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Take Command 28

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1 Overview

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TAKE COMMAND 28

Welcome to our help! We have designed this help file to accompany our products ***Take Command*** and ***TCC***.

Take Command combines the best features of the GUI and character-mode interfaces. You can have multiple console applications open in tabbed windows, with a Windows Explorer-like interface available for those times when you need a visual look at your folders.

Take Command is composed of three elements which work closely together:

Take Command Environment - A rich development and operations environment that allows you to:

- Run multiple console and GUI applications simultaneously in tabbed windows, including our own Take Command Console (**TCC**), CMD, PowerShell and bash. ***Take Command*** will display output much faster (up to 10x) than running the application in a standard Windows console window.
- Cut and paste text
- Drag and drop files into tab windows from an Explorer-like environment, other applications, or the desktop
- Create and edit command scripts with a full featured editor, including syntax highlighting
- Debug batch scripts with a sophisticated debugger, including single-stepping and conditional breakpoints

Take Command Console (**TCC**) - A command processor compatible with CMD (the default command processor in Windows 10 / 2016 / 2019) but substantially enhanced with thousands of additional features. ***TCC*** provides the ability to:

- Interactively run commands, such as DIR, COPY, etc.
- Interactively run batch script files, such as .CMD, .BAT or .BTM scripts
- Run batch scripts as background processes based on timed schedules or operational triggers, such as changes in the system environment

Take Command Language - A mature scripting language based on and compatible with CMD, but massively enhanced. It includes:

- 265+ internal commands
- 390+ functions
- 320+ variables
- Hundreds of additional options for CMD compatible commands
- Additional underlying capabilities, such as the ability to access FTP and HTTP sites as if they were local disk drives

The following image shows how the pieces fit together. The overall environment surrounds a set of consoles, each with its own tabbed window. Each console can run commands in the Take Command language (or other languages, such as PowerShell or bash, in additional tab windows).

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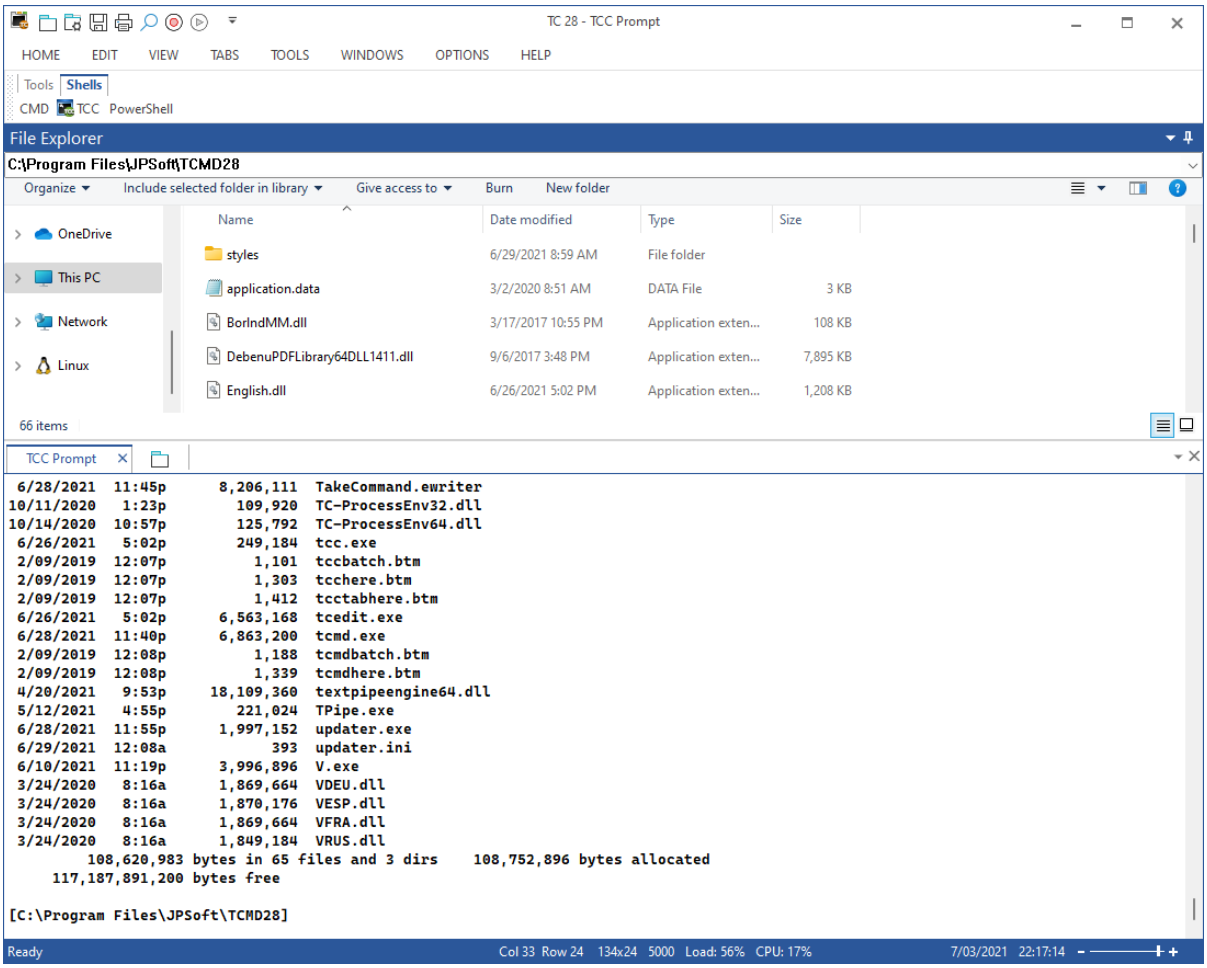
Take Command is designed for Windows 10, Server 2016, and Sever 2019. (Prior versions are available on request if you need 32-bit or Windows 7 support.)



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2 Whats New in Version 28

Take Command 28.0:

The ***Take Command***, ***TCC***, ***CMDebug***, and ***TCC-RT*** installers are built with a new version of Advanced Installer.

Take Command, ***TCC***, ***CMDebug***, and ***TCC-RT*** have been tested with the preview version of Windows 11, and some minor internal changes were made for compatibility.

Take Command:

Many security, performance & size improvements.

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Take Command is now CET Shadow Stack compatible.

The GUI framework library has been updated.

Improved support for high resolution displays and multiple monitors.

Take Command has two new themes (Options / Styles / Themes):

Windows 10 Light
Windows 10 Dark

TCC:

Many security, performance & size improvements.

TCC is now CET Shadow Stack compatible.

TCC tab completion supports the new optional library function name format (*library$function*).

The popup windows (i.e., F6, F7) now display the search string passed by the command line in the edit control.

TCC file expansion and tab completion now support "~\" (home directory) syntax. If the filename is ~, or begins with a **~** (or ***~/***), ***TCC*** will substitute to the user's home directory, as defined by the HOME environment variable. (If HOME doesn't exist, ***TCC*** will look for %HOMEDRIVE + HOMEPATH.) For example:

```
dir ~\
copy foo ~\foofolder\
```

TCC file expansion and tab completion now support the predefined Windows folders. The syntax is **:foldername** where *foldername* can be:

AccountPictures
AdminTools
AppCaptures
ApplicationShortcuts
CameraRoll
CDBurning
CommonAdminTools
CommonOEMLinks
CommonPrograms
CommonStartMenu
CommonStartMenuPlaces
CommonStartup
CommonTemplates
Contacts
Cookies
Desktop
DeviceMetadataStore
Documents
DocumentsLibrary
Downloads
Favorites

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Fonts
GameTasks
History
ImplicitAppShortcuts
InternetCache
Libraries
Links
LocalAppData
LocalAppDataLow
LocalDocuments
LocalDownloads
LocalizedResourcesDir
LocalMusic
LocalPictures
LocalVideos
Music
MusicLibrary
Nethood
OneDrive
OriginalImages
PhotoAlbums
PicturesLibrary
Pictures
Playlists
PrintHood
Profile
ProgramData
ProgramFiles
ProgramFilesX64
ProgramFilesX86
ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
Programs
Public
PublicDesktop
PublicDocuments
PublicDownloads
PublicGameTasks
PublicLibraries
PublicMusic
PublicPictures
PublicRingtones
PublicUserTiles
PublicVideos
QuickLaunch
Recent
RecordedTVLibrary
ResourceDir
RetailDemo
Ringtones
RoamingAppData
RoamedTileImages
RoamingTiles
SampleMusic
SamplePictures

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SamplePlayLists
SampleVideos
SavedGames
SavedPictures
SavedSearches
Screenshots
SearchHistory
SearchTemplates
SendTo
SidebarDefaultParts
SidebarParts
SkyDrive
SkyDriveCameraRoll
SkyDriveDocuments
SkyDrivePictures
StartMenu
Startup
System
SystemX86
Templates
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
Videos
VideosLibrary
Windows

These folder names can be used in any internal ***TCC*** command that takes filenames. For example:

```
dir :downloads
copy picture.jpg :pictures\myfolder1\
```

IDE / Batch Debugger:

Many security, performance & size improvements.

CMDebug / IDE is now CET Shadow Stack compatible.

The GUI framework library has been updated.

Improved support for high resolution displays and multiple monitors.

The Scintilla edit control has been updated to version 5.1. The lexer (lexilla.dll) has been separated from the editor (scintilla.dll). There are a number of improvements in readability and speed for high resolution displays.

TCEDIT:

The GUI framework library has been updated.

TCEdit is now CET Shadow Stack compatible.

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The Scintilla edit control has been updated to version 5.1. The lexer (lexilla.dll) has been separated from the editor (scintilla.dll). There are a number of improvements in readability and speed for high resolution displays.

Help:

The help is built with a new version (8.3) of Help & Manual.

The .chm help (obsolete, unsupported, and deprecated by Microsoft) has been changed to .ewriter format. An eWriter eBook is WebHelp stored in a single file, and the eWriter.exe app is used to display the help. The eWriter format combines the benefits of CHM and WebHelp, eliminating the disadvantages of both. It uses the Windows HTML rendering engine to display the content, with support for CSS3, HTML5, JavaScript and media. This will allow us (in future versions) to incorporate tutorials and videos in the help file.

The new eWriter format includes support for high-resolution displays (.chm does not).

Unlike .chm help files, The eWrite HELP can be opened from network drives on local networks.

Repeated calls to HELP will open in the same help window.

Plugins:

Added more TakeCommandIPC commands. See PLUGINS and the plugin SDK for details.

TCTABACTIVE
Returns 1 if the current tab is active.

TCTABVISIBLE
Returns 1 if the current tab is visible

COLOR
Change the color palette for this console

FONT
Change the font for this tab window

TCLISTVIEW
Return the selected files in the list view control

RECORDER
Turn the macro recorder on or off

STARTNA
Attach a hidden console window but don't make it active

WSHELL
Change to a shell directory

WSHORTCUT
Change to an Explorer shortcut

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TRANS
Set ***Take Command*** window transparency

FLASH
Flash the tab window

DETACH
Detach a console window from ***Take Command***

New TMCD.INI Directives:

WindowState=Custom - (TCMD only) If set to Custom (or through the TCMD configuration dialog "Windows / Startup Mode / Saved") the ***Take Command*** window will always start in the same size and location as it was when it last exited.

New Variable Functions:

@JSONCREATE[filename] - Create a JSON file for writing by other JSON variable functions (for example, @JSONSTARTOBJECT, @JSONPUTPROPERTY, etc.).

@XMLCREATE[filename] - Create an XML file for writing by other XML variable functions.

Updated Variable Functions:

@FILESIZE - Now supports returning the size of file streams. @FILESIZE now also supports retrieving file sizes for HTTP and HTTPS files. (Note that due to HTTP protocol limitations, you cannot use wildcards or scan subdirectories.)

Updated Commands:

ACTIVATE

FORCEMIN - Force the window to be minimized even if the thread that owns the window is not responding.

VDESKTOP=*id* - Move the window to another virtual desktop. *id* can be either a desktop number (1-n), the GUID for that desktop, or the desktop name. See VDESKTOP for more details.

ASSOCIATE

/V:* - Displays all of the shell verbs and their commands for the specified extension.

DEL

If you are deleting a stream, DEL will check for a symlink and delete the stream from the linked file. (Windows does not support deleting a symlink'd stream.)

DIR

/\ - Display directory names with a trailing \.

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ENUMSERVERS

/Domain=*domain* - The NetBIOS name of the domain to enumerate. If you do not specify a domain, ENUMSERVERS uses the primary domain.

EVERYTHING

Everything Search has been updated to version 1.4.1.1009.

IFTP

/K="..." - The CA signed client public key used when authenticating (SSH only). When authenticating via public key authentication this setting may be set to the CA signed client's public key. This is useful when the server has been configured to trust client keys signed by a particular CA. For example:

```
/K="SignedSSHCert=ssh-rsa-cert-v01@openssh.com
AAAAB3NzaC1yc2EAAAADAQABAAAB..."
```

The algorithm such as `ssh-rsa-cert-v01@openssh.com` in the above string is used as part of the authentication process. To use a different algorithm simply change this value. For instance all of the following are acceptable with the same signed public key:

- ssh-rsa-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...
- rsa-sha2-256-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...
- rsa-sha2-512-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...

/T=*nnn* - If this is set, the socket's keep-alive option is enabled, and TCP keep-alive packets will be sent periodically to maintain the connection. *nnn* is the inactivity time in seconds before a TCP keep-alive packet is sent.

LIBRARY

You can now specify which library to use for a function name (allowing you to use the same function names in different libraries). To specify a particular library and function, use the syntax:

library$function

Where *library* is the library file name, and *function* the name of the function.

If you don't specify a library name, ***TCC*** will use the old format and use the first matching function name it finds in the library list.

/N - LIBRARY with no arguments will display the function names in the library list. If you specify /N and no other arguments, LIBRARY will show the library name + function name in the *library$function* format.

LUA

LUA has been updated to version 5.4.3.

PDIR

/\ - Display directory names with a trailing \.

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SCRIPT

Added documentation on calling internal ***TCC*** commands from any Active Scripting language using the tcommand() interface.

START

/VDESKTOP=*id* - Start the app on another virtual desktop. *id* can be either a desktop number (1-n), the GUID for that desktop, or the desktop name. See VDESKTOP for more details. Note that Windows doesn't have an API to actually start on another desktop, so ***TCC*** starts it on the local desktop and them immediately moves it -- so you'll see a flash when the window starts and then disappears.

TASKEND

The PID can be hex if it is prefixed with a leading 0x.

/Ne - Don't display errors.

/R - Delete the process tree (the specified process and all of its child processes).

TASKLIST

The PID can be hex if it is prefixed with a leading 0x.

/R - Show the process tree (the specified process and all of its child processes).

TPIPE

Textpipeengine64.dll has been updated to version 11.8.1.

/Simple has some new redaction filters which are designed to work inside restriction filters.

89 Remove diacritics
91 Redact x-over text
92 Redact x-over digits
93 Redact x-over all but last 4 digits
94 Redact x-over non-blanks
95 Replace with blanks
96 Redact with pseudo NHS
97 Redact with pseudo SSN
98 Redact with pseudo bank number

TREE

/\ - Display directory names with a trailing \.

WINDOW

VDESKTOP=*id* - Move the window to another virtual desktop. *id* can be either a desktop number (1-n), the GUID for that desktop, or the desktop name. See VDESKTOP for more details.

WMIQUERY

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WMIQUERY now supports remote queries. The namespace argument for remote servers will look like "\\remote-server\root\cimv2" (substitute your server name for "remote-server").

/USER=*username* - The user name to use for remote queries.

/PASSWORD=*password* - The password to use for remote queries.

/L - Don't separate records with a CR/LF. (This is probably only useful when you are querying single-line records.)

WSETTINGS

New settings dialogs (some require your system / device to be configured to support the option):

ActivityHistory
AdvancedDisplay
AppDiagnostics
AppVolume
Audio
AutomaticFileDownloads
Broadcasting
Clipboard
DeliveryOptimization
Documents
DownloadMaps
Encryption
EyeTracker
FindMyDevice
Fonts
GameBar
GameDVR
GameMode
GraphicsSettings
InkingAndTyping
Nightlight
Notifications
Phone
PhoneCalls
Pictures
RemoteDesktop
SharedExperiences
SigninOptions
Sound
Tasks
Touchpad
Troubleshoot
VideoPlayback
Videos
VoiceActivation
WiFiCalling
WindowsHelloFace
WindowsHelloFingerprint
WindowSecurity
YourPhone

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New Commands:

LOCAL

Define variables that are local to a library function or to a batch file. The syntax is:

LOCAL *var1, var2, ...*

LOCAL will save the existing values of the specified environment variables (if any) and then delete the variable from the environment. You can then SET a new variable with that name; when the library function or batch file exits, the local variables are deleted from the environment and the previous values (if any) are restored.

SSHEXEC

The SSHEXEC command establishes a Secure Shell (SSH) connection to a server and starts up the user's default shell. Press Ctrl-C to disconnect from the other system. The syntax is:

SSHEXEC [/A /F *filename* /G*n* /H *fwhost* /IPV6 /R *port* /S /T *type* /U *user* /P *password*] *host* /L *name*[:*password*] "*command* ..."

/A(utodetect firewall)
/F(ilename for host stdin)
/G (logging level)
/H (firewall host)
/IPv6
/L (user:password)
/P (firewall password)
/R(emote port)
/S(tatus messages)
/T (firewall type)
/U (Firewall user name)

host - Host name
command - Command to pass to the default host shell

If you don't specify a username, SSHEXEC will use the current username. You can provide a password on the command line by appending it to the username (i.e., "User:Password"). If you don't provide a password, SSHEXEC will prompt for it.

If you want to do redirection on the remote system, enclose the command argument list in double quotes. The double quotes will be removed before passing the commands to the remote system.

SSHEXEC will display the host name & user name and prompt for a line of input, then send it to the host shell and return to the prompt to wait for the next line. SSHEXEC will display any output sent by the host to STDOUT and STDERR. When you type "exit" at the prompt, or the host disconnects SSHEXEC will exit.

VDESKTOP

Manage Windows 10 virtual desktops (requires Windows 10 build 21313 or later). VDESKTOP lets you create, remove, or switch desktops. The syntax is:

VDESKTOP [[/N="*name"]* /C [/W="file"] /R id /S [id] - +]

/C Create a new desktop

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/R Remove the specified desktop. Id can be a desktop number (1 - n) or the GUID for that desktop.
/S Switch to the specified desktop. If *id* isn't specified, switch to the desktop created with /C. *id* can either be a desktop number (1 - n) or the GUID for that desktop.

/N="*name*" You can optionally specify a desktop name. If you don't specify a name, you need to use a desktop number (1 - *n*) or the desktop GUID. Note that with the current Windows builds, the name is not updated in the Task View, though it is usable with subsequent VDESKTOP commands, and it will be displayed properly when the system is restarted.
/W="*file*" When used with /C, /W specifies the image file to use for the background wallpaper for the desktop. Note that with the current Windows builds, the background will not be updated until the system is restarted.

WMIRUN

Use WMI to run methods on a local or remote machine. You must be running in an elevated session. The syntax is:

WMIRUN /USER=*user* /PASSWORD=*password* /CLASS=*classname* /METHOD=*methodname networkresource command*

/USER=*username* - The user name to use for remote queries

/PASSWORD=*password* - The password to use for remote queries

/CLASS=*classname* - The WMI class name

/METHOD=*methodname* - The WMI method name

networkresource - WMI namespace. The namespace argument for remote servers will look something like "\\remote-server\root\cimv2" (substitute your server name for "remote-server").

command - The command you want WMI to run.

For example, this command terminates process 26568 on the local machine:

```
WMIRUN /method=Terminate /class=Win32_Process "\\.\root\CIMV2"
Win32_Process.Handle="26568"
```

2.1 Version 27

Take Command 27.0:

The Take Command, TCC, CMDebug, and TCC-RT installers are built with a new version of Advanced Installer.

Dropped 32-bit support for TCC-RT v27.

Take Command:

Many performance & size improvements.

The GUI framework library has been updated.

If the "auto attach consoles" option is enabled, ***Take Command*** will check to ensure the console is on the same virtual desktop before attaching it to a tab.

The tab label context menu (right click) has a new option "Notifications..." that displays the Notification dialog. This dialog allows you to send an activity and/or silence notification request to ***Take Command*** (see also the NOTIFY command in the ***TCC*** new commands below).

Activity notifications: When ***Take Command*** updates the tab window, it checks to see if the time since the last update is >= to *timeout,* and if so it will execute the specified *command*.

Silence notification: *timeout is* the number of seconds without any display output before ***Take Command*** will execute the specified *command*.

repeat - The number of times to notify on a matching activity / silence, or "forever".

timeout - The number of seconds before triggering a notification.

command - The command to execute on an activity / silence match

TCC:

Many performance & size improvements.

The IPWorks internet & compression libraries have been updated to IPWorks 2020.

Everything Search has been updated to 1.4.1.1001.

The embedded Lua interpreter has been updated to version 5.4.2.

Added support for Python 3.9.

Batch file nesting limits have been removed (now only subject to the memory available).

Variable name length limits have been removed.

FTP - TCC will try to preserve timestamps when transferring files. The MDTM command is used when downloading, and the MFTM command is used when uploading. The server must support these commands for this to work.

Array variable expansion now supports arithmetic expressions (for example, "echo %myarray[%i*3]").

The previous XML parser in ***TCC*** (msxml6) has been replaced with a more powerful parser that provides much more capability, including both reading & writing XML and JSON files.

IDE / Batch Debugger:

The GUI framework library has been updated.

The Scintilla edit control has been updated to version 4.5.5.

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The debugger has a new "Call Stack" window that displays the current call stack (the filename, line #, command line, and the line(s) that called it (i.e., GOSUB or CALL). Double-clicking on a line in the Call Stack window will take you to that line in the tab window. (Note that the call stack is only expanded when you "Step Into" the next command.)

When debugging batch files that CALL or chain to another batch file (or GOSUB "filename: :label), or call a library function, if you "Step Into", the debugger will open a new tab window for the new file / library (if a tab window with that file doesn't already exist). The new tab window will be automatically closed when control returns to the calling batch file. If you stop debugging, all the windows will remain open to allow you to make edits.

The Environment window is rewritten after stepping through each command so it can catch updates. It now saves its row position and restores that after rewriting the contents (so it no longer always goes back to the beginning of the environment list).

TCEDIT:

The GUI framework library has been updated.

The Scintilla edit control has been updated to version 4.4.5.

If you specify a file that doesn't exist when starting ***TCEdit*** (and you didn't specify /C), ***TCEdit*** will display a messagebox asking if you want to create the file.

Yes - Creates a new empty file and opens it in the active tab window.
No - Opens an untitled empty tab window (you will need to name the file before saving).
Cancel - Exits ***TCEdit***.

Help:

The help is built with a new version (8.2) of Help & Manual.

New TMCD.INI Directives:

PowerShellProfileID=*string* - The profile Id to look for when loading profiles. ***TCC*** will look for profiles that begin with the specified Id. For instance, the default value is "Microsoft.PowerShell" so the class will look for profiles named "Microsoft.PowerShell_profile.ps1".

TimeServerPort=*n* - The UDP port where the remote time server is listening (default 123). If TimeServerProtocol is set to tpTimeProtocol (1) the port will be set to 37.

TimeServerProtocol=*n* - The protocol used to connect to the time server. The default is 1 (tpSNTP). The Time protocol may be selected by setting this value to 0 (tpTimeProtocol).

New Internal Variables:

_BATCHPATH - Pathname of the current batch file (including the trailing \).

_IPDNSOTHER - A space-delimited list of other DNS servers configured for the host machine. (The primary server is returned by %_IPDNSSERVER.)

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New Variable Functions:

@IPBROADCAST - The broadcast address of the specified network adapter.

@IPBROADCAST[*adapter*]

adapter - the index of the adapter

@IPDHCPENABLED - Returns 1 if the specified network adapter has DHCP enabled.

@IPDHCPENABLED[*adapter*]

adapter - the index of the adapter

@IPEXPIRES - The expiration date and time of the lease obtained by the specifed network adapter.

@IPEXPIRES[*adapter*]

adapter - the index of the adapter

@IPIPV6LL - The IPv6 link local address of the specified network adapter.

@IPIPV6LL[*adapter*]

adapter - the index of the adapter

@IPOBTAINED - The date and time of when the current lease was obtained by the network adapter.

@IPOBTAINED[*adapter*]

adapter - the index of the adapter

@IPOTHER - Returns a space-delimited list of alternate addresses for the specified host (if any). Most hosts have only one IP interface; this function is for querying multihomed hosts (hosts with more than one interface).

@IPOTHER[name, address]

name - the host name
address - the host address

@IPOTHERL - Returns a space-delimited list of any other IP addresses leased by the specified network adapter.

@IPOTHERL[*adapter*]

adapter - the index of the adapter

@IPSTATUS - Returns the current status of the specified network adapter.

@IPSTATUS[*adapter*]

adapter - the index of the adapter

Possible return values are:

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Up
Down
Testing
Unknown
Dormant
NotPresent
LowerLayerDown

@IPWINSSERVER2 - Returns the secondary WINS server for the specified network adapter.

@IPWINSSERVER2[*adapter*]

adapter - the index of the adapter

@JSONCLOSE - closes a JSON file opened by @JSONOPEN. The syntax is:

@JSONCLOSE[]

@JSONENDARRAY - Writes the closing bracket of a JSON array. The syntax is:

@JSONENDARRAY[]

@JSONENDOBJECT - Writes the closing brace of a JSON object. The syntax is:

@JSONENDOBJECT[]

@JSONFLUSH - Flushes the JSON parser buffers. The syntax is:

@JSONFLUSH[]

@JSONHASXPATH - returns 1 if the XPath exists in the JSON file, 0 if it doesn't. The syntax is:

@JSONHASXPATH[*["filename",]xpath*]

The *xpath* always begins with /json.

If you do not specify a filename, @JSONHASXPATH will use the file previously opened by @JSONOPEN.

@JSONINPUT - Parse an input string as JSON data. (This is used in place of @JSONOPEN.) The syntax is:

@JSONINPUT[*inputdata*]

@JSONINSERTPROPERTY - Writes a value of a property. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONINSERTPROPERTY[xpath,name,*value,type,position*]

Name specifies the name of the property.

Value specifies the new value.

Type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

The *Position* parameter specifies the position of Value relative to the element specified by *XPath*. Possible values are:

- 0 (Before the current element)
- 1 (After the current element)
- 2 (The first child of the current element)
- 3 (The last child of the current element)

@JSONINSERTVALUE - Inserts the specified value at the selected position. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONINSERTVALUE[xpath,*value,type,position*]

Value specifies the new value.

Type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

The *Position* parameter specifies the position of Value relative to the element specified by *XPath*. Possible values are:

- 0 (Before the current element)
- 1 (After the current element)
- 2 (The first child of the current element)
- 3 (The last child of the current element)

@JSONNODES - Returns the number of nodes (children) for the specified path in a JSON file. The syntax is:

@JSONNODES[["*filename",]path*]

@JSONOPEN - open a JSON file for use by @JSONXPATH and/or @JSONNODES. The syntax is:

@JSONOPEN[*filename*]

@JSONOUTPUT - Output JSON to a string after processing. (This is used in place of @JSONSAVE.) The syntax is:

@JSONOUTPUT[]

@JSONPUTNAME - Writes the name of a property. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONPUTNAME[*name*]

@JSONPUTPROPERTY - Writes the name of a property and its value to a JSON file. The syntax is:

@JSONPUTPROPERTY[*name,value,type*]

The *name* parameter specifies the name of the property.

The *value* parameter specifies the value of the property.

The *type* parameter specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

@JSONPUTRAW - Writes a raw JSON fragment to a JSON file. The syntax is:

@JSONPUTRAW[*text*]

@JSONPUTVALUE - Writes a value of a property. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONPUTVALUE[*value,type*]

Value specifies the new value.

ValueType specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

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@JSONREMOVE - Removes the element or value set in XPath. The syntax is:

@JSONREMOVE[*xpath*]

If *xpath* is not specified, @JSONREMOVE will use the current XPath.

@JSONRESET - Flushes the JSON parser buffers, and initializes the parser to its default state. The syntax is:

@JSONRESET[]

@JSONSAVE - Saves the modified JSON document to the specified output file. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONSAVE[*outputfile[,overwrite]*]

If *overwrite* is 1, @JSONSAVE will overwrite an existing file. Otherwise, @JSONSAVE will display an error.

@JSONSETNAME - Sets a new name for the element specified by XPath. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONSETNAME[*xpath,] name*]

If *xpath* is not specified, @JSONSETNAME will default to the current *xpath*.

@JSONSETVALUE - Sets a new value for the element specified by XPath. The file must have been opened with a previous @JSONOPEN. The syntax is:

@JSONSETVALUE[*xpath,]value,type*]

If *xpath* is not specified, @JSONSETVALUE will default to the current *xpath*.

value specifies the new value.

type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

@JSONSTARTARRAY - Writes the opening bracket of a JSON array. The syntax is:

@JSONSTARTARRAY[]

@JSONSTARTOBJECT - Writes the opening brace of a JSON object. The syntax is:

@JSONSTARTOBJECT[]

@JSONXPATH - JSON XPath query. The syntax is:

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@JSONXPATH[*["filename",]path*]

The *path* is a series of one or more element accessors separated by '/'. The path can be absolute (starting with '/') or relative to the current XPath location. Note: When using XPath notation the root element is always referred to as "json". This means all paths will begin with "/json".

The following are possible values for an element accessor:

name	A particular element name.
[i]	The i-th subelement of the current element.
..	the parent of the current element.

@PUNYDECODE - Decode a Punycode string or file. The format is:

@PUNYDECODE[**s**,*string*]
@PUNYDECODE[*inputfile*,*outputfile*]

@PUNYENCODE - Encode a Punycode string or file. The format is:

@PUNYENCODE[**s**,*string*]
@PUNYENCODE[*inputfile*,*outputfile*]

@QPDECODE - Decode using the Quote-Printable MIME format (using only special characters). The format is:

@QPDECODE[**s**,*string*]
@QPDECODE[*inputfile*,*outputfile*]

@QPENCODE - Encode using the Quote-Printable MIME format (using only special characters). The format is:

@QPENCODE[**s**,*string*]
@QPENCODE[*inputfile*,*outputfile*]

@XMLENDELEMENT - Writes the closing tab of an XML element opened using @XMLSTARTELEMENT. If no elements are open, @XMLENDELEMENT returns an error. The syntax is:

@XMLENDELEMENT[]

@XMLFLUSH - Flushes the XML parser buffers, and checks its end state. The syntax is:

@XMLFLUSH[]

@XMLGETATTR - Returns the value of the specified attribute. The syntax is:

@XMLGETATTR[*["filename",],attributename*]

@XMLHASXPATH - returns 1 if the XPath exists in the XML file, 0 if it doesn't. The syntax is:

@XMLHASXPATH[*["filename",]xpath*]

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@XMLINPUT - Parse an input string as XML data. (This is used in place of @JXMLOPEN.) The syntax is:

@XMLINPUT[*inputdata*]

@XMLOUTPUT - Output XML to a string after processing. (This is used in place of @XMLSAVE.) The syntax is:

@XMLOUTPUT[]

@XMLPUTATTR - Writes an XML attribute on the currently opened XML element. The syntax is:

@XMLPUTATTR[*name,namespaceURI,value*]

@XMLPUTCDATA - Writes an XML CDATA block. The file must have been opened with a previous @XMLOPEN. The syntax is:

@XMLPUTCDATA[*text*]

@XMLPUTCOMMENT - Writes an XML comment block. The file must have been opened with a previous @XMLOPEN. The syntax is:

@XMLPUTCOMMENT[*text*]

@XMLPUTELEMENT - Writes a simple XML element with no attributes and the specified value between the opening and closing tags. The syntax is:

@XMLPUTELEMENT*name,namespaceURI, value*]

If *name* is a local name without a prefix, ***TCC*** will automatically introduce a new xmlns="NamespaceURI" attribute if necessary.

If *name* is in the form prefix:local, then ***TCC*** will automatically introduce a new xmlns:prefix="NamespaceURI" as necessary.

When calling @XMLPutElement or @XMLStartElement, if a ***namespaceURI*** is not specified an empty namespace will be defined for the element. If a namespace should be associated with the element, a ***namespaceURI*** value must be provided. When creating the XML, ***TCC*** will determine if the namespace already exists to avoid duplicate definitions of the same namespace.

@XMLPUTSTRING - Writes text inside an XML element. The file must have been opened with a previous @XMLOPEN. The syntax is:

@XMLPUTSTRING[*text*]

@XMLREMOVECHILDREN - Removes the children of the element at the specified (or current) XPath. The element itself remains. The syntax is:

@XMLREMOVECHILDREN[*[path]*]

@XMLREMOVEELEMENT - Removes the element and its children at the specified (or current) XPath. The syntax is:

@XMLREMOVEELEMENT[*[path]*]

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@XMLRESET - Flushes the XML parser buffers, and initializes the parser to its default state. The syntax is:

@XMLRESET[]

@XMLSAVE - Saves the modified XML document to a the specified output file. The file must have been opened with a previous @XMLOPEN. The syntax is:

@XMLSAVE[*outputfile*]

@XMLSTARTELEMENT - Writes the opening tag of a new XML element. If an XML element is already opened, then this element is written as a child. The syntax is:

@XMLSTARTELEMENT*name,namespaceURI*]

Updated Internal Variables:

_cpu is obsolete and has been removed.

_wow64 is obsolete and has been removed.

Updated Variable Functions:

@LUA - updated to Lua 5.4.2.

@PING - added two new options for the time to live and the ICMP service type.

@ping[host[,timeout[,size[,ttl[,type]]]]]

ttl - Time to live - defaults to the TTL value of the underlying TCP/IP subsystem

type - ICMP service type (default 8)

@SELECT - if you set the *sort* option to -1, @SELECT will sort the list in reverse order.

@XMLXPATH - the *path* argument has additional options.The path is a series of one or more element accessors separated by '/'. The path can be absolute (starting with '/') or relative to the current XPath location.

The following are possible values for an element accessor:

'name'	A particular element name
name[i]	The i-th subelement of the current element with the given name
[i]	The i-th subelement of the current element
[last()]	The last subelement of the current element
[last()-i]	The subelement located at the last location minus i in the current element
name[@attrname="attrvalue"]	The subelement containing a particular value for a given attribute (supports single AND double quotes)
..	The parent of the current element

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Updated Commands:

COPY

COPY /G now supports HTTP / HTTPS copies.

/GZ - When copying to an HTTP / HTTPS target, this option will compress the file into gzip format before uploading it.

ESET

/K"*::regex*" - defines a regular expression mask for the input.

If you are editing a typed environment variable (see SET /T), ESET will create a matching regular expression mask for the input.

EVERYTHING

Everything Search has been updated to version 1.4.1.1001.

HASH

HASH now supports ranges and selection by attributes.

/S - Return hashes for matching files in the current directory and subdirectories.

IFTP

IFTP will try to preserve timestamps when transferring files. The MDTM command is used when downloading, and the MFTM command is used when uploading. The FTP host server must support these commands for this to work.

LIBRARY

(Not new, but apparently never documented.) The command line following the library function name is passed to the function, and the arguments can be referenced with the same %1 - %n syntax as used by batch files and aliases.

LUA

The internal Lua support has been updated to Lua 5.4.2.

ON

There are new options to execute commands on conditions when not in a batch file ("global" conditions). If no command is specified, ***TCC*** will remove the existing command for the specified condition. Each time an ON statement is defined, it defines a new command to be executed for that event, and any prior command is discarded.

If an ON condition is defined for the current batch file, it will override a global ON condition.

ON CLOSE ***[command] -*** Execute ***command*** when the ***TCC*** tab is closed.

On LOGOFF ***[command] -*** Execute command when the user logs off.

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ON SHUTDOWN ***[command]*** **-** Execute command when the system is being shut down.

ON SUSPEND ***[command]*** **-** Execute command when the system is going to sleep or hibernation. Windows will continue suspending after a maximum of 2 seconds.

ON RESUME ***[command]*** **-** Execute command when the system resumes after sleeping or hibernating.

/G - Set a global condition. This is useful when you want to set global conditions from a batch file. For example:

ON /G LOGOFF *command*

PAUSE

/T - Displays a countdown timer. Must be used with /W*n*, which must precede /T.

SET

Array variable assignment and display now support arithmetic expressions (for example, "set %myarray[%i*3]=somevalue").

SETARRAY

You can initialize arrays by appending [*value*] to the definition. For example, to initialize all of the array elements to 0:

setarray myarray[100] [0]

TPIPE

The TextPipe engine has been updated to version 11.7.5.

New Commands:

COMMANDS

Display, enable, or disable the ***TCC*** internal commands. The syntax is:

COMMANDS [/D /E /P] *commandname ...*

If you do not enter any arguments, COMMANDS will display all of the internal commands. Disabled commands will be enclosed in parentheses. If you enter command names without a /D or /E, COMMANDS will show the current state of those commands.

/D - Disable one or more commands. If you do not provide any command names, COMMANDS will display all of the disabled commands.

/E - Enable one or more commands. If you do not provide any command names, COMMANDS will display all of the enabled commands.

/P - Pause after displaying each page.

DNS

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Display the DNS records for the specified DNS server and host domain. The syntax is:

DNS [/Nh] *server hostname*

/Nh - Don't display the columns header

server - The address of the DNS server

hostname - The host domain to query

For example:

DNS 1.1.1.1 jpsoft.com

NOTIFY

Send an activity notification request to ***Take Command***. This can be useful to detect when a long-running process is waiting for input or has finished (/S) or when a process has started (/A). (This command is only useful when ***TCC*** is running in a ***Take Command*** tab window.) The syntax is:

NOTIFY *repeat* [*timeout*] [/A /S] [*command...*]

repeat - The number of repetitions. This can be an integer value from 1 to *n,* or the string FOREVER. Set *repeat* to 0 to disable notifications.

timeout - The number of seconds before triggering a notification. The default value is 15.

/A - Activity notification. When ***Take Command*** updates the tab window, it checks to see if the time since the last update is >= *timeout,* and if so it will execute the specified *command*. If no *command* is specified, /A will turn off activity notification.

/S - Silence notification. *timeout is* the number of seconds without any display output before ***Take Command*** will execute the specified *command*. If no *command* is specified, /S will turn off silence notification.

command - The command to execute on an activity / silence match

The *command* will be executed by ***Take Command***, not ***TCC.*** So if you specify a *command* that writes to STDOUT or STDERR (not recommended!), you will see the output mixed with the output from ***TCC*** in that tab window.

THREAD

Execute a command in a separate thread. The syntax is:

THREAD *command [args]*

It is the user's responsibility to ensure that there are no I/O or file system conflicts when running multiple THREAD commands and/or running THREAD simultaneously with commands in the primary TCC thread.

THREAD will set the internal variable _thread_result to the return value of *command*.

TOAST

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Displays Windows Toast notifications, a popup window that appears on the lower right corner of the display. Unlike message boxes, Toast popups are not modal and will disappear after a few seconds. Windows will not display Toast notifications if the user has disabled notifications, either for ***TCC*** or everywhere.

The syntax is:

TOAST /template=*n* /text1="*text*" [*options*]

TOAST sets two internal command variables:

_toast
- 0 - no toast active or no user response yet
- 1 - user clicked on the toast
- 2 - user dismissed the toast
- 3 - toast timed out
- 4 - application hid the toast
- 5 - toast was not activated
- 6 - toast failed
- 7 - system does not support toasts
- 8 - unhandled option
- 9 - multiple texts were provided
- 10 - toast notification manager initialization failure
- 11 - toast could not be launched

_toast_action
- 0 - user has not clicked on a button
- 1 - user clicked on first button
- 2 - user clicked on second button
- 3 - user clicked on third button

The TOAST command exits after calling Windows to display the Toast notification. Windows will call back to TOAST with the Toast results and actions, so the _toast and _toast_action variables will not be set until the user either clicks on the Toast or it times out.

The TOAST options are:

/action="*text"* - You can have one or more actions. Each action creates a button on the Toast window; clicking on that button will set the _toast_action internal variable.

/attribute="*text*" - Attribution text displayed on the bottom of the Toast window.

/audio=*n* - Windows system sound to play when the notification is displayed.
- 0 - DefaultSound
- 1 - IM
- 2 - Mail
- 3 - Reminder
- 4 - SMS
- 5 - Alarm
- 6 - Alarm2
- 7 - Alarm3
- 8 - Alarm4
- 9 - Alarm5
- 10 - Alarm6
- 11 - Alarm7
- 12 - Alarm8

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13 - Alarm9
14 - Alarm10
15 - Call
16 - Call1
17 - Call2
18 - Call3
19 - Call4
20 - Call5
21 - Call6
22 - Call7
23 - Call8
24 - Call9
25 - Call10

/audiostate=*n* - Specifies whether you want to display the sound (see /audio above) once, looping, or not at all.
0 - Default
1 - Silent
2 - Loop

/duration=*n* - The time to display the Toast notification
0 - Default
1 - Short
2 - Long

/expire=*n* - Number of seconds before the notification expires.

/image="*pathname*" - The image file you want to display (for template types 0 - 3)

/template=*n* - The type of Windows Toast you want to display:
0 - An image on the left, and a string that occupies a maximum of three lines
1 - An image on the left, a bold string on the first line and a second string wrapped across the second and third lines.
2 - An image on the left, a bold string on the first and second lines, and a second string on the third line.
3 - An image on the left, a bold string on the first line, a second string on the second line, and a third string on the third line.
4 - A string that occupies a maximum of three lines
5 - A bold string on the first line and a second string wrapped across the second and third lines.
6 - A bold string on the first and second lines, and a second string on the third line.
7 - A bold string on the first line, a second string on the second line, and a third string on the third line.

/S - Create the shortcut to *TCC* required for Toast notifications. (Not valid with any other options.) This is normally done by the installer, so you shouldn't need to run TOAST /S unless the shortcut was removed.

/text1="*text*" - Text to display in the first line (template types 0 - 7).

/text2="*text*" - Text to display in the second line (for template types 1, 2, 3, 5, 6, and 7)

/text3="*text*" - Text to display in the third line (for template types 3, and 7)

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2.2 Version 26

Take Command 26.0:

Windows 7 support has been dropped from all products (Take Command, TCC, CMDebug, and TCC-RT).

Except for TCC-RT, 32-bit Windows support is deprecated in v26. The v26 Take Command, TCC, and CMDebug installers are all 64-bit only. 32-bit installers will be available on request for multisystem licenses.

The Take Command, TCC, CMDebug, and TCC-RT installers are built with a new version of Advanced Installer.

Take Command:

Changed all of the Take Command icons to a modern "Fluent" design.

The GUI framework library has been updated.

The language dll's are substantially smaller and load faster.

Many performance & size improvements.

Take Command will now scale properly when moving between monitors with different DPI values.

Added support for Windows Server 2019.

The Windows Error Lookup tool now supports NTSTATUS error codes.

There is a new option in the Options menu to change the working directory for Take Command.

The context menu on the tab labels has a new entry "Search" to search the current tab window.

The context edit menu in the tab window has a new entry "Search" to search the current tab window.

The "Run" dialog has new options to select TCC, CMD, PowerShell, or bash.

The "Run" dialog icon has been added to the quick access menu on the Take Command title bar.

The "Run" dialog has been added to the HOME menu.

The Take Command dialogs have been tweaked to be cleaner and more readable.

The tooltip for the transparency slider (lower right corner) now displays the current transparency setting (20 - 255; higher values are more opaque).

TCC:

Everything Search has been updated to 1.4.1.969.

The language dll's are substantially smaller and load faster.

Many performance & size improvements.

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The embedded Lua interpreter has been updated to version 5.4.

Python support has been rebuilt with the new 3.8.2 release.

Added support for Windows Server 2019.

Most of the remaining string size limits have been removed (except for those where the Windows APIs have limits).

TCC now supports both local and global alias lists (or neither) simultaneously. TCC will look first in the local list (if it exists) for a match; if it doesn't find one it will look in the global list. This allows you to have a common set of aliases (in the global list) and task-specific aliases (in the local list). The ALIAS /GL and /LL options allow you to specify which list you want to use when displaying / creating / modifying / deleting aliases.

TCC now supports both local and global user-defined function lists (or neither) simultaneously. TCC will look first in the local list (if it exists) for a match; if it doesn't find one it will look in the global list. This allows you to have a common set of functions (in the global list) and task-specific functions (in the local list). The FUNCTION /GL and /LL options allow you to specify which list you want to use when displaying / creating / modifying / deleting functions.

TCC now supports both local and global command history lists simultaneously. This is for advanced users only; it is not generally recommended to have both types. If you have only a local command history list or only a global command history list, history recall will work the same as in previous versions. If you have both local and global command history lists, searching backwards through the history will first search the local list. If you reach the beginning of the local list, the next history entry returned will be from the end of the global list. If you search forwards through the global list, when you reach the end the next history entry returned will be the beginning of the local list. If you try to go beyond the beginning of the global list or the end of the local list TCC will beep. Note that history wrapping is not compatible with local + global lists.

TCC now supports both local and global directory history lists simultaneously. This is for advanced users only; it is not generally recommended to have both types. If you have only a local directory history list or only a global directory history list, directory history recall will work the same as in previous versions. If you have both local and global directory history lists, searching backwards through the history will first search the local list. If you reach the beginning of the local list, the next history entry returned will be from the end of the global list. If you search forwards through the global list, when you reach the end the next history entry returned will be the beginning of the local list. If you try to go beyond the beginning of the global list or the end of the local list TCC will beep.

Added two optional special aliases that let you customize your environment based on the current directory:

CD_Leave - ***TCC*** will execute this alias when it is about to change the current directory. ***TCC*** will pass the name of the current directory (%1) and the name of the new directory (%2).

CD_Enter - ***TCC*** will execute this alias immediately after changing the current directory. ***TCC*** will pass the name of the new directory (%1).

IDE / Batch Debugger:

The GUI framework library has been updated.

The IDE will now scale properly when moving between monitors with different DPI values.

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The Scintilla edit control has been updated to version 4.3.2.

Many performance & size improvements.

Expanded the help for the IDE / Debugger.

The IDE will monitor the filesystem for any changes to the file(s) being edited. If another application modifies a file, the IDE will display a message notifying you of the change and asking if you want to reload the updated file.

Changed all of the IDE icons to a modern "Fluent" design.

Most of the IDE menu entries have icons, giving you more options to customize the toolbar.

Improved the font display slightly.

There is a new startup option following the file name to goto a line number:

/gotoline:*nn*

For example:

bdebugger mytest.cmd /gotoline:24 *[batch file arguments...]*

There is a new option "Syntax Colors" in the Options menu that allows you to select the colors used in the syntax colorization from a 16 million color palette. When you click on one of the foreground or background color buttons, the IDE will display a color picker dialog to let you choose colors.

The Error Lookup dialog (Debug / Error Lookup) now supports NTSTATUS error codes.

The IDE has additional tabs for Local Aliases, Global Aliases, Local Functions, and Global Functions. They will only be displayed if the appropriate local / global list exists.

There is a new option in the File menu to reload the file in the current tab from the disk.

There is a new option in the File menu to delete the file in the current tab to the recycle bin.

There are two new options in the File menu to save & load sessions. You create a session with the "Save Session" menu option, which creates a file with the names of the files in the tab windows. "Load Session" will open the files in the *.session file you specify.

There is a new option in the Options menu to set the caret color for the tab edit windows.

There is a new option in the Options menu to change the working directory for the IDE.

There is a new sub menu in the Options menu to select the window tab location (top, bottom, left, or right).

The context menu on the tab labels has a new entry "Copy Full Path" that copies the full pathname of the file in that tab to the clipboard.

The context menu on the tab labels has a new entry "Close All" that closes all of the tab windows.

The "Tabs..." menu entry has been moved from Options to Edit.

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The IDE dialogs have been tweaked to be cleaner and more readable.

The tooltip for the transparency slider (lower right corner) now displays the current transparency setting (20 - 255; higher values are more opaque).

The Batch Arguments combo box on the IDE toolbar now displays hint text if you don't supply arguments at startup.

Dragging text in the a edit window will now automatically scroll the window when you reach the edges.

The Unicode value on the statusbar for the character at the cursor location now supports UTF8 multibyte characters.

Added support for UTF8 in TCMD.INI.

TCEDIT:

The GUI framework library has been updated.

TCEdit will now scale properly when moving between monitors with different DPI values.

The Scintilla edit control has been updated to version 4.3.2.

Many performance & size improvements.

Expanded the help for TCEdit.

TCEdit will monitor the filesystem for any changes to the file(s) being edited. If another application modifies a file, the IDE will display a message notifying you of the change and asking if you want to reload the updated file.

Changed all of the TCEdit icons to a modern "Fluent" design.

Most of the TCEdit menu entries have icons, giving you more options to customize the toolbar.

Improved the font display slightly.

TCEdit now supports piped input. For example, "dir | TCEdit" will load the contents of the directory into the first tab window.

TCEdit now supports piped output with the "File / Save to STDOUT" menu option. This allows you to edit the pipe input before sending it on to be processed by another app. For example:

```
dir /b | tcedit | someapp
```

There is a new command line option to print the file and then exit TCEdit:

```
tcedit filename /print
```

There is a new startup option following the file name to goto a line number:

```
/gotoline:nn
```

For example:

tcedit mytest.cmd /gotoline:24 *[yourtest.cmd /gotoline:12 ...]*

There is a new option in the File menu to reload the file in the current tab from the disk.

There is a new option in the File menu to delete the file in the current tab to the recycle bin.

There are two new options in the File menu to save & load sessions. You create a session with the "Save Session" menu option, which creates a file with the names of the files in the tab windows. "Load Session" will open the files in the *.session file you specify.

There is a new option "Syntax Colors" in the Options menu that allows you to select the colors used in the syntax colorization from a 16 million color palette. When you click on one of the foreground or background color buttons, TCEdit will display a color picker dialog to let you choose colors.

There is a new option in the Options menu to set the caret color for the tab edit windows.

There is a new submenu in the Options menu to select the window tab location (top, bottom, left, or right).

The context menu on the tab labels has a new entry "Copy Full Path" that copies the full pathname of the file in that tab to the clipboard.

The context menu on the tab labels has a new entry "Close All" that closes all of the tab windows.

The "Tabs..." menu entry has been moved from Options to Edit.

The tooltip for the transparency slider (lower right corner) now displays the current transparency setting (20 - 255; higher values are more opaque).

Dragging text in the a edit window will now automatically scroll the window when you reach the edges.

The Unicode value on the statusbar for the character at the cursor location now supports UTF8 multibyte characters.

Plugins:

Added VS 2019 support.

Added CD_Enter and CD_Leave support (see above). When you change directories from the command line, ***TCC*** will first look for aliases of those names; if it doesn't find a match it will look in the plugins for a matching name.

Help:

The help is built with a new version (8.0) of Help & Manual.

New TMCD.INI Directives:

These directives are set in the OPTION command, on the "Startup" and "Command Line" dialogs:

AliasGlobalSize

AliasLocalSize

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DirHistoryLocalSize

DirHistoryGlobalSize

FunctionGlobalSize

FunctionLocalSize

GlobalAliases

GlobalDirHistory

GlobalFunctions

GlobalHistory

HistoryGlobalSize

HistoryLocalSize

New Internal Variables:

_osbuildex - Returns the Windows build number + the sub-build number (for example, "19041.84").

New Variable Functions:

@DATEFMT - Formats a date/time in a custom format. The syntax is:

@DATEFMT[*date,format*]

date - The date to format (in yyyy-mm-dd hh:mm:ss format). If *date* is *, @DATEFMT defaults to the current date/time. Valid dates are January 1, 1970 (1970-1-1) to December 31, 3000 (3000-12-31). The time must be in 24-hour format.

format - The custom format to use. (Note that the %'s will normally need to be doubled or escaped to prevent TCC from expanding them before @DATEFMT sees them.) The formatting options are:

Code	Replacement string
%a	Abbreviated weekday name in the locale
%A	Full weekday name in the locale
%b	Abbreviated month name in the locale
%B	Full month name in the locale
%c	Date and time representation in the locale
%C	The year divided by 100 and truncated to an integer, as a decimal number (00–99)
%d	Day of month as a decimal number (01 - 31)
%D	Equivalent to **%m/%d/%y**

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%e Day of month as a decimal number (1 - 31), where single digits are preceded by a space
%F Equivalent to **%Y-%m-%d**
%g The last 2 digits of the ISO 8601 week-based year (00 - 99)
%G The ISO 8601 week-based year as a decimal number
%h Abbreviated month name (equivalent to **%b**)
%H Hour in 24-hour format (00 - 23)
%I Hour in 12-hour format (01 - 12)
%j Day of the year as a decimal number (001 - 366)
%m Month as a decimal number (01 - 12)
%M Minute as a decimal number (00 - 59)
%n A newline character (**\n**)
%p The locale's A.M./P.M. indicator for 12-hour clock
%r The locale's 12-hour clock time
%R Equivalent to **%H:%M**
%S Second as a decimal number (00 - 59)
%t A horizontal tab character (**\t**)
%T Equivalent to **%H:%M:%S**, the ISO 8601 time format
%u ISO 8601 weekday as a decimal number (1 - 7; Monday is 1)
%U Week number of the year as a decimal number (00 - 53), where the first Sunday is the first day of week 1
%V ISO 8601 week number as a decimal number (00 - 53)
%w Weekday as a decimal number (0 - 6; Sunday is 0)
%W Week number of the year as a decimal number (00 - 53), where the first Monday is the first day of week 1
%x Date representation for the locale
%X Time representation for the locale
%y Year without century, as decimal number (00 - 99)
%Y Year with century, as decimal number
%z The offset from UTC in ISO 8601 format; no characters if time zone is unknown
%Z Either the locale's time-zone name or time zone abbreviation, depending on registry settings; no characters if time zone is unknown
%% Percent sign

Characters that do not begin with a % are displayed unchanged.

The **#** flag may prefix any formatting code. In that case, the meaning of the format code is changed as follows:

Format code	Meaning
%#a, **%#A**, **%#b**, **%#B**, **%#g**, **%#G**, **%#h**, **%#n**, **%#p**, **%#t**, **%#u**, **%#w**, **%#X**, **%#z**, **%#Z**, **%#%**	**#** flag is ignored.
%#c	Long date and time representation, appropriate for the locale. For example:

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	"Wednesday, March 25, 2020, 12:41:29".
%#x	Long date representation, appropriate to the locale. For example: "Wednesday, March 25, 2020".
%#d, **%#D**, **%#e**, **%#F**, **%#H**, **%#I**, **%#j**, **%#m**, **%#M**, **%#r**, **%#R**, **%#S**, **%#T**, **%#U**, **%#V**, **%#W**, **%#y**, **%#Y**	Remove leading zeros or spaces (if any).

The ISO 8601 week and week-based year produced by **%V**, **%g**, and **%G**, uses a week that begins on Monday, where week 1 is the week that contains January 4th, which is the first week that includes at least four days of the year. If the first Monday of the year is the 2nd, 3rd, or 4th, the preceding days are part of the last week of the preceding year. For those days, **%V** is replaced by 53, and both **%g** and **%G** are replaced by the digits of the preceding year.

@FILETYPE - returns the encoding type of the file. The syntax is:

@FILETYPE[*filename*]

You must enable UTF8 input for TCC to recognize UTF8 files; see OPTION / Setup. The possible return values are:

ASCII
UTF8
UTF16

Updated Internal Variables:

_DOS - Added support for Windows Server 2019.

Updated Variable Functions:

@CRC32 - if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

@EVAL - has an optional + argument at the end of the precision string (i.e., %@eval[nnn=x.y+] to specify that positive reaults should be prefixed by a +.

@HISTORY - has an optional third argument specifying whether you want the local history list or the global history list. (If you want to specify the history list to use, but not the (optional second argument) word to return, set *word* to -1.)

@HISTORY[*entry[*, *word*, *[L | G]]*]

@LINE - added support for UTF8 files.

@LINES - added support for UTF8 files.

@MD5- if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

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@SHA1- if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

@SHA256- if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

@SHA384- if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

@SHA512- if the first argument is "sa", treat the second argument as an ASCII string. If the first argument is "s8", treat the argument as a UTF8 string.

Updated Commands:

ALIAS

ALIAS now supports both local and global lists simultaneously. If you have both local and global lists defined, when displaying, creating or deleting aliases, you can specify which list you want ALIAS to use.

/GL - use the global alias list

/LL - use the local alias list

If you have both local and global lists defined and do not specify /GL, ALIAS will default to using the local list.

TCC will first look for aliases in the local list; if not found TCC will search the global list.

If you use the /G option to convert a local alias list to a global alias list, ALIAS will not do the conversion if a global alias list already exists (for example, in another TCC session or in SHRALIAS).

Added two new optional special aliases **CD_Enter** and **CD_Leave** (see above).

/R - added support for UTF8 files.

COLOR

Added new options for setting the foreground and background color in a TCC console window (not a TCMD tab window) to 16 million or 256 colors. You must be running Windows 10 and have ANSI enabled.

/FG *r,g,b* - sets the foreground color to the 16 million color RGB value specified. Valid ranges for r, g, and b are 0-255.

/BG *r,g,b* - sets the background color to the 16 million color RGB value specified. Valid ranges for r, g, and b are 0-255.

/FG *color* - sets the foreground color to the 256 color (xterm) value specified. Valid range for *color* is 0 - 255.

/BG *color* - sets the background color to the 256 color (xterm) value specified. Valid range for *color* is 0 - 255.

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/P [*color]* - displays a color picker dialog to select a color. Must be used with /FG or /BG, and cannot be combined with /F.

COPY

COPY /S will now display the number of directories copied (if any).

/CDA - copy the attributes from each of the source subdirectories to the target subdirectories.

DATE

DATE has a new option *"datefmt*" that displays the current date/time in a custom format. The formatting characters are the same as used by the @DATEFMT function (see above). The DATE syntax is:

DATE [/Fn /T /U *"format"*] [mm-dd-yy]] [AM | PM]

DEL

DEL /S /X will now display the number of directories removed (if any).

DELAY

DELAY hh:mm:ss or DELAY mm:ss will wait for the specified amount of time.

DESCRIBE

DESCRIBE now supports UTF8 description files.

DIR

/CD:"*colordir*" - define a customized directory colorization string to use instead of the COLORDIR environment variable or the ColorDir option in TCMD.INI.

DIRHISTORY

DIRHISTORY now supports both local and global lists simultaneously. When displaying, creating or deleting directory history entries, you can specify which list you want DIRHISTORY to search:

/GL - use the global directory history list

/LL - use the local directory history list

When searching the directory history, TCC will look first in the local list (if it exists), and then in the global list (if it exists).

If you use the /G option to convert a local directory history list to a global directory history list, DIRHISTORY will not do the conversion if a global directory history list already exists (for example, in another TCC session or in SHRALIAS).

DO

DO will delete any temporary files created by using CLIP: in a DO statement.

ENDLOCAL

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If you only have global aliases defined, ENDLOCAL will restore the global list saved by SETLOCAL (as in previous versions). If you have both local aliases and global aliases defined, ENDLOCAL will only restore the local list that was saved by SETLOCAL. See also SETLOCAL.

ESET

/LL (or /LL) - use the global alias or function list. ESET will default to using the local list if it exists; if it doesn't ESET will look for a global list.

/G (or /GL) - use the local alias or function list.

EVERYTHING

Everything Search has been updated to version 1.4.1.969.

The TCC / Everything Search integration is faster and uses less memory.

EXCEPT

/NM - if no match is found for the argument(s) in the exception list, EXCEPT will not execute the command.

FFIND

/TE*"text*" - Converts a text string to a regular expression and then does a regex search. You don't need to learn regular expressiona,d and /TE will run 10x faster than /T. The only limitation is the maximum line length in the file must be < 16Mb.

FUNCTION

FUNCTION now supports both local and global lists simultaneously. If you have both local and global lists defined, when displaying, creating or deleting functions, you can specify which list you want FUNCTION to use.

/GL - use the global function list

/LL - use the local function list

If you have both local and global lists defined and do not specify /GL, FUNCTION will default to using the local list.

TCC will first look for a user-defined function in the local list; if not found TCC will search the global list.

If you use the /G option to convert a local function list to a global function list, FUNCTION will not do the conversion if a global function list already exists (for example, in another TCC session or in SHRALIAS).

/R - added support for UTF8 files.

HISTORY

HISTORY now supports both local and global lists simultaneously. When displaying, creating or deleting history entries, you can specify which list you want HISTORY to search:

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/GL - use the global history list

/LL - use the local history list

When searching the history, TCC will look first in the local list (if it exists), and then in the global list (if it exists).

If you use the /G option to convert a local history list to a global history list, HISTORY will not do the conversion if a global history list already exists (for example, in another TCC session or in SHRALIAS).

/R - added support for UTF8 files.

LIBRARY

Added support for UTF8 library files.

LIST

LIST now supports paging backwards through piped input.

MEMORY

MEMORY now shows the local and global alias and function sizes.

MOVE

MOVE /S will now display the number of directories moved (if any).

/MDA - copy the attributes from each of the source subdirectories to the target subdirectories. (Only valid if moving to another drive; otherwise MOVE does a rename of the top-level directory and all of the subdirectory attributes are retained.)

MSGBOX

If TCC is running in a Take Command tab window, the message box will be centered on the tab window.

/PC - center the message box on the desktop.

/X - the message box cannot be moved.

OPTION

There are new options to set Global and/or Local aliases, user-defined functions, command history, and directory history.

There are new options to set the Global and/or Local sizes for aliases, user-defined functions, command history, and directory history.

PDIR

/CD:"*colordir*" - define a customized directory colorization string to use instead of the COLORDIR environment variable or the ColorDir option in TCMD.INI.

PROMPT

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$: - Display the prompt timer in hh:mm:ss.ms format.

$*"datefmt"* - Display the current date/time in a custom format. The formatting characters are the same as used by the @DATEFMT function (see above).

QUERYBOX

Removed the maximum length limit (previously 255 characters) for the input string.

Removed the maximum length limit (previously 127 characters) for the /CUE string.

REGDIR

/Nb - Don't display the contents of REG_BINARY values.

/TS - include seconds in the last write time display.

REGDIR will now display all the strings in a REG_MULTI_SZ.

REN

REN /S will now display the number of directories renamed.

SETLOCAL

If you only have global aliases defined, SETLOCAL will behave as in previous versions and temporarily copy the global list to a local list, and restore the global list on an ENDLOCAL. If you have both local aliases and global aliases defined, SETLOCAL will only save the local list, which will be restored by ENDLOCAL.

SETARRAY

/R now supports UTF8 files.

SHORTCUT

SHORTCUT will not try to fully qualify the command, startup directory, or link file name if they contain %'s. This allows you to embed variables in those arguments that will be expanded by Windows.

TEE

/F*"datefmt"* - prefix each line with a timestamp using a custom format. The formatting characters are the same as used by the @DATEFMT function (see above).

TIME

TIME has a new option *"datefmt"* that displays the current date/time in a custom format. The formatting characters are the same as used by the @DATEFMT function (see above). The TIME syntax is:

TIME [/S [server] /T /U *"format"*] [hh[:mm:ss]]] [AM | PM]

TPIPE

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Updated the TextPipe Engine version from 9.9.4 to 11.6.

The TextPipeEngine dll is now 64-bit (for the x64 version of TCC). (The initial load is a bit slower, but everything runs faster.)

Updated Unicode compose/decompose functions for NFC, NFD, NFKC, NFKD.

Updated PDF libraries.

Updated code page converted library.

Upgraded regular expression library.

Unicode support upgraded to Unicode 12.1.

New option for Add Line Numbers (to reset at the start of a new file).

The Line Number filter has a new option:

/line=StartNumber,Increment,SkipBlank,DontNumberBlank,NumberFormat[,DontReset[,ResetNewFile]]

ResetNewFile - if 1, reset the count at the start of a new file. The default is 0.

Added a new selection filter:

/selection2=type, columnSpec, moveTo, processIndividually, excludeDelimiter, excludeQuotes, delimiter, customDelimiter, hasHeader

Type - the type of filter to add

0 Delete column
1 Restrict lines
2 Restrict columns
3 Restrict to bytes
4 Restrict to delimited fields (CSV, Tab, Pipe etc)
5 - unused
6 Remove lines
7 Remove delimited fields (CSV, Tab, Pipe etc)
9 Move columns
10 Move delimited fields (CSV, Tab, Pipe etc)
12 Copy columns
13 Copy delimited fields (CSV, Tab, Pipe etc)
17 Remove Byte Range
18 Extract fields

columnSpec - the double-quoted list of items to remove e.g. "1..10, 16, 20"

moveTo : integer - where to move or copy the columns or fields to. Default 1.

processIndividually - whether or not to apply sub filters to each CSV or Tab field individually, or to the fields as one string value. Default false.

excludeDelimiter - whether or not to include the comma or Tab field delimiter when passing the field to the sub filter. Default true.

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excludeQuotes - whether or not to include the CSV quotes that may surround the field when passing the field to the sub filter. Default true.

delimiter - (optional) the index of the standard delimiter to use, or 6 for custom, default 0 for CSV

customDelimiter - (optional) the double quoted custom delimiter to use, default blank

hasHeader - (optional) true if the file's first row is a header row, default false.

The End of Line filter has two new options:

/eol=Input,Output,Length,**LFString,Remove**

LFString - the new line feed string on output when option 4 is chosen for Input
Remove - whether to remove bad EOLs (default 1)

Column specifications for Delimited field delete, extract and restrict can now specify multiple columns in one filter e.g. 6, 9, 61..63.

Added JSON output format to database filter.

/database=Mode,...

Mode = 4 - JSON

Added Convert Tab to JSON and Convert JSON to Tab filters.

/simple=type

type = 86 - Convert JSON to Tab
type = 87 - Convert Tab to JSON

Added Convert Word documents to RTF filter.

/Simple=type

type = 88 - Convert Word documents to RTF

New Sort by UTF-8 (case sensitive and insensitive).

/sort=Type,...

Type = 9 - UTF8 sort (case insensitive)
Type = 10 - UTF8 sort (case sensitive)

/InputClipboardUnicode=[0|1] - In clipboard mode, controls whether the input is handled as ANSI or Unicode. The default is 0 (ANSI).

Added options to the /Split= filter:

/split=type,SplitSize,SplitChar,SplitCharPos,SplitCharCount,SplitLines,SplitFilename[,FirstFileNumber[,PreventOverload]]

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FirstFileNumber - (optional) the number of the first file, default 0

PreventOverload - (optional) true to prevent more than 10,000 files in one folder, default false

Defaults to UTF8 encoding instead of ANSI when loading/saving files.

Enhanced perl regex filter to allow Unicode characters to delimit Whole Words.

Updated case changing filters to work with UTF-8 encoded text.

Changed Convert Word/Excel/PDF to text filters to output UTF-8 text.

Remove BOM filter now detects if it has changed the file or not, and handles UTF-16 LE properly.

Search/replace list filters now support Unicode.

Improved Line Numbering filter to correctly tell the difference between start of file and start of restriction.

Improved error handling for specification filters that do not support multiple ranges.

Improved error handling for script filters and loading settings and Languages.

Field specification filters now support field names with embedded hyphens (-), and field names with spaces can be used by surrounding them with quotes.

A warning is now output when a field specification does not match the field names found in a file.

Improved the speed of "exact match" search/replace.

Text to Word List now recognises English possessives (or other abbreviations) ending with 's.

Updated Remove Blanks from Start of Line/End of Line to handle UTF-8 e3 80 80 IDEOGRAPHIC SPACE (common in Chinese text).

Split file filters will now remove the last file if it has zero bytes.

Split filter now processes macros after the file numbering has taken place.

Database filters now change the output extension to match the format.

The "Extract URL" filter now copes with any scheme, from the previously supported mailto:, http:, https:, nntp:, gopher:, ftp:, ftps:, and newer ones such as call: and skype:

Enhanced log output to provide information for every filter type (very useful for filter debugging).

TPIPE now checks for 'zombie' filters that follow a T-filters' secondary output filter (these filters do nothing).

New filter to convert Word documents to RTF.

HTML entities are now case sensitive.

The log now includes filter icons for easier identification.

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Conversion from CSV to Tab now eliminates unnecessary quotes.

OpenOffice support for ODT, ODS, and ODP.

TREE

Added support for colorizing the output of TREE. The colorizing options and format are the same as DIR, and can include:

Extension
File attribute
File size
File date/time
Executable type
Ranges

VER

/C - displays the version information in the same format as CMD (i.e., "Microsoft Windows [Version 10.0.19559.1000]").

VIEW

/W - If in a Take Command tab window, moves the VIEW window into the tab window (and keeps it there if you resize or move the Take Command window). If in a TCC console window, sizes & moves the VIEW window to the same size and position as the TCC window (but you can drag the VIEW window away).

The Edit menu has new options for copying to the clipboard:

Copy Current Line (Ctrl+Y)

CSV Copy Current Line

Shift+Click on CSV coilumn header to select the entire column.

Y

There are three new options for timestamping the STDIN lines that Y writes to STDOUT:

/D - Prefix each line with the current date (in yyyy-mm-dd format).

/F"*format*" - a custom time/date *format* string. See @DATEFMT (above) for details on the *format* arguments.

/T - Prefix each line with the current time (in hh:mm:ss.ms format).

WMIQUERY

/Q - prevents the display of the property name when displaying properties.

New Commands:

CHRONIC

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CHRONIC runs a command and hides its STDOUT and STDERR output unless the command fails (return value != 0). If the command succeeds, no output is displayed. The syntax is:

CHRONIC [/R] *command ...*

/R - Display the output if the command writes to STDERR. If /R is not specified, CHRONIC will only display the output if the command returns a non-zero exit code.

CHRONIC will display the STDOUT and STDERR output separately. For example:

c:\> CHRONIC *testcommand*
Exit code: 2
STDOUT:
stdout output here ...
STDERR:
stderr output here ...

PEE

PEE is similar to TEE, but instead of redirecting STDOUT to multiple files, it redirects it to multiple secondary commands via pipes. The syntax is:

PEE /= /D /F"*format*" /R /T *app ...*

/= - display the PEE command dialog

/D - prefix each line with the current date

/F"*format*" - a custom time/date *format* string. See @DATEFMT (above) for details on the *format* arguments.

/R - redirect STDERR too

/T - prefix each line with the current time

SPONGE

SPONGE reads standard input and writes it to the specified file. Unlike output redirection, SPONGE reads all its input before opening the output file. This allows constructing pipes that read from and write to the same file. SPONGE reads standard input into a memory buffer, so piping extremely large amounts of data (i.e., multiple gigabyte) is not recommended.

The syntax is:

SPONGE [/A] *outputfilename*

/A - append output to *outputfilename*. The default is to overwrite *outputfilename*.

TS

TS reads lines from STDIN, prefixes a date/time stamp, and writes the line to STDOUT. TS is intended to be used in pipes, when you need to know when each line was received. The syntax is:

TS [/D /T "*format*"]

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/D - Prefix each line with the current date (in yyyy-mm-dd format).

/T - Prefix each line with the current time (in hh:mm:ss.ms format).

"..." - The *format* string. See @DATEFMT (above) for details on the *format* arguments.

If you don't specify any options, TS defaults to /D /T.

2.3 Version 25

Take Command 25.0:

Take Command:

Take Command uses substantially less CPU when you have multiple tabs and you are not using tab groups or splitter windows.

The communication between Take Command and TCC is much faster & uses less CPU time.

Frame shadow clipping, overlapping and scaling fixed in multi-monitor and multi-DPI environments.

Lots of Office 2013/2016, Visual Studio 2015 theme inconsistencies fixed.

DPI support has been improved for Edit, Checkbox, and Combobox controls.

You can change the TCMD window transparency with Ctrl-Shift-Mousewheel.

You can now unregister any system, provided you have the original activation key and the name of the computer to unregister. The registration dialog has a "System name" field for the computer name (which defaults to the current system). Enter the name and click the "Unregister" button to remove the specified system. TCMD will open a web page on your browser with the unregistration result.

You can now generate a manual key (one that doesn't require internet activation) on any system, provided you have the original activation key and the name of the computer to register, and the system where you request the key does have internet access. The registration dialog has a "System name" field for the computer name (which defaults to the current system). Enter the name and click the "Request Manual Key" button. TCMD will open a web page on your browser that returns the manual key. Copy that key value and enter it in the "Activation Key" field on the registration dialog on the computer you want to register.

You can now display your license info on the registration server. Bring up the registration dialog, enter your activation key and click on the "Show License Info" button. TCMD will open a web page on your browser that shows the maximum number of systems you can register, the name(s) of registered systems, and the dates they were registered.

Added a new entry to the Home / File menu:

Clear Buffer	Delete the contents of the current tab window's screen buffer.

Added a new entry to the Edit menu:

Copy+Append	Append the current selection to the existing clipboard contents.

Added a new entry to the Tabs menu (and the context menu when right clicking on a Tab label):

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Detach+Hide	Detaches the tab, but keeps it hidden. It can be reattached with the "Attach Tabs" option.

The tab windows right click context menu has a new option: "Copy+Append" will append the current selection to the existing clipboard contents.

If you have the Linux selection option enabled, when you mark a block and release the left mouse button with the shift key down, TCMD will append the selection to the clipboard.

If you have the Linux selection option enabled, when you double click with the shift key down, TCMD will append the selection to the clipboard.

If you have the Linux selection option enabled, when you triple click with the shift key down, TCMD will append the line to the clipboard.

A Ctrl-W key will close the current tab (like Ctrl-F4), provided you have enabled either the left or right control key for Take Command. (See OPTIONS / Take Command / Tabs / Windows.)

A Ctrl-Shift-C key will append the current selection to the existing clipboard contents.

The Scintilla edit control has been updated to version 4.2.0.

The Regular Expression Analyzer (Tools / RegEx) now has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.

The Regular Expression Analyzer has a "cheat sheet" of RE syntax and common expressions.

You can slide the Take Command window up off the display ("Quake console") and back down again with Ctrl-Alt-Enter.

You can highlight the row where the cursor is located with the new CursorLineColor directive in TCMD.INI. Set it with OPTIONS / Take Command / Tabs / Windows / Cursor Line.

If you change the tab window font size with Ctrl-mousewheel or the zoom in / zoom out menu options, the new font size is only applied to the current tab window; so each tab window can have its own size. (Eventually each tab window will also optionally support its own font, but not in this version.)

If Take Command crashes or is killed by another app, the hidden console windows will be unhidden after 5 seconds, so they can be closed or reattached.

TCC:

TCC has been extensively rewritten to support multithreading (almost) everywhere. For example, a plugin can run other internal commands, aliases, and batch files without conflicting with the main thread. Note that this doesn't mean that the Windows console APIs support multithreading - if you do output from multiple threads simultaneously, you will get jumbled output. Due to limitations in Windows, console event handling (^C, ^Break, shutdown, logoff, etc.) are only seen & processed by the main thread.

TCC is compatible with the new Windows 10 Terminal (currently in preview).

Changed some of the less-commonly used dll's to load on demand, which will reduce the startup time and RAM footprint slightly.

All of the IPWorks internet / network / zip libraries have been updated.

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The Onigmo regular expression library has been updated.

Added support for Python 3.8.

You can now unregister any system, provided you have the original activation key and the name of the computer to unregister. The registration dialog has a "System name" field for the computer name (which defaults to the current system). Enter the name and click the "Unregister" button to remove the specified system. TCC will open a web page on your browser with the unregistration result.

You can now generate a manual key (one that doesn't require internet activation) on any system, provided you have the original activation key and the name of the computer to unregister, and the system where you request the key does have internet access. The registration dialog has a "System name" field for the computer name (which defaults to the current system). Enter the name and click the "Request Manual Key" button. TCC will open a web page on your browser that returns the manual key. Copy that key value and enter it in the "Activation Key" field on the registration dialog.

You can now display your license info on the registration server. Bring up the registration dialog, enter your activation key and click on the "Show License Info" button. TCMD will open a web page on your browser that shows the maximum number of systems you can register, the name(s) of registered systems, and the dates they were registered.

The [ ] wildcard now accepts either **!** or **^** as the NOT symbol.

The history and directory history popup windows now support multiple selection (with the shift or ctrl keys + left mouse), and they have a popup context menu (right mouse button) to Copy, Copy+Append, Cut, or Delete. You can also select multiple entries and execute them by pressing Enter - ***TCC*** will create a command line that looks like this:

(*line1*) & (*line2*) & (*line3*)

There are new options for output redirection. These options will override the UnicodeOutput and UTF8Output directives in TCMD.INI. The piped output options also work with DOS pipes (i.e., |!:u). Note: these options only work for redirecting output from TCC internal commands.

>:a	Redirected output (STDOUT and/or STDERR) is ANSI (8 bit characters)
>:u	Redirected output is UTF16 Unicode
>:8 or >:u8	Redirected output is UTF8
>>:a	Appended redirected output (STDOUT and/or STDERR) is ANSI (8 bit characters)
>>:u	Appended redirected output is UTF16 Unicode
>>:8 or >>:u8	Appended redirected output is UTF8
|:a	Piped output is ANSI
|:u	Piped output is UTF16 Unicode
|:8 or I:u8	Piped output is UTF8

Directory colorization (DIR, PDIR, SELECT) now supports ranges in the COLORDIR variable or ColorDir .INI directive. See DIR below for details.

Directory colorization (DIR, PDIR, SELECT) now supports subsystem types (Win32, Win64, GUI, CUI) in the COLORDIR variable or ColorDir .INI directive. See DIR below for details.

Date and time ranges can now compare UTC times by adding a 'U' after the D or T (and the optional A, C, or W) in the range specification. For example:

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/[twu00:00,11:59]

Size ranges now can test for compressed size (on NTFS drives with compression enabled for the file or directory) by appending a C to the S argument. For example, to specify files with a compressed size between 100 and 1000 bytes:

/[sc100,1000]

The Regular Expression Analyzer (Ctrl-F7) now has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.

The Regular Expression Analyzer has a "cheat sheet" of RE syntax and common expressions.

You can slide the TCC window up off the display ("Quake console") and back down again with Ctrl-Alt-Enter. The key sequence is configurable using the QuakeHotKey .INI directive; see below.

You can minimize the TCC window to & from the system tray with Ctrl-Shift-Z. The key sequence is configurable using the TrayHotKey .INI directive; see below.

Reduced the CPU usage in TCC slightly when running in a Take Command tab window.

TCC will detect if it is running as a service or detached before prompting for SSL or SSH authentication, and will provide an automatic 'Y' (yes) input.

The FileCompletion .INI directive and environment variable supports a new type:

libraries - Tab completion for library function names

IDE / Batch Debugger:

The Scintilla edit control has been updated to version 4.2.0.

Redrawing in the edit windows is smoother and faster.

Improved the load and save times for large files.

When loading a file, IDE will first check for the file type (UTF-16, UTF-8, UTF-8 with BOM, or ANSI). If the file doesn't have a UTF-16 or UTF-8 BOM, it is read as an ANSI file with the current console code page, and converted to UTF-8 before editing. It will be converted back to an ANSI file with the current code page when it is saved. This allows the IDE to properly display high-bit ASCII characters in the editor.

The batch debugger has a new "Command Expansion" window that will pop up above the tab window when you start debugging. The Command Expansion window will show the original command line, the command line after alias expansion, and the command line after variable expansion. The Command Expansion window is a docking window, so it can be moved & attached at other locations. If you don't want to see the Command Expansion window, you can turn it off from the IDE "View / Command Expansion" menu option.

You can now single-step into command groups and FOR loops. Click on the "Step Into" button on the IDE toolbar. You will see the current command line being executed in the "Command Expansion" window (see above).

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The "Modified" tab has a new column "Previous" that shows the previous value of the variable that was just changed.

When debugging, the IDE window will now keep the current line centered on the screen (unless it's on the last page). This allows you to see both the last few lines and the next ones to be executed.

You can change the IDE window transparency with Ctrl-Shift-Mousewheel.

The Watch, Modified, and Breakpoint windows will now save the column widths if you change them, and use the new widths when you restart the IDE.

The edit window will now keep the current line highlighted even when not in focus.

The edit window will default to maintaining the same indentation as the previous line. The default can be changed with the MaintainIndent option in TCMD.INI (see below).

Regular Expression searching (Find dialog) now uses the C++11 regular expression library instead of the previous limited regular expression support.

The profiler timer now uses the Windows performance counters. The resolution is now in milliseconds (.001 seconds) instead of hundredths (.01 seconds).

If you're using TCC syntax (not CMD), and the first command on the line is an internal TCC command, the IDE will display the quick usage help on the status bar.

Added a new submenu to the File menu:

Encoding	Files are always treated as UTF-8 inside the editor. This option allows you to specify how the file will be written when it is saved to disk.
Default Codepage	When the file is saved it will be written using the current codepage
UTF16 Little Endian	When the file is saved it will be written as UTF-16
UTF8	When the file is saved it will be written as UTF-8
UTF8 with BOM	When the file is saved it will be written as UTF-8 with a leading BOM

Added a new entry to the Edit menu:

Copy+Append	Append the current selection to the existing clipboard contents.

Added a new submenu to the Edit menu:

End of Line Characters

CR + LF	Lines end in a Carriage Return + Linefeed (Windows default)
CR	Lines end in a Carriage Return (OSX default)
LF	Lines end in a Linefeed (Linux default)

Added a new entry to the Edit / Advanced menu:

Toggle current fold - toggles folding the current line on & off

Added two new folding entries to the View menu. (These will be a bit confusing if you don't turn on the folding margin in the Options menu!)

Toggle current fold - toggles folding the current line on & off

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Toggle all folds - toggles every fold in the file

Added a new entry to the Debug menu:

Evaluate Command - runs the specified command in the context of the currently executing batch file. The output is displayed in a scrollable read-only edit control. Note that the command you run may change the result of the batch file being debugged.

The tab windows right click context menu has a new option: "Copy+Append" will append the current selection to the existing clipboard contents.

A Ctrl-Shift-C key will append the current selection to the existing clipboard contents.

The Regular Expression Analyzer (Tools / Regular Expressions...) now has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.

The Regular Expression Analyzer has a "cheat sheet" of RE syntax and common expressions.

The Watch, Modified, and Breakpoints windows will now show a tooltip on a mouse hover that contains a column's full text, if it is too wide to be shown entirely in the column.

If you "step out" (run to breakpoint or end) and you are in a CALL'd batch file, and if there are no more breakpoints in the current file, you will be returned to the parent batch file at the line following the CALL, and "step out" will be turned off.

The debugger will not save a *.watch file if the only variables being watched are the default **?** and **_?**.

TCEDIT:

The Scintilla edit control has been updated to version 4.2.0.

Improved the TCEdit startup time.

Improved the load and save times for large files.

When loading a file, TCEdit will first check for the file type (UTF-16, UTF8, UTF-8 with BOM, or ANSI). If the file doesn't have a UTF-16 or UTF-8 BOM, it is read as an ANSI file with the current console code page, and converted to UTF-8 before editing. It will be converted back to an ANSI file with the current code page when it is saved. This allows TCEdit to properly display high-bit ASCII characters.

Redrawing in the edit windows is smoother and faster.

You can change the TCEdit window transparency with Ctrl-Shift-Mousewheel.

The edit window will now keep the current line highlighted even when not in focus.

The edit window will default to maintaining the same indentation as the previous line. The default can be changed with the MaintainIndent option in TCMD.INI (see below).

Regular Expression searching (Find dialog) now uses the C++11 regular expression library instead of the previous limited regular expression support.

Added a new submenu to the File menu:

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Encoding	Files are always treated as UTF-8 inside the editor. This option allows you to specify how the file will be written when it is saved to disk.
Default Codepage	When the file is saved it will be written using the current codepage
UTF16 Little Endian	When the file is saved it will be written as UTF-16
UTF8	When the file is saved it will be written as UTF-8
UTF8 with BOM	When the file is saved it will be written as UTF-8 with a leading BOM

Added a new entry to the Edit menu:

Copy+Append	Append the current selection to the existing clipboard contents.

Added a new submenu to the Edit menu:

End of Line Characters

CR + LF	Lines end in a Carriage Return + Linefeed (Windows default)
CR	Lines end in a Carriage Return (OSX default)
LF	Lines end in a Linefeed (Linux default)

Added a new entry to the Edit / Advanced menu:

Toggle current fold - toggles folding the current line on & off

Added two new folding entries to the View menu. (These will be a bit confusing if you don't turn on the folding margin in the Options menu!)

Toggle current fold - toggles folding the current line on & off
Toggle all folds - toggles every fold in the file

The tab windows right click context menu has a new option: "Copy+Append" will append the current selection to the existing clipboard contents.

A Ctrl-Shift-C key will append the current selection to the existing clipboard contents.

Help:

The help is built with a new version of Help & Manual 7.

TMCD.INI Directives:

CursorLineColor - Set the color of the line where the cursor is located (TCMD tab windows only). Set it with OPTIONS / Take Command / Tabs / Windows / Cursor Line.

EscResetHistory=yes|NO - If YES, ***TCC*** will reset the command history pointer to the end of the list when you press an Escape at the command prompt.

MaintainIndent=YES|no - In IDE & TCEdit edit windows, use the same indentation as on the previous line.

QuakeHotKey (default Enter) - Hotkey to slide the Take Command or TCC windows "Quake style". The hotkey is always Ctrl-Alt- something; the value for QuakeHotKey is the last value. For example, for the default Ctrl-Alt-Enter::

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QuakeHotKey=Enter

RepeatArgument - Duplicates the previous argument on the command line (defaults to Shift-F12).

ScreenUpdate - Number of frames per second for the Take Command tab windows updates. The range is 1 - 100; the default is 30.

TrayHotKey (default Ctrl-Shift-Z) - Move the Take Command or TCC window to & from the system tray.

Enabled the (obsolete, deprecated, not recommended) [Secondary] section.

Command Line Editing:

Added workaround for Windows 10 bug to allow using selection keystrokes (i.e., Shift-Left, etc.) without enabling Legacy Console.

Shift-F12 (RepeatArgument) will duplicate the previous argument on the command line.

Ctrl-Backspace - same as Ctrl-L (delete word left).

Ctrl-Del - same as Ctrl-R (delete word right).

Changed the default TCC "undo" editing key from Alt-Z to Ctrl-Shift-Z (Windows 10 will eat the Alt-Z key unless you set the "legacy console" option.)

Changed the default TCC "redo" editing key from Alt-Y to Ctrl-Shift-Y (Windows 10 will eat the Alt-Y key unless you set the "legacy console" option.)

New Internal Variables:

There are a number of new internal variables for GPS position and status. They require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all the variables; if a value is not supported Windows will return "Ëlement not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

%_gpsalt - Altitude (from sea level) in meters.

%_gpsazimuth - Azimuth of each satellite in view. Returns a space-delimited list.

%_gpselevation - Elevation of each satellite in view. Returns a space-delimited list.

%_gpserrorradius - Accuracy of latitude and longitude values, in meters.

%_gpsfixquality - Quality of the fix (integer).

%_gpsfixtype - Type of the fix (integer).

%_gpshdop - Horizontal dilution of precision.

%_gpsheading - True heading.

%_gpsids - IDs of the satellites in view. Returned a space-delimited list of integers.

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%_gpslat - Latitude

%_gpslon - Longitude

%_gpsmagheading - Magnetic heading.

%_gpsnmea - Returns the NMEA sentence as a string.

%_gpsopmode - GPS operation mode (integer).

%_gpspdop - Position dilution of precision.

%_gpsprns - PRN numbers of satellites in view. Returns a space-delimited list of integers.

%_gpssatsinview - Number of satellites in view (integer)

%_gpssatsused - Number of satellite used in solution (integer).

%_gpsselmode - GPS selection mode (integer).

%_gpssnr - Signal to noise ratio of each satellite in view. Returns a space-delimited list.

%_gpsspeed - Speed in knots.

%_gpsstatus - GPS status (integer).

%_gpsvdop - Vertical dilution of precision.

New Variable Functions:

@VARTYPE - Returns the type (if any) for the specified variable name. The possible values are:

0 No type
1 Integer (0-9)
2 Decimal (0-9, the decimal character, and the thousands separator)
3 Hex (0-9, A-F)
4 Boolean (0 or 1)
5 Alphabetic (A-Z and a-z)
6 Alphanumeric (A-Z, a-z, and 0-9)
7 Regular expression

@WINPATH - Convert from WSL pathname format to Windows format. For example:

```
echo %@winpath[//mnt/c/windows/system32/notepad.exe]
c:\windows\system32\notepad.exe
```

@WSLPATH - Convert from Windows pathname format to WSL format. For example:

```
echo %@wslpath[c:\windows\system32\notepad.exe]
//mnt/c/windows/system32/notepad.exe
```

Updated Variable Functions:

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@EVAL - added log2() function.

@PID - added an optional second argument that specifies whether to return all PID's that match the first argument. For example:

```
@pid[firefox,+]
```

@TIMER - Now uses the Windows performance counters for higher resolution. The default @TIMER resolution is in milliseconds (.001 seconds) instead of hundredths (0.01 seconds). @TIMER has three new values for the optional second argument to return the split time as an arithmetic value:

ms - split time in milliseconds
us - split time in microseconds
ns - split time in nanoseconds

@VERSION - added a new optional 5th parameter that specifies whether to append the version number to the filename (0), or prefix it to the extension (1).

Plugins:

Plugins can now run any command (alias, internal, batch file, etc.) without conflicting with the main TCC processing thread (see TCC above).

Updated Commands:

ACTIVATE

/POS - accepts a * value for any of the arguments. If the value is *, ACTIVATE will use the existing position / width / height value. For example, to resize a window without moving it:

```
ACTIVATE "title" /POS=*,*,1200,800
```

To move a window without resizing it:

```
ACTIVATE "title" /POS=200,400,*,*
```

ASSOCIATE

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/V:verb- ASSOCIATE defaults to reading and writing to SHELL\OPEN\COMMAND. You can use a different verb by specifying the /V option. For example, to tell create a PRINT verb for .TXT files:

```
ASSOCIATE /V:PRINT .txt=%%SystemRoot%%\system32\NOTEPAD.EXE /p %%1
```

ATTRIB

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

CHCP

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/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

COLOR

COLOR now supports changing the console color palette with either an .INI file (for example, as used by the ColorTool utility), or an .ITERMCOLORS file. The syntax is:

```
COLOR /F filename
```

If you are running in a Take Command tab window, COLOR will pass the new colors to TCMD to update the tab window. You can have a different color palette in each tab window.

DIR

Directory colorization (using either the COLORDIR environment variable or OPTION / Colors / Directory colors) now supports all types of ranges (size, date, time, description, owner, and exclusion). The syntax is the same as for ranges in an internal command. For example, to display files that are between 100 and 1000 bytes in bright green:

```
set colordir=/[s100,1000]:bri green;
```

Directory colorization now supports colors for file subsystem types. The supported subsystems are:

EXETYPE_WIN32GUI	Windows x86 GUI app
EXETYPE_WIN32CUI	Windows x86 console app
EXETYPE_WIN64GUI	Windows x64 GUI app
EXETYPE_WIN64GUI	Windows x64 console app
EXETYPE_DOS	DOS (16-bit) app (obsolete)
EXETYPE_POSIX	POSIX app (obsolete)
EXETYPE_EFI	EFI app

For example, to display 32-bit console apps in bright green and 64-bit console apps in bright red:

```
set colordir=EXETYPE_WIN32CUI:bri green;EXETYPE_WIN64CUI:bri red
```

/-C - Removes the thousands separators when displaying file sizes (for compatibility with CMD.EXE).

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

ENUMSERVERS

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

ENUMSHARES

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

EVERYTHING

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The ***Take Command / TCC*** distribution now includes ES.EXE, the command line interface to EVERYTHING (including an x64 version for x64 Windows).

FOR

The ~a (display attributes) format has been updated to match the current CMD behavior with extended attributes (including CMD's behavior of not displaying all the extended attributes).

GOSUB

GOSUB now supports calling subroutines in another file when that file is compressed.

HEAD

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

IF

ISVISIBLE "title" - executes the command if the specified window is visible. (This means that Windows has set the visibility flag; it does not mean that the window is necessarily visible on your desktop.

IFF

ISVISIBLE "title" - executes the command if the specified window is visible.

INSTALLED

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

LIBRARY

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

PAUSE

/C - After you press a key, erases the prompt and does not print a CR/LF.

PDIR

Directory colorization now supports ranges (see DIR for details).

Directory colorization now supports subsystem types (see DIR for details).

/D - switched the meaning from "colorize" to "don't colorize" (to match DIR and SELECT).

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

PLUGIN

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

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PRINT

/S *printer* - set the default printer.

PRIORITY

If you only provide a PID or window title, PRIORITY will display the current priority.

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

PROMPT

The PROMPT timer (= metachar) resolution is now in milliseconds (.001 seconds) instead of hundredths (.01 seconds).

REGDIR

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/X - display the REG_DWORD, REG_DWORD_BIG_ENDIAN, and REG_QWORD values in hex. Only valid when used with /V and /D.

SELECT

Directory colorization now supports ranges (see DIR for details).

Directory colorization now supports subsystem types (see DIR for details).

SERVICES

/I - Display the PID's for services. Note that stopped services will return 0 for the PID, as will Windows services.

SYNC

/WAIT=n - Pause for n milliseconds between each block copied from the source to the target file. This is useful for slow networks and very large file copies; it prevents SYNC from monopolizing all of the network I/O.

TAIL

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

TASKLIST

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

TIMER

TIMER now uses the Windows performance counters for greater accuracy. The default TIMER resolution is now in milliseconds (.001 seconds) instead of hundredths (0.01 seconds).

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/L - When used with /S (split time) or TIMER OFF, display the result in the number of milliseconds.

/M - When used with /S (split time) or TIMER OFF, display the result in the number of microseconds.

/N - When used with /S (split time) or TIMER OFF, display the result in the number of nanoseconds.

TOUCH

/CD - create the specified directory if it doesn't exist.

TREE

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

TYPE

/Pn - the /P(ause) option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

UNQLITE

Updated to UnQLite 1.1.9.

VIEW

- Per monitor DPI support (Windows 10 Creators Update 1703 and above). This means that V will automatically adjust itself when moving between monitors of different scaling.
- Shift+click on CSV column header to select entire column.
- Copy CSV command to copy CSV columns (with delimiter) to clipboard.
- Added /QUIET command line option for printing.

WINDOW

/POS - accepts a * value for any of the arguments. If the value is *, WINDOW will use the existing position / width / height value. For example, to resize a window without moving it:

```
WINDOW /POS=*,*,1200,800
```

To move a window without resizing it:

```
WINDOW /POS=200,400,*,*
```

2.4 Version 24

Take Command 24.02:

Updated the internet and compression libraries in TCC.

Changed the TCC /S startup switch to /B.

Added support for the CMD /S startup option to TCC.

Everything Search has been updated to version 1.4.1.935.

Updated the Language dlls.

Updated the Scintilla (scilexer.dll) editor.

Take Command 24.01:

The Take Command display output is faster and uses less CPU.

TCC now supports Python 3.7.2.

Improved the editor performance in IDE, CMDebug and TCEdit.

Everything Search has been updated to version 1.4.1.932.

Updated the Onigmo regular expression library.

Updated the Scintilla (scilexer.dll) editor.

Take Command 24.0:

Installer:

Take Command is using new version of Advanced Installer.

Take Command:

Version 24 is using a new version of the GUI framework library.

Version 24 is using a new version of the Scintilla editor.

Take Command no longer includes ANSI32.DLL and ANSI64.DLL, and does not inject them into console apps for ANSI support. On Windows 10, Take Command will use the built-in console ANSI support. On Windows 7 & 8, if you want ANSI in CMD you will need to use a third-party app like ANSICON. ANSI is still supported for ***TCC*** internals.

Take Command has a number of screen drawing improvements related to DPI scaling.

Take Command's output has been further optimized, increasing display speed another 10-20%.

The ***Take Command*** window will now "snap" to the screen edges when it is dragged near an edge (configurable with the SnapMargin directive in TCMD.INI; see below).

Take Command now supports Office 2013 & 2016 tooltip styles, and an optional TCMD.INI directive to use a different style (see below). ***Take Command*** will default to the appropriate tooltip style for the theme.

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The "Administrator:" prefix for elevated session titles has been shortened to "Admin:" to allow more of the actual command to appear in the title.

The ***Take Command*** configuration dialog now lets you set the color for selected text (defaults to the inverse of the current color).

The ***Take Command*** VIEW menu has an option "Topmost" which will make the ***Take Command*** window always on top of other (non-topmost) windows.

The Tab windows now have an optional margin on the sides & the top/bottom to make it a little easier to read & select text. See the VMargin and HMargin TCMD.INI directives.

The ***Take Command*** configuration dialog has a new option on the **Tabs** page to prepopulate the Title and Command fields with the appropriate values for TCC, CMD, PowerShell, and bash.

The ***Take Command*** block marking (Ctrl + left button + mouse move) now also supports block marking with the Alt key instead of the Ctrl key, to match the Scintilla block marking in the IDE and TCEDIT.

TCC:

There are about 80 new command dialogs. Almost all of the non-trivial (i.e., not ECHO) internal ***TCC*** commands now have dialogs, and the existing dialogs have been enhanced with additional options. Note there are a handful commands (like DO, FOR, PDIR, and TASKDIALOG) which by their nature do not lend themselves to being implemented in a command dialog.

The attributes dialog (**/A:=**) supports the new Windows 10 Pinned and Unpinned attributes.

The ranges dialog (**/[=]**) now supports the ! (NOT) operator for date, time, size, owner, and description ranges.

File sorting (/O:xxx) in the file handling commands (COPY, DEL, MOVE, etc.) has some additional options:

- **c** Sort by compression ratio
- **i** Sort by description
- **o** Sort by owner

All of the command dialogs (**/=**) now have an "Edit command line" option if you need to modify the generated command line. (Use with caution - the command dialogs probably know the syntax better than you do!)

All of the ***TCC*** command line editing keys can now be displayed and remapped. The OPTION command has a new "Keyboard" tab, which allows you to add / edit / remove keys for each of the editing functions (more than 100 in all). You can bind multiple key combinations to each - for example, Paste has Ctrl-V and Shift-Ins. See the new key directives in TCMD.INI Directives (below).

Key aliases are now processed before the ***TCC*** key mapping, so you can override ***TCC***'s default behavior without having to use the TCMD.INI directives.

Added support for the HKCU "App Paths" registry entries.

The internal Lua has been updated to 5.3.5.

Added support for Python 3.7.1.

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IDE / Batch Debugger:

Version 24 is using a new version of the GUI framework library.

Version 24 is using a new version of the Scintilla editor.

Text display is faster and the antialiased fonts are a little clearer.

The dark themes now have dark margins (profiler, breakpoints, line numbering).

When you move the debugger window, it will snap to the screen edges if it's within 10 pixels.

Help:

The v24 help is built with a new version of the help compiler (Help & Manual).

The help has been expanded with more examples, tutorials, and key words.

TMCD.INI Directives:

HMargin=*n* (in [TakeCommand] section) - A integer value that specifies the left border margin (in pixels) for ***Take Command*** tab windows. The default value is 4. This option is set in the ***Take Command*** configuration dialog **Tabs** page.

SelectedColors=*color* - ***Take Command*** and ***TCC*** will default to using the inverse of the current color when you mark a selection with the mouse or keyboard. If SelectedColors is set, they will use that value instead. This option is set in the ***TCC*** OPTION command (for ***TCC*** console mode sessions), or in the ***Take Command*** configuration dialog (for ***Take Command*** tab windows).

SnapMargin=*n* - Snaps the ***Take Command*** window to the screen edge if the window edges are within *n* pixels. The default value is 10; 0 will disable the snap.

ToolTipStyles=*style* - A string value specifying the tooltip style you wish to use. (***Take Command*** will default to using the tooltip style appropriate for the selected theme.) The possible values for *style* are:

Standard
Balloon
RTF
Luna
HTML
Office 2007
Office 2010
Office 2013
Office 2016

VMargin=*n* (in [TakeCommand] section) - A integer value that specifies the top border margin (in pixels) for ***Take Command*** tab windows. The default value is 2. This option is set in the ***Take Command*** configuration dialog **Tabs** page.

EnglishMessages=NO|yes (in [4NT] section) - If set to Yes, ***TCC*** will display error messages from Windows in English, regardless of the default language.

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There are now keystroke directives for all of the command line editing functions. They can be added / edited / removed in the OPTION "Keyboard" dialog. The keystroke directives are saved in a new [Keys] section in TCMD.INI.

The directives, description, and default keys are:

AddFile	Keep tab completion entry and add another (F10)
AliasExpand	Expand all aliases on the command line (Ctrl-W)
Argument0	Get argument 0 from previous command line (Ctrl-0)
Argument1	Get argument 1 from previous command line (Ctrl-1)
Argument2	Get argument 2 from previous command line (Ctrl-2)
Argument3	Get argument 3 from previous command line (Ctrl-3)
Argument4	Get argument 4 from previous command line (Ctrl-4)
Argument5	Get argument 5 from previous command line (Ctrl-5)
Argument6	Get argument 6 from previous command line (Ctrl-6)
Argument7	Get argument 7 from previous command line (Ctrl-7)
Argument8	Get argument 8 from previous command line (Ctrl-8)
Argument9	Get argument 9 from previous command line (Ctrl-9)
ArgLeft	Move the cursor left to the previous argument (Alt-Shift-Left)
ArgRight	Move the cursor right to the next argument (Alt-Shift-Right)
Backspace	Delete the character to the left of the cursor (Backspace)
BeginLine	Move the cursor to the start of the line (Home)
CommandDialog	Display the command dialog for the first argument on the command line (Alt-F2)
CommandEscape	Do not interpret the next keystroke as a command line editing key (Alt-255)
ConsoleHeightMax	Increase the console window height (Ctrl-Alt-Shift-Down)
ConsoleHeightMin	Reduce the console window height (Ctrl-Alt-Shift-Up)
ConsoleWidthMax	Increase the console window width (Ctrl-Alt-Shift-Right)
ConsoleWidthMin	Reduce the console window width (Ctrl-Alt-Shift-Left)
Copy	Copy the highlighted text to the clipboard. (Ctrl-Y)
Del	Delete the character at the cursor (Del)
DelArgLeft	Delete the argument to the left of the cursor (Ctrl-Alt-L, Ctrl-Alt-Left)
DelArgRight	Delete the argument to the right of the cursor (Ctrl-Alt-R, Ctrl-Alt-Right)
DelHistory	Delete the current history list entry and display the previous entry (Ctrl-D)
DelToBeginning	Delete from the cursor to the start of the line (Ctrl-Home)
DelToEnd	Delete from the cursor to the end of the line (Ctrl-End)
DelWordLeft	Delete the word to the left of the cursor (Ctrl-L)
DelWordRight	Delete the word to the right of the cursor (Ctrl-R, Ctrl-Backspace)
DirectoryCompletion	Toggle between the default files + directories filename completion, and directories only (Shift-F6)
DirWinOpen	Open the directory history popup window (Ctrl-PgUp, Ctrl-PgDn, F6)
EndHistory	Display the last entry in the history list (Ctrl-E)
EndLine	Move the cursor to the end of the line (End)
EraseLine	Delete the entire line (Esc)
ExecLine	Execute or accept a line (Enter)
FileBrowse	Display the Windows file browse dialog (F5)
FolderBrowse	Display the Windows folder browse dialog (Alt-F5)
FontMax	Increase the console font size (Ctrl-Plus)
FontMin	Reduce the console font size (Ctrl-Minus)
Help	Display the Help topic for the current command (F1)
HelpWord	Display the Help topic for the word at the cursor (Ctrl-F1)
HistWinOpen	Open the command history popup window (PgUp, PgDn)
Ins	Toggle insert / overstrike mode (Insert)
LastHistory	Return the last history entry (F3)
Left	Move the cursor left one character on the input line (Left)

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LFNToggle	Toggle tab completion between long filename and short filename modes on LFN drives (Ctrl-A)
LineToEnd	Copy the current command line to the end of the history list, then execute it (Ctrl-Enter)
MoveConsoleDown	Move the console window down (Alt-Win-Down)
MoveConsoleUp	Move the console window up (Alt-Win-Up)
MoveConsoleLeft	Move the console window left (Alt-Win-Left)
MoveConsoleRight	Move the console window right (Alt-Win-Right)
NextDirHistory	Get the next directory from the directory history (Shift-PgDn)
NextFile	Get the next matching filename during tab completion (Tab, F9)
NextHistory	Get the next command from the command history (Down)
OriginalFile	Restore the original filename (Alt-F9)
ParentDirectory	Change to the parent directory (Ctrl-Shift-Up)
Paste	Paste line from clipboard (Ctrl-V Shift-Ins)
PATHCompletion	Toggle between completing files found in the local directory, and completing them in the local directory + all of the directories in PATH (Ctrl-F6)
PopFile	Open the tab completion window (F7, Ctrl-Tab)
PopupWinDel	Delete a line from in the command history or directory history window (Ctrl-D)
PopupWinEdit	Moves a line from the command history or directory history window to the prompt for editing (Ctrl-Enter)
PopupWinEditWin	Edit a line in the command history or directory history window (Ctrl-E)
PrevArgument	Recall the last argument from the previous command line (Ctrl-B)
PrevFile	Get the previous matching filename (F8, Shift-Tab)
PrevDirHistory	Get the previous directory from the directory history (Shift-PgUp)
PrevHistory	Get the previous command from the command history (Up)
PrintHistory	Print the command history (Ctrl-P)
Redo	Redo the last Undo (Ctrl-Shift-Y)
Regex	Display the regular expression analyzer dialog (Ctrl-F7)
RepeatFile	Repeat the previous matching filename (F12)
Right	Move the cursor right one character on the input line (Right)
SaveHistory	Save the command line in the command history list without executing it (Ctrl-K)
SelectFromHome	Mark from the beginning of the line to the cursor (Shift-Home)
SelectLeft	Add the character on the left to the selection (Shift-Left)
SelectRight	Add the character on the right to the selection (Shift-Right)
SelectToEnd	Mark from the cursor to the end of the line (Shift-End)
SelectWordLeft	Add the word on the left to the selection (Ctrl-Shift-Left)
SelectWordRight	Add the word on the right to the selection (Ctrl-Shift-Right)
SingleStep	Toggle batch debugger single-stepping (Ctrl-F5)
Undo	Undo the last edit (Ctrl-Shift-Z)
VariableExpand	Expand variables on the entire command line (Ctrl-X)
VariableExpandWord	Expand variables for the current word (Ctrl-Shift-X)
WordLeft	Move the cursor left one word (Ctrl-Left)
WordRight	Move the cursor right one word (Ctrl-Right)

LIST has some new directives for redefining keys that were formally fixed. These can all be set with the OPTION / Keyboard dialog. (Note that LIST is still considered obsolete and you should be using VIEW!)

ListDelete	Delete the current file (Del)
ListDown	Scroll down one row (Down)
ListEdit	Edit the current file using the default editor (E)
ListEnd	Go to the end of the file (End)
ListFindRegexReverse	Search backwards for a regular expression (Ctrl-R)

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ListGoto	Display a dialog to jump to a specific line (G)
ListHelp	Display help for LIST (F1)
ListHexSpace	Toggle display of nonprintable characters (space or .) when in hex mode (S)
ListHome	Go to the beginning of the file (Home)
ListInfo	Displays information about the current file (I)
ListLeft	Scroll left one column (Left)
ListNumber	Number the lines (L)
ListOpen	Display the "Open File" dialog (O)
ListPageLeft	Scroll left 40 columns (Ctrl-Left)
ListPageRight	Scroll right 40 columns (Ctrl-Right)
ListPgUp	Scroll up one page (PgUp)
ListPgDn	Scroll down one page (PgDn)
ListRight	Scroll right one column (Right)
ListSave	Save to a file (Ins)
ListTabSize	Display a dialog to set the tab size (Tab)
ListUp	Scroll up one row (Up)

Command Line Editing:

Key aliases are now processed before the ***TCC*** key mapping, so you can override ***TCC***'s default behavior without having to use the TCMD.INI directives.

Ctrl-Win-T - (in ***Take Command***) Start a new default tab window

New Variable Functions:

@COMPUTERNAME[*n*] - Returns a DNS or NetBIOS name associated with the local computer. The names are created at startup time. The type of name to be retrieved is specified by *n*:

0 The NetBIOS name of the local computer or the cluster associated with the local computer
1 The DNS name of the local computer or the cluster associated with the local computer
2 The name of the DNS domain assigned to the local computer or the cluster associated with the local computer.DNS
3 The fully qualified DNS name that uniquely identifies the local computer or the cluster associated with the local computer
4 The NetBIOS name of the local computer
5 The DNS host name of the local computer
6 The name of the DNS domain assigned to the local computer
7 The fully qualified DNS name that uniquely identifies the computer

Plugins:

The keystroke plugin behavior and API call has changed in ***TCC*** v24. Keystroke plugins are now called after key aliases, and before ***TCC*** looks for the default action for that key. The KEYINFO structure has an additional field ***pszKey*** at the end:

```
// structure passed to plugin functions to monitor keystrokes. A
//   keystroke function can be named anything, but must prefix a
//   * to its name in the function list (pszFunctions, above).
//   If the keystroke plugin handled the keystroke and doesn't want to pass
//   it back to TCC, it should set nKey = 0 and pszKey to an empty string.
//   The command processor will call the keystroke function with all parameters
//     set to 0 just before accepting input for each new command line.
```

```
//   The string pointers are Unicode
typedef struct {
    int       nKey;             // key entered
    int       nHomeRow;         // start row
    int       nHomeColumn;      // start column
    int       nRow;             // current row in window
    int       nColumn;          // current column in window
    LPTSTR    pszLine;          // command line
    LPTSTR    pszCurrent;       // pointer to position in line
    int       fRedraw;          // if != 0, redraw the line
    LPTSTR    pszKey;           // (v24+ only) ASCII name of key (for example,
              "Ctrl-Alt-Home")
} KEYINFO, *LPKEYINFO;
```

V24+ only: If the value passed in "nKey" is 0, the key is not a valid Unicode character, and the keystroke plugin needs to parse the ***pszKey*** string to get the name. The name will be passed in the format:

[Ctrl-][Alt-][Shift-]key

For example:

F12
Ctrl-F1
Ctrl-Alt-Left
Ctrl-Shift-F5

The keystroke plugin can modify the ***nKey*** or ***pszKey*** value and pass it back to ***TCC*** to evaluate the default action for the (new) value. If ***nKey*** is != 0, ***TCC*** will treat it as a normal Unicode character. If ***nKey*** = 0, ***TCC*** will evaluate ***pszKey*** for a valid keyname.

If the keystroke plugin handled the key and doesn't want ***TCC*** to do anything more, set ***nKey*** to 0 and ***pszKey*** to an empty string (write a null to the first byte).

Updated Commands:

ACTIVATE

ACTIVATE now has a command dialog.

ALIAS

ALIAS now has a command dialog.

ASSOC

ASSOC now has a command dialog.

ATTRIB

The command dialog supports the new Windows 10 Pinned and Unpinned attributes.

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /Q (quiet) option.

The command dialog now supports the /Nj (no junctions) option.

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BTMONITOR

BTMONITOR now has a command dialog.

CD

CD now has a command dialog.

CDD

CDD now has a command dialog.

CLIPMONITOR

CLIPMONITOR now has a command dialog.

COPY

The command dialog has a new "Sorting" button to select the file sort order.

/Nz - Skip system directories (when used with /S).

DATEMONITOR

DATEMONITOR now has a command dialog.

DEBUGMONITOR

DEBUGMONITOR now has a command dialog.

DEDUPE

/Nz - Skip system directories (when used with /S).

DEL

The command dialog has a new "Sorting" button to select the file sort order.

/Nz - Skip system directories (when used with /S).

DELAY

DELAY now has a command dialog.

DELAY UNTIL now accepts a space, comma, or = between the date and the time. (This allows it to work with the string returned by @AGEDATE.)

DESCRIBE

The command dialog has a new "Sorting" button to select the file sort order.

DIR

The command dialog has a new "Sorting" button to select the file sort order.

/Nz - Skip system directories (when used with /S).

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DISKMONITOR

DISKMONITOR now has a command dialog.

ENUMSHARES

If you don't enter any arguments, ENUMSHARES will display its command dialog.

ESET

ESET now has a command dialog.

If you don't enter any arguments, ESET will display its command dialog.

EVENTMONITOR

EVENTMONITOR now has a command dialog.

EVERYTHING

The command dialog now supports the /B (rebuild the ES database) option.

The command dialog now supports the /H (delete the ES run history) option.

The command dialog now supports the /I (rescan all folder indexes) option.

FIREWIREMONITOR

FIREWIREMONITOR now has a command dialog.

FOLDERMONITOR

FOLDERMONITOR now has a command dialog.

FUNCTION

FUNCTION now has a command dialog.

FTYPE

FTYPE now has a command dialog.

GZIP

The command dialog has a new "Sorting" button to select the file sort order.

HASH

HASH now has a command dialog.

If you don't enter any arguments, HASH will display its command dialog.

HEAD

The command dialog has a new "Sorting" button to select the file sort order.

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The command dialog now supports the /B (no bell) option.

The command dialog now supports the /N+*n* (skip lines) option.

HISTORY

The command dialog now supports the /M (number history list) option.

The command dialog now supports the /T*n* (display *n* lines) option.

IFTP

The command dialog now supports the /EP (extended passive) option.

The command dialog now supports the /IPv6 option.

The command dialog now supports the /Zn (Zlib compression) option.

If you don't enter any arguments, IFTP will display its command dialog.

INKEY

INKEY now has a command dialog.

If you don't enter any arguments, INKEY will display its command dialog.

INPUT

INPUT now has a command dialog.

If you don't enter any arguments, INPUT will display its command dialog.

JABBER

The command dialog now supports the /F"filename" (send file) option.

The command dialog now supports the /IPv6 option.

JAR

The command dialog has a new "Sorting" button to select the file sort order.

JOBMONITOR

JOBMONITOR now has a command dialog.

LIBRARY

LIBRARY now has a command dialog.

/R now supports reading multiple library files.

/Q - Don't display an error if the function doesn't exist.

LIST

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You can define all of the LIST keys using the new OPTION / Keyboard dialog.

The command dialog has a new "Sorting" button to select the file sort order.

LOCKMONITOR

LOCKMONITOR now has a command dialog.

LOG

LOG now has a command dialog.

MKLINK

The command dialog now supports the /A (create link with absolute pathname) option.

MONITOR

MONITOR now has a command dialog.

MOVE

The command dialog has a new "Sorting" button to select the file sort order.

/Nz - Skip system directories (when used with /S).

NETMONITOR

NETMONITOR now has a command dialog.

MSGBOX

MSGBOX now has a command dialog.

OPTION

The new "Keyboard" tab allows you to add / edit / remove keys for each of the editing functions (about 100 in all). You can bind multiple key combinations to each - for example, Paste has Ctrl-V and Shift-Ins. See the new key directives in TCMD.INI Directives (above).

Now lets you set the color for selected text (defaults to the inverse of the current color).

OSD

OSD now has a command dialog.

If you don't enter any arguments, OSD will display its command dialog.

PATH

PATH now has a command dialog.

/V - Checks all of the directories in %PATH, and displays an error message for any that don't exist.

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PDIR

/Nz - Skip system directories (when used with /S).

PIPEVIEW

PIPEVIEW now has a command dialog.

POWERMONITOR

POWERMONITOR now has a command dialog.

PRIORITY

The command dialog now supports the /D (disable Windows thread boosting) option.

The command dialog now supports the /E (enable Windows thread boosting) option.

PROCESSMONITOR

PROCESSMONITOR now has a command dialog.

QUERYBOX

QUERYBOX now has a command dialog.

If you don't enter any arguments, QUERYBOX will display its command dialog.

REBOOT

REBOOT now has a command dialog.

RECORDER

RECORDER now has a command dialog.

If you don't enter any arguments, RECORDER will display its command dialog.

REGDIR

REGDIR now has a command dialog.

If you don't enter any arguments, REGDIR will display its command dialog.

REGMONITOR

REGMONITOR now has a command dialog.

REN

The command dialog has a new "Sorting" button to select the file sort order.

REXEC

REXEC now has a command dialog.

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If you don't enter any arguments, REXEC will display its command dialog.

RSHELL

RSHELL now has a command dialog.

If you don't enter any arguments, RSHELL will display its command dialog.

SCREENMONITOR

SCREENMONITOR now has a command dialog.

SELECT

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /H (hide "." and "..") option.

SENDHTML

The command dialog now supports the /P*n* (priority) option.

The command dialog now supports the /S*n* (sensitivity) option.

SENDMAIL

The command dialog now supports the /P*n* (priority) option.

The command dialog now supports the /S*n* (sensitivity) option.

SERVICEMONITOR

SERVICEMONITOR now has a command dialog.

SERVICES

SERVICES now has a command dialog.

SET

SET now has a command dialog.

SETARRAY

SETARRAY now has a command dialog.

SETP

SETP now has a command dialog.

If you don't enter any arguments, SETP will display its command dialog.

SHORTCUT

SHORTCUT now has a command dialog.

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If you don't enter any arguments, SHORTCUT will display its command dialog.

SYNC

The command dialog has a new "Sorting" button to select the file sort order.

TAIL

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /B (no bell) option.

TAR

The command dialog has a new "Sorting" button to select the file sort order.

TASKBAR

TASKBAR now has a command dialog.

If you don't enter any arguments, TASKBAR will display its command dialog.

TEE

TEE now has a command dialog.

If you don't enter any arguments, TEE will display its command dialog.

TOUCH

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /Q (quiet) option.

If you don't enter any arguments, TOUCH will display its command dialog.

TREE

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /A (ASCII characters) option.

TYPE

Added the /B (no bell) option to the TYPE command dialog.

The command dialog has a new "Sorting" button to select the file sort order.

UNTAR

The command dialog now supports the /Ne (no error output) option.

UUID

UUID now has a command dialog.

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UNSETP

UNSETP now has a command dialog.

UNTAR

The command dialog now supports the /Ne (no error output) option.

USBMONITOR

USBMONITOR now has a command dialog.

VBEEP

VBEEP now has a command dialog.

VIEW

The command dialog has a new "Sorting" button to select the file sort order.

The command dialog now supports the /W (TCMD tab window) option.

WEBFORM

WEBFORM now has a command dialog.

WEBUPLOAD

WEBUPLOAD now has a command dialog.

WINDOW

WINDOW now has a command dialog.

WMIQUERY

WMIQUERY now has a command dialog.

If you don't enter any arguments, WMIQUERY will display its command dialog.

WSETTINGS

WSETTINGS now has a command dialog, including the option to let you select the settings dialog from a list.

If you don't enter any arguments, WSETTINGS will display its command dialog.

WSHELL

WSHELL now has a command dialog, including the option to let you select the shell folder from a list.

If you don't enter any arguments, WSHELL will display its command dialog.

WSHORTCUT

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WSHORTCUT now has a command dialog, including the option to let select the folder from a list.

If you don't enter any arguments, WSHORTCUT will display its command dialog.

ZIP

The command dialog has a new "Sorting" button to select the file sort order.

ZIPSFX

ZIPSFX now has a command dialog.

7ZIP

The command dialog has a new "Sorting" button to select the file sort order.

New Commands:

TCEDIT

TCEDIT is a tabbed editor for editing all kinds of text files, including INI files and various scripting languages (with syntax coloring). TCEDIT also supports reading from the clipboard (CLIP:), FTP, and HTTP sites. The syntax is:

TCEDIT [*range* .../C //EXIT /INI /START /O:[-]acdeginorstuz] *file*...

/C - Create the file if it doesn't exist.

/INI - edit the current TCMD.INI

/START - edit the current TCSTART.*

/EXIT - edit TCEXIT.* (this is guesswork, since TCC hasn't found it yet)

TCEDIT defaults to line selection. You can select rectangular blocks by holding down the Alt key while selecting text.

TCEDIT supports multiple selections for cut and paste. Hold the Ctrl key down while selecting text with the mouse. When multiple selections are copied to the clipboard, each selection is added to the clipboard text in order with no delimiting characters. For rectangular selections the document's line end is added after each line's text.

UNLIBRARY

UNLIBRARY removes library functions defined with the LIBRARY command. The syntax is:

UNLIBRARY [/Q /R filename ... (function ...)] functionname ...

/Q - Don't display errors if the library function doesn't exist.

/R - Read the functions to delete from a file

UNLIBRARY supports exception lists (enclosed in parentheses) to specify library functions you do not want to delete.

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2.5 Version 23

Take Command 23.0:

Installer:

Take Command is using new version of Advanced Installer.

Take Command:

Version 23 is using a new version of the GUI framework library.

Version 23 is using a new version of Scintilla.

TCMD has a macro recorder that will record and play back keystrokes and mouse actions. You can control the macro recorder several ways:

1. Win-F11 - Start / stop macro recording
2. Win-F12 - Start / stop macro playback
3. Record & Playback buttons on the Quick Access toolbar
4. Record & Playback buttons on the ***Take Command*** Tools menu
5. The new ***TCC*** RECORDER internal command

The Command Input window now supports syntax coloring for command line input, using the same colors and keywords as the IDE / batch debugger.

The "Restarted Elevated" option in the Home menu will detach the tabs, start a new elevated Take Command session, and reattach the tabs in that session.

If you select "Attach Tabs" from the tab context menu, and (1) there is only one unattached console window, and (2) it is visible, it will automatically be attached without having to select it from the dialog.

The status bar has a new "Screen buffer size (Rows)" field.

The tab window context menu (right click) has three new options:

Read-only Tabs - Disable keyboard input in this tab.

New Horizontal Tab Group - move the current tab window into a new vertical tab group.

New Vertical Tab Group - move the current tab window into a new horizontal tab group.

Take Command has a number of screen drawing improvements related to custom font sizes and DPI scaling.

TCMDHere.btm now automatically restarts itself elevated if necessary, and has a /U option to remove the "TCMD prompt here" entry from the Windows Explorer context menu.

TCCTabHere.btm now automatically restarts itself elevated if necessary, and has a /U option to remove the "TCC tab window here" entry from the Windows Explorer context menu.

TCC:

Version 23 is using a new version of the Onigmo regular expression library.

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TCC now supports syntax coloring on the command line (similar to the syntax coloring in the IDE / batch debugger). You set the option and the colors to use in the OPTION / Windows dialog. You can define both foreground and background using any of the 16 Windows console colors. TCC will colorize:

Default - any text that doesn't match a syntax option

Commands - internal TCC commands

Aliases - command aliases defined with the TCC ALIAS command.

Comments - lines beginning with **rem** or **::**

Labels - labels for a GOTO or GOSUB

Operators - | < > && || etc.

Batch / Local Vars - %1 - %n, %*, %~... etc.

Environment Vars - environment variables

Internal Vars - internal TCC variables and variable functions

Regexes - regular expressions

TCCHere.btm now automatically restarts itself elevated if necessary, and has a /U option to remove the "TCC prompt here" entry from the Windows Explorer context menu.

IDE / Batch Debugger:

Version 23 is using a new version of the GUI framework library.

Version 23 is using a new version of Scintilla.

The Tabs context menu (right click on a tab header) has three new options:

Open Containing Folder (opens a File Explorer window in the batch file's directory)
Close
Close All But This

If you are editing a variable name in the Watch window, the Delete (X) button will delete marked text in the edit control. Otherwise, X will delete the currently selected line in the watch list.

"Run to Cursor" is a new option in the Debug menu. If you click on a line in the debugger window, and then select "Run to Cursor", the debugger will run the batch file (ignoring any breakpoints) until it reaches the selected line.

Help:

The v23 help is built with a new version of the help compiler (Help & Manual).

The help has been expanded with more examples, tutorials, and key words.

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TMCD.INI Directives:

MacroRecorder=YES|no - Enable or disable the Take Command macro recorder. This directive goes in the [TakeCommand] section.

Command Line Editing:

See "Syntax Coloring" in the new TCC features above.

Variables:

You can return the result of a command with %(command). This is the same as @EXEC[command] but a little easier to write.

%@ will return the batch file arguments (like %*), but they will all be double quoted.

Numeric variable expressions - %((...)) will evaluate and substitute the expression. For example:

```
echo %((3+5)) is the answer.
```

Conditional expressions - %[[...]] will evaluate the conditional expression, and return 0 if the exit status is true; 1 if it is not. For example:

```
echo %[[5 == 6]]
```

Updated Variable Functions:

@COMPARE - added support for HTTP & HTTPS.

@CRC32 - has three new optional parameters:

@CRC32[*s f b,*]file[,*start[,length]*]

b	Use binary buffer (pass the handle returned by @BALLOC as the *file* parameter)
start	Start position in binary buffer or file in bytes (defaults to 0)
length	Length of buffer to hash in bytes (defaults to size of binary buffer or file)

@FILES - added support for exclusion ranges (i.e., @files[/!notthis.file] *.file])

@IF has new conditional tests:

ISLIBRARY - returns 1 if the name is a library function

ISSYMLINK - returns 1 if the filename is a symlink.

ISREADABLE - returns 1 if the file is readable.

ISWRITEABLE - returns 1 if the file is writeable.

@MD5 - has three new optional parameters:

@MD5[*s f b,*]file[,*start[,length]*]

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b	Use binary buffer (pass the handle returned by @BALLOC as the *file* parameter)
start	Start position in binary buffer or file in bytes (defaults to 0)
length	Length of buffer to hash in bytes (defaults to size of binary buffer or file)

@PING - now also supports IPv6 addresses. (In Windows 7, this will only work in an elevated session.)

@SEARCH - added support for regular expressions in the program name. @SEARCH will also now add double quotes to the returned filename if it contains whitespace or special characters.

@SHA1, @SHA256, @SHA384, @SHA512 - have three new optional parameters:

@SHA1[*s f b,*]file[,*start[,length]*]

b	Use binary buffer (pass the handle returned by @BALLOC as the *file* parameter)
start	Start position in binary buffer or file in bytes (defaults to 0)
length	Length of buffer to hash in bytes (defaults to size of binary buffer or file)

New Variable Functions:

@BSIZE - Returns the size of a binary buffer. The syntax is:

@BSIZE[*handle*]

handle	Handle returned by @BALLOC

@SERIALHW - Returns the serial number of a physical drive. The syntax is:

@SERIALHW[*drive*]

drive	The drive letter associated with the physical drive.

Returns a string with the drive letter, or an error if the drive doesn't exist or have a serial number.

@UNQCLOSE - Close a UnQLite database opened by @UNQOPEN. The syntax is:

@UNQCLOSE[*filename*]

Returns 0 if successful, or the error text if not.

@UNQDELETE - Delete a key/value pair from a UnQLite database. The syntax is:

@UNQDELETE[[*u*,]*filename, key*]

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to delete

Returns 0 if successful, or the error text if not.

@UNQKVB- Add a key / binary blob value pair to a UnQLite database. The syntax is:

@UNQKVB[[*u*,]*filename, "key", handle, length*]

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u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to add or replace
handle	Handle to binary buffer (returned by @BALLOC)
length	Length of buffer to write (or -1 for the entire buffer)

Returns 0 if successful, or the error text if not.

@UNQKVBA - Append to the value of an existing key / binary blob value pair. The syntax is:

@UNQKVBA[[*u*,]*filename, "key", handle, length*]

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to update
handle	Handle to binary buffer (returned by @BALLOC)
length	Length of buffer to write (or -1 for the entire buffer)

Returns 0 if successful, or the error text if not.

@UNQKVF - Add a key / file value pair to a UnQLite database. The syntax is:

@UNQKVF[[*u*,]*filename, "key", file, length*]

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to add or replace
file	Name of the file to save to the key
length	Length of the file to write (or -1 for the entire file)

Returns 0 if successful, or the error text if not.

@UNQKVFA - Append to the value of an existing key / file value pair. The syntax is:

@UNQKVFA[[*u*,]*filename, "key", file, length*]

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to update
file	Name of the file to save to the key
length	Length of the file to write (or -1 for the entire file)

Returns 0 if successful, or the error text if not.

@UNQKVS - Add a key / string value pair to a UnQLite database. The syntax is:

@UNQKVS[[*u*,]*filename, "key", "value"*]

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to add or replace
value	Value to add

Returns 0 if successful, or the error text if not.

@UNQKVSA - Append to the value of an existing key/value pair. The syntax is:

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@UNQKVSA[[*u*,]*filename, "key", "value"*]

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to update
value	Value to append to the existing value

Returns 0 if successful, or the error text if not.

@UNQOPEN - Open a UnQLite database, specifying a database name that is used by other @UNQ... functions. The syntax is:

@UNQOPEN[*mode, filename*]

The possible values for *mode* are:

RWC	Open a database with read+write privileges. The database is created if it doesn't exist.
RW	Open the database with read+write privileges. If the database does not exist, an error is returned.
RO	Open the database in read-only mode. If the database does not exist, an error is returned.
MM	A read-only memory-mapped view of the database.

If *filename* is ":mem:", then a private in-memory database is created. The in-memory database will be discarded when the database is closed.

Returns 0 if successful, or an error if not.

@UNQREADB - Read a binary value from an existing key in a UnQLite database. The syntax is:

@UNQREADB[[*u*,]*filename, "key", handle, length*]

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to read
handle	A binary handle returned by @BALLOC

Returns 0 if successful, or an error if not.

@UNQREADF - Read a value from an existing key in a UnQLite database and save it to a file. The syntax is:

@UNQREADF[[*u*,]*filename, "key", outputname, length*]

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to read
outputname	Output file that will contain the value

Returns 0 if successful, or an error if not.

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@UNQREADS - Read a string value from an existing key in a UnQLite database. The syntax is:

@UNQREADS[[*u*,]*filename, "key"*]

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened by @UNQOPEN
key	Key to read

Returns the value as a string, or the error text.

Updated Commands:

DEDUPE

/H - Convert duplicate files to hard links to the first file.

DIRHISTORY

/M - number the lines when displaying the directory history list.

DIRS

/M - number the lines when display the DIRS list.

/P - pause after displaying each page.

DO

ISLIBRARY - returns 1 if the name is a library function

ISSYMLINK - returns 1 if the filename is a symlink.

ISREADABLE - returns 1 if the file is readable.

ISWRITEABLE - returns 1 if the file is writeable.

ESET

/B - edit batch variables (1 - n).

FFIND

/Q(uiet) - don't display any output, but set the FFIND internal variables.

FFIND now supports @filelists.

HISTORY

/M - number the lines when displaying the history list.

IF / **IFF**

ISLIBRARY - returns 1 if the name is a library function

ISSYMLINK - returns 1 if the filename is a symlink.

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ISREADABLE - returns 1 if the file is readable.

ISWRITEABLE - returns 1 if the file is writeable.

JABBER

/IPv6 - use IPv6 instead of IPv4.

MKLINK

If you don't specify a target or any options, MKLINK will display information on the link (including OpenAFS reparse points).

ON ERROR

Now sets _SYSERR.

PDIR

/(K) - Display the CKSUM hash.

REGDIR

/T will now display the time for the top level key in addition to the subkeys.

REXEC

/IPv6 - use IPv6 instead of IPv4.

RSHELL

/IPv6 - use IPv6 instead of IPv4.

SCRPUT

/C - Move the cursor to the specified position after writing the string.

/U - Move the cursor to the end of the string.

SENDHTML

/IPv6 - use IPv6 instead of IPv4.

SENDMAIL

/IPv6 - use IPv6 instead of IPv4.

SET

/B - change batch variables (1 - n).

SETARRAY

/Z - resize an existing array. For example:

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```
setarray myarray[5,2]
...
setarray /z myarray[8,3]
```

SMPP

/IPv6 - use IPv6 instead of IPv4.

SNPP

/IPv6 - use IPv6 instead of IPv4.

SWITCH

Now supports regular expressions for the CASE argument(s).

TASKDIALOG

/AF"*details*" - Like /A, but TASKDIALOG will show the details at the bottom of the dialog's footer area instead of immediately after the contents.

/AX"*details*" - Like /A, but TASKDIALOG will show the expanded details by default.

/DB:xx - Default button. This can either be a number (1000-n for custom buttons, or a defined button type:

OK
Yes
No
Cancel
Retry
Close

/DR:n - The default radio button (only valid when used with /R).

/T:n - Timeout after *n* seconds. Returns the Cancel / Close button value (12).

TYPE

/L0 - Don't number blank lines.

UNALIAS

Now supports regular expressions for the alias name.

UNFUNCTION

Now supports regular expressions for the function name.

UNSET

Now supports regular expressions for the variable name.

VSCRPUT

/C - Move the cursor to the specified position after writing the string.

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/U - Move the cursor to the end of the string.

WEBFORM

/IPv6 - use IPv6 instead of IPv4.

WEBUPLOAD

/IPv6 - use IPv6 instead of IPv4.

WHICH

Now supports regular expressions for alias names.

New Commands:

MONITOR

Display or change monitor capabilities, including:

Technology type
Color temperature
Contrast
Display area position
Display area size
RGB drive
RGB gain
Brightness
Reset factory color defaults
Reset factory defaults
Save to nonvolatile storage

Not all settings are supported by all monitors. If you don't enter any arguments, MONITOR will display the current configuration of all physical monitors. Depending on the options and the monitor hardware, MONITOR can take several hundred milliseconds to return. The MONITOR command will fail if the monitor does not support DDC/CI.

The options are:

/N:n - change settings on physical monitor *n*. The default is 0.

/FD - restores the factory default settings

/FC - restores the factory default color settings

/B:n - set the brightness

/C:n - set the contrast

/T:*n* - change the color temperature. *n* can be one of the following:

4000
5000
6500

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7500
8200
9300
10000
11500

/D:*Color*:*n* - Sets a monitor's red, green, or blue drive value. Drive settings are used to adjust the monitor's white point (*drive* is also called *black level*). *Color* is either RED, GREEN, or BLUE; *n* is the drive value (usually 0-100). You can have multiple /Drive arguments in a single MONITOR command.

/G:*Color*:*n* - Sets a monitor's red, green, or blue gain value. Gain settings are generally used to adjust the monitor's white point. *Color* is either RED, GREEN, or BLUE; *n* is the gain value (usually 0-100). Changing the gain settings can change the color temperature. You can have multiple /Gain arguments in a single MONITOR command.

/AP:*x*:*y* - Set the horizontal (x=0) or vertical (x=1) position of the monitor's display area. *y* is the new width or height. Increasing the horizontal position moves the display area to the right; decreasing it moves the display area to the left. Increasing the vertical position moves the display area up, decreasing it moves the display area down.

/AS:*x*:*y* - Set the display area width (x=0) or height (x=1). *y* is the new width or height.

/S - save settings to the display's nonvolatile storage

MOUNTVHD

Mount a VHD or VHDX image. You must be running an elevated session. The format is:

MOUNTVHD [d:\ | d:\path] image

d:	Optional drive letter
d:\path	Optional mount path
image	VHD or VHDX file to mount

RECORDER

Record and play back mouse & keyboard input. The syntax is:

RECORDER [/C /K /L:n /M /P /R filename /S /W filename]

/C	Clear the macro queue
/K	Keyboard events only (ignore mouse events)
/L:*n*	Play back the current macro *n* times
/M	Start recording a macro
/P	Play back the current macro
/R *name*	Load a macro file (previously saved with /S)
/S *name*	Save the current macro recording to a file
/W	Wait for the macro playback to finish

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/X Stop recording or playing

UNMOUNTVHD

Unmount a VHD or VHDX image previously mounted with MOUNTVHD. You must be running an elevated session. The format is:

UNMOUNTVHD [*d:*\ | *d:**path*\]

d: Optional drive letter.
d:\path Optional mount path

UNQLITE

UnQLite is an embedded NoSQL (Key/Value store and Document-store) database engine. UnQLite reads and writes directly to ordinary disk files. The complete database with multiple collections is contained in a single disk file.

The syntax is:

unqlite [/RWC [/RO [/MM] /RW /TEMP /MM] filename] [/DB:"database"] [/C filename] [/D key] [/R key] [/KVS "key" "value"] [/KVSA "key" "string"] [/KVB "key" handle length] [/KVBA "key" handle length] [/KVF "key" filename length] [/KVFA "key" filename length]

/C Close a database. If you omit the name, UNQLITE will close the most recently opened database.

/RWC Open a database with read+write privileges. The database is created if it doesn't exist.

/RW Open the database with read+write privileges. If the database does not exist, an error is returned.

/RO Open the database in read-only mode. If the database does not exist, an error is returned.

/TEMP A private, temporary on-disk database will be created. The database will be deleted when the database is closed.

/MM A read-only memory-mapped view of the database. Only valid when used with /RO.

filename The name of the database file. If filename is ":mem:", then a private in-memory database is created. The in-memory database will be discarded when the database is closed.

/DB:name Open an existing database for a read / write / delete operation. The database name should be quoted.

/D Delete the specified key

/R Read the specified key and display the string (or file) value.

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/KVS Create a key / value pair. If the key exists, it will be overwritten with the new value.

/KVSA Append a string to the value of an existing key.

/KVF Create a key / file value pair. If the key exists, it will be overwritten with the new value. *length* is the length of the file to write (or -1 for the entire file).

/KVFA Append a file to the value of an existing key. *length* is the length of the file to write (or -1 for the entire file).

/KVB Create a key / binary blob value. If the key exists, it will be overwritten with the new value. *handle* is a handle returned by @BALLOC; *length* is the length to write (or -1 for the entire buffer).

/KVBA Append a binary blob to the value of an existing key. *handle* is a handle returned by @BALLOC; *length* is the length to write (or -1 for the entire buffer).

2.6 Version 22

Take Command 22.0:

Installer:

Take Command is using new version of Advanced Installer.

Take Command:

We have made additional changes to ***Take Command*** to make it harder to attack with malware.

There are hundreds of minor tweaks to the layout, icons, menus, and themes.

Take Command is compatible with the Windows 10 Fall Creators Update.

Take Command is using an updated version of the GUI framework.

Take Command is using an updated version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

Take Command is using an updated version of the Onigmo regular expression library.

Added four new themes to ***Take Command***:

Office 2016 White
Office 2016 Colorful
Office 2016 Gray
Office 2016 Black

The default ***Take Command*** theme is now Office 2016 White.

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Added auto complete for the edit controls and combo boxes that take (existing) file and directory names.

Added Python and Emacs syntax options to regular expressions (both the regular expression analyzer and the ***Take Command*** configuration dialog).

If launched from ***Take Command*** (Tools / View Errors), the Lookuperrors.exe app will center itself in the TCMD window.

The Regular Expression Analyzer now lets you select the regular expression syntax you want to test (Perl, Python, Ruby, Gnu, etc.).

The Command Input window now supports screen readers.

Take Command tabs and toolbars now use ClearType for cleaner text.

TCMDBatch.btm now automatically starts a session elevated so it can change the file associations.

Take Command 22 has a fix for a longstanding Windows bug that would cause the occasional "AttachConsole" popup error when starting a new tab.

TCMDBatch.btm now has a /U (uninstall) option to revert the .BAT and .CMD associations to CMD.EXE.

ANSI X3.64 performance has been improved, and there are additional options:

<ESC>]4;...BEL	Change color(s)
<ESC>]104;...BEL	Reset color(s)
<ESC>8	Restore cursor
<ESC>7	Save cursor
<ESC>[?5W	Set tab at every 8 columns
<ESC>[?5;#W	Set tab at every # columns
<ESC>[4h	Insert mode
<ESC>[4l	Overstrike mode
<ESC>[#S	Scroll up
<ESC>[#T	Scroll down
<ESC>[*attr1*;m	Like 30-37 and 40-47, but if *attr1* is 90-97, bold foreground. If *attr1* is 100-107, bright background
<ESC>c	Reset
<ESC>D	Index
<ESC>E	Next line
<ESC>H	Horizontal tab set
<ESC>M	Reverse index

TCC:

We have made additional changes to ***TCC*** to make it harder to attack with malware.

TCC is compatible with the Windows 10 Fall Creators Update.

TCC is using updated versions of the internet libraries (FTP, FTPS, SFTPS, HTTP, HTTPS, etc.).

TCC is using updated versions of the compression libraries (ZIP, 7ZIP, TAR, etc.).

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TCC is using an updated version of the Onigmo regular expression library.

Removed the limits on batch file (and library function, see below) nesting. Now the only limit is your RAM.

The Regular Expression Analyzer (Ctrl-F7) now lets you select the regular expression syntax you want to test (Perl, Python, Ruby, Gnu, etc.).

Added Python and Emacs syntax options to regular expressions (both the regular expression analyzer and the OPTION dialog).

The internal embedded Python support has been updated to include 3.6.3.

Tcl/tk support has been updated to 8.6.6.

Updated Regina REXX support

Updated ooREXX support

Added auto complete for the edit controls and combo boxes that take (existing) file and directory names.

Added support for the **m<&n** syntax from CMD (for example, "2<&1"). (I don't know of any instance where this would actually be useful, but there are some Windows batch files created by Linux developers that use it.)

TCC will reset COMSPEC to TCC.EXE after a WM_SETTINGCHANGE.

Variable indirection now supports array names (for example, %[var[3]]).

Added the conditional expression **IsBatch** (like IsAlias) for use in IF / IFF / etc.

Many of the internal TCC commands now have a default file completion format (borrowing from the DWIM parser) that will return the valid arguments for that command & position on the command line.

The FileCompletion .INI directive and environment variable supports three new types:

aliases
variables
functions

FileCompletion also supports a new position syntax:

[n] Only match the following extensions if the argument number is equal to *n*
[*n] Only match the following extensions if the argument number is less than or equal to *n*
[n*] Only match the following extensions if the argument number is greater than or equal to *n*
[/x] Only match the specified switch. A matching switch argument will not increase the *argument* value.

For example, the default ZIP file completion syntax looks like this:

zip:[1] dirs zip [2*] *

TCC has a new startup option:

/IL - don't load the default library functions (from the Library folder).

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The numeric expression parser (@EVAL and all of the other functions and commands that use it) now supports up to 2,147,483,647 digits in Windows 64. Windows x86 will be far less; the actual value will be dependent on the amount of RAM and the other active processes.

TCCBatch.btm now automatically starts a session elevated so it can change the file associations.

TCCBatch.btm now has a /U (uninstall) option to revert the .BAT and .CMD associations to CMD.EXE.

ANSI X3.64 performance has been improved, and there are additional options:

<ESC>]4;...BEL	Change color(s)
<ESC>]104;...BEL	Reset color(s)
<ESC>8	Restore cursor
<ESC>7	Save cursor
<ESC>[?5W	Set tab at every 8 columns
<ESC>[?5;#W	Set tab at every # columns
<ESC>[4h	Insert mode
<ESC>[4l	Overstrike mode
<ESC>[#S	Scroll up
<ESC>[#T	Scroll down
<ESC>[*attr1*;m	Like 30-37 and 40-47, but if *attr1* is 90-97, bold foreground. If *attr1* is 100-107, bright background.
<ESC>c	Reset
<ESC>D	Index
<ESC>E	Next line
<ESC>H	Horizontal tab set
<ESC>M	Reverse index

IDE / Batch Debugger:

There are hundreds of minor tweaks to the layout, icons, menus, and themes (particularly the dark themes).

IDE is using a new version of the Scintilla edit control for the IDE / batch debugger window.

There is a new Tools menu with three commands:

- Regular Expression Analyzer
- Lookup Windows Errors
- Character Map

The debugger will automatically save & reload watch lists (*.watch).

The debugger will automatically save & reload bookmarks (*.bmark).

The debugger will automatically save & reload breakpoints (*.bp).

The debugger edit windows now support screen readers.

The debugger tabs now use ClearType for cleaner text.

Help:

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The v22 help is built with a new version of the help compiler (Help & Manual).

The help has been expanded with more examples, tutorials, and key words.

INI Directives:

ANSIWin10=YES|no - Now supported in ***Take Command*** as well as ***TCC***. If ANSIWin10=no, ***Take Command*** will use its internal ANSI support instead of the Windows 10 console ANSI.

LibraryDirectory=*pathname* - The path to search for library function files. The default is **Library** in the TCC installation directory.

Command Line Editing:

F1 now ignores leading * and (and @.

Ctrl-F1 ignores leading * and (and @.

Alt-F2 ignores leading * and (and @ when using command dialog help popup.

Scroll between recent directories (in the directory history) with Shift-PgUp / Shift-PgDn.

F5 will display the file browse dialog.

Alt-F5 will display the folder browse dialog.

Updated Variables Functions:

@EVAL - supports up to 2,147,483,647 digits in Windows x64.

@FILEREADB - optional third parameter to specify the output format:

[,h]	Output is 2-digit hex (00 - FF)
[,x]	Output is 0x00 - 0xFF

@SHA1
@SHA256
@SHA384
@SHA512 The first parameter determines whether the output is in upper or lower case:
s or f - lower case
S or F - upper case

@WORD[n-,string] - return all words from the *nth* one to the end of the line

Plugins:

Added VS 2015 and VS 2017 support.

Updated Commands:

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7UNZIP

The default filename completion syntax is **[1] dirs 7z [2*] ***

7ZIP

The default filename completion syntax is **[1] dirs 7z [2*] ***

ALIAS

The default filename completion syntax is **[/r] * [1] aliases [2*] ***

BATCOMP

The default filename completion syntax is **btm bat cmd dirs**

BDEBUGGER

The default filename completion syntax is **[1] dirs btm bat cmd [2*]**

BZIP2

The default filename completion syntax is **[1] dirs bz2 [2*] ***

CD / CHDIR

The default filename completion is **dirs**

CDD

The default filename completion is **dirs**

COPYDIR

The default filename completion is **dirs**

DEDUPE

The default filename completion syntax is **[1] * [2*] dirs**

DESCRIBE

/C*n dir* - Convert descriptions between DESCRIPT.ION and the NTFS file summary formats. The argument following /C*n* is the start directory; DESCRIBE will convert the descriptions in that directory and all of its subdirectories.

/C0 - convert descriptions from NTFS to DESCRIPT.ION
/C1 - convert descriptions from DESCRIPT.ION to NTFS

/R - Remove the old description after converting (only valid when used with /C*n*)

/W - Description editor dialog for easily creating / editing / deleting descriptions.

DIFFER

The default filename completion is **dirs**

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DIRHISTORY

The default filename completion syntax is **[/a] dirs [/r] * [1*] dirs**

DIRS

The default filename completion is **dirs**

DO

DO supports large numbers (64-bit integers) for its counters.

ESET

The default filename completion is **[/a] aliases [/f] functions [1*] variables**

FOLDERMONITOR

The default filename completion syntax is **[/s] dirs [/c] dirs [1*] ***

FUNCTION

The default filename completion syntax is **[/r] * [1] functions [2*] ***

GOSUB

The default filename completion is **[1] dirs btm cmd bat [2*] ***

If you append a * to the last variable name in the parameter list on the label line, it will be "greedy", and all remaining variables will be assigned to it. For example:

```
gosub sub1 one two three four five

:sub1 [arg1 arg2 arg3*]
```

arg3 will be assigned "three four five".

GZIP

The default filename completion syntax is **[1] dirs gz [2*] ***

INKEY

INKEY now accepts the /C option with no additional arguments to clear the keyboard buffer.

INPUT

/Lx[:y] - **x** specifies the maximum length, and **y** specifies the minimum length.

JAR

The default filename completion syntax is **[1] dirs jar [2*] ***

LOOKUPERRORS

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Supports hex input with a leading x or 0x.

If launched from Take Command (Tools / View Errors), the Lookuperrors.exe app will center itself in the TCMD window.

MD / MKDIR

The default filename completion is **dirs**

MOVEDIR

The default filename completion is **dirs**

PATH

The default filename completion is **dirs**

/M - reset the *PATH* variable to the original value when TCC was started.

PAUSE

/Wn - wait for n seconds and then continue with the next command if the user didn't press Enter.

PDIR

/HL - show hard links

/NF - suppress the bytes free from the footer

/NH - suppress the header

/NL - don't display link name for symbolic links

/NS - suppress the footer

/NV - suppress the volume label from the header

/Q - display the owner name

PLAYAVI

The default filename completion is **avi ***

PLUGIN

The default filename completion is **dirs dll**

POPD

The default filename completion is **dirs**

PSHELL

The default filename completion is **[1] dirs ps1 [2*] ***

PSUBST

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The default filename completion is **dirs**

PUSHD

The default filename completion is **dirs**

RD / RMDIR

The default filename completion is **dirs**

REBOOT

/B text - Block shutdown / reboots. The system will display the "text" in the popup explaining the reason for blocking the shutdown.

REGDIR

/T - prefix key names with the time stamp of their last change.

SET

The default filename completion is **[/r] * [1] variables [2*] ***

/M var - reset the *var* variable to the original value when TCC was started.

SETLOCAL

The GLOBALLISTS option will prevent SETLOCAL from switching to local aliases during the SETLOCAL duration.

SETLOCAL will now save the SETDOS /F settings.

SYNC

The default filename completion is **dirs**

TAR

The default filename completion is **[1] dirs tar [2*] ***

TIMER

/C - turn off the timer on a Ctrl-C.

TREE

The default filename completion is **dirs**

UNALIAS

The default filename completion is **[/r] * [1*] aliases**

UNBZIP2

The default filename completion is **[1] dirs bz2 [2] dirs**

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UNFUNCTION

The default filename completion is **[/r] * [1*] functions**

UNGZIP

The default filename completion is **[1] dirs gz [2] dirs**

UNJAR

The default filename completion is **[1] dirs jar [2*] ***

UNMOUNTISO

The default filename completion is **dirs**

UNSET

The default filename completion is **[/r] * [1*] variables**

UNTAR

The default filename completion syntax is **[1] dirs tar [2*] ***

UNZIP

The default filename completion syntax is **[1] dirs zip [2*] ***

WHICH

Now supports user-defined functions.

ZIP

The default filename completion syntax is **[1] dirs zip [2*] ***

ZIPSFX

The default filename completion syntax is **[1] dirs exe [2*] dirs**

New Commands:

LIBRARY

LIBRARY will load / display / delete library functions, which are similar to batch files but which are loaded into RAM and can be called as if they are internal commands. The syntax is:

LIBRARY [/D func /F [func] /P /R file /U]

/D	Delete a function (the function name can contain wildcards)
/F	Display the loaded (matching) functions (the function name can contain wildcards)
/P	Pause after each page when displaying functions
/R	Read a function file

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/U Update function (otherwise you will get an error when loading a function that already exists).

Library functions act like batch files that are always available in memory. Library functions are read from files, with the syntax:

```
functionname {
    command1
    command2
    ...
}
```

When ***TCC*** starts, it will automatically load any library function files in the LIBRARY subdirectory of the ***TCC*** installation directory. You can have any number of functions in a file.

If you do not specify any switches, LIBRARY will display the library function names that match the command line argument(s). If you do not specify any arguments, LIBRARY will display all of the library function names.

Library functions can contain aliases, internal or external commands, batch files, or other library functions.

The ***TCC*** parser will look for a matching library function name before looking for plugins, internal commands, external commands, or batch files.

SETP

Display or set environment variables in another process. The syntax is:

SETP *pid* [/P /R *filename*] var[=value]

pid	Process ID, or the window title, or the task name
var	The variable name to set. If you are displaying matching variables, the name can contain wildcards.
value	The value of the variable
/P	Pause after displaying each page
/R	Read variables and values from a file

TCFONT

Change the ***Take Command*** font from ***TCC***. The syntax is:

TCFONT "*fontname*" [*height* [*weight*]]

fontname	Font name (for example, "consolas" or "lucida console")
height	Font height (defaults to 10)
weight	Font weight (defaults to 400)

100	Thin
200	Extra light
300	Light
400	Normal
500	Medium
600	Semibold
700	Bold

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800	Extra bold
900	Heavy

UNSETP

Delete environment variables in another process. The syntax is:

UNSETP *pid* [/R *filename*][(*except...*)] var

pid	Process ID, or the window title, or the task name
var	The variable name to delete. The name can contain wildcards
/R	Read variables and values from a file

You can delete all matching variables except for those specified by enclosing the exceptions in parentheses. For example, to remove all variables beginning with "v" except for *var1* and *var2*:

unsetp (var1 var2) v*

2.7 Version 21

Take Command 21.01:

BDEBUGGER / IDE - the "CMD Syntax" option now maximizes CMD compatibility & disables ***TCC***-only internal commands, variables, and functions.

BDEBUGGER / IDE - The Options menu has a new entry "Font" to select the font type and size to use in the IDE windows.

IDE - Added tooltips to all menu entries.

Many minor optimizations.

Updated Scintilla editor.

New TCMD.INI directive ANSIWin10=YES|no (in the [4NT] section). If set to NO, ***TCC*** will use its internal ANSI instead of the Windows 10 console ANSI support.

Help file updates, including a much expanded IDE / batch debugger section.

Take Command 21.0:

Installer:

Take Command is using new version of Advanced Installer.

Take Command:

Take Command has extensive internal revisions to make it smaller and faster, and to start up faster. And ***Take Command*** v21 uses less disk space.

We have made a lot of changes to ***Take Command*** to make it harder to attack with malware (for example, with buffer overruns).

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Take Command is compatible with the Windows 10 Creators Update.

Take Command is using a new version of the GUI framework.

Take Command is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

Take Command is using a new version of the Onigmo regular expression library.

Take Command will use the new Windows 10 built-in ANSI support instead of ANSIxx.dll if you're running Windows 10 Creators Update (or later) and you enable ANSI support in ***Take Command*** (Options / Take Command / Tabs / Windows / ANSI colors). This will enable ANSI for all tab windows. (Note that due to as-yet-noexistent Windows APIs, ***Take Command*** cannot support the 256 color or 24-bit color options in the Windows 10 ANSI.)

Take Command has a new option in the Tools menu. "Windows Error Lookup" will open a small dialog that lets you look up Windows and network error messages based on the integer value.

Take Command has another new option in the Tools menu. "Char Map" will open the Windows Charact Mapping dialog that lets you look up and copy characters for any font.

Take Command has a new startup option:

> /X - Retrieve and store the ***Take Command*** window layout in a file (*TCMD.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *TCMD.XML* file must be in the same directory as *TCMD.INI*.

The File ribbon menu has a new option "Save HTML", which will save the current tab's screen buffer to a file in HTML format (including colors).

The Help / Register dialog has a new option "USB (Portable) key" to generate a registration key on the USB (thumb) drive & directory of your choice. You can also now create a USB registration key even if you have already registered ***Take Command*** on the computer.

The Help / Register dialog has a new option "Unregister" to remove the ***Take Command*** registration from the current computer.

The Command Input window now supports "Paste+Run" and "Copy+Paste+Run" in the context menu.

The tab context menu (right click on the tab title) and the Tabs ribbon menu each have two new options:

> Suspend - suspends all processes in this tab
> Resume - resumes suspended processes in this tab

The "Attach Tabs" menu entry in the tab bar context menu (right click on the tab bar in an empty space) and in the Tabs ribbon menu is now disabled if there are no unattached console windows.

The tab context menu (right click on the tab title) and the Tabs ribbon menu each have a new Priority menu that allows you to set the priority level for the process running in the tab:

Idle	Idle priority (only executes when no higher priority task is scheduled)
Below	Below normal priority
Normal	Normal (default) priority

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Above	Above normal priority
High	High priority

The Run dialog (right click on the tab bar in an empty space) now allows you to set the priority of the program to run. (See above for the possible priority values.)

The toolbar button dialog now allows you to set the priority of the program to run. (See above for the possible priority values.)

The Tabs page of the ***Take Command*** configuration dialog now lets you set the priority for the startup program in each tab window.

Cursor keys, F1, Backspace, and Del will no longer turn off selected text.

Changed the default ***Take Command*** tab window font from Lucida Console to Consolas. (Lucida Console doesn't support double-wide characters.)

The tabbed toolbar no longer defaults to hiding the tab label if there is only one tab. (This was confusing users and made it difficult to understand where your new buttons were being placed.) Also, if you select the ***Take Command*** menu option "View / Tabbed Toolbar", it will show the tabbed toolbar even if there are no buttons. This makes it easier to add buttons and to create new tabs.

TCC:

TCC has extensive internal revisions to make it smaller and faster, and to start up faster. And ***TCC*** v21 uses less disk space.

We have made a lot of changes to ***TCC*** to make it harder to attack with malware (for example, with buffer overruns).

TCC is compatible with the Windows 10 Creators Update.

TCC is using new versions of the internet libraries (FTP, FTPS, SFTPS, HTTP, HTTPS, etc.).

TCC is using new versions of the compression libraries.

TCC is using a new version of the Onigmo regular expression library.

Everything Search has been updated to a new version.

The internal Lua has been updated to 5.3.4.

The internal embedded Python support has been updated to include 3.6.0.

TCC supports 24-bit color if you're using Windows 10 Creators Update. If you are running ***TCC*** in a ***Take Command*** tab window, enable ANSI support in ***Take Command*** (Options / Take Command / Tabs / Windows / ANSI colors). If you are running ***TCC*** in a console window, you need to enable ANSI support in ***TCC*** (OPTION / Windows / Colors / ANSI Colors). Use the appropriate ANSI sequences to set RGB colors.

TCC will automatically remove a leading "file://" from a filename spec before passing the filename to Windows.

All of the monitoring functions are thread-safe (for multiple simultaneous monitor activity).

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Changing the language in ***TCC*** no longer requires restarting ***TCC***.

HTTP transfers now support compression for receiving data, so large copies should be significantly faster.

The overhead for the ***TCC*** monitoring functions (i.e., DISKMONITOR, FOLDERMONITOR, etc.) has been substantially reduced.

IDE / Batch Debugger:

IDE has extensive internal revisions to make it smaller and faster, and to startup faster.

IDE is using a new version of the Scintilla edit control for the IDE / batch debugger window.

The debugger toolbar has some new button icons.

IDE has a new option in the Debug menu. "Windows Error Lookup" will open a small dialog that lets you look up Windows and network error messages based on the integer value.

The batch arguments combo box on the toolbar now shows the default arguments. You can change them before running the batch file.

The Batch Variables window now supports modifying any of the batch arguments during execution of the batch file.

You can block select in the edit window by holding down the Alt key while selecting text with the left mouse button.

The edit window now supports multiple selections at one time. You can select additional text by holding down the Ctrl key while dragging with the mouse. Multiple selections are added to the clipboard in order with no delimiting characters. For block selections, the line end is added after each line of text. Block selections are always copied from top to bottom, not in the order of selection.

The Watch tab now defaults to always showing two variables:

%_? - The last ***TCC*** result value
%? - The last ERRORLEVEL value

The edit control is now using antialiasing for better text display.

The IDE / debugger will now search the path for the filename(s) if they do not have a path and are not in the current directory.

The IDE / debugger will now expand relative pathnames (i.e., "...\mybatch.cmd" etc.) before searching for the file.

Help:

The v21 help is built with a new version of the help compiler (Help & Manual).

The help has been expanded with more examples, tutorials, and key words.

INI Directives:

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The color directives (in ***TCC***, the input color, output color, and error color, and in ***Take Command***, the tab window colors) no longer require you to enter both the foreground and background colors. If you only enter one, ***TCC*** or ***Take Command*** will use the current default color for the other.

SmoothScroll - has been removed. (It no longer makes sense with modern video cards -- you can't see the difference anymore.)

CMDBatch=NO|yes - If YES, ***TCC*** will run all .BAT and .CMD files in a CMD.EXE shell. (For those of you using poorly-written batch files that depend on CMD bugs or undocumented behavior.)

ReadConsole=NO|yes - If YES, ***TCC*** will use the Windows ReadConsole API (like CMD) to read its line input. If you set ReadConsole=Yes, then you will lose *all* of the ***TCC*** line editing features. Windows will pass the line back to ***TCC*** for processing when you press Enter. This option is intended for users who have an extensive editing setup using something like CLink and don't want to convert everything over to the ***TCC*** format.

TabClosePrompt=NO|yes - If YES, ***Take Command*** will display a messagebox when a tab window is closed and the console process's exit code is != 0, showing the process ID and the exit code.

XMLSettings=NO|yes (in [TakeCommand] section) - If YES, retrieve and store the ***Take Command*** window layout in a file (*TCMD.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *TCMD.XML* file must be in the same directory as *TCMD.INI*.

XMLSettings=NO|yes (in [4NT] section) - If YES, retrieve and store the ***IDE*** window layout in a file (*IDE.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *IDE.XML* file must be in the same directory as *TCMD.INI*.

Command Line Editing:

Ctrl-Shift-Up - Change to the parent directory (like a "cd .."). If you have anything on the command line, it will be saved to the command history before the directory is changed.

A Ctrl-C will now reset the current history pointer (like a new command entry).

Alt-F2 - Invoke a command dialog if an internal command is the first argument on the command line. (Note: this used to be Alt-F1, but now Windows is eating that keystroke and not passing it on to ***TCC*** or ***Take Command***.)

Ctrl-W - Expanded aliases at the command prompt. (Note: this used to be Ctrl-F, but Windows 10 is using Ctrl-F to pop up a console search dialog.)

New Variable Functions:

@CKSUM[*filename*] - Returns the cksum (CRC32-ish) matching the Unix / Linux cksum utility (Posix 100.32 decimal format).

@PLUGIN[*module*] - Returns the full pathname for the specified plugin name.

@PROCESSIO[*pid, option*] - Returns the I/O information for a process.

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pid - The Process ID

option - The requested info:

0 - The number of read operations performed
1 - The number of write operations performed
2 - The number of I/O operations performed, other than read and write operations
3 - The number of bytes read
4 - The number of bytes written
5 - The number of bytes transferred during operations other than read and write operations

@PSHELL[*expression*] - Execute the PowerShell expression.

@SELECTARRAY - Like @SELECT, but the first argument is a (1-dimensional) array name, and the window is filled with the array elements.

@USB[*d:*] - returns 1 if the specified drive letter is a USB drive.

Updated Variables Functions:

@SCRIPT - is working again in v21 (it was broken by some previous Microsoft updates).

New Internal Variables:

_MSGBOX_CHECKBOX - if 1, the user has checked the optional MSGBOX checkbox. (See MSGBOX below)

_TCCINSTANCES - number of instances of ***TCC*** (version 21 or later) currently running.

_TCMDINSTANCES - number of instances of ***TCMD*** (version 21 or later) currently running.

_USBS - returns a space-delimited list of all of the USB drives.

Updated Internal Variables:

_WINVER - Now returns the actual Windows version for Windows 8 / 10 instead of the Windows default API results (i.e., "10.0" instead of "6.3").

Updated Commands:

7UNZIP

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

7ZIP

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

The default compression level has been changed to 2.

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The default compression type has been changed to LZMA2.

ASSOCIATE

ASSOCIATE now has a command dialog (/= option).

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

ATTRIB

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

BZIP2

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

CDD

CDD has some additional shell folders for Windows 10:

:AppCaptures
:CommonStartMenuPlaces
:LocalDocuments
:LocalDownloads
:LocalMusic
:LocalPictures
:LocalVideos
:OneDrive
:RetailDemo
:SavedPictures
:SavedSearches

CHCP

/I - Show all installed code pages

/P - Pause after each page (only valid with /I or /S)

/S - Show all supported code pages

COPY

/WAIT=*n* - Pause for *n* milliseconds between each block copied from the source to the target file. This is useful for users with slow networks and very large file copies; it prevents COPY from monopolizing all of the I/O.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DEDUPE

DEDUPE now defaults to using a SHA256 hash for file comparisons.

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You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DATE

The weekday and month are now translated into your local language (English, French, German, Italian, Russian, and Spanish).

DEL

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DESCRIBE

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DIFFER

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DIR

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

DIRHISTORY

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

ENDLOCAL

If you have global aliases and/or functions, SETLOCAL will now copy them to a local list for the duration of the SETLOCAL. The matching ENDLOCAL will reset them to the global list.

SETLOCAL will save the directory stack (PUSHD / POPD), and the matching ENDLOCAL will restore it.

EVENTLOG

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

EVERYTHING

EVERYTHING now supports ReFS 3.x

/B - Rebuilds the Everything Search database

/H - Delete the Everything Search run history

/I - Rescan all the folder indexes

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/V - Display the Everything Search version (major.minor.build)

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

FFIND

/W - added **Ranges** button to invoke the Ranges dialog

/W - added **Attributes** button to invoke the Attributes dialog

GLOBAL

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

GZIP

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

HEAD

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

HISTORY

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

IFTP

/IPV6[=0|1|2] - When set to 0, IFTP will use IPv4 exclusively. When set to 1, IFTP will use IPv6 exclusively. To instruct IFTP to prefer IPv6 addresses, but use IPv4 if IPv6 is not supported on the system, this setting should be set to 2. If you don't specify /IPV6, IFTP will set this value to 0. If you specify /IPV6 with no explicit value, IFTP will set the value to 1.

/V=*hostname* - Sends the HOST command to the server. The HOST command allows FTP processes to specify which virtual host to connect to for a server-FTP process that is handling requests for multiple virtual hosts on a single IP address. When this option is set, the HOST command is sent to the server prior to authenticating.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

INPUT

Now supports regular expressions for the mask (/K"xxx"). You must prefix the regular expression with **::** - for example:

```
input /k"::^[0-9]$" Enter a number: %%number
```

JABBER

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You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

JAR

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

KEYSTACK

/I - wait for an input idle or the specified number of milliseconds. The syntax is:

/I=pid,milliseconds	Look for the specified process ID
/I"Title",milliseconds	Look for the specified window title

LIST

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

MD / MKDIR

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

MEMORY - now displays three additional fields:

- The current working set for ***TCC***
- The maximum working set for ***TCC***
- The private memory usage for ***TCC***

MKLINK

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

MKLNK

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

MOVE

/WAIT=*n* - Pause for *n* milliseconds between each block moved from the source to the target file. This is useful for users with slow networks and very large file copies; it prevents MOVE from monopolizing all of the I/O.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

MSGBOX

/5"text" - Optional custom button #5. Clicking on this button returns 25 in %_?.

/6"text" - Optional custom button #6. Clicking on this button returns 26 in %_?.

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/Bxxxxxx - Background color (in RGB hex format)

/Fxxxxxx - Text color (in RGB hex format)

There are two new button type modifiers (only valid when used with YESNO or YESNOCANCEL):

YESTOALL - adds a "Yes to All" button (returns 30)
NOTOALL - adds a "No to All" button (returns 31)

There are two new button types:

SKIPSKIPALLCANCEL - Displays three buttons : "Skip", "Skip All", and "Cancel"
IGNOREIGNOREALLCANCEL - Displays three buttons : "Ignore", "Ignore All", and "Cancel"

And three new optional Checkbox types. (You can only choose one at a time.)

DONOTASKAGAIN - add checkbox "Do not ask me again".
DONOTTELLAGAIN - add checkbox "Do not tell me again"
DONOTSHOWAGAIN - add checkbox "Do not show again"

If the checkbox is selected, MSGBOX will set the internal variable %_msgbox_checkbox to 1.

OPTION

The OPTION dialog has a new page "Commands", where you can define which ***TCC*** internal commands you want to enable and disable.

The OPTION Register dialog page has a new option "USB (Portable) key" to generate a registration key on the USB (thumb) drive & directory of your choice. You an also now create a USB registration key even if you have already registered ***Take Command*** on the computer.

PATH

/D *directory* - Removes the specified directory from the PATH variable.

PLAYAVI

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

PLAYSOUND

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog..

PLUGIN

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

PRIORITY

/D - Disable the ability of the system to temporarily boost the priority of threads in the process.

/E - Re-enable the ability of the system to temporarily boost the priority of threads in the process.

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You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

PSUBST

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

RD / RMDIR

If ***TCC*** is in a tab window, it will notify ***TCMD*** of the directory removal so that ***TCMD*** can update its File Explorer window.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

REN

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

SCRIPT

SCRIPT is working again in v21 (it was broken by some previous Microsoft updates). You can also now call ***TCC*** via a COM interface (in TakeCmd.tlb) from scripts. The "tcommand(cmd)" function will execute any internal ***TCC*** command.

SELECT

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

SENDHTML

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

SENDMAIL

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

SET

/M - Revert to the original environment that ***TCC*** started with.

SETARRAY

/F - now supports multiple array names.

SETLOCAL

SETLOCAL supports the EnableExtensions, DisableExtensions, EnableDelayedExpansion, and DisableDelayedExpansion arguments from CMD. (Though they're not necessary, since ***TCC*** either sets those by default or through the OPTION command.)

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If you have global aliases and/or functions, SETLOCAL will now copy them to a local list for the duration of the SETLOCAL. The matching ENDLOCAL will reset them to the global list.

SETLOCAL will save the directory stack (PUSHD / POPD), and the matching ENDLOCAL will restore it.

START

/Breakaway - The child process is not associated with the ***TCC*** job (see JOBS). This requires that ***TCC*** is running in a job with the breakaway option enabled.

/Color=BF - Set the default color for the new console window. ***B*** is the background color (hex 0-F) and ***F*** is the foreground color (hex 0-F).

/Desktop=winstation\desktop - Specify the window station and desktop where the app should be started. If you don't enter a backslash (\), the argument is assumed to be the desktop where you want the app to start.

/Feedback=on - Indicates that the cursor is in feedback mode for two seconds after the process is started, and the "Working in Background" cursor is displayed. If during those two seconds the process makes the first GUI call, the system gives five more seconds to the process. If during those five seconds the process shows a window, the system gives five more seconds to the process to finish drawing the window. The system turns the feedback cursor off after the first call to GetMessage, regardless of whether the process is drawing.

/Feedback=off - The feedback cursor is forced off while the process is starting (the normal select cursor is displayed).

/Job=jobname - Start the new process in the specified job (see JOBS below). Cannot be used with /RUNAS.

/NoPinning - Any windows created by the new process cannot be pinned on the taskbar.

/ParentAffinity - The process inherits its parent's affinity.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

SYNC

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TABCOMPLETE

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TAIL

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TAR

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You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TASKDIALOG

Increased the maximum number of custom buttons to 10.

Increased the maximum number of radio buttons to 10.

/AC"*text*" - The text to be used to label the button for collapsing the expandable information.

/AE"*text*" - The text to be used to label the button for expanding the expandable information.

/E - Display the security shield icon.

/FE - Display the security shield icon in the footer.

/N - Custom buttons (/B and /R) are to be displayed as command links instead of push buttons.

TASKLIST

/I - Display the process integrity (low, medium, high, system) for the code integrity and the resource integrity.

/H - Display the threads for each process (thread ID and priority). If /X is also specified, the TID and priority will be displayed in hexadecimal format.

TASKLIST now displays a footer with the total number of processes, and optionally the total number of threads (if you specified /H).

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TEE

/R - Redirect to STDERR instead of STDOUT

TIME

The weekday and month are now translated into your local language (English, French, German, Italian, Russian, and Spanish).

TOUCH

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TREE

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

TYPE

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

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UNBZIP2

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

UNGZIP

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

UNJAR

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

UNTAR

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

UNZIP

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

VER

Now returns the actual Windows version for Windows 8 / 10 instead of the Windows default API results (i.e., "10.0" instead of "6.3").

VIEW

/T when reading from a pipe will now start displaying immediately instead of waiting for the pipe to finish & close.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

ZIP

/G - Generate unique keys for each file encrypted. This setting controls the algorithm that generates AES cryptographic keys from the Password specified. For added security, a random *salt* value is generated, and a unique key will be generated for every unique combination of Password and salt. If /G is specified, a unique salt value and key will be generated for each file encrypted. If /G is not specified, a single salt value and key will be generated for all encrypted files in the archive.

You can now pass default arguments to the command dialog. The **/=** option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

ZIPSFX

/A - Require Admin privileges to execute the created file.

/I - Install to the specified directory, run the specified file, and then remove the extracted files.

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/N - Silent installation - hides the extraction progress bar and the success window when the archive executable is run.

/P"xxx" - Optional parameters to pass to the file to be executed. Only valid with /F.

New Commands:

ENUMPROCESSES

Display the child processes for the specified process. The syntax is:

ENUMPROCESSES pid

pid - The Process ID for the process whose child processes you want to enumerate.

ENUMSERVERS

Enumerate the servers on the network. The optional server name may contain wildcards, including regular expressions. The syntax is:

ENUMSERVERS [/P /Type=xxx] server ...

server - The machine name to match

/P - Pause after each page

/Type=xxx - Return only servers of this type. If you do not specify /Type, ***TCC*** will return all servers. Other possible types are:

WORKSTATION - All workstations
SQLSERVER - Any server running Microsoft SQL Server
DOMAIN - Primary domain controller
DOMAINBACKUP - Backup domain controller
DOMAIN_ENUM - Primary domain
LOCAL - Servers maintained by the browser
AFP - Apple File Protocol servers
TIME - Servers running the Timesource service
PRINTQ - Server sharing print queue
TERMINAL - Terminal Servers
CLUSTER - Server clusters in the domain
VSCLUSTER - Cluster virtual servers in the domain
MASTER - Server running the master browser service

ENUMSHARES

Enumerate the share names for the specified server. The syntax is:

ENUMSHARES [/= /A /D /F /I /P /Q /R /U /V] \\server\sharename

server - The machine name

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sharename - The sharename(s) to match. Sharenames may contain wildcards, including regular expressions.

server - The machine name

sharename - The sharename(s) to match. Sharenames may contain wildcards, including regular expressions.

/= - Display the ENUMSHARES command dialog

/A - Display the admin shares (i.e., ADMIN$, C$, print$, etc.)

/D - Display the disk shares (default unless /F, /I, or /Q is set)

/F - The local path for the shared resource. For disks, this member is the path being shared. For print queues, this is the name of the print queue being shared.

/I - Display the shared IPC (interprocess communication)

/P - Pause after each page

/Q - Display the shared print queues

/R - Display the optional comment about the sharename (in quotes)

/U - Display the current number of uses and the maximum allowed uses in the format "[n] [n]".

/V - Display the shared communication devices

HASH

Display the hash for the specified file(s). HASH supports ranges, attributes, and wildcard filenames. The syntax is:

HASH [/[*range*] /A:xxx /CKSUM /CRC32 /MD5 /SHA1 /SHA256 /SHA384 /SHA512] *filename* ...

CKSUM - Linux CRC32 format

/CRC32

/MD5

/SHA1

/SHA256

/SHA386

/SHA512

HASH will default to /SHA256.

INSTALLED

Display all of the apps installed on the system. The syntax is:

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INSTALLED [/= /P /A["xxx"] /D["xxx"] /I["xxx"] /U["xxx"] /V["xxx"] /X[86][64] appname]

/= - Display the INSTALLED command dialog

/P - Pause after displaying each page

/A - Show the installed date (may be empty)

/D - Show the installation directory

/I - Show the icon file

/U - Show the publisher

/V - Show the version number

Appname can contain wildcards. If you don't specify *appname*, it will default to *. The optional arguments after /A, /D, /I, /U, and /V will filter the results (they all can contain wildcards). For example, to show all of the installed x64 apps that have "1.0" somewhere in their version number:

installed /v"*1.0*" /x64

JOBMONITOR

Monitor job activity (see JOBS). The syntax is:

JOBMONITOR [/C [jobname]]
JOBMONITOR jobname [* TIME PROCESS MEMORY] n command

/C - Delete the job monitor(s)

jobname - The Windows job to monitor

* - Monitor all activity for the job

TIME - Monitor the end of job and process time notifications

PROCESS - Monitor the process notifications (process limit, new process, zero processes, end of process, abnormal process exit)

MEMORY - Monitor the job and process memory limit notifications

JOBMONITOR will set four environment variables when a condition is triggered:

_jobaction - The type of notification, which will be one of these values:

EndOfJobTime
EndOfProcessTime
ActiveProcessLimit
ActiveProcessZero
NewProcess
ExitProcess
AbnormalExitProcess
ProcessMemoryLimit
JobMemoryLimit

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_jobpid - The process PID

_jobprocessname - The name of the process

_jobtime - The time (hh:mm:ss.ms) the notification was received

JOBS

Create Windows Jobs and optionally attach processes to a job. You can start a new job already attached with the "START /job=jobname option". The syntax for JOBS is:

JOBS
[/J=jobname /N=jobname /B /C /D /G /K /R /S /U /W /X /Y /JM=mem /PM=mem /P=n /JTL=ms /PTL=ms] [pid | processname]

pid - Process ID of a process to assign to the job

processname - Process name of a process to assign to the job

/= - Display the JOBS command dialog

/J=name - Set limits for an existing job

/N=name - Create a new job

/JM=n - Causes all processes associated with the job to limit the job-wide sum of their committed memory to *n* bytes. When a process attempts to commit memory that would exceed the job-wide limit, it fails.

/PM=n - Limit the maximum committed memory for for all processes in the job to *n* bytes. When a process attempts to commit memory that would exceed the per-process limit, it fails.

/P=*n* - Limit the total number of processes in the job to *n*

/JT=*ms* - Limit the maximum amount of per-job user-mode execution time to *ms* milliseconds

/PT=*ms* - Limit the maximum amount of user-mode execution for all processes associated with the job to *ms* milliseconds

/B - If any process associated with the job creates a child process using the **CREATE_BREAKAWAY_FROM_JOB** flag while this limit is in effect, the child process is not associated with the job.

/C - Close the job handle for the specified *jobname*.

/D - Prevent processes associated with the job from creating and/or switching to other desktops

/G - Prevent processes associated with the job from accessing global atoms

/I - Display limit info for the job

/K - All processes associated with the job will terminate when the last handle to the job is closed.

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/L - Prevent processes associated with the job from calling the ChangeDisplaySettings API

/R - Prevent processes associated with the job from reading from the Windows clipboard

/S - Prevent processes associated with the job from changing system parameters using the SystemParametersInfo API

/U - Prevent processes associated with the job from using USER handles owned by processes not associated with the same job

/W - Prevent processes associated with the job from writing to the Windows clipboard

/X - Prevent processes associated with the job from logging out of Windows, rebooting, or shutting down

/Y - Allow any process associated with the job to create child processes that are not associated with the job

JOINDOMAIN

Join a computer to a domain or workgroup. The syntax is:

JOINDOMAIN [/W] computer\domain[\organization] user [password]

/W - Join a workgroup instead of a domain

computer - The DNS or NETBIOS name of the computer

domain - The name of the domain or workgroup to join

organization - (Optional) The RFC 1779 format name of the organizational unit (OU) for the account. If you specify this parameter, it must contain a full path. (For example, OU=testOU,DC=domain,DC=Domain,DC=com.)

user - The account name to use when connecting to the domain controller. The name must be either a domain NetBIOS name and user account (for example, *jpsoft\rconn*) or the user principal name (UPN) of the user in the form of a login name (for example, "user@tcmd.com")

password - The password to use when connecting to the domain controller. If the password is not entered (or is *), ***TCC*** will prompt for the password

PIPEVIEW

View realtime activity in a pipe. PIPEVIEW will read from STDIN, and display it in a VIEW window while also forwarding it on to STDOUT to be read by the next app. For example:

dir /s | pipeview | sort

The syntax is:

PIPEVIEW [/D /E /GB /R /T /VH /X]

/D - Prefix each line with the current date

/E - Always show the end of the pipe (most recent activity). Otherwise PIPEVIEW will default to showing the beginning of the pipe buffer.

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/GB - (GreenBar) Display alternate shaded lines to make reading the output easier with long lines

/R - Write to STDERR instead of STDOUT

/T - Prefix each line with the current time

/VH - The pipe contents are displayed with each line of text followed by two lines containing the hex codes of each character.

/X - Display the pipe contents in hex

PSHELL

Execute a PowerShell script or string. The syntax is:

PSHELL [/C /S script ...]

/C - Close the persistent PowerShell interpreter

/S - Execute a string (like @PSHELL)

Note that you may need to enable PowerShell scripting on your system; on recent versions of Windows it is disabled by default (for security).

REGDIR

Display the specified Windows Registry tree. The syntax is:

REGDIR [/D /F /P /V] keyname

/D - Display the data for all values (only valid when used with /V)

/F - Display the full name for each key. (The default is to display only the indented name of the current key, similar to TREE's output.)

/P - Pause after displaying each page

/V - Display the values for each key

SAVECONSOLE

Save the console screen buffer to a file in either plain text or HTML format (including colors). The syntax is:

SAVECONSOLE [/H /T /W] filename ...

/H - Save the console as HTML

/T - Include a header with the console title + date + time

/W - Don't strip trailing white space on each line (this will result in a much bigger file)

UPTIME

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Display the time since the system was booted, and the time the system has been active (i.e., not sleeping or hibernating).

UUID

Create UUIDs in the specified format. The syntax is:

UUID [/B] [/Cn] [/Fn]

/B - Enclose the UID in curly braces

/Cn - Create *n* UUIDs

/Fn - Format for the UUID, where *n* is:
0 - returns the UUID with lower case alphabetic characters and embedded hyphens
1 - returns the UUID with upper case alphabetic characters and embedded hyphens
2 - returns the UUID with lower case alphabetic characters and no hyphens
3 - returns the UUID with upper chase alphabetic characters and no hyphens

WINSTATION

Show the window stations and desktops on your system. The syntax is:

WINSTATION [/C /R /S] winsta\desktop [command]

/C - Create a new winstation and desktop

/R - Run the specified command on the winstation\desktop. If you do not specify a command, WINSTATION will run Windows Explorer

/S - Switch to the specified desktop. (You cannot switch to any winstation other than "WinSta0"; this is a Windows restriction.)

WSETTINGS

Display the specified Windows 10 Settings dialog. The syntax is:

WSETTINGS dialogname

where *dialogname* is (some of these will not be available, depending on your Windows version):

```
About
AccessWorkOrSchool
Accounts
AccountInfo
Activation
AirplaneMode
AppsAndFeatures
AppsForWebsites
AutoPlay
Background
BackgroundApps
Backup
BatterySaver
BatterySaverSettings
BatteryUsageByApp
Bluetooth
```

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```
Calendar
CallHistory
Camera
CellularNetwork
ClosedCaptions
ConnectedDevices
Colors
Contacts
DataUsage
DateAndTime
DefaultApps
DeviceEncryption
Dial-up
DirectAccess
Display
DownloadMaps
Email
EmailAndAppAccounts
Ethernet
Family & other users
FeedbackAndDiagnostics
ForDevelopers
HighContrast
Holographic
Keyboard
Location
Lock screen
Magnifier
ManageOptionalFeatures
ManageKnownNetworks
Messaging
Microphone
MobileHotspot
Motion
Mouse
MouseAndTouchpad
Multitasking
Narrator
NetworkStatus
NFCAndProximity
NotificationsAndActions
OfflineMaps
OptionalFeatures
OtherDevices
OtherOptions
Pen
Personalization
PowerAndSleep
PrintersAndScanners
Privacy
ProjectingToThisPC
ProximitySensor
Proxy
Radios
Recovery
RegionAndLanguage
Screen rotation
Settings
SigninOptions
```

```
Speech
SpeechInkingAndTyping
Start
Storage
SyncSettings
TabletMode
Taskbar
Themes
Typing
USB
VPN
Wheel
WiFi
WindowsDefender
WindowsInsiderProgram
WindowsUpdate
WindowsUpdateAdvancedOptions
WindowsUpdateCheckForUpdates
WindowsUpdateHistory
WindowsUpdateRestartOptions
YourInfo
```

WSHELL

Open a Windows Explorer window in the specified location. The syntax is:

WSHELL [/T] folder

/T - Use the Explorer in Take Command

folder can be any of the following (some of these will not be available, depending on your Windows version):

AccountPictures
AddNewProgramsFolder
AdministrativeTools
AppData
ApplicationShortcuts
AppsFolder
AppUpdatesFolder
Cache
CameraRoll
CDBurning
ChangeRemoveProgramsFolder
CommonAdminTools
CommonAppData
CommonDesktop
CommonDocuments
CommonDownloads
CommonMusic
CommonPictures
CommonPrograms
CommonRingtones
CommonStartMenu
CommonStartup
CommonTemplates
CommonVideo
ConflictFolder

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```
ConnectionsFolder
Contacts
ControlPanelFolder
Cookies
Cookies\Low
CredentialManager
CryptoKeys
Desktop
DeviceMetadataStore
DocumentsLibrary
Downloads
dpapiKeys
Favorites
Fonts
Games
GameTasks
History
HomeGroupCurrentUserFolder
HomeGroupFolder
ImplicitAppShortcuts
InternetFolder
Libraries
Links
LocalAppData
LocalAppDataLow
MusicLibrary
MyComputerFolder
MyMusic
MyPictures
MyVideo
Nethood
NetworkPlacesFolder
OneDrive
OneDriveCameraRoll
OneDriveDocuments
OneDriveMusic
OneDrivePictures
Personal
PicturesLibrary
PrintersFolder
PrintHood
Profile
ProgramFiles
ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
ProgramFilesX64
ProgramFilesX86
Programs
Public
PublicAccountPictures
PublicGameTasks
PublicLibraries
QuickLaunch
Recent
RecordedTVLibrary
RecycleBinrFolder
ResourceDir
RingTones
```

```
RoamedTileImages
RoamingTiles
SavedGames
Screenshots
Searches
SearchHistoryFolder
SearchHomeFolder
SearchTemplatesFolder
SendTo
StartMenuStart Menu
Startup
SyncCenterFolder
SyncResultsFolder
SyncSetupFolder
System
SystemCertificates
SystemX86
Templates
ThisPCDesktopFolder
UsersFilesFolder
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
UsersLibrariesFolder
VideosLibrary
Windows
```

WSHORTCUT

Invoke the specified Windows Explorer shortcut. The syntax is:

WSHORTCUT [/T] shortcut

/T - Use the Explorer in Take Command

shortcut (some of these may not be available, depending on your version of Windows):

```
AddNetworkLocation
AdministrativeTools
Applications
AutoPlay
BackupAndRestore
BitLocker
BluetoothDevices
ColorManagement
CommandFolder
CommonPlacesFolder
ControlPanel
ControlPanelAllTasks
ControlPanelCategoryView
ControlPanelIconsView
CredentialManager
DateAndTime
DefaultPrograms
DesktopFolder
DeviceManager
DevicesAndPrinters
```

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```
Display
DocumentsFolder
DownloadsFolder
EaseOfAccessCenter
Email
FamilySafety
Favorites
FileExplorerOptions
FileHistory
FontSettings
FontsFolder
FrequentFolders
GamesExplorer
GetPrograms
HelpAndSupport
HomeGroupSettings
HomeGroupUsers
Hyper-VRemoteFileBrowsing
IndexingOptions
Infared
InstalledUpdates
InternetExplorerOptions
KeyboardProperties
LanguageSettings
Libraries
LocationInformation
LocationSettings
MediaServers
MouseProperties
MusicFolder
MyDocuments
Network
NetworkAndSharingCenter
NetworkConnectionsPCsettings
NetworkConnections
NetworkConnections
NetworkWorkGroup
NotificationAreaIcons
NVIDIAControlPanel
OfflineFiles
OneDrive
PenAndTouch
Personalization
PictureFfolder
PortableDevices
PowerOptions
PreviousVersionsResultsFolder
PrinthoodDelegateFolder
Printers
ProgramsAndFeatures
PublicFolder
QuickAccess
RecentPlaces
Recovery
RecycleBin
RegionAndLanguage
RemoteAppAndDesktopConnections
RemotePrinters
RemovableStorageDevices
```

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```
ResultsFolder
Run
Search
SearchEverywhere
SearchFiles
SecurityAndMaintenance
SetProgramAccess
ShowDesktop
Sound
SpeechRecognition
StorageSpaces
SyncCenter
SyncSetupFolder
System
SystemIcons
TabletPC
TaskbarAndNavigation
TextToSpeech
ThisPC
Troubleshooting
UserAccounts
UserAccounts(netplwiz)
UserPinned
UserProfile
VideosFolder
WebBrowser
WindowsDefender
WindowsMobilityCenter
WindowsFeatures
WindowsFirewall
WindowsToGo
WindowsUpdate
WorkFolders
```

2.8 Version 20

Take Command 20.10:

There are a number of performance improvements in ***Take Command***, ***IDE***, and ***TCC v***20.10**.**

Take Command, ***IDE***, and ***TCC v***20.10 all use less memory.

The ***Take Command*** and ***IDE*** GUI framework has been updated, and support for high resolution monitors (4K+) has been improved.

The IPWorks internet dll's have all been updated. Ipworksssl9.dll has been removed and combined with ipworks9.dll in a new ipworks16.dll.

Take Command v20.10 is using new version of Advanced Installer.

Take Command v20.10 is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window). The new version includes improved UTF8 support, and improvements to many of the language lexers.

Everything Search has been updated to a new version.

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The interactive HELP (TCHELP.EXE) is built with a new version of the help compiler, and has dropped support for IE 8 (& earlier). If you are still running IE 8, you will need to update to a browser version that is still supported in Windows.

Take Command 20.0:

Installer:

The ***Take Command*** v20.0 installer now combines the 32-bit and 64-bit versions of ***Take Command*** in a single installer (***TCMD.EXE***).

Take Command v20.0 is using new version of Advanced Installer.

Take Command:

Take Command v20.0 has extensive internal revisions to make it smaller and faster.

Take Command v20.0 is using a new version of the GUI framework.

Take Command v20.0 is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

Take Command v20.0 will now automatically resize the (hidden) console font size to avoid a problem with Windows restricting the maximum console window size (and thus the effective tab window size) based on the size of the default console font. (This is normally only an issue with high resolution monitors.)

Take Command v20.0 now optionally supports ANSI escape sequences in **all** console applications (not just for ***TCC*** internal commands). See the ***TCC*** section below for details on what ANSI sequences are supported.

The ***Take Command*** tabbed toolbar buttons have an additional "Tooltip" option to set the tooltip that will pop up when you hover over the button. (If you don't set a tooltip, ***Take Command*** will display the full command name.)

The ***Take Command*** "Options / Configuration / Take Command / Register" dialog has new options to request a manual activation key (for computers that do not have internet access) and to unregister ***Take Command*** on a computer.

The ***Take Command*** Registration dialog (displayed at startup time for trial versions) has a new option to request a manual activation key for computers that do not have internet access.

The Oniguruma regular expression library in ***Take Command*** has been replaced with Onigmo. There are a number of additions in **Character types, Extended groups. Back References,** and **Subexp calls**. See Regular Expression Syntax for details.

TCC:

TCC v20.0 has extensive internal revisions to make it smaller and faster.

There have been a number of internal changes to try to reconcile the (inherently incompatible) ANSI and Windows code pages.

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The ***TCC*** "OPTION / Register" dialog has new options to request a manual activation key (for computers that do not have internet access) and to unregister ***Take Command*** on a computer.

The Oniguruma regular expression library in ***TCC*** has been replaced with Onigmo. There are a number of additions in **Character types, Extended groups. Back References,** and **Subexp calls**. See Regular Expression Syntax for details.

The Ipworks dll's have been updated to new versions.

The internal Lua interpreter in ***TCC*** has been updated to 5.3.3.

Added support for Python 3.6.

Added support for Tcl/Tk 8.6.

VIEW is using a new version of V.

TCC will now reset the history pointer to the original position if you press ESC or ^C during a history recall (cursor up / down) sequence.

ANSI support has been extended to support many more escape sequences. ***TCC*** now supports these sequences; all are prefixed with an ESC (ASCII 27, or ^e):

[A	move cursor up one line
[#A	move cursor up # lines
[a	move cursor right one character
[#a	move cursor right # characters
[B	move cursor down one line
[#B	move cursor down # lines
[b	repeat the previous character
[#b	repeat the previous character # times
[C	move cursor right one character
[#C	move cursor right # characters
[D	move cursor left one character
[#D	move cursor left # characters
[E	move cursor down one line and to first column
[#E	move cursor down # lines and to first column
[d	move cursor to first line
[#d	move cursor to line #
[e	move cursor down one line
[#e	move cursor down # lines
[F	move cursor up one line and to first column
[#F	move cursor up # lines and to first column
[f	move cursor to top-left
[#f	move cursor to line # and first column
[#;#f	move cursor to line #, column #

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[G move cursor to first column
[#G move cursor to column #

[H move cursor to top-left
[#H move cursor to line # and first column
[#;#H move cursor to line #, column #

[I move cursor forward one tab
[#I move cursor forward # tabs

[J erase from cursor to the end of display
[0J as above
[1J erase from the start of display to cursor
[2J erase display and move cursor to the top-left

[j move cursor left one character
[#j move cursor left # characters

[K erase from cursor to the end of line
[0K as above
[1K erase from the start of line to cursor (inclusive)
[2K erase line

[k move cursor up one line
[#k move cursor up # lines

[L insert one blank line
[#L insert # blank lines

[M delete one line
[#M delete # lines

[m restore default color (and intensity)
[0m as above
[...m set color / intensity attributes (any of these numbers, separated by semicolons):

0	all attributes off
1	bold (foreground is intense)
4	background is intense
5	background is intense
7	reverse video
8	concealed (foreground becomes background)
22	bold off (foreground is not intense)
24	background is not intense
25	background is not intense
27	normal video
28	concealed off
30	foreground black
31	foreground red
32	foreground green
33	foreground yellow
34	foreground blue
35	foreground magenta
36	foreground cyan
37	foreground white
39	default foreground

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40 background black
41 background red
42 background green
43 background yellow
44 background blue
45 background magenta
46 background cyan
47 background white
49 default background

[P delete one character
[#P delete # characters

[s save cursor position

[u move cursor to saved position (or top-left, if nothing was saved)

[X erase one character
[#X erase # characters

[Z move cursor back one tab
[#Z move cursor back # tabs

[@ insert one blank character
[#@ insert # blank characters

[` move cursor to first column
[#` move cursor to column #

[?7h wrap lines at screen edge
[?7l don't wrap lines at screen edge

[?25h show cursor
[?25l hide cursor

[21t sends "^e]lTitle^e\" (the console's window title) to console input

]0;TitleBEL
]2;TitleBEL Sets the console title to "Title"; BEL is the ASCII character 7

IDE / Batch Debugger:

The batch IDE has a new Toolbox window that lists all of the internal commands, variables, and variable functions organized by category. Double-clicking on a command will display its command dialog (if it has one), and then insert the resulting command on the current line in the editor. Selecting a command or variable and then pressing F1 will display the help for that command/variable.

Ctrl-F7 will invoke the regular expression analyzer while in the editor.

Help:

The v20 help is built with a new version of the help compiler (Help & Manual).

The HTML help and the web help have updated templates.

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The help has been expanded with more examples, tutorials, and key words.

INI Directives:

ANSI=NO|yes - Enable ANSI escape sequence support for all console applications running in ***Take Command*** tab windows (in the [TakeCommand] section of TCMD.INI). ***Take Command*** will inject a dll (ANSI32.dll or ANSI64.dll) into the console applications it starts. Note that if you have enabled ANSI in ***Take Command***, you should disable ANSI support in ***TCC*** (OPTION / Windows).

New Environment Variables:

TCANSIEXCLUDE - A semicolon-delimited list of applications where you do not want to have ***Take Command*** inject the ANSIxx.dll (see ANSI above).

New Internal Variables:

_dedup_errors - The number of errors in a DEDUP command (usually access denied).

_dedup_files - The number of duplicated files found.

_differ_added - The number of files in the target directory not found in the source directory in a DIFFER command.

_differ_changed - The number of files in the target directory that have been changed (file date/time stamp) compared to the source directory.

_differ_deleted - The number of files in the source directory not found in the target directory in a DIFFER command.

_differ_errors - The number of errors in a DIFFER command (usually access denied when comparing hashes).

_foldertime - The system time of the most recent FOLDERMONITOR update (hh:mm:ss.ms).

Updated Internal Variables:

_idleticks - removed 49-day maximum. You can now leave your system inactive for a few thousand years and still get an accurate _idleticks value.

Updated Commands:

COPY - Added a new option /Nr. If set, a COPY /W will delete to the recycle bin (unless the file matches the RECYCLEEXCLUDE environment variable).

EXCEPT - Added a /Ne option to not display an error message if EXCEPT can't find a matching file.

FOLDERMONITOR - Added a mutex to the FOLDERMONITOR thread to allow multiple simultaneous access (by multiple TCC sessions or plugins). Also added a new command variable _foldermonitor that returns the system time of the event.

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HELP - Has been completely redone (see above). Help also has two new options:

/I - Show the Index instead of the topic

/S - Show the Search window instead of the topic

MOVE - When deleting to the recycle bin, MOVE now checks the RECYCLEEXCLUDE environment variable. If the file matches, MOVE deletes the file instead of sending it to the recycle bin.

SYNC - Added a new option /Nr. If set, a SYNC /W will delete to the recycle bin (unless the file matches the RECYCLEEXCLUDE environment variable).

TCTOOLBAR - Added support for an optional "tooltip" argument to set the tooltip that will pop up when you hover over the button.

New Commands:

DEDUPE - Search for and optionally delete or symlink duplicated files. DEDUPE searches one or more directories, assigns a hash value to files, and then compares the hash value to all the other files. On slow systems (and particularly in x86 Windows) this can take a while, so you should try to reduce the amount of searching & hashing by using ranges, and not trying to dedupe an entire disk at one time.

DEDUPE assumes that the first file it finds for each hash is the original file.

The syntax is:

DEDUPE [ranges] [/A:[[-|+]rhsadecijopt /D /L /N[defjnst] /P /Q /R /S[[+]
n] /SHA1 /SHA256 /SHA384 /SHA512 /T /V /W[n]] filename directory [directory...]

filename The filename to search for (* for everything)
directory The directories (and optionally subdirectories) to search

/= - Invokes the DEDUPE command dialog
/A:... - Attribute selection
/D - Delete duplicate files
/L - Convert duplicate files to symlinks of the first file. Note that to create symlinks, you must be in an elevated session.
/N -

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors
- **f** Don't display the bytes freed in the summary
- **j** Skip junctions (when used with /S)
- **s** Don't display the summary
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*

/P - Prompt before deleting or symlink'ing files.
/Q - Quiet (don't display directories or files as they are processed)
/R - Delete to the recycle bin
/S[n] - Search subdirectories
/SHAx - Hash algorithm to use. The default is SHA1; you can use SHA256, SHA384, or SHA512 but (1) it isn't necessary unless you've created files specifically for hacking SHA1, and (2) it will slow down DEDUPE.
/V - Verbose output
/Wn - Wipe deleted files

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DIFFER - Compare two directories and display files that have been added, changed, or deleted. If you don't specify the /A, /C, and/or /D options, DIFFER will prefix the line with a [*] for changed files, [+] for added files, and [-] for deleted files.

The syntax is:

DIFFER [ranges] [/A:[[-|+]rhsadecijopt /A /C /D /N[js] /S source target

source - source directory
target - target directory

/= - Invokes the DIFFER command dialog
/A:... - Attribute selection
/A - Added files
/C - Changed files
/D - Deleted files
/N
e Don't display errors
j Skip junctions (when used with /S)
s Don't display the summary
/S[n] - Search subdirectories
/SHAx - Compare file hashes. The default is SHA1; you can use SHA256, SHA384, or SHA512. If you don't specify /SHAx, then DIFFER will compare the file times (which is much faster, but can't determine that two files are identical if the date/times are different)..

PSUBST - Associates a path with a drive letter. Like the Windows SUBST command, but the drive substitution is optionally persistent (i.e., when the machine is restarted).

The syntax is:

PSUBST [drive1: [path]]
PSUBST /D drive1:
PSUBST /P drive1: [drive2:]path]

drive1:	Specifies a virtual drive to which you want to assign a path.
/=	Invokes the PSUBST command dialog
path	Specifies a physical path you want to assign to a virtual drive (no trailing backslash).
/D	Deletes a substituted (virtual) drive.
/P	Make a new or existing virtual drive persistent.

PSUBST with no parameters will display a list of the current virtual drives. If a drive is persistent, it will be prefixed with a *.

2.9 Version 19

Take Command 19.10:

Take Command 19.10 is primarily an internal design update, with hundreds of improvements to the speed and memory usage of Take Command, TCC, and IDE.

The Debugger / IDE has several new themes (including VS 2015 light, dark, and blue).

Updated installer version.

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Updated scilexer.dll version (for the Batch Debugger / IDE and Command Input window).

Take Command 19.0:

Installer:

The web help for ***Take Command*** and ***TCC*** is now fully responsive and will display correctly formatted on any desktop, laptop, tablet, or phone. The web help is also substantially faster to load than before.

Take Command v19.0 is using a new version of the installer engine.

The installer now prompts for associating BAT, BTM, and CMD files with both ***Take Command*** and ***TCC***.

Uninstalling ***Take Command*** now invokes an optional (quick) uninstall survey.

Take Command:

Take Command v19.0 is using new versions of all of the IPWorks dll's.

Take Command v19.0 is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

Take Command v19.0 is using a new version of *textpipeengine.dll* (for TPIPE).

Take Command v19.0 is using a new version of the Everything Search engine.

The display output speed in Take Command tab windows is faster.

The Folder View and List View windows have been replaced with a single File Explorer (Windows 7+ style) browser window. This provides a number of new features:

- Additional layout options
- Quick Access entries
- Many more column options in the list view
- Optional preview window
- Optional details window
- Additional menu options (Organize, Share with, Include Folder in Library, Burn, etc.)
- Status bar with total items & items selected, and size of selected items

The ***Take Command*** theme now defaults to Office 2013 (instead of Office 2010).

Take Command now retains the view state (show or hide) of the tabbed toolbar when you exit & restart.

Tab toolbar buttons can now optionally specify a "Run As" user and password to execute the command as a different user.

The Tabs menu (and right-click context menu for tab labels) has a new "Clone" option that tells the TCC tab window to create a new tab with the same current directory and environment.

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Edit / Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste. Alternately, you can set AppendCommandLines=YES in your TCMD.INI and a Ctrl+paste will insert " & " instead of the default " ".

Edit / Copy+Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste. Alternately, you can set AppendCommandLines=YES in your TCMD.INI and a Ctrl+Copy+Paste will insert " & " instead of the default " ".

The Edit menu has a new "Goto URL" option if you have selected an HTTP/HTTPS/FTP/FTPS name.

The right-click popup context menu has a new "Goto URL" option if you have selected an HTTP/HTTPS/FTP/FTPS name, or if there is an HTTP/HTTPS/FTP/FTPS name at the current mouse location.

TCMD no longer turns off the selection if you click inside the selection. You can revise a selection by clicking inside it and dragging the mouse left or right.

Shift-F6 will toggle between the (default) files + directories filename completion, and directories only. The default will be reset for a new command line.c

Ctrl+F6 will toggle between completing files found in the local directory, and completing them in the local directory + all of the directories in PATH.

TCC:

Added programmable tab completion, using any scripting language supported by TCC (i.e., BTM/CMD, Lua, Python, REXX, Tcl, etc.). See TABCOMPLETE for details.

Doubled the PUSHD / POPD directory stack size (to 16K).

Ctrl+Shift+V will insert a " & " between lines of a multiline paste.

Ctrl+Shift+X will expand (only) the variable (or variable function) at the current cursor position.

At startup, TCC will save the last directory in the directory history list (i.e., if you're running SHRALIAS or you've loaded the directory history in TCSTART) to the buffer used by "CD -".

If the first argument on a command line is in the format "env_var=value command options" (and env_var=value doesn't match an external command) then TCC will set the specified environment variable to the value, execute the command, and then remove the variable.

Filename completion will now be done in the order the extensions are specified. For example, "set filecompletion=myeditor:htm html css" will first try to match .htm files, then .html, and finally .css.

Added the "Normal" attribute for filename completion (Normal means no attributes are set).

TCC no longer turns off the selection if you use the left or right cursor keys (or Shift-Left, Shift-Right, Shift-Ctrl-Left, or Shift-Ctrl-Right). So selection (marking) from the keyboard (Shift-Left / Shift-Right) now allows you to go back to the selection (inside the selection or immediately before or after) and resize it with Shift-Left / Shift-Right) again.

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. See **Plugins** below for details.

The internal Lua interpreter has been updated from version 5.2 to 5.3.1.

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IDE / Batch Debugger:

The debugger has a new command in the Options menu:

Profiler - toggles the batch file profiler timer on and off. When the Profiler is on, it will display the elapsed time for each command line in the margin immediately to the left of the command line.

The IDE status bar now includes a new field (immediately following the cursor position field) that displays the Unicode value of the character at the current cursor location.

The IDE will select the syntax lexer (colorization) based on the file extension:

.bat	TCMD (or CMD)
.btm	TCMD
.cmd	TCMD (or CMD)
.css	CSS
.htm	HTML
.html	HTML
.lua	Lua
.php	PHP
.pl	Perl
.ps1	PowerShell
.py	Python
.rb	Ruby
.sh	Bash shell
.sql	SQL
.tcl	Tcl/Tk
.vbs	VBScript
.xml	XML

Help:

The help has been expanded with more examples, tutorials, and key words.

The help is using a new skin, with a dropdown menu to print the current topic and to send email to support@jpsoft.com about the current topic.

INI Directives:

AppendCommandLines=yes|NO - Append a " & " between lines of a multiline paste instead of the default " ".

ScriptDirectory=path - The directory for tab completion scripts (the default is "Complete" in the TCMD installation directory).

TabToolbar=YES|no - Show or hide the tabbed toolbar.

New Environment Variables:

JARPATH - If the command name has a .JAR extension and JARPATH is set (the same syntax as PATH - path1;path2;path3) ***TCC*** will search it looking for a matching filename. If found, the command line will be reformatted (inserting "java.exe -jar" at the beginning) and executed. For example:

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myjar.jar 1 2 3
will be executed as:
java.exe -jar myjar.jar 1 2 3

New Internal Variables:

_btdevicecount - The number of Bluetooth devices found.

_btradiocount - The number of Bluetooth radios installed on the system.

_btservicecount - The number of Bluetooth services present.

Updated Variable Functions:

@EVAL - Maximum precision has been increased to 30,000 digits.

@SERVICE - Added support for device drivers and file system drivers.

@SERVICE - Returns -1 if the specified service doesn't exist.

New Variable Functions:

@btdeviceaddress[n] - The Bluetooth address of the device whose index is n. (Indexes range from 0 to _btdevicecount.)

@btdeviceauthenticated[n] - Returns 1 if the Bluetooth device n is authenticated.

@btdeviceclass[n] - Returns the device class for the Bluetooth device n.

@btdeviceconnected[n] - Returns 1 if the Bluetooth device n is connected.

@btdevicelastseen[n] - The last time the Bluetooth device n was seen. The format of the date is "mm/dd/yyyy hh:mm:ss".

@btdevicelastused[n] - The last time the Bluetooth device n was used. The format of the date is "mm/dd/yyyy hh:mm:ss".

@btdevicename[n] - The name of the Bluetooth device n.

@btdeviceremembered[n] - Returns 1 if the Bluetooth device n is a remembered device.

@btradioaddress[n] - The Bluetooth address of the radio whose index is n. (Indexes range from 0 to _btradiocount.)

@btradioclass[n] - The device class for the Bluetooth radio n.

@btradioconnectable[n] - Returns 1 if the Bluetooth radio n accepts incoming connections.

@btradiodiscoverable[n] - Returns 1 if the Bluetooth radio n is discoverable.

@btradiomanufacturer[n] - The manufacturer of the Bluetooth radio n.

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@btradioname[n] - The name of the Bluetooth radio n.

@btradiosubversion[n] - The radio subversion of the Bluetooth radio n.

@btserviceaddress[n] - The Bluetooth address of the service whose index is n. (Indexes range from 0 to _btservicecount.)

@btserviceclassid[n] - The service class Id (UUID) of Bluetooth service n.

@btservicecomment[n] - A comment describing the Bluetooth service n.

@btservicename[n] - The name of Bluetooth service n.

@btserviceotherclassid[n] - A list of other class Ids for the Bluetooth service n.

@btserviceport[n] - A port on which the Bluetooth service n is listening.

@btserviceprotocol[n] - The protocol used by the Bluetooth service n.

@email[address] - Validate an email address. @EMAIL uses the regular expression "^[\w-]+(\.[\w-]+)*@([a-z0-9-]+(\.[a-z0-9-]+)*?\.[a-z]{2,6}|(\d{1,3}\.){3}\d{1,3})(:\d{4})?$" to validate the address. This matches 99.99% of valid email address including ip's (which are rarely used). Allows for a-z0-9_.- in the username, but not ending in a full stop (i.e user.@domain.com is invalid) and a-z0-9- as the optional sub domain(s) with domain name and a 2-7 char (a-z) tld.

@parse[line,switches[,arg]] - Parse the command line for switches, returning an OR'd value for matching switches or optionally the argument(s) following the switch.

line - The (double quoted) command line to parse. If line is ".", TCC will substitute the command line for the current batch file.
switches - One or more switch arguments (for example, /RST will match either an /R, and /S, or a /T on the command line.
arg - An optional integer value for the argument(s) following the switch to return. A 0 will return the switch, 1 the first argument following the switch. A * will return the remainder of the command line following the switch.

Plugins:

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. For example:

```
echo %_myplugin$variable
echo %@myplugin$func[abc]
myplugin$mycommand
```

When TCC is performing tab completion, it will look for a plugin function named TABCOMPLETION. Like TABCOMPLETE scripts, TABCOMPLETION allows you to create plugin functions to customize TCC's tab completion. The syntax is:

```
INT WINAPI TABCOMPLETION(LPCTSTR Command, LPCTSTR Argument, int Index,
LPCTSTR CommandLine);
```

Command - the name of the command at the beginning of the command line

Argument - the current argument being evaluated

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Index - the offset in the command line of the beginning of Argument

CommandLine - the entire command line (double quoted)

When the plugin function finishes, it should return 0 if it processed the completion, and save the result(s) in the TABCOMPLETIONRESULT environment variable. If the function has multiple completion results, they should be added to TABCOMPLETIONRESULT, separated by a space (and double quoted if they contain any whitespace).

TCC will examine the contents of TABCOMPLETIONRESULT; if it contains a single value TCC will insert it at the completion point on the command line. If there are multiple return values, TCC will display a popup window for selection (like the F7 completion window).

TCC will try to find a tab completion script first; if none of them perform the requested completion, TCC will look for the plugin function.

Updated Commands:

CD

/R - Change to the target of the reparse point (hard or symbolic link).

At startup, TCC saves the last directory from SHRALIAS or (if loaded by TCSTART) the directory history list to the "CD -" buffer.

CDD

/R - Change to the target of the reparse point (hard or symbolic link).

At startup, TCC saves the last directory from SHRALIAS or (if loaded by TCSTART) the directory history list to the "CDD -" buffer.

COPY

You can override the default HTTP proxy server, proxy user, and proxy password (set in TCMD.INI) with the /Proxy... options.

/Proxy=*server*
/ProxyUser=*username*
/ProxyPwd=*password*

/Vn - Specifies the number of retries (0-n) if the verification fails. If n is specified and all the retries fail, the target file will be deleted.

DEL

If you are deleting to the recycle bin, the DEL result will say "xx files sent to the recycle bin" instead of "xx files deleted".

DIR

/HL - Show the hard links for files / directories. /HL can only be used in single-column mode.

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/O:x - When combined with /S, sorts the results from all directories together and displays them in a single listing. (Unless you're also specifying /F, this isn't apt to result in anything comprehensible.) Note that /O:x will turn off headers and footers.

DIRS

You can optionally display only those directories in the stack which match a name. For example:

```
DIRS c:                    (only display directories on the C: drive)
DIRS \\server\share        (only display directories on this UNC share name)
```

The name to match can include wildcards.

ESET

Added tab completion support for variables and user-defined functions.

EVERYTHING

Everything Search as a lot of new options:

added option to index size, dates and attributes
added option to enable fast sorting of size, dates, attributes, path and extension
added thumbnail view
added preview pane
added REFS support
improved NTFS indexing
improved indexing performance
added advanced searching
added multi-file renaming
added content searching
improved re-indexing performance when the existing indexes are up to date
added search history organizer
added show total size in status bar option
added single click open option
added full row select option

FOLDERMONITOR

/Wn - Waits for *n* milliseconds before processing the file / directory change. (Useful if you have a lot of actions occurring in a short amount of time and you only care about the last one.)

GZIP

/= - Added a command dialog for GZIP.

LUA

The internal Lua interpreter has been updated from version 5.2 to 5.3.1.

MOVE

You can override the default HTTP proxy server, proxy user, and proxy password (set in TCMD.INI) with the /Proxy... options.

/Proxy=*server*

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/ProxyUser=*username*
/ProxyPwd=*password*

PDIR

/O:x - When combined with /S, sorts the results from all directories together and displays them in a single listing. It's up to you to use a formatting string that will result in a comprehensible output. (Note that /O:x will turn off headers and footers.)

POPD

You can optionally restore only the most recent directory in the stack which matches a name. For example:

POPD c:	Pop the most recent directory on C:
POPD \\server\share	Pop the most recent directory on the UNC share

The name to match can include wildcards.

Note that this means you can optionally choose to POPD to any directory in the directory stack, not just the most recent one.

PUSHD

/R - Change to the target of the reparse point (hard or symbolic link).

SERVICES

Added support for device drivers and file system drivers.

/Tn The type of services to enumerate. This can be a combination (OR'd) of the following values:

1	Kernel drivers
2	File system drivers
16	Services that run in their own process
32	Services that share a process with one or more other services

If you don't specify /T, SERVICES will default to all four types.

SET

/P - Added a kludge for a CMD bug (set /p=prompt) that some people have been using as an ECHOS equivalent.

/T:type[:"regexpression"] - Set a variable type. If you try to set the variable to an incompatible type, SET will return an error. The supported types are:

int (or 1)	The variable can only contain 0-9
dec (or 2)	The variable can only contain 0-9, the decimal character, and the thousands separator
hex (or 3)	The variable can only contain 0-9 and A-F
bool (or 4)	The variable can only contain 0 or 1
alpha (or 5)	The variable can only contain A-Z and a-z
alnum (or 6)	The variable can only contain A-Z, a-z, and 0-9
regex (or 7)	The variable must match the specified regular expression

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SETARRAY

/F - Force overwrite of existing array (if any).

/T:type[:"regexpression"] - Set a variable type for one of the array dimensions. If you try to set the variable to an incompatible type, SETARRAY will return an error. The supported types are:

int (or 1)	The variable can only contain 0-9
dec (or 2)	The variable can only contain 0-9, the decimal character, and the thousands separator
hex (or 3)	The variable can only contain 0-9 and A-F
bool (or 4)	The variable can only contain 0 or 1
alpha (or 5)	The variable can only contain A-Z and a-z
alnum (or 6)	The variable can only contain A-Z, a-z, and 0-9
regex (or 7)	The variable must match the specified regular expression

START

/RUNAS - added support for /TAB, /TABNA, and /WAIT.

/RUNAS - if the user name begins with .\, ***TCC*** will substitute the computer name for the ".".

SYNC

/P - will now prompt for deletes as well as copies.

TPIPE

All internal temporary files are now thread-safe to avoid conflicts when running TPIPE simultaneously in multiple TCC sessions.

You can now back quote a TPIPE option if you want to include special characters in an argument string. For example:

```
tpipe /input=file /replace=`4,0,0,0,0,0,0,0,0,"b/a",foo`
```

UNGZIP

/= - Added a command dialog for UNGZIP.

VIEW

VIEW recognizes when it is running on a high resolution monitor and adjusts the user interface accordingly.

VIEW will highlight all occurrences of selected text.

You can override the default proxy server, proxy user, and proxy password (set in TCMD.INI) with the /Proxy... options.

/Proxy=*server*
/ProxyUser=*username*
/ProxyPwd=*password*

WEBFORM

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Added support for SSL connections.

WEBUPLOAD

Added support for SSL connections.

New Commands:

BTMONITOR

Monitor when a Bluetooth device is connected or disconnected. The syntax is:

BTMONITOR [/C [action]]
BTMONITOR name [Connected | Disconnected] [n | FOREVER] command

name is the Bluetooth device name you want to monitor; it can include wildcards.

BTMONITOR sets three environment variables:

_btindex - The index of the Bluetooth device being connected or disconnected (for the @btdevice... functions)
_btaddress - The address of the Bluetooth device being connected or disconnected
_btname - The name of the Bluetooth device being connected or disconnected

BZIP2

The BZIP2 command creates bzip2 (*.bz2) compressed archives. BZIP2 is normally used for compressing a single file; if you need to compress multiple files you should use the ZIP (or TAR) command. The syntax is:

BZIP2 [/= /A:[[-][+]rhsdaecjot] /A /M /Q /V] *bzip2archive* [@*file*] *file*

bziparchive The .bz2 file to work with
file The file to extract

/= - Invokes the BZIP2 command dialog
/A:... - Attribute selection
/A - Add file (default)
/C - Contents
/M - Move the file to the bzip2 archive and delete the original on disk
/Q - Quiet (don't display filenames as they are added to the archive).
/V - View filename(s) in archive

JAR

Add, update, or delete files in a Java .JAR archive. The .JAR file may then be imported into Java code or executed by a JVM. The syntax is similar to the ZIP command:

JAR [/A:[[-][+]rhsdaecjot] /A /C /D /F /Ln /M /Ne /Nt /O:[-]adegnrstu /P /Q /R /TEST /U /V] *jararchive* [@*file*] *file*...

jararchive The jar file to work with
file The files(s) to be added to the jar file

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/= - Invokes the JAR command dialog

/A:... (attribute switch)
/A(dd)
/C(ontents)
/D(elete)
/F(reshen)
/Ln (compression level)
/M(ove)
/O:... (sort order)
/P - Progress
/Q - Quiet
/R - Recurse
/TEST - Test
/U - Update
/V - View

LOCKMONITOR

Monitor when the session is locked or unlocked. The syntax is:

LOCKMONITOR [/C [action]]
LOCKMONITOR [Locked | Unlocked] [n | FOREVER] command

RESTOREPOINT

RESTOREPOINT creates, removes, or lists the Windows system restore points. TCC must be running in an elevated session to create or remove restore points. RESTOREPOINT is not supported in Windows Server. The syntax is:

RESTOREPOINT [/C /D=*description* /R *n*]

/C - Create a restore point
/D= - The description shown when displaying restore points
/R - Remove the restore point whose sequence is *n*.

TABCOMPLETE

TABCOMPLETE allows you to create scripts to customize TCC's tab completion, using any scripting language supported by TCC (i.e., BTM, Lua, Python, REXX, etc.). The syntax is:

TABCOMPLETE [/= /L script /P /S /U script]

/= - Display the TABCOMPLETE command dialog
/L - Load a tab completion script
/P - Pause after displaying a page of script names (only used with /S)
/S - Display the names of all active tab completion scripts
/U - Unload a tab completion script.

You can create a maximum of 256 tab completion scripts, each of which can process any number of command names, variables, functions, etc. When TCC starts, it will automatically load any scripts in the "Complete" subdirectory in the TCC installation directory.

A tab completion script is passed four arguments:

Command - the name of the command at the beginning of the command line

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Argument - the current argument being evaluated
Index - the offset in the command line of the beginning of Argument
CommandLine - the entire command line (double quoted)

When the script finishes, it should return 0 if it processed the completion, and save the result(s) in the TABCOMPLETIONRESULT environment variable. If the script has multiple completion results, they should be added to TABCOMPLETIONRESULT, separated by a space (and double quoted if they contain any whitespace).

TCC will examine the contents of TABCOMPLETIONRESULT; if it contains a single value TCC will insert it at the completion point on the command line. If there are multiple return values, TCC will display a popup window for selection (like the F7 completion window).

UNBZIP2

The UNBZIP2 command will uncompress archives that have been compressed using the bzip2 format. The syntax is:

UNBZIP2 [/= /C /E /O /Q /V] *bziparchive* [*path*]

bzip2archive The .bz2 file to work with
path The path where files will be extracted

/= - Invokes the UNBZIP2 command dialog
/C - Contents
/E - Extract file (default).
/O - Overwrite existing file.
/Q - Quiet (don't display filenames as they are extracted from the archive).
/V - View the file name(s)

UNJAR

Extract or list files in a Java .JAR archive. The syntax is similar to the UNZIP command:

UNJAR [/= /A:[[-][+]rhsdaecjot] /C /E /F /O /P /Q /T /TEST /U /V] *jararchive* [*path*] [@*file*] *file*...

jararchive The JAR file to work with
path The path where files will be extracted
file The file(s) to extract

/= - Invokes the UNJAR command dialog

/A:... (attribute switch)
/C(ontents)
/E(xtract)
/F(reshen)
/O(verwrite)
/P - Progress
/Q - Quiet
/TEST - Test
/U - Update
/V - View

Bug Fixes:

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ZIP /I - fixed a problem with the description not always being saved.

7ZIP /i - fixed a problem with the description not always being saved.

ZIP, 7ZIP, GZIP, TAR - Fixed a problem with /M not deleting the file description.

2.10 Version 18

Feature List:

Take Command v18.0 is using a new version of the installer.

The ***Take Command*** installer now offers to optionally associate batch files (.BAT, .BTM, and/or .CMD) with TCMD.EXE.

Take Command v18.0 is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

Take Command v18.0 is using a new version of Oniguruma (regular expression parser).

Take Command v18.0 is using a new version of *textpipeengine.dll* (TPIPE).

The **Everything Search Engine** from voidtools is now included in ***Take Command***.

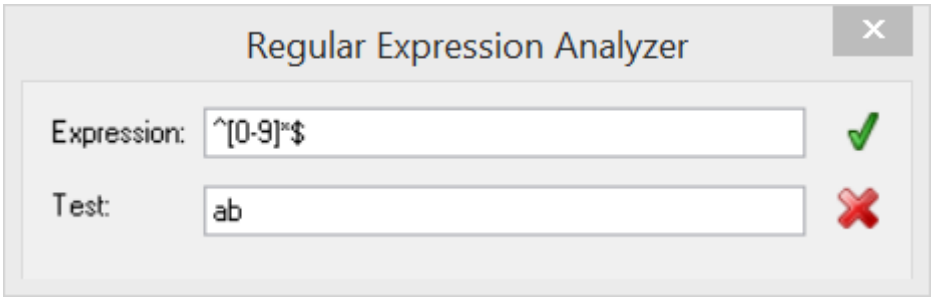
Error logging and exception handling has been completely redone. Instead of a TCMD.GPF / TCC.GPF file, ***Take Command***, ***TCC***, and the IDE will now create ***tcmd.log***, ***tcc.log,*** and ***ide.log*** files that contain the error info (including the file name, function, and line number of the error). The log files will be created in the installation directory if it is writeable (i.e. not in "Program Files" or "Program Files (x86)). If not, they will be in c:\users\<username>\appdata\local\jpsoft.

Take Command:

The open file / save file dialogs have been updated to the Windows 7 / 8 format.

There is a new menu entry "Regex" under Tools, that displays a regular expression analyzer. There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.



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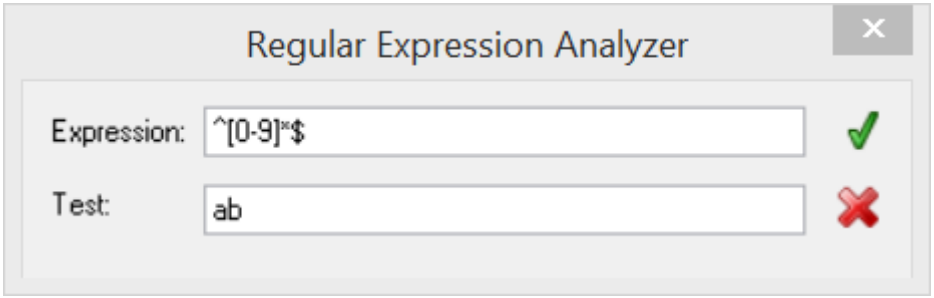
TCC:

The open file / save file dialogs have been updated to the Windows 7 / Windows 8 format.

There is a new popup dialog (invoked by pressing Ctrl-F7), that displays a regular expression analyzer. There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.



IDE / Batch Debugger:

The open file / save file dialogs have been updated to the Windows 7 / Windows 8 format.

The Options menu has two new entries:

TCC Syntax - use the TCC syntax colorizer. (This is the default for BAT, BTM, and CMD files.)
CMD Syntax - use the CMD syntax colorizer. (Useful when writing CMD-only batch files.)

There is a new tab window at the bottom ("Modified") that shows all variables that are set while executing the batch file. (This is like the "Auto" window in Visual Studio.)

File/Open now loads the breakpoint file (filename.ext.bp) and the watched vars file (filename.ext.watch) automatically when you load a batch file.

File/Save now saves the breakpoint file (filename.ext.bp) and the watched vars file (filename.ext.watch) automatically when you save a batch file.

INI Directives:

EverythingSearch=YES|no - now defaults to YES.

Regex=Ctrl-F7 - default key to pop up the regular expression analyzer dialog.

RightClickPaste=yes|NO - if YES, a right click in a TCMD tab window will paste the clipboard contents instead of invoking the context menu. (Note that this isn't necessary for most users, as the middle mouse button already does a paste.)

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New Environment Variables:

CMDLINE2 - the original command line (before alias and variable expansion, redirection, compound commands, etc.).

New Internal Variables:

_HYPERV - returns 1 if ***TCC*** is running in a Hyper-V VM.

_POWERBATTERY - returns the battery % (0-100) when the POWERMONITOR condition is triggered.

_POWERDISPLAY - returns 0 if the primary monitor is powered off or 1 if it is on.

_POWERSCHEME - returns the power scheme in use when the POWERMONITOR condition is triggered.

_POWERSOURCE - returns the power source (AC or DC) when the POWERMONITOR condition is triggered.

_TASKDIALOG_BUTTON - the button pressed to exit TASKDIALOG.

_TASKDIALOG_RADIO - the selected radio button (if any) in TASKDIALOG.

_TASKDIALOG_VERIFY - returns 1 if the verify button was checked in TASKDIALOG.

_XEN - returns 1 if ***TCC*** is running in a Xen VM.

Updated Internal Variables:

_do_dirs - returns the value for the current DO loop (i.e., nested DO's each have their own _do_dirs).

_do_errors- returns the value for the current DO loop (i.e., nested DO's each have their own _do_errors).

_do_files- returns the value for the current DO loop (i.e., nested DO's each have their own _do_files).

_do_loop- returns the value for the current DO loop (i.e., nested DO's each have their own _do_loop).

Updated Variable Functions:

@EVAL - added support for scientific notation both in the input and output. For example:

@eval[1.6582E+8 *47]
@eval[1.6582E+8 *47=E] - the **=E** format tells @EVAL to output the results in scientific notation.

@FILEREAD - added support for UTF8 files (with BOM or UTF8 extended chars within the first 2K).

@GETDIR - now uses the Windows 7 / Windows 8 open file dialog.

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@SHA1[[s,]filename] - added an optional first argument "s" to generate the hash on a string (in *filename*), not a file.

@SHA256[[s,]filename] - added an optional first argument "s" to generate the hash on a string (in *filename*), not a file.

@SHA384[[s,]filename] - added an optional first argument "s" to generate the hash on a string (in *filename*), not a file.

@SHA512[[s,]filename] - added an optional first argument "s" to generate the hash on a string (in *filename*), not a file.

@TRUENAME - a leading ~\ or ~/ will be interpreted as the current user's home directory.

New Variable Functions:

@EVERYTHING[filename[,cdfpw[,n]]] - calls Everything Search to return all matching filenames / directories (space delimited). The options are:

filename - the name to search for. If *filename* begins with a **"::",** the filename is treated as a regular expression
c - case sensitive search
d - only search for directories
f - only search for files
p - match path names
w - match whole word
n - maximum number of matches to return

@FILELOCK[filename] - returns the PIDs of the process(e)s with a lock on the specified file.

@PIDUSER[pid] - returns the user name for the specified process ID. (System processes return an empty string.)

Updated Commands:

7UNZIP

Added range and attribute selection to the command dialog.

CD

Fuzzy directory searches are much faster, and you no longer need to build the index (jpstree.idx) for NTFS drives.

Added support for Windows shell folders (for the current user). See CDD for the syntax and folder names.

CDD

Fuzzy directory searches are much faster, and you no longer need to build the index (jpstree.idx) for NTFS drives.

Added support for CDD to the Windows shell folders (for the current user). The syntax is:

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CDD :foldername

where *foldername* can be:

AccountPictures	(Windows 8+)
AdminTools	
ApplicationShortcuts	(Windows 8+)
CameraRoll	(Windows 8.1+)
CDBurning	
CommonAdminTools	
CommonOEMLinks	
CommonPrograms	
CommonStartMenu	
CommonStartup	
CommonTemplates	
Contacts	
Cookies	
Desktop	
DeviceMetadataStore	
Documents	
DocumentsLibrary	
Downloads	
Favorites	
Fonts	
GameTasks	
History	
ImplicitAppShortcuts	
InternetCache	
Libraries	
Links	
LocalAppData	
LocalAppDataLow	
LocalizedResourcesDir	
Music	
MusicLibrary	
Nethood	
OriginalImages	
PhotoAlbums	
PicturesLibrary	
Pictures	
Playlists	
PrintHood	
Profile	
ProgramData	
ProgramFiles	
ProgramFilesX64	
ProgramFilesX86	
ProgramFilesCommon	
ProgramFilesCommonX64	
ProgramFilesCommonX86	
Programs	
Public	
PublicDesktop	
PublicDocuments	
PublicDownloads	
PublicGameTasks	

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PublicLibraries	
PublicMusic	
PublicPictures	
PublicRingtones	
PublicUserTiles	(Windows 8+)
PublicVideos	
QuickLaunch	
Recent	
RecordedTVLibrary	
ResourceDir	
Ringtones	
RoamingAppData	
RoamedTileImages	(Windows 8+)
RoamingTiles	(Windows 8+)
SampleMusic	
SamplePictures	
SamplePlayLists	
SampleVideos	
SavedGames	
Screenshots	(Windows 8+)
SearchHistory	(Windows 8.1+)
SearchTemplates	
SendTo	
SidebarDefaultParts	
SidebarParts	
SkyDrive	(Windows 8.1+)
SkyDriveCameraRoll	(Windows 8.1+)
SkyDriveDocuments	(Windows 8.1+)
SkyDrivePictures	(Windows 8.1+)
StartMenu	
Startup	
System	
SystemX86	
Templates	
UserPinned	
UserProfiles	
UserProgramFiles	
UserProgramFilesCommon	
Videos	
VideosLibrary	
Windows	

DO

LEAVE now supports variable arguments.

_do_dirs - returns the value for the current DO loop (i.e., nested DO's each have their own _do_dirs).
_do_errors- returns the value for the current DO loop (i.e., nested DO's each have their own _do_errors).
_do_files- returns the value for the current DO loop (i.e., nested DO's each have their own _do_files).
_do_loop- returns the value for the current DO loop (i.e., nested DO's each have their own _do_loop).

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/D - Added support for Windows shell folders (for the current user). See CDD for the syntax and folder names.

EJECTMEDIA

Added support for ejecting removable USB drives.

EVERYTHING

EVERYTHING now has a command dialog.

Added range and attribute selection options.

/E - Display the Everything Search dialog. You can combine /E with the other EVERYTHING options (except /D and /F).

/O - Display the Everything Search options dialog.

/S - Sort results by path, then file name. (This can take several seconds with a large number of search results.)

FOR

/R - Added support for Windows shell folders (for the current user). See CDD for the syntax and folder names.

HEAD

Added support for UTF8 files (with BOM or UTF8 extended chars within the first 2K).

MD

Changed /Ne to only suppress all non-fatal errors (such as ERROR_ALREADY_EXISTS).

PLAYAVI

Added support for wildcards.

Added support for @file lists.

PLAYSOUND

Added support for wildcards.

Added support for @file lists.

PROMPT

$= - display the elapsed time for the prior command.

PUSHD

Added support for Windows shell folders (for the current user). See CDD for the syntax and folder names.

TAIL

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Added support for UTF8 files (with BOM or UTF8 extended chars within the first 2K).

TAR

Added range and attribute selection to the command dialog.

TASKBAR

LOGOFF - display the logoff dialog.

TASKDIALOG

/A"Details" - the TASKDIALOG will have a button that you can click to expand the dialog and view the text specified in "Details".

/B"Button text" - Text to use for custom buttons. If you specify one or more /C arguments, TASKDIALOG will not display any of the default buttons. TASKDIALOG will return the button ID of the button pushed in the command variable %_taskdialog_button. TASKDIALOG will number the custom button ID's beginning at 1000.

/C - Check the verification checkbox at TASKDIALOG startup. (The checkbox defaults to unchecked.)

/F[ISW]"Text" - display footer text with an optional icon:

I - information
S - error
W - warning

/H - enable hyperlinks embedded in the additional info (/A) text, the footer (/F) text, and the main instruction text. Hyperlinks are created with an <a> HTML tab. For example:

/A"This is a hyperlink: Full details about Take Command 18.0"

/L - Convert the buttons defined by /B into command links. A command link is a bigger button that has an icon and optionally a second smaller line of text. (To display a second line, append a ^n to the /B argument, followed by the text for the second line.)

/R"Button text" - Display radio buttons. The selected button will be returned in the command variable %_taskdialog_radio. TASKDIALOG will number the custom radio button ID's beginning at 2000.

/V"Text" - Display a verification checkbox. If the box is checked, the command variable %_taskdialog_verify will be set when TASKDIALOG exits.

/X - the dialog can be closed using Alt-F4, Escape, and the title bar's close button even if no cancel button is specified.

TASKLIST

/U - Display the user name for each process (system processes return an empty string).

/U"owner" - Display only the processes for specified owner.

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/X - Display PIDs in hex.

/Z - Display parent PIDs in the second column.

TITLE

If you do not specify a new title, TITLE will display the existing console title.

TPIPE

Sorting is much faster.

Much faster processing of filters that match against a list of patterns.

Open file on completion now uses the default editor if no file association is found.

Upgraded PDF component.

Updated Perl regular expression component.

Hidden worksheets are now ignored by the Excel to Text filter.

TPIPE has a number of new options:

/input="filename"**[,Subfolders[,Action]]** (You can specify multiple "/input=..." statements.)
filename - the filename, **folder**, or **wildcard**
Subfolders - how many subfolders to include (default 0):
0 - no subfolders
1 to 254 - subfolder(s)
255 - all subfolders
Action - the action to take (default 1):
1 - include the files
2 - exclude the files
3 - ignore the files

/inputbinary=action,**sample**
Action (default 0):
0 - Binary files are processed
1 - Binary files are skipped
2 - Binary files are confirmed before processing
Sample - the sample size to use for identifying binary files (default 255)

/inputpromptRO=n - if 1, prompt for read-only input files.

/inputstring=... - Process the string (as if it were in a file) and return the result.

/logappend=n - if 1, append to the log file.

/outputappend=n - if 1, appends to the output file.

/outputretaindate=n - if 1, retains the existing file date on the output file.

/sort - new sort types:
6 - Sort by date and time
7 - Sort by date

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8 - Sort by time

/selection=Type,Locate,Param1,Param2,MoveTo,nDelimiter,CustomDelimiter,HasHeader[,ProcessIndividually**[,ExcludeDelimiter[,ExcludeQuotes]]**]

ExcludeDelimiter - whether or not to apply subfilters to each CSV or Tab field individually, or to the fields as one string value. Defaults to 0.
ExcludeQuotes - whether or not to include the CSV quotes that may surround the field when passing the field to the subfilter. Defaults to 1.

/split=type,SplitSize,SplitChar,SplitCharPos,SplitCharCount,SplitLines,SplitFilename**[,FirstFileNumber[,PreventOverload]]**

FirstFileNumber - the number of the first file. Defaults to 0.
PreventOverload - if 1, don't create more than 10,000 files in one folder. Defaults to 0.

TRUENAME

A leading ~\ or ~/ will be interpreted as the current user's home directory.

TYPE

Added support for UTF8 files (with BOM or UTF8 extended chars within the first 2K).

UNTAR

Added range and attribute selection to the command dialog.

UNZIP

Added range and attribute selection to the command dialog.

WHICH

WHICH will now identify plugin variables, internal variables and variable functions.

A leading * will now skip the alias test. (i.e., if "dir" is an alias, "*dir" will return the internal command.)

New Commands:

COPYDIR - copy a directory tree to a new location. The syntax is:

COPYDIR source destination

Both *source* and *destination* are directory names. If *destination* does not exist, COPYDIR will create *destination* and copy *source* to *destination*. If *destination* already exists, COPYDIR will append the last subdirectory name in *source* to *destination,* create the new subdirectory, and copy *source* to *destination*.

FILELOCK - returns a list of the processes with a lock on the specified file, and optionally close them to free the file. The syntax is:

FILELOCK [/C /F] filename

/C(lose process) - requests the process(es) to close.

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/F(orce close) - like TASKEND /F, forces the process(es) to be closed.

JUMPLIST - create a custom task jumplist for ***Take Command*** (Windows 7+ only). The syntax is:

JUMPLIST [/C /D /S] "title" "arguments"

/C - commit the changes

/D - delete an existing task list

/S - add separator line

"title" - title to use in the task list

"arguments" - command and arguments to pass to ***Take Command***. (The command will be prefaced with a /C before it is passed to ***Take Command***, so it will be started in a new tab window.)

To create a custom task list, you need to call JUMPLIST for each command, and then a final time with the /C option.

MOUNTISO - mounts an ISO image as a disk drive (Windows 8+ only). The syntax is:

MOUNTISO [d:\ | d:\path\] image

d:\ - the optional drive letter to use. If you don't specify a drive or mount path, Windows will automatically assign one.
image - the ISO file to mount.

d:\path\ - the mount path to use.

MOVEDIR - move a directory tree to a new location. The syntax is:

MOVEDIR source destination

Both *source* and *destination* are directory names. If *destination* does not exist, MOVEDIR will create *destination* and move *source* to *destination*. If *destination* already exists, MOVEDIR will append the last subdirectory name in *source* to *destination,* create the new subdirectory, and move *source* to *destination*.

POWERMONITOR - Monitor power scheme change, battery power, AC / DC switch, system suspend, and system resume. The syntax is:

POWERMONITOR [/c [action]]
POWERMONITOR [Battery | AC | DC | Scheme | Display | Resume | Suspend] [n | FOREVER] command

Note that Windows will send an immediate notification for the current scheme, AC/DC, and battery.

POWERMONITOR will set environment variables when the condition is triggered:

_POWERBATTERY - returns the battery % (0-100).
_POWERSOURCE - returns the power source (AC or DC).
_POWERDISPLAY - returns 0 if the primary monitor is powered off or 1 if it is on.
_POWERSCHEME - returns the power scheme in use:

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0 - Power Saver
1 - Maximum Performance
2 - Balanced
3 - Unknown

UNMOUNTISO - unmounts an ISO image previously mounted with MOUNTISO (Windows 8+ only). The syntax is:

UNMOUNTISO [d:\ | d:\path\]

2.11 Version 17

Feature List:

Take Command, ***TCC***, and the IDE / Batch Debugger have been rewritten to remove almost all limitations on file, line and argument sizes (other than those imposed by the Windows APIs and the amount of available RAM).

Take Command v17 is using a new version of the GUI framework.

Take Command v17 is using a new version of the installer.

Take Command v17 is using a new version of the Scintilla edit control (for the IDE / batch debugger and the ***Take Command*** Command Input window).

The help has improved support for display on 4K monitors.

Take Command:

Take Command has improved support for ***TCC*** dialogs. They no longer block access to other ***TCC*** tab windows, and when you click on another tab, ***Take Command*** will hide the dialog windows belonging the non-active tab windows.

The Edit/Debug option in the Tools menu now starts the IDE / debugger using a new tab window instead of a console window.

The ***Take Command*** status bar now includes the row & column position of the cursor in the active tab window.

The ***Take Command*** command input window will now optionally include aliases in tab completion if the argument being expanded is at the beginning of the command line. This requires that you have at least one TCC session (or SHRALIAS) using global variables.

The ***Take Command*** command input window will now optionally include internal commands in tab completion if the argument being expanded is at the beginning of the command line.

If you press the left mouse button while the cursor is in a tab window, ***Take Command*** will pause output (and scrolling) until you release the key. This will make it easier to copy text while the app is still outputting text.

If you press the left mouse button while the cursor is on the slider in the vertical scrollbar, ***Take Command*** will pause output (and scrolling) until you release the key.

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If you hold down the Ctrl key while dropping files in a ***Take Command*** tab window, ***Take Command*** will append a CR and execute the command.

Ctrl-C - If you have selected text in a tab window, a Ctrl-C will now copy that text to the clipboard and clear the selection. If you do not have any selected text (or if you press Ctrl-C again), it will act like a Ctrl-Break.

The ***Take Command*** toolbar buttons can send some additional special keys

F13	LWIN
F14	RWIN
F15	APPS
F16	SLEEP
F17	SELECT
F18	PRINT
F19	EXECUTE
F20	MUTE
F21	VOLUMEUP
F22	VOLUMEDOWN
F23	
F24	

TCC:

Some plugins will need to be updated to v17-compatible versions, as many of the internal APIs have changed as a result of the parser and string handling rewrite.

TCC will now optionally include aliases in tab completion if the argument being expanded is at the beginning of the command line.

TCC will now optionally include internal commands in tab completion if the argument being expanded is at the beginning of the command line.

Added more UTF-8 support (for file input, i.e. batch files and variable functions) with the UTF8 directive in *TCMD.INI.*

Ctrl-C - If you are at the command line and have selected text in the TCC window, a Ctrl-C will now copy that text to the clipboard and clear the selection. If you do not have any selected text (or if you press Ctrl-C again), it will act like a Ctrl-Break and interrupt the command line entry.

Ctrl-Alt-Left - Delete the argument to the left of the cursor. The arguments are parsed the same as for internal commands; i.e., quoted strings are considered a single argument.

Ctrl-Alt-Right - Delete the argument to the right of the cursor. The arguments are parsed the same as for internal commands; i.e., quoted strings are considered a single argument.

Shift-Alt-Left - Move to the beginning of the argument to the left of the cursor. The arguments are parsed the same as for internal commands; i.e., quoted strings are considered a single argument.

Shift-Alt-Right - Move to the beginning of the argument to the right of the cursor. The arguments are parsed the same as for internal commands; i.e., quoted strings are considered a single argument.

Tab completion has been enhanced to automatically expand variable names embedded in the pathname being completed.

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Ctrl+ (on the numeric keypad) will increase the font size in a ***TCC*** console window. You must be using a TrueType font (such as Lucida Console or Consolas), not a raster font.

Ctrl- (on the numeric keypad) will decrease the font size in a ***TCC*** console window. You must be using a TrueType font (such as Lucida Console or Consolas), not a raster font.

Ctrl-Win-Left - Decrease the console window width.

Ctrl-Win-Right - Increase the console window width. You cannot increase the window width beyond the console screen buffer width.

Ctrl-Win-Up - Decrease the console window height.

Ctrl-Win-Down - Increase the console window height. You cannot increase the window height beyond the number of rows in the console screen buffer.

Alt-Win-Left - Move the ***TCC*** console window left 5 pixels.

Alt-Win-Right - Move the ***TCC*** console window right 5 pixels.

Alt-Win-Up - Move the ***TCC*** console window up 5 pixels.

Alt-Win-Down - Move the ***TCC*** console window down 5 pixels.

The obsolete pseudovariables %+ and %= are deprecated in v17; they will be removed altogether in future versions.

IDE / Batch Debugger:

The current row and column on the debugger status bar has been moved to the left (to match the ***Take Command*** status bar).

The debugger status bar now includes the visible size of the edit window. (If you have a horizontal scrollbar, the maximum width will be greater than shown on the status bar.)

Changed the "debug stop" icon to something more obvious.

INI Directives:

PluginDirectory=*path* - The directory where ***TCC*** will look for plugins to automatically load at startup.

UTF8=yes|NO: If enabled, ***TCC*** will check (non UTF-16) files to see if they are in UTF-8 format. You can set UTF8 in OPTION / Startup.

New Internal Variables:

_FILEARRAY - The number of array elements assigned by the last @FILEARRAY function.

_TCCRUN - The length of time the current ***TCC*** session has been running (as a FILETIME, in 100ns increments).

_TCCSTART - The time the current ***TCC*** session was started (as a FILETIME, in 100ns increments).

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Updated Internal Variables:

_DOS - Added WINDOWS81, WIN2012R2, and WINDOWS10.

Updated Variable Functions:

@CDROM - - if the argument is not a drive specification, @CDROM will expand the name to get the drive.

@CWD - if the argument is not a drive specification, @CWD will expand the name to get the drive.

@CWDS - if the argument is not a drive specification, @CWDS will expand the name to get the drive.

@EXETYPE - Added additional application types:

9 - Windows x64 GUI
10 - Windows x64 console
11 - EFI
12 - EFI boot driver
13 - EFI runtime driver
14 - EFI ROM
15 - XBox
16 - Windows boot application

@FINDFIRST - if the filename is quoted, the returned filename will also be quoted (if necessary).

@FINDNEXT - if the filename is quoted, the returned filename will also be quoted (if necessary).

@FSTYPE - if the argument is not a drive specification, @FSTYPE will expand the name to get the drive.

@FULL - if the filename is quoted, the returned filename will also be quoted (if necessary).

@FULL - added an optional second argument to specify the pathname to use. (This can include relative path operators like "...\".)

@GETDIR - if the filename is quoted, the returned filename will also be quoted (if necessary).

@GETFILE - if the filename is quoted, the returned filename will also be quoted (if necessary).

@GETFOLDER - if the filename is quoted, the returned filename will also be quoted (if necessary).

@LABEL - if the argument is not a drive specification, @LABEL will expand the name to get the drive.

@LFN - if the filename is quoted, the returned filename will also be quoted (if necessary).

@LINE - is now 20x faster.

@READY - if the argument is not a drive specification, @READY will expand the name to get the drive.

@REGBREAD - If the key name begins with *machinename*, opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

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HKEY_LOCAL_MACHINE
HKEY_PERFORMANCE_DATA
HKEY_USERS

@REGBWRITE - Now supports remote registry access (see @REGBREAD).

@REGCOPYKEY - Now supports remote registry access (see @REGBREAD).

@REGCREATE - Now supports remote registry access (see @REGBREAD).

@REGDELKEY - Now supports remote registry access (see @REGBREAD).

@REGEXIST - Now supports remote registry access (see @REGBREAD).

@REGQUERY - Now supports remote registry access (see @REGBREAD).

@REGSET - Now supports remote registry access (see @REGBREAD).

@REGSETENV - Now supports remote registry access (see @REGBREAD).

@REGTYPE - Now supports remote registry access (see @REGBREAD).

@REMOTE - if the argument is not a drive specification, @REMOTE will expand the name to get the drive.

@REMOVABLE - if the argument is not a drive specification, @REMOVABLE will expand the name to get the drive.

@SERIAL - if the argument is not a drive specification, @SERIAL will expand the name to get the drive.

@SERIALPORTOPEN - added an option to set the number of stop bits.

@TIMER - Now supports 10 timers (see TIMER below).

@TRUENAME - if the filename is quoted, the returned filename will also be quoted (if necessary).

@UNIQUE - if the filename is quoted, the returned filename will also be quoted (if necessary).

@VERSION - if the filename is quoted, the returned filename will also be quoted (if necessary).

@WMI - Added support for remote machines.

New Variable Functions:

@DRIVE - Returns the drive for the specified pathname. The path argument will be expanded before the drive name is extracted. If the pathname is a UNC, @DRIVE will return the computer name + sharename (i.e., @DRIVE[\\system1\d_drive\myfile] will return "\\system1\d_drive").

Updated Commands:

CALL

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Increased the maximum nested batch file level from 16 to 32.

CDD

/S - The JPSTREE.IDX file is now always built as UTF-16.

CLS

/C is much faster with large console buffers.

COPY

/CRC:*type*:*filename* - Create a file that contains a CRC + file name for every file copied.

type - The type of CRC to create. Possible types are:

MD5
CRC32
SHA1
SHA256
SHA384
SHA512

DESKTOP

Added an optional second argument to specify the program that DESKTOP should launch in the new desktop. The default is "userinit.exe" (which will launch Explorer).

ESET

/W - open the alias list / environment / function list in a popup window and select the line to edit. You can search, edit, and delete entries in the window. If you include an argument after the /W option, the popup window will display only those entries that match the argument (including wildcards).

ESET /W can be combined with a registry environment key (/S, /U, /D, /V) to edit the Windows registry environment values.

EVERYTHING

Now using Everything 1.3.4, which includes both 32-bit and 64-bit support. EVERYTHINGIPC.EXE has been deleted, so Everything searches will be faster.

KEYSTACK

Added support for some additional special keys:

F13	LWIN
F14	RWIN
F15	APPS
F16	SLEEP
F17	SELECT
F18	EXECUTE
F19	PRINT
F20	MUTE
F21	VOLUMEUP

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F22 VOLUMEDOWN
F23
F24

PATH

/N - Display the individual PATH directories each on its own line.

PUSHD

Increased the maximum directory stack size from 2047 to 8191.

SETLOCAL

Increased the maximum nesting level to 32.

TAR

TAR supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is compressed, TAR will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be be added the TAR archive.

TASKDIALOG

/P=x,y - Display the dialog at the specified screen coordinates.

TIMER

Now supports 10 timers (/1 - /10).

VER

Added support for Windows 10.

VIEW

Now supports displaying the clipboard ("view clip:").

Added support for displaying FTP files (including SFTP and FTPS).

Added support for displaying HTTP and HTTPS files.

ZIP

ZIP supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is zipped, ZIP will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be added to the ZIP archive.

7ZIP

7ZIP supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is zipped, 7ZIP will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be added to the 7ZIP archive.

New Commands:

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COMMENT / ENDCOMMENT

Like TEXT / ENDTEXT, but doesn't process or output any batch file lines between the COMMENT and ENDCOMMENT statements.

LINKS

Displays the hardlinks for the specified file(s). The syntax is:

LINKS file...

REGMONITOR

Monitor Windows Registry keys. The syntax is:

REGMONITOR [/C [key]]

REGMONITOR key NAME ATTRIBUTES VALUE SECURITY n command

2.12 Version 16

Feature List:

The Take Command UI has been revamped, to make things easier to find and to provide a little more room for the tab windows. The Take Command menu has been changed to a ribbon format (which can be optionally always displayed or minimized).

Take Command now has a customizable Quick Options toolbar that is on the left side of the caption bar. The Quick Options toolbar has a customize button on the right side that adds or removes commands from Quick Options, enables / disables the Tabbed Toolbar, and minimizes or displays the ribbon.

Because of the change to the ribbon menu, the old styles have been deleted and new ones added to the Options menu:

Office 2007 Blue
Office 2007 Silver
Office 2007 Black
Office 2007 Aqua
Office 2007 System
Office 2010 Blue
Office 2010 Silver
Office 2010 Black
Office 2013
Windows 7
Windows 8

The Take Command Edit menu now includes Undo / Redo options (enabled if TCC is running in the active tab window).

The Command Input window context menu now includes Undo / Redo options.

The TCC tab window context menu now includes Undo / Redo options.

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The IDE alias window context menu now includes Undo / Redo options.

The IDE function window context menu now includes Undo / Redo options.

The IDE environment window context menu now includes Undo / Redo options.

The IDE user-defined functions window context menu now includes Undo / Redo options.

The IDE batch parameters window context menu now includes Undo / Redo options.

The Take Command Options menu has a new Font option to set the tab window font size (system, normal, large, and extra large).

Take Command has a new menu option (Tabs / Close Other Tabs) that will close all of the tabs except the current one.

The Take Command Explorer toolbar has been removed in order to increase the default tab window size, and most of the options moved to the View tab.

The Take Command tabbed toolbars now support dragging & dropping commands from the Customize dialog onto the tabbed toolbar.

Take Command has a new menu option (View / Full Screen) that will maximize the tab windows and hide the menu & toolbar options.

There is a new Take Command menu option "Tools" that displays icons to run VIEW or the batch editor / debugger.

The Take Command "Windows" menu option now includes additional splitter options to create a new horizontal or vertical tab group with the current tab.

There is a new small tab on the right of the tab window headers that opens a new default tab window.

Hold down the Alt key while spinning the mouse wheel to select tab windows.

If you manually detach a tab window, Take Command will no longer try to automatically reattach it if you have AutoAttachConsoles=Yes in your TCMD.INI.

Take Command now sets the hidden console windows to use a Unicode font (Consolas or Lucida Console) to avoid problems with mismatched TCMD and TCC fonts.

Take Command has a new menu option (Tabs / Send Input) that will send all input for that tab window to selected other tab windows.

Added an internal Lua interpreter. Lua scripts can be executed by entering the script name at the TCC prompt, or with the LUA command (see below). You can also execute Lua expressions with the @LUA variable function.

TCC command history now supports wildcards. For example, you can search for a previous command that contains the string "foo" by typing "*foo*" on the command line and pressing the up or down keys.

The TCC command history popup window now supports wildcards. For example, you can display all of the commands that contain the string "foo" by typing "*foo*" on the command line and pressing the PgUp key.

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The TCC directory history popup window now supports wildcards. For example, you can display all of the directories that contain the string "foo" by typing "*foo*" on the command line and pressing the Ctrl-PgUp key.

The TCC popup windows can now optionally use character-mode windows instead of GUI windows. This is intended for use with server consoles that are character-mode only, or when using SSH with no GUI support; there is no benefit (and several disadvantages) in using this option for normal non-server environments. See the TCMD.INI ConsolePopupWindows directive.

The TCC popup windows now support Unicode characters in the Search edit control.

TCC customized filename completion will exclude extensions that are prefixed with a **!**.

New version of the GUI framework.

New versions of all of the IPWorks dll's.

New version of the TPIPE engine dll.

New version (3.3.7) of the Scintilla dll (for the IDE editor/debugger).

New version of V.EXE (for the internal VIEW command).

Batch Debugger / IDE:

If you hover the mouse over an internal or environment variable name, the IDE will show a tooltip with the current value (truncated to 512 characters if necessary).

If you hover the mouse over an internal command name, the IDE will show a tooltip with the command syntax.

INI Directives:

AliasSize=n - Increased the maximum global alias size to 512K characters.

ConsolePopupWindows=yes|NO - enable or disable character-mode popup windows (for example, command or directory history windows). This is intended for use with server consoles that are character-mode only, or when using SSH with no GUI support; there is no benefit (and several disadvantages) in using this option for normal non-server environments.

DebuggerToolTips=YES|no - enable or disable tooltips in the IDE / batch debugger that show the current value of internal and environment variables, and the syntax for internal commands.

FileCompletionLooping=yes|NO - enable or disable Linux-style filename completion looping. I.e., when TCC reaches the last match, it will loop back to the first match (with no indication that it has done so). It's easier to use the tab / F8 forward/back stepping in TCC, but some hard-wired Linux users wanted this.

FunctionSize=n - Increased the maximum global function list size to 256K characters.

Lua=YES|No - enable or disable executing Lua scripts directly from the TCC prompt.

New Internal Variables:

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_IPADAPTER - returns the index of the current adapter.

_IPADAPTERS - returns the number of adapters in the system.

_IPARPPROXY - returns 1 if the local computer is acting as an ARP proxy.

_IPDNS - returns 1 if DNS is enabled for the local computer.

_IPDNSSERVER - returns the default DNS server for the local computer.

_IPROUTING - returns 1 if routing is enabled on the local computer.

_ISFTP - returns 1 if you have an SSH IFTP connection open

_7UNZIP_FILES - returns the number of files extracted in the last 7UNZIP command.

_7UNZIP_ERRORS - returns the number of errors in the last 7UNZIP command.

_7ZIP_FILES - returns the number of files compressed in the last 7ZIP command.

_7ZIP_ERRORS - returns the number of errors in the last 7ZIP command.

Updated Variable Functions:

@PPID[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a process name.

@SNAPSHOT[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

@WINCLIENTSIZE[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

@WINEXENAME[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

@WINPOS[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

@WINSIZE[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

@WINSTATE[=pid] - if the argument begins with a **=**, it is assumed to be a PID instead of a window title.

New Variable Functions:

@FONT[n] - returns console font information. *n* is the info requested:

0 - font name (Windows usually returns an empty string unless you've previously set the font)
1 - font width
2 - font height
3 - font weight
4 - font family
5 - font index in console font table

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@IPADDRESSN[n] - returns the IP address of the adapter at index *n*.

@IPALIASES[name] - returns the other names corresponding to the host with the specified name.

@IPDESC[n] - returns the description for the adapter at index *n*.

@IPDHCP[n] - returns the DHCP server for the adapter at index *n*.

@IPGATEWAY[n] - returns the gateway for the adapter at index *n*.

@IPIPV6N[n] - returns the IPv6 address of the adapter at index *n*.

@IPNAMEN[n] - returns the name of the adapter at index *n*.

@IPPHYSICAL[n] - returns the physical address of the adapter at index *n*.

@IPPORT[service] - returns the port number for the specified service.

@IPSERVICEALIASES[service] - returns aliases for the specified service.

@IPSUBNET[n] - returns the subnet of the adapter at index *n*.

@IPTYPE[n] - returns the type of adapter at index *n*. Possible values include:

OTHER
WIRELESS
ETHERNET
TOKENRING
FDDI
PPP
LOOPBACK
SLIP

@IPWINS[n] - returns 1 if the adapter at index *n* uses WINS.

@IPWINSSERVER[n] - returns the primary WINS Server for the adapter at index *n*.

@IPZONEID[n] - returns the IPv6 Zone ID (also known as a scope ID) for the adapter at index *n*. The values of the Zone ID are defined relative to the sending host.

@LUA[expression] - execute a Lua expression.

@UUID[n] - creates a UUID (same as a GUID in Windows). *n* can be:

0 - returns the UUID with lower case alphabetic characters and embedded hyphens
1 - returns the UUID with upper case alphabetic characters and embedded hyphens
2 - returns the UUID with lower case alphabetic characters and no hyphens
3 - returns the UUID with upper chase alphabetic characters and no hyphens

@VERSION[filename[,separator[,start[,force]]]] - return a serially "versioned" replacement for the file name if the file already exists. This is distinct from the function of @UNIQUE[] in that it retains the entire filename and only appends a version separator character and an ascending version number to the filename. @VERSION does not create the file; it just returns the next available version name. @VERSION has four arguments:

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1) the filename to "versionize" (required)
2) the version separation character (optional, defaults to ';')
3) the starting version number (if necessary to add a version number; optional, defaults to '1')
4) flag to force versioning, even if the file doesn't exist (optional, defaults to 0 or FALSE).

@WINTITLE[pid] - return the window title of the process with the specified PID.

Updated Commands:

ACTIVATE

If the window title argument begins with a **=**, it is assumed to be a PID instead of a title. (Note that this is less reliable than providing a title, as a process can have multiple top-level windows.)

ALIAS

/Z - Overwrite the alias list with the contents of the specified file (must be used with /R). ALIAS /R /Z is 20x faster than an ALIAS /R.

DIR

/nm:x - Display a maximum of 'x' directory entries.

DO

/Q - like /L, but treats double quoted arguments (with embedded whitespace) as a single argument.

ESET

ESET now supports filename completion when editing aliases.

FUNCTION

/Z - Overwrite the alias list with the contents of the specified file (must be used with /R). FUNCTION /R /Z is 20x faster than FUNCTION /R.

PDIR

/nm:x - Display a maximum of 'x' directory entries.

POSTMSG

If the window title argument begins with a **=**, it is assumed to be a PID instead of a title. (Note that this is less reliable than providing a title, as a process can have multiple top-level windows.)

TASKLIST

If the process name / window title argument begins with a **=**, it is assumed to be a PID instead of a name or title.

TPIPE

Unicode characters in the search / replace fields are now converted to UTF-8 before being processed by the Regular Expression engine.

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Added log entries for size/date of ignored files.

Search/replace lists can now generate log entries (useful for debugging). Logs can optionally be output only for where replacements occurred.

Search/Replace lists now discard blank search terms and terms where the replacement is identical to the search.

Log filename now has environment variables resolved before display.

Named subexpressions created by a Split on Pattern filter are now saved as global variables for use in other filters.

Upgraded PDF component now handles more PDF document types.

/CLIPBOARD - Runs the current filter with input from and output to the clipboard.

/DUP - added an optional final argument to specify how the output should be formatted for Type=1 -- e.g., "%d %s" to show the count followed by the string.

/dup=Type,MatchCase,StartColumn,Length,IncludeOne,Format

/INPUTBINARY=n - Determines how binary files are processed. The options are:

0 - Binary files are processed (default)
1 - Binary files are skipped
2 - Binary files are confirmed before processing

/INPUTDELETE=n - If 1, the input files will be deleted after processing. USE WITH CAUTION!!

/INPUTPROMPT=n - If 1, TPIPE will prompt before processing each input files.

/OUTPUTCHANGED=n

0 - Always output
1 - Only output modified files
2 - Delete original if modified

/OUTPUTMODE=n - Sets the output mode. The options are:

0 - Output to clipboard (all files are merged)
1 - Output to files
2 - Output to a single merged file

/OUTPUTOPEN=n - If 1, TPIPE will open each output file in its associated program upon completion.

/LINE - added optional final argument (0 or 1) to not reset the line count at the end of the file.

/line=StartNumber,Increment,SkipBlank,DontNumberBlank,NumberFormat,DontReset

/OUTPUTFOLDER=folder - Set the output filter folder.

/SIMPLE - added new types:

81 - Shred file

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82 - Unicode to escaped ASCII
83 - Restrict to Unicode files
84 - T-filter (process the same input in multiple ways)
85 - Convert HTML/XML entities to text

/SORT=Type,Reverse,RemoveDuplicates,StartColumn,Length - Sort files. Note that /SORT is slow on large files; it's intended for simple sorts of relatively small files. For big files, you should use a dedicated sorting app.

Type - the sort type
0 - ANSI sort
1 - ANSI sort (case sensitive)
2 - ASCII sort
3 - ASCII sort (case sensitive)
4 - Numeric sort
5 - Sort by length of line
Reverse - If 1, sort in descending order; if 0, sort in ascending order
RemoveDuplicates - If 1, remove duplicate lines; if 0 keep duplicate lines
StartColumn - The column in the line to begin the comparisons
Length - The length of the comparison

/STRING - added new types:
17 - Restrict to filenames matching the Perl pattern
18 - Restrict to filenames not matching the Perl pattern

VIEW

New version of V.EXE.

New octal word hex format

Better recognition of UTF-8 files.

ZIP

ZIP is now 500% faster when zipping files.

New Commands:

7UNZIP - Unzip files in .7z archives. The syntax is similar to the UNZIP command:

7UNZIP [/A:[[-][+]rhsdaecjot] /C /CRC /D /E /F /Nt /P /O /Q /S"password" /TEST /U /V] ziparchive path file ...

ziparchive	The 7Zip file to work with
path	The path where files will be extracted
file	The file(s) to extract
/=	Display the 7UNZIP command dialog to help you set the filename and command line options. You cannot specify any other arguments on the command line.
/A:...	Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details. You can specify **/A:=** to display a dialog to help you set individual attributes.

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/C	Display (on standard output) the contents of a file in the zip archive.
/CRC	Display the file CRCs (must be used with /V).
/D	Recreate the directory structure saved in the 7zip file.
/E	Extract the specified file(s). (This is the default.)
/F	Extract only those files that currently exist in the target folder, and which are older than the file in the 7zip archive.
/Nt	Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.
/O	Overwrite existing files. 7UNZIP normally prompts before overwriting an existing file; /O will suppress the prompt.
/P	Display the progress (0 - 100%) for each file as it is extracted.
/Q	Don't display filenames as they are extracted.
/S	Use the specified password to extract the file(s) from an encrypted archive. If you don't provide a password on the command line, 7UNZIP will prompt you to enter one.
/TEST	Test the integrity of the 7zip file (header and contents). Any errors will be displayed on STDERR.
/U	Extract files which either don't exist in the target folder, or which are older than the file in the 7zip archive.
/V	View the list of files in the archive (date, time, size, and filename). If the 7zip file is password protected, 7UNZIP will append a * after the filename.

7ZIP - Zip files in .7z archives. The syntax is similar to the ZIP command:

7ZIP [/A:[[-][+]rhsdaecjot] /A /C /CRC /D /F /Kn /Ln /M /O:[-]
adegnrstu /P /Q /R /S"password" /T /TEST /U /V] *ziparchive* [*@file*] *file*...

ziparchive	The 7zip file to work with
file	The files(s) to be added to the 7zip file

/=	Display the 7ZIP command dialog to help you set the filename and command line options. You cannot specify any other arguments on the command line.
/A:...	Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details. You can specify **/A:=** to display a dialog to help you set individual attributes.
/A	Add the specified file(s) to the 7zip file. (This is the default.)
/C	Display (on standard output) the contents of a file in the7 zip archive.
/CRC	Display the file CRCs (must be used with /V).
/D	Delete the specified file(s) from the 7zip file.
/Kn	Compression method: 0 LZMA (default) 1 BZip2 2 Delta 3 Copy (no compression) 4 Deflate 5 LZMA2
/F	Update only those files that currently exist in the 7zip file, and which are older than the files on disk.
/Ln	Set the compression level (1 - 5, where 1=minimum compression, and 5=maximum compression). The default is 3.
/M	Delete the files from the disk after adding them to the 7zip file.
/O:...	Sort the files before processing. You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

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- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted

/P Display the progress (0 - 100%) for each file as it is zipped.

/Q Don't display the files being zipped.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the 7zip file.

/S Use the specified password to encrypt the file(s). If you don't provide a password on the command line, 7ZIP will prompt you to enter one.

/T Save the file attributes (they will be set when the file is extracted).

/TEST Test the integrity of the 7ZIP file (header and contents). Any errors will be displayed on STDERR.

/U Update files which either don't exist in the 7zip file, or which are older than the files on disk.

/V View the list of files in the 7zip file (date, time, size, and filename). If the zip file is password protected, 7ZIP will append a * after the filename.

LUA - Invoke the internal Lua interpreter. The syntax is:

lua [options] [script [args]]

The options are:

-e _stat_: executes string stat;
-l _mod_: "requires" mod;
-i: enters interactive mode after running script;
-v: prints version information;
--: stops handling options;
-: executes stdin as a file and stops handling options.

After handling its options, lua runs the given script, passing to it the given args as string arguments. When called without arguments, lua behaves as lua -v -i when the standard input (stdin) is the console, and as lua - otherwise.

Before running any argument, the interpreter checks for an environment variable LUA_INIT. If its format is @_filename_, then lua executes the file. Otherwise, lua executes the string itself.

All options are handled in order, except -i. For instance, an invocation like

lua -e'a=1' -e 'print(a)' script.lua

will first set a to 1, then print the value of a (which is '=1='), and finally run the file script.lua with no arguments.

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Before starting to run the script, lua collects all arguments in the command line in a global table called arg. The script name is stored at index 0, the first argument after the script name goes to index 1, and so on. Any arguments before the script name (that is, the interpreter name plus the options) go to negative indices. For instance, in the call

```
lua -la b.lua t1 t2
```

the interpreter first runs the file a.lua, then creates a table

```
arg = {
      [-2] = "lua",
      [-1] = "-la",
      [0] = "b.lua",
      [1] = "t1", [2] = "t2" }
```

and finally runs the file b.lua. The script is called with arg[1], arg[2], ... as arguments; it can also access these arguments with the vararg expression '=...='.

In interactive mode, if you write an incomplete statement, the interpreter waits for its completion by issuing a different prompt.

If the global variable _PROMPT contains a string, then its value is used as the prompt. Similarly, if the global variable _PROMPT2 contains a string, its value is used as the secondary prompt (issued during incomplete statements). Therefore, both prompts can be changed directly on the command line. For instance,

```
lua -e"_PROMPT='myprompt> '" -i
```

(the outer pair of quotes is for the shell, the inner pair is for Lua), or in any Lua programs by assigning to _PROMPT. Note the use of -i to enter interactive mode; otherwise, the program would just end silently right after the assignment to _PROMPT.

WAKEONLAN - send a "Wake-On-LAN" packet to the specified system (which may also be a broadcast address). This will power on the remote machine if the functionality is supported by the network card on the remote machine.) The syntax is:

```
WAKEONLAN remotehost macaddress

    remotehost - the address of the machine to wake
    macaddress - the physical address of the remote host
```

2.13 Version 15

Feature List:

Updated the TextPipe engine to 9.3.1.

Updated the Scintilla editor (used by the IDE and Command Input window) to 3.2.5.

Updated the installer.

Updated the registration & licensing modules. Registration can now only be done from within Take Command (Help menu), not TCC.

Take Command, TCC, and the IDE (batch debugger) have been optimized to load faster.

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The Take Command help is now also available in ePUB format at http://jpsoft.com/downloads/v15/TakeCommand.epub. You can choose either the PDF or ePUB format for reading on your portable devices.

TCC is now supported in the Windows PE environment. (There are a few commands that won't work because of missing Windows APIs, and Take Command won't work because there is no GUI.)

Take Command now doesn't update the Folder & List Views at startup if they are disabled or set to AutoHide. (This will speed up the load time substantially if you have network drives which are mapped but unavailable.)

The password fields in TCMD.INI are now encrypted when they are saved. (The encryption is strong, but if somebody wants to debug TCC.EXE and monitor the API calls, they'll eventually be able to figure out the unencrypted strings. But they'll have to work for it.)

The Command Input window now uses the same font and point size as the tab windows.

Take Command now disables updates when renaming folders in the Folder View.

Take Command now disables updates when renaming files or directories in the List View.

Take Command now disables updates when editing descriptions in the List View.

The Take Command Folder View now supports Ctrl-C or Ctrl-Insert to copy the current selection to the clipboard.

The Take Command List View now supports Ctrl-C or Ctrl-Insert to copy the current selection(s) to the clipboard.

Take Command now supports copying descriptions in DESCRIPT.ION when copying / dragging / dropping files in the Folder & List View windows.

Added a global hotkey (default Ctrl-Shift-Z) to toggle Take Command to and from the system tray.

Updated the Internet support dll's for TCC.

Updated the zip / tar support dll's for TCC.

Added support for the new OpenAFS 1.7.x redirector when retrieving the volume information (for example, in FREE, %@DISKFREE, etc.).

The TCC command line editor has Undo and Redo support. You can remap the keys with the "Undo" and "Redo" key mapping entries in TCMD.INI.

Undo - Alt-Z
Redo - Alt-Y

Batch Editor / Debugger:

When a file has been modified, the tab title will be updated with a leading *. When the file is saved, the * will be removed.

INI Directives:

AutoProxy=YES|no Enable / disable automatic HTTP proxy detection

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AutoFirewall=YES|no	Enable / disable automatic firewall detection
TrayHotKey=Z	The hotkey to toggle Take Command to and from the system tray. The specified alphabetic key is combined with Ctrl + Shift, so the default hotkey is Ctrl-Shift-Z.
Copyright=YES|no	Display the TCC copyright message at startup. This is the same as the TCC /Q startup option, and only applies to registered copies.
EverythingSearch=yes|NO	If YES, CDD will use "Everything Search" (http://www.voidtools.com) instead of JPSTREE.IDX for fuzzy directory matching. See CDD for details.
FilesCaseSensitive=yes|NO	If YES, filename comparisons will be case sensitive (like Linux, and unlike Windows).
Redo=Alt-Y	Key mapping directive to redo last edit (see Undo and Redo above).
Undo=Alt-Z	Key mapping directive to undo last edit (see Undo and Redo above).

The password fields in TCMD.INI for the Internet settings are encrypted.

Internal Variables:

%_do_loop - Incremented each time through a DO loop.

%_tclistview - Returns the selected items in the List View window as an include list.

%_virtualbox - Returns 1 if TCC is running in a VirtualBox VM.

Variable Functions:

%@DISKFREE - Now supports the OpenAFS 1.7.x redirector to retrieve disk space usage.

%@DISKTOTAL - Now supports the OpenAFS 1.7.x redirector to retrieve disk space usage.

%@DISKUSED - Now supports the OpenAFS 1.7.x redirector to retrieve disk space usage.

%@FORMAT - If the second argument (***string***) doesn't exist, @FORMAT now treats it as an empty string and pads the output accordingly.

%@LINES - Now also sets two variables:

_LINES_MAXLEN - The length of the longest line
_LINES_MAXLOC - The line number (base 0) of the longest line.

%@MACADDRESS - Returns the MAC address of the network interface at the specified address.

%@SELECT - Added optional start line and key mask fields. The start line will highlight the specified line number (the first line is 1).

The selected line number will be returned in the SELECT_LINE environment variable (the first line is 1).

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If you specify a key mask, the searching is disabled, and TCC will check input keystrokes for a match against the key mask. If a match is found, @SELECT will return the current line and set the _SELECT_KEY environment variable to the input key value. The key mask is in the same format as INKEY /K.

The format is:

@SELECT[filename,top,left,bottom,right,title[,sorted[,startline,[keymask]]]]

%@TIME - Added (not very useful, not recommended, and then only for the USA) support for am/pm time. For example:

%@TIME[1:39:15pm]

%@TALNUM[string] - Returns the number of alphanumeric (a-z, A-Z, and 0-9) characters in the string

%@TALPHA[string] - Returns the number of alphabetic characters (a-z, A-Z) in the string

%@TASCII[string] - Returns the number of 7-bit ASCII characters (0x00 - 0x7F) in the string

%@TCNTRL[string] - Returns the number of ASCII control characters (0x00 - 0x1F and 0x7F) in the string

%@TLOWER[string] - Returns the number of lower case alphabetic characters in the string

%@TUPPER[string] - Returns the number of upper case alphabetic characters in the string

%@TDIGIT[string] - Returns the number of decimal digits (0-9) in the string

%@TPRINT[string] - Returns the number of printable characters in the string

%@TPUNCT[string] - Returns the number of punctuation characters (printable characters which are not alphanumeric or space) in the string

%@TSPACE[string] - Returns the number of white space characters (0x09 - 0x0D or 0x20) in the string

%@TXDIGIT[string] - Returns the number of hexadecimal digits (0 - 9, A - F) in the string

Plugins:

Plugins can now access array variables directly through the ArrayVariables array. See TakeCmd.h in the SDK for details.

Updated Commands:

CD

If the TCMD.INI directive "EverythingSearch" is set, CD will use "Everything Search" (http://www.voidtools.com) instead of JPSTREE.IDX for fuzzy directory searches. Everything Search is slightly faster, but will only work on local NTFS drives. Setting EverythingSearch is the equivalent of setting FuzzyCD=3 (***name***), unless you're using regular expressions.

CDD

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If the TCMD.INI directive "EverythingSearch" is set, CDD will use "Everything Search" (http://www.voidtools.com) instead of JPSTREE.IDX for fuzzy directory searches. Everything Search is slightly faster, but will only work on local NTFS drives. Setting EverythingSearch is the equivalent of setting FuzzyCD=3 (***name***), unless you're using regular expressions.

COPY

If you specify the /C, /CF, /R, /U, or /UF options, COPY will append a **!** to the copy specifier if the target exists and is being overwritten. For example:

```
[d:\] copy file1 file2
file1 =>! file2
```

If the EverythingSearch option is set, COPY won't try to update JPSTREE.IDX for local NTFS drives.

The /N option no longer creates empty subdirectories when used with /S.

DEL

If the EverythingSearch option is set, DEL won't try to update JPSTREE.IDX for local NTFS drives.

FREE

Now supports the OpenAFS 1.7.x redirector to retrieve disk space usage.

IF

If the "DupBugs" TCMD.INI directive (OPTION / Startup / "Duplicate CMD.EXE bugs") has been set, the IF behavior is different when in a command group in a batch file. If there are multiple command lines in the command group, a failed IF will now only ignore the remainder of the commands on that line. The commands on the subsequent lines will still be executed.

IFTP

/EP - Use Extended Passive mode. (Works with FTP and FTPS, but not SFTP.)

/IPv6 - By default, IFTP expects an IPv4 address for the local and remote host, and will create an IPv4 socket. The /IPv6 option tells IFTP to use IPv6 instead. (Works with FTP, FTPS, and SFTP connections.)

/PR="nnn" - When using active mode, IFTP uses any available port to listen to incoming connections from the server. You can override this behavior by setting /PR (PortRange) to a value containing the range of ports the class will be listening to. The range is provided as *start-end*, for instance: "1024-" stands for anything higher than 1024, "1024-2048" stands for ports between 1024 and 2048 inclusive, "4000-4010, 50000-50010" stands for ports between 4000 and 4010 or between 50000 and 50010. (Works with FTP and FTPS, but not SFTP.)

/Z[n] - Use Zlib compression. You can optionally set the compression level (0-9; the default is 7). Zlib compression must be enabled on the server, and will only work with FTP and FTPS connections (not SFTP).

JABBER

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/F"filename" - Send a file to the specified target.

MD

If the EverythingSearch option is set, MD won't try to update JPSTREE.IDX.

MOVE

If you specify the /C, /CF, /R, /U, or /UF options, MOVE will append a **!** to the move specifier if the target exists and is being overwritten. For example:

[d:\] move file1 file2
file1 ->! file2

/G - Will now display the % moved even if Windows is doing a rename (which may be a copy & delete internally).

If the EverythingSearch option is set, MOVE won't try to update JPSTREE.IDX for local NTFS drives.

OPTION

OPTION now allows you to set "Auto SSL" for SMTP (i.e., SENDMAIL and SENDHTML).

OSD

OSD now lets you control up to 10 simultaneous OSD displays. (OSD allows you to create any number of windows, but you can only close the ones you've labeled from 0-9.) There are two new switches:

/C=n - Close the OSD window *n* (0-9). /C=*n* must be the only argument to OSD.

/ID=*n* - Open the OSD window *n* (0-9). /ID must be the first argument to OSD.

If you don't specify an /ID, OSD will default to window 0.

PLUGIN

PLUGIN now accepts multiple plugin name arguments. (The new syntax should still support commands using the old syntax.) The syntax is:

PLUGIN [/B /C /F /I /K /L /P /U /V] plugin ...

PRINT

PRINT now accepts piped & redirected input to send to the printer. If there is no filename, PRINT will read from STDIN, create a temporary file, and send it to the printer.

PROMPT

~ - New metacharacter (substitute for **P**). If the environment variable HOME (or HOMEDRIVE + HOMEPATH) exists, TCC will compare the variable to the beginning of the current path. If they match, TCC will substitute **~** for the variable part. (If they don't match, ~ is treated like a P.)

For example:

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[c:\] set home=c:\users\myself
[c:\] set prompt=[$~]
[c:\] cd \users\myself\downloads
[~\downloads]

RD

If the EverythingSearch option is set, RD won't try to update JPSTREE.IDX for local NTFS drives.

REN

If the EverythingSearch option is set, REN won't try to update JPSTREE.IDX for local NTFS drives.

SENDHTML

/= (Command dialog) - Added the **BCC:** option.

/SMTP=server - Overrides the default SMTP server to use to send mail.

/USER=address - Overrides the default email account to use to send mail.

The OPTION command now allows you to set "Auto SSL" for SENDHTML.

SENDMAIL

/= (Command dialog) - Added the **BCC:** option.

/SMTP=server - Overrides the default SMTP server to use to send mail.

/USER=address - Overrides the default email account to use to send mail.

The OPTION command now allows you to set "Auto SSL" for SENDMAIL.

SYNC

If the EverythingSearch option is set, SYNC won't try to update JPSTREE.IDX for local NTFS drives.

TAR

/TEST - Test the integrity of the TAR file (header and contents). Any errors will be displayed on STDERR.

TPIPE

TPIPE is using a new version of the text pipe engine. There are a number of additional TPIPE options in v15.

Grep filters now allow Unicode patterns (when UTF-8 support mode is enabled).

Split filter now allows Unicode filenames, and Unicode file break patterns.

Removed the (completely useless) Quick Help from TPIPE. A "TPIPE /?" now invokes the online help for TPIPE.

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/BUFFERSIZE - Sets the buffer size for the preceding search/replace filter. (The default is 4096.)

/buffersize=n

/EDITDISTANCE - Sets the edit distance threshold for the preceding search/replace filter. (The default is 2.)

/editdistance=n

/DATABASE - Adds a database-type filter.

/database=Mode,GenerateHeader,Timeout,Connection,InsertTable,FieldDelimiter,Qualifier

Mode
0 Delimited output
1 Fixed width
2 XML
3 Insert script

GenerateHeader - Generates header information when True.

Timeout - SQL command timeout in seconds.

ConnectionStr - The database connection string.

InsertTable - The name of the insert table.

FieldDelimiter - The string to use between columns.

Qualifier - The string to use around string column values.

/SELECTION - Added additional options for restriction filter types. (Restriction filters require sub filters to have any effect.)

/selection=Type,Locate,Param1,Param2,MoveTo,nDelimiter,CustomDelimiter,HasHeader[,ProcessIndividually]

The new *Type* options are:

1 Restrict lines
2 Restrict columns
3 Restrict to bytes
4 Restrict to delimited fields (CSV, Tab, Pipe etc.)

The new *ProcessIndividually* option specifies whether to apply sub filters to each CSV or Tab field individually (1), or to the fields as one string value (0). The default is false.

/MATHS - Adds a maths type filter. The syntax is:

/maths=operation,operand

operation - the operation to perform
0 +
1 -

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2 *
3 div (the remainder is ignored)
4 mod (the remainder after division)
5 xor
6 and
7 or
8 not
9 shift left (0 inserted)
10 shift right (0 inserted)
11 rotate left
12 rotate right

operand - the operand to use

/PERL - Sets the Perl matching options for the immediately preceding search/replace filter.

/perl=BufferSize,Greedy,AllowComments,DotMatchesNewLines

BufferSize - The maximum buffer size to use for matches. Any match must fit into this buffer, so if you want to match larger pieces of text, increase the size of this buffer to suit. Default is 4096.

Greedy - If the pattern finds the longest match (greedy) or the shortest match. Default is false.

AllowComments - Allow comments in the Perl pattern. Default is false.

DotMatchesNewLines - Allow the '.' operator to match all characters, including new lines. Default is true.

/REPLACELIST - Add a search and replace list, using search and replace pairs from the specified file.

/replacelist=Type,MatchCase,WholeWord,CaseReplace,PromptOnReplace,FirstOnly,SkipPromptIdentical,Simultaneous,LongestFirst,Filename

Type:
0 Replace
1 Pattern (old style)
2 Sounds like
3 Edit distance
4 Perl pattern
5 Brief pattern
6 Word pattern

MatchCase - Matches case when set to 1, ignores case when set to 0

WholeWord - Matches whole words only when set to 1

CaseReplace - Replaces with matching case when set to 1

PromptOnReplace - Prompts before replacing when set to 1

FirstOnly - If 1, only replace the first occurrence

SkipPromptIdentical - If 1, don't bother prompting if the replacement text is identical to the original.

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Simultaneous - If 1, all search strings are scanned for simultaneously instead of consecutively. (This is useful if the search strings and results strings overlap.)

LongestFirst - If 1, searches for long phrases (most specific) before short phrases (least specific) - this is generally used for translations.

Filename - The file to load search/replace pairs from. If the file extension is .XLS or .XLSX, the file is assumed to be Excel format, if the extension is .TAB the file is assumed to have tab-delimited values, and any other extension (including .CSV) is assumed to have Comma-Separated Values.

The filename can contain environment variables enclosed in % signs e.g. %TEMP% \myfile.txt. TPIPE corrects any doubled backslashes.

/SCRIPT - Adds an ActiveX script filter. The syntax is:

/script=language,timeout,code

language: The language of the script
timeout: The command timeout in seconds
script: The code

/STARTSUBFILTERS - The following filters are created as sub filters, until the closing /ENDSUBFILTERS. Sub filters allow a restricted part of the entire text to be operated on by a group of filters without effecting the entire text. For example, a "Restrict to delimited fields" (CSV, Tab, Pipe, etc.) filter can pick out a range of CSV fields, and then a search/replace filter can operate JUST on the text restricted.

/ENDSUBFILTERS - End the sub filters defined by the preceding /STARTSUBFILTERS.

UNTAR

/TEST - Test the integrity of the TAR file (header and contents). Any errors will be displayed on STDERR.

UNZIP

/TEST - Test the integrity of the ZIP file (header and contents). Any errors will be displayed on STDERR.

VIEW

VIEW now has the ability to view CSV files as tables. CSV files are typically used to represent tabular data, where each line in the file represents a row of a table. Each line contains the text of each column in the row, separated by a comma (although other characters can be used - e.g., a TAB).

By default, VIEW will automatically recognize CSV files and will display them as a table - where all the columns have the same width (much like a spreadsheet). Although unlike a spreadsheet, the column widths in V are fixed (determined by the longest entry in the column) and cannot be resized. You can press the arrow button next to the new CSV Mode button in the toolbar to customize the CSV behavior. Press the CSV Mode button to toggle between CSV mode and standard text mode.

ZIP

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/TEST - Test the integrity of the ZIP file (header and contents). Any errors will be displayed on STDERR.

New Commands:

ASSOCIATE

Combines the ASSOC and FTYPE command. ASSOCIATE will display, delete, or create associations. The syntax is:

ASSOCIATE [/D /F /P /R filename /U] [.ext [program]]

/D - Delete the association for the specified *.ext*

/F - Force an overwrite of an existing association

/P - Pause after each page (only useful when running ASSOCIATE with no arguments)

/R - Read associations from a file. The lines in the file must be in the format *.ext=program*

/U - Add the file association in HKCU instead of HKCR

DATEMONITOR

Monitor the current date and time, and execute the specified command when they match the saved time. If you don't specify any arguments, DATEMONITOR will display the current dates & times it is monitoring, and the associated commands.

DATEMONITOR [/C] yyyy-mm-dd hh:mm n command

/C	Clear any existing date monitors
n	Number of repetitions (or **FOREVER**)
command	Command to execute when the date matches the current time

The date must be in ISO (yyyy-mm-dd) format, and the time in 24-hour format.

DATEMONITOR sets two environment variables when the condition is triggered:

_datemonitor	The current date in yyyy-mm-dd format
_timemonitor	The current time in hh:mm (24-hour) format

ECHOX

Echo a line to STDOUT without performing any variable expansion or redirection. The syntax is:

ECHOX text

ECHOXERR

Echo a line to STDERR without performing any variable expansion or redirection. The syntax is:

ECHOXERR text

EVERYTHING

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Search for files and/or directories on local NTFS drives using "Everything Search" (http://www.voidtools.com). EVERYTHING by default does a wildcard search equivalent to "***filename***", and outputs the full pathname of all matching files and/or directories. The syntax is:

EVERYTHING [/C /D /F /M=n /P /R /W] filename [...]

/C	Filename matching is case sensitive
/D	Only search for directories
/F	Only search for files
/M=n	Only return a maximum of *n* files / directories. (Note that /M determines the total number of matches prior to any additional filtering. If you use /D or /F you will end up with the total minus the number of directories or files you excluded.)
/P	Match path names
/R	*filename* is a regular expression (EVERYTHING will automatically set the regular expression flag if the filename begins with **::**)
/W	Match whole word

You need to install Everything Search and index your local NTFS drives before using EVERYTHING.

SCREENMONITOR

Executes the specified command when a screen saver is active. If you don't specify any arguments, SCREENMONITOR will display the current screen saver monitor command (if any). Once the condition has been set, it will not be set again until the screen saver becomes inactive and then active again.

SCREENMONITOR [/C] n command

/C	Clear any existing screen saver monitors
n	Number of repetitions (or **FOREVER**)
command	Command to execute when the screen saver becomes active

2.14 Version 14

Feature List:

Take Command now supports a splitter window (on the horizontal scrollbar). You must enable "Splitter Windows" in the Take Command configuration dialog (Tabs window), and restart TCMD to see the splitter. (Note that it is technically impossible to display splitter console windows, so TCMD is using a lot of hand-waving, smoke, and mirrors.) The splitter window (on the right side) will not automatically scroll to the end when new output is displayed, or when you enter new commands. This allows you to scroll back in the screen buffer to review previous commands and output, and to select text from previous pages.

Take Command will check to see if your maximum allowable console window size (as set by Windows) is smaller than your Take Command tab window; if so Take Command will reduce the console font size until the console window size matches the tab window. (Requires Windows 7 or later.)

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The Internet code has been substantially rewritten and ported to a new major update of the IPWorks dll's.

Updated the IDE editor to a new version of Scintilla (3.2).

The conditional tests (DO, IF, IFF, etc.) now accept ! as a synonym for NOT.

Alt-F9 will restore the original filename mask when doing filename completion. This will only work provided you haven't terminated the completion loop; i.e., by pressing anything other than tab, F8, F9, F10, or F12.

Alt-F6 will no longer open the Folder View and List View windows if they're disabled; it will toggle between the Command Input window and the active tab window.

Added a "Register for all users" option (checkbox on the register page). This option will only be enabled if you are running an elevated administrator session.

There will not be a TCC/LE 14.0.

Batch Editor / Debugger:

You can select a rectangular area by holding down the Alt key while clicking the left mouse button and dragging the mouse.

INI Directives:

CompleteAllFiles=yes|NO - Normally, ***TCC*** will only complete directories and executable files (as defined by PATHEXT) when you press Tab or F9 at the beginning of a command line. If CompleteAllFiles is set to YES, ***TCC*** will complete any matching filename. Note that if you also have CompletePaths set, you'll probably have several hundred (or thousand!) matches for any filename you enter.

SplitterWindows=NO|yes - If YES, Take Command will display a horizontal scrollbar with a splitter in each tab window.

Internal Variables:

_SERIALPORTS - Returns a space-delimited list of all of the available serial ports (COM1 - COMn).

Variable Functions:

@FILES[/H filename] - Don't count "." or ".."

@REREPLACE[source_re, target_re, source] - Regular expression back reference replacement.

source_re - Regular expression to apply to the source

target_re - Regular expression for back reference

source - Source string

@SERIALPORTCLOSE[n] - Close the serial port. "n" is the handle returned by @SERIALPORTOPEN.

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@SERIALPORTFLUSH[n] - Flush the contents of the serial port buffer. "n" is the handle returned by @SERIALPORTOPEN.

@SERIALPORTOPEN[COMn[, baud[, parity[, bits[, flow]]]]] - Open a serial port for read & write. The parameters are:

COMn - The COM port to open (COM1 - COM9)

baud - The baud rate (110 - 256000)

parity - The parity scheme to use. This can be one of the following values:

no
odd
even
mark
space

bits - The number of bits in the bytes to transmit & receive

flow - The type of flow control to use. This can be one of the following values:

no
CtsRts
CtsDtr
DsrRts
DsrDtr
XonXoff

@SERIALPORTOPEN returns a handle to the serial port, which must be passed to the other serial port functions.

@SERIALPORTREAD[n] - Reads a string from the serial port. "n" is the handle returned by @SERIALPORTOPEN.

@SERIALPORTWRITE[n, text] - Writes a string to the serial port. "n" is the handle returned by @SERIALPORTOPEN.

@SMCLOSE[n] - Close a shared memory handle.

n - The shared memory handle returned by @SMOPEN

@SMOPEN[size, name] - Open a handle to shared memory

size - The size of shared memory (in bytes)

name - The name of the shared memory. The name can have a "Global\" or "Local\" prefix to create the object in the global or session namespace.

@SMPEEK[*handle,offset,size*] - Read a value from shared memory.

handle - a handle from @SMOPEN

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value to read (in bytes):

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1 - character
2 - short
4 - int
8 - int64

@SMPOKE[*handle,offset,size,value*] : Write a value to shared memory

handle - a handle from @SMOPEN

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value (in bytes):

1 - character
2 - short
4 - int
8 - int64

value - the value to poke

@SMREAD[n, offset, type, length] - Read a string from shared memory

n - The shared memory handle returned by @SMOPEN

offset - The offset (in bytes) from the beginning of the shared memory buffer.

type - Either **a** to read the string as ASCII or **u** to write it as Unicode.

length - The length of the string (in characters) to read.

@SMWRITE[n, offset, type, string] - Write a string to shared memory

n - The shared memory handle returned by @SMOPEN

offset - The offset (in bytes) from the beginning of the shared memory buffer.

type - Either **a** to write the string as ASCII or **u** to write it as Unicode.

string - The string to write.

@TRIMALL[string] - Remove leading and trailing spaces and tabs, and extra internal spaces and tabs.

Updated Commands:

ATTRIB

/L - Set or display the attributes of the symbolic link versus the target of the symbolic link.

COPY

If you don't specify any arguments, COPY will display the command dialog.

Added support for regular expression back references in the target name. If you are using back references, you must use a regular expression in the source name. The syntax is:

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copy ::filename ::target

See the help for details about back references.

DEL

If you don't specify any arguments, DEL will display the command dialog.

DESCRIBE

If you don't specify any arguments, DESCRIBE will display the command dialog.

ESET

/C - copy the value from another variable / alias / function. The syntax is:

eset /c var1 var2

where "var1" is the variable whose value you want to copy, and "var2" is the variable (new or existing) that you want to update.

GLOBAL

If you don't specify any arguments, GLOBAL will display the command dialog.

JABBER

If you don't specify any arguments, JABBER will display the command dialog.

MD

If you don't specify any arguments, MD will display the command dialog.

MKLINK

If you don't specify any arguments, MKLINK will display the command dialog.

MKLNK

If you don't specify any arguments, MKLNK will display the command dialog.

MOVE

If you don't specify any arguments, MOVE will display the command dialog.

Added support for regular expression back references in the target name. If you are using back references, you must use a regular expression in the source name. The syntax is:

move ::source ::target

See the help for details about back references.

PDIR

Now supports multiple nested *'s in a @ function specification.

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PLAYSOUND

If you don't specify any arguments, PLAYSOUND will display the command dialog.

RD

If you don't specify any arguments, RD will display the command dialog.

REN

If you don't specify any arguments, REN will display the command dialog.

Added support for regular expression back references in the target name. If you are using back references, you must use a regular expression in the source name. The syntax is:

ren ::source ::target

See the help for details about back references.

SELECT

If you don't specify any arguments, SELECT will display the command dialog.

SENDHTML

If you don't specify any arguments, SENDHTML will display the command dialog.

SENDMAIL

If you don't specify any arguments, SENDMAIL will display the command dialog.

SET

/RO var=value - set a read-only variable. Once you've set the variable, you cannot change it (or unset it). Only environment variables can be read-only (not registry variables or array variables).

SETARRAY

/R filename arrayname - read a file into a (1-dimensional) array. (SETARRAY will determine the required size of the array.)

START

/Desktop=desktopname - specify the desktop where you want to start the application.

/NODE n - Start the program using the specified NUMA node (*n* is a decimal integer).

/TABNA - start a new Take Command tab window, but keep the current tab active.

SYNC

If you don't specify any arguments, SYNC will display the command dialog.

TAR

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If you don't specify any arguments, TAR will display the command dialog.

TIMER

Accepts an optional command to run. This is the equivalent of "timer on & command & timer off". The syntax is:

timer command [args]

TOUCH

If you don't specify any arguments, TOUCH will display the command dialog.

UNTAR

If you don't specify any arguments, UNTAR will display the command dialog.

UNZIP

If you don't specify any arguments, UNZIP will display the command dialog.

ZIP

If you don't specify any arguments, ZIP will display the command dialog.

New Commands:

DEBUGMONITOR

Monitors the OutputDebugString API call from any process. The syntax is:

DEBUGMONITOR [/C]
DEBUGMONITOR n command

DEBUGMONITOR will set the environment variable "_outputdebugstring" to the string specified in the OutputDebugString call.

DESKTOP

Create a new desktop or switch to an existing desktop. The syntax is:

DESKTOP /C [/N] newdesktopname - create and optionally switch to a new desktop
DESKTOP desktopname - switch to an existing desktop

If you don't specify any arguments, DESKTOP will display the existing desktops.

RESOLUTION

Change the resolution (and optionally the color depth and refresh frequency) of the specified display. The syntax is:

RESOLUTION [displayname] width height [depth [frequency]]

If you don't specify any arguments, RESOLUTION will display the display devices and monitors.

TPIPE

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Text filtering and substitution. You can specify multiple filters, which are processed in the order they appear on the command line. Do not insert any unquoted whitespace in the arguments to an option! Row and column positions start at 1.

The syntax is:

TPIPE [/input=filename] [/output=filename] [/filter=filename] [/unicode=input,output] [/save=filename] [/simple=n[u]] [/eol=input,output,length] [/line=start,increment,skipblank,dontnumberblank,format] [/insert=position,type,string] [/head=Exclude,LinesOrBytes,Count] [/tail=Exclude,LinesOrBytes,Count] [/number=type,value] [/string=type,string] [/file=type,filename] [/dup=RemoveDuplicateLines,IgnoreCase,StartColumn,Length,IncludeOne] [/comment=text] [/log=LogFileName] [/run=InputFileName,OutputFileName,"CommandLine"] [/merge=type,filename] [/split=type,SplitSize,SplitChar,SplitCharPos,SplitCharCount,SplitLines,SplitFilename] [/grep=Type,IncludeLineNumbers,IncludeFilename,IgnoreCase,CountMatches,UTF8,PatternType,Pattern] [/replace=Type,MatchCase,WholeWord,CaseReplace,PromptOnReplace,Extract,FirstOnly,SkipPromptIdentical,Action,SearchStr,ReplaceStr] [/xml=Type,IncludeText,IncludeQuotes,MatchCase,BufferSize,Tag,Attribute,EndTag]

/input=filename

Filename to read. This can be either a disk file, include file (@filename), or CLIP:. If it is not specified, TPIPE will read from standard input.

/output=filename

Filename to write. This can be either a disk file or CLIP:. If it is not specified, TPIPE will write to standard output.

/merge=type,filename

Adds a merge type filter (merge into single output filename). The arguments are:

type:
- 0 Merge into filename
- 1 Retain lines found in filename
- 2 Remove lines found in filename
- 3 Link filter filename

filename - the filename to use

/filter=filename

Name of filter file to load (see /save=filename)

/save=filename

Saves the filter settings defined on the command line to the specified filename, and returns without executing any filters.

/unicode=input,output

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Convert the file to or from Unicode. **input** is the encoding for the input file; **output** is the encoding for the output file. The possible values are:

UTF-16LE
UTF-16BE
UTF-32LE
UTF-32BE
UTF-8
ANSI
ASCII
CP*nnn*, where *nnn* is the Windows code page.

TPIPE handles files internally as UTF-8, so if you want to process a Windows UTF-16LE file, you'll need to convert it to UTF-8 first, then apply the desired filters, and convert it back to UTF-16LE.

/simple=n[u]

Adds a simple filter type. n is the type of filter to add, and for those filters that support it, u indicates that the filter will be dealing with Unicode data.

1 Convert ASCII to EBCDIC
2 Convert EBCDIC to ASCII
3 Convert ANSI to OEM
4 Convert OEM to ANSI
5 Convert to UPPERCASE
6 Convert to lowercase
7 Convert to Title Case
8 Convert to Sentence Case
9 Convert to tOGGLE cASE
10 Remove blank lines
11 Remove blanks from End of Line
12 Remove blanks from Start of Line
13 Remove binary characters
14 Remove ANSI codes
15 Convert IBM drawing characters
16 Remove HTML and SGML
17 Remove backspaces
18 Resolve backspaces
19 Remove multiple whitespace
20 UUEncode
21 Hex Encode
22 Hex Decode
23 MIME Encode (Base 64)
24 MIME Decode (Base 64)
25 MIME Encode (Quoted printable)
26 MIME Decode (Quoted printable)
27 UUDecode
28 Extract email addresses
29 Unscramble (ROT13)
30 Hex dump
32 XXEncode
33 XXDecode
34 Reverse line order
35 Remove email headers
36 Decimal dump

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37 HTTP Encode
38 HTTP Decode
39 Randomize lines
40 Create word list
41 Reverse each line
42 Convert to RanDOm case
43 Extract URLs
44 ANSI to Unicode
45 Unicode to ANSI
46 Display debug window
47 Word concordance
48 Delete all
49 Restrict to each line in turn
50 Convert CSV to Tab-delimited
51 Convert CSV to XML')
52 Convert Tab-delimited to CSV
53 Convert Tab-delimited to XML
54 Convert CSV (with column headers) to XML
55 Convert Tab-delimited (with column headers) to XML
56 Convert CSV (with column headers) to Tab-delimited
57 Convert Tab-delimited (with column headers) to CSV
58 Restrict to file name
59 Convert Word documents to text
60 Swap UTF-16 word order
61 Swap UTF-32 word order
62 Remove BOM (Byte Order Mark)
63 Make Big Endian
64 Make Little Endian
65 Compress to Packed Decimal
66 Compress to Zoned Decimal
67 Expand Binary Number to EBCDIC
68 Expand Binary Number to ASCII
69 NFC - Canonical Decomposition, followed by Canonical Composition
70 NFD - Canonical Decomposition
71 NFKD - Compatibility Decomposition
72 NFKC - Compatibility Decomposition, followed by Canonical Composition
73 Decompose
74 Compose
75 Convert numeric HTML Entities to text
76 Convert PDF documents to text
77 Restrict to ANSI files
78 Restrict to Unicode UTF16 files
79 Restrict to Unicode UTF32 files
80 Convert Excel spreadsheets to text

/eol=input,output,length

Add an EOL (end of line) conversion filter. The arguments are:

input:
0 - Unix (LF)
1 - Mac (CR)
2 - Windows (CR/LF)
3 - Auto
4 - Fixed (use the length parameter to specify the length)

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output:
0 - Unix
1 - Mac
2 - Windows
3 - None

length - The line length to use if input=4

/line=StartNumber,Increment,SkipBlank,DontNumberBlank,NumberFormat

Adds a Line Number filter. The arguments are:

StartNumber - the starting line number

Increment - the amount to add for each new line number

SkipBlankIncrement - don't increase the line number for blank lines

DontNumberBlank - don't put a line number on blank lines

NumberFormat - The format to use for the line number. The format syntax is:
[-][width][.precision]d
An optional left justification indicator, ["-"]
An optional width specifier, [width] (an integer). If the width of the number is less than the width specifier, it will be padded with spaces.
An optional precision specifier [precision] (an integer). If the width of the number is less than the precision, it will be left padded with 0's.
The conversion type character:
d - decimal

/insert=position,type,string

Add an insert type filter. The arguments are:

type:
0 - Insert column
1 - Insert bytes

position - the position to insert the string

string - the string to insert

/head=Exclude,LinesOrBytes,Count

Add a head type filter (includes or excludes text at the beginning of the file). The arguments are:

Exclude - if 0, include the text; if 1, exclude it

LinesOrBytes - if 0, measure in lines; if 1, measure in bytes

Count - the number of lines or bytes to include or exclude

/tail=Exclude,LinesOrBytes,Count

Add a tail type filter (includes or excludes text at the end of the file). The arguments are:

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Exclude - if 0, include the text; if 1, exclude it

LinesOrBytes - if 0, measure in lines; if 1, measure in bytes

Count - the number of lines or bytes to include or exclude

/dup=Type,IgnoreCase,StartColumn,Length,IncludeOne

Remove or show duplicate lines. The arguments are:

Type:
0 - Remove duplicate lines
1 - Show duplicate lines

IgnoreCase - if 1, ignore case during comparisons

StartColumn - The starting column for comparisons

Length - The Length of the comparison

IncludeOne - Include lines with a count of 1

/string=type,MatchCase,string

Add a string-type filter. The arguments are:

type:
0 Add left margin
1 Add header
2 Add footer
3 Add right margin
4 Remove lines
5 Retain lines
6 Remove lines matching perl pattern
7 Retain lines matching perl pattern
8 Add text side by side
9 Add repeating text side by side
10 Not Used
11 Not Used
12 XSLT transform
13 Restrict to lines from list
14 Restrict to lines NOT in list
15 Restrict to lines matching perl pattern
16 Restrict to lines NOT matching perl pattern

matchCase - case sensitive or not (where appropriate)

string - the string to use

/file=type,MatchCase,filename

Add a file-type filter. The arguments are:

type:
17 Restrict to filenames matching perl pattern

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18 Restrict to filenames NOT matching perl pattern

MatchCase - If 1, do a case sensitive match (where appropriate)

filename - the filename to use

/number=type,value

Add a number-type filter. The arguments are:

type:
0 Convert Tabs to Spaces
1 Convert Spaces to Tabs
2 Word wrap (value column width)
3 Pad to width of value
4 Center in width of value
5 Right justify in width of value
6 Restrict CSV field to value
7 Restrict tab-delimited field to value
8 Truncate to width value
9 Force to width value
10 Repeat file value times
11 Restrict to blocks of length
12 Expand packed decimal (with implied decimals)
13 Expand zoned decimal (with implied decimals)
14 Expand unsigned (even-length) packed decimal
15 Expand unsigned (odd-length) packed decimal

Value - the numeric value to use

/comment=text

Add a comment to a filter file.

Text - Comment to add

/log=Filename

Log the TPIPE actions.

Filename - Name of log file

/run=InputFileName,OutputFileName,"CommandLine"

Adds a Run External Program filter. The arguments are:

InputFilename - the filename that TextPipe should read from after the External Program writes to it.

OutputFilename - the filename that TextPipe should write to for the External Program to read in.

CommandLine - the command line of the program to run. Should include double quotes around the entire command line.

/split=type,SplitSize,SplitChar,SplitCharPos,SplitCharCount,SplitLines,SplitFilename

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Adds a split type filter. The arguments are:

type:
0 Split at a given size
1 Split at a given character
2 Split at a given number of lines

splitSize - the size file to split at

splitChar - the character to split at

splitCharPos -
0 Split before the character (it goes into the next file)
1 Split after the character (it remains in the first file)
2 Split on top of the character (remove it)

SplitCharCount - the number of times to see SplitChar before splitting

SplitLines - (optional) split after a given number of lines, default 60

SplitFilename - (optional) the name to give to each output split file. /split will append a "%3.3d" format specifier to the name; i.e. an input file "foo.txt" will generate output files named "foo.txt.000", "foo.txt.001", etc. If you don't specify a SplitFilename, /split will use the input filename as the base.

/grep=Type,IncludeLineNumbers,IncludeFilename,IgnoreCase,CountMatches,PatternType,UTF8,IgnoreEmpty,Pattern

Adds a Grep type line based filter. The arguments are:

Type:
0 Restrict lines matching
1 Restrict lines NOT matching
2 Extract matches
3 Extract matching lines (grep)
4 Extract non-matching lines (inverse grep)
5 Remove matching lines
6 Remove non-matching lines

IncludeLineNumbers - 1 to include the line number where the pattern was found

IncludeFilename - 1 to include the filename where the pattern was found

IgnoreCase - 1 to ignore case when matching the pattern

CountMatches - 1 to only output a count of the number of matches

PatternType
0 Perl pattern
1 Egrep pattern
2 Brief pattern
3 MS Word pattern

UTF8 - 1 to allow matching Unicode UTF8 characters

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IgnoreEmpty - 1 to ignore empty matches

Pattern - the (regular expression) pattern to match

/replace=Type,MatchCase,WholeWord,CaseReplace,PromptOnReplace,Extract,FirstOnly, SkipPromptIdentical,Action,SearchStr,ReplaceStr

Adds a search and replace (find and replace) filter. The arguments are:

Type:
- 0 Replace
- 1 Pattern (old style)
- 2 Sounds like
- 3 Edit distance
- 4 Perl pattern
- 5 Brief pattern
- 6 Word pattern

MatchCase - Matches case when set to 1, ignores case when set to 0

WholeWord - Matches whole words only when set to 1

CaseReplace - Replaces with matching case when set to 1

PromptOnReplace - Prompts before replacing when set to 1

Extract - If 1, all non-matching text is discarded

FirstOnly - If 1, only replace the first occurrence

SkipPromptIdentical - If 1, don't bother prompting if the replacement text is identical to the original.

Action - the action to perform when found:
- 0 replace
- 1 remove
- 2 send to subfilter
- 3 send non-matching to subfilter
- 4 send subpattern 1 to subfilter etc

SearchStr - the string to search for

ReplaceStr - the string to replace it with

/xml=Type,IncludeText,IncludeQuotes,MatchCase,BufferSize,Tag,Attribute,EndTag

Adds an HTML/XML filter. The arguments are:

Type - the operation to perform:
- 0 restrict to an element
- 1 restrict to an attribute
- 2 restrict to between tags

IncludeText - whether to include the find string in the restriction result (default false)

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IncludeQuotes - whether to include surrounding quotes in the attribute result or not (default false)

MatchCase - match case exactly or not (default false)

BufferSize - the maximum expected size of the match (default 32768)

Tag - the element or start tag to find

Attribute - the attribute to find

EndTag - the endTag to find

2.15 Version 13

NEW VERSION OVERVIEW - Take Command 13.04

VIEW - The menus and dialogs are now available in English, French, Russian, and Spanish. The first time you run VIEW, it will set the language to the one defined in TCMD.INI. If you want to change it, you can select a language by starting VIEW, and selecting Tools / Preferences from the menu.

Updated all of the Internet libraries (ip*.dll).

NEW VERSION OVERVIEW - Take Command 13.03

Updated all of the Internet libraries (ip*.dll).

Updated zip library.

Updated registration (licensing) library.

New installer version.

Added Google Translate to web help.

MKLINK - /D will now create a directory symlink even if the directory to link to does not exist (for CMD compatibility).

NEW VERSION OVERVIEW - Take Command 13.02

The batch debugger editor and command input editor have been upgraded to a major new version.

Added the feedback tab to the web help pages.

BDEBUGGER - Added the Ctrl-F3, F3, and Shift-F3 keys (find next / find prev).

NEW VERSION OVERVIEW - Take Command 13.01

The local help (tcmd.chm) has a number of new display options.

Take Command and TCC now have the option to use either the new Web Help or the local help (tcmd.chm). The web help
has some additional features, including the ability to add comments to help topics.

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The search algorithm for the popup windows has changed slightly. TCC will append a * to the search string unless the last character of the string is a wildcard (?, *, or]), or if the search string is a regular expression (the first two characters of the string are **::**).

MKLINK - The /X option no longer requires two arguments.

Take Command/LE has been discontinued. Existing Take Command/LE customers have been sent a free update to the full Take Command version.

.INI Directives:

WebHelp=yes|NO - New TCMD.INI directive (set in the Take Command and the TCC configuration dialogs). If set,
Take Command and TCC will use the web help at https://jpsoft.com/help/index.htm instead of the local help.

NEW VERSION OVERVIEW - Take Command 13.0

This is a summary of the new features. For complete details, see the appropriate topics in this help file. Features marked with a * are also in TCC/LE; all other features are Take Command and/or TCC only.

Feature List:

* TCC/LE is now available in 32-bit and 64-bit versions.

* Removed the (non-Windows) limits on filename and argument size. The maximum filename size (dictated by Windows) and single argument size is now 32,767 characters.

* The maximum (input) command line is now 65,535 characters.

* The maximum expanded command line size is now 131,072 characters.

* Fuzzy directory (jpstree.idx) updates (in MD, RD, DEL /S/X, etc.) are twice as fast as v12.

The Take Command toolbar has a new button "V" that will call the new file viewer VIEW (see below).

All of the popup windows (history lists, filename completion, @select, etc) have an edit control on the toolbar. Entering a search string there (or just typing while the popup window has focus) will eliminate non-matching entries from the window. The search string can also contain wildcards or regular expressions. (For example, entering *jpsoft* in the edit control at the top of the window will select all matching lines that contain "jpsoft" anywhere.)

All paging options (/P) in TCC now accept an "All" key to turn off paging. (This will vary by language, and is shown in the prompt.)

TCC now sets the default regular expression syntax (according to the value set in TCMD.INI) at startup and after saving new values in OPTION. (This is only of interest to plugin authors.)

The persistent directory history file is now only loaded if either local directory history is set, or TCC thinks it is the first instance. But since there's no such thing as "shell levels" in Windows, TCC can only guess (based on the TCMD.INI inheritance).

If the DirHistoryOnEntry .INI directive is set, TCC will save its startup directory to the directory history.

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A Ctrl-Enter in the Command Input window will execute the current line and move the cursor down to the next line (without inserting a line).

Take Command now saves toolbar changes done through the add tab or create/edit button dialogs (previously it required you to right click in the toolbar & select "Save to .INI").

Help file updates.

.INI Directives:

AliasSize - Set the size of the global alias list (in characters). (The default is 256K.)

BeepFreq / BeepLength-- you can play a system sound on an error by setting BeepLength to 0 and BeepFreq to the desired sound:

0 - Windows default beep sound
16 - Windows Critical Stop sound
32 - Windows Question sound
48 - Windows Exclamation sound
64 - Windows Asterisk sound

DelWipePasses - The number of passes for a DEL /W. The range is 1-9; the default is 3.

FunctionSize - Set the size of the global function list (in characters). (The default is 128K.)

Command Line Editing:

A Ctrl-Enter in the Command Input window will execute the current line and move the cursor down to the next line (without inserting a line).

An Alt-F1 will look to see if the (first and only) argument on the line is an internal command with a command dialog (see below), and if so invoke the dialog.

The popup history windows have an edit control on the toolbar. Entering a search string there (or just typing while the popup window has focus) will eliminate non-matching entries from the window.

New Commands:

SENDHTML

Send an HTML email.

SENDHTML [/A file1 [/A file2 ...] /D /Eaddress /H"header: value" /In /M /Pn /R /Sn /SSL[=n] /V] "address[,address...] [cc:address[,address] bcc:address[,address...]]" subject [text | @msgfile]

file1...	The attachment files
address	The destination email address
subject	The subject line
text	The message to send
msgfile	The file containing the message body
/SSL=n	SSL negotiation type

/A file	Attachment
/D	Delivery Confirmation
/E	Reply-to address
/H	Send custom header

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/In	Importance
/M	CRAM-MD5 authentication
/Pn	Priority
/R	Send read receipt
/Sn	Sensitivity
/V	Verbose
/X	Send EHLO instead of HELO

If you pass "/=" as the argument, SENDHTML will display a dialog to help you with the command line options.

TCDIALOG

Run the new internal command dialogs. . See the Commands section for details.

The syntax is:

TCDIALOG command

If "command" does not have a dialog, TCDIALOG returns a usage error.

VIEW

VIEW is a replacement for LIST. The syntax is:

VIEW [/A:[[-|+]rhsadecijopt /A /B /E /F /FIX /FLAT / GB /H /L /L:n ?
LEN:n /O:xx /P /R /S:xx /T /TEXT /VH /W] file ...

/=	Display the VIEW command dialog to help you set the filename and command line options. You cannot specify any other arguments on the command line.
/A:	Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use **/A:** with ***@file*** lists. See @file lists for details. You can specify **/A:=** to display a dialog to help you set individual attributes.
/A	View the file in ASCII mode. This is the default mode and will only need to be specified in order to override an existing EBCDIC mode.
/B	View the file in EBCDIC mode. VIEW normally automatically determines if a file is EBCDIC and automatically sets this mode.
/E	Start viewing the file from the end instead of the beginning.
/F	Standard input has been redirected (such as the output of a DIR command). (VIEW can normally determine this on its own.)
/FIX:n	When viewing a file, the display may be fixed at a certain column position so that any text to the left of the fixed column will always be visible (ie, it will not scroll off the screen).
/FLAT	Enables Flat Text Mode. This is a cross between text and hex modes. The file is displayed as text, however, control characters like line feeds and tabs are not expanded, and the file is always wrapped at the specified wrap length.

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/GB Enables Greenbar Mode. (Each alternating line is in a different color.)

/H View the file in Hex mode.

/L Display the last file that was viewed. (This will be the first file in the Recent Files list.)

/L:n Start displaying the file from line number *n.* A solid blue line will appear at the top of the file, indicating that a non-zero start offset is being used.

/LEN:n Set the wrap length to *n.*

/O:xx Start displaying the file from offset *xx*.

/P Print the file and exit VIEW when finished.

/R When started with no parameters, VIEW will browse the current directory. By specifying the /R option, VIEW will display the directory that it last browsed.

/S The /S option is used to tell VIEW to start displaying the file at the position of a string match. The format of the /S command line option is as follows:

```
/S:SearchString /SO:[CWRHUB] /SN:n /SC:Columns
```

where SO can contain a series of letters which correspond to the options in the search dialog box. These can be one of:

C Match case

W Word Only

R Regular Expression

H Hex/Binary

U Unicode

B Search backwards (from end of file)

SN indicates which occurrence of the string to find. By default, the first match is found (n=1).

SC can be used to restrict the search to certain columns.

If the search string contains spaces, you must enclose it in double quotes.

/T Enable File Tailing. If data is added to the file while you are viewing it, it will automatically be updated. There is no need to press the Refresh button to see any changes since the file was loaded. This is particularly useful when viewing log files while they are still being updated.

/TEXT Open the files in text mode (opposite of /H). (This is the default.)

/VH Display the file in Vertical Hex Mode. This is a cross between Text and Hex modes. The file is displayed one line at a time (just as in text mode). However,

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each line is followed by 2 lines containing the hex code of each character in the line.

/W Display the VIEW window in a Take Command tab window.

WEBFORM

POST data to interactive web pages or scripts. WEBFORM will use the proxy & firewall settings from TCMD.INI.

WEBFORM [/An /En /Fn /U"username" /P"password" /R"referer" /V] /W"url" "varname" "varvalue" ...

/An Authorization scheme:
0 - basic
1 - digest
2 - proprietary
3 - none
4 - NTLM
5 - Negotiate

/En Encoding:
0 (URLEncoding) This is the most common encoding for HTML form contents.
1 (MultipartFormData) This is MIME encoding allowing transmission of binary data.
2 (QueryString) This is an older form of encoding where the actual parameters are appended to the URL query string. (Generally not recommended because most servers limit the size of the URL to less than 1K or 2K).

/F"from" Email address of the HTTP agent.

/U"username" User name if authentication is to be used.

/P"password"

/L"localfile" Local file for downloading. If the file exists, it will be overwritten.

/O"headers" Other headers. The headers must be of the format "header: value" as described in the HTTP specifications. Header lines should be separated by CR/LF (^r^n).

/R"referer" The document referring the requested URL

/Tn Firewall type:
0 - no firewall (default)
1 - Connect through a tunneling proxy. Port is set to 80.
2 - Connect through a SOCKS4 proxy. Port is set to 1080.
3 - Connect through a SOCKS5 proxy. Port is set to 1080.

/V(erbose) Display retrieved document text

/W"url" URL of web page

Example:
webform /v /w"http://download.finance.yahoo.com/d/quotes.csv" "f", "sl1d1t1c1ohgv" "e", ".csv" "s", "IBM"

WEBUPLOAD

Upload files to RFC1867-compliant web servers. WEBUPLOAD will use the proxy & firewall settings from TCMD.INI.

WEBUPLOAD [/An /Fn /U"username" /P"password" /R"referer" /V] /W"url" [/V "varname" "varvalue"] "filevar" "filename" ...

/An Authorization scheme:
0 - basic
1 - digest
2 - proprietary
3 - none
4 - NTLM
5 - Negotiate

/F"from" Email address of the HTTP agent.

/U"username" User name if authentication is to be used.

/P"password"

/L"localfile" Local file for downloading. If the file exists, it will be overwritten.

/O"headers" Other headers. The headers must be of the format "header: value" as described in the HTTP specifications. Header lines should be separated by CR/LF (^r^n).

/R"referer" The document referring the requested URL

/Tn Firewall type:
0 - no firewall (default)
1 - Connect through a tunneling proxy. Port is set to 80.
2 - Connect through a SOCKS4 proxy. Port is set to 1080.
3 - Connect through a SOCKS5 proxy. Port is set to 1080.

/V The following two arguments are a varname / varvalue pair.

Commands:

ACTIVATE

DESKTOP - makes the desktop the active window

ASSOC

/U - display/set the associations in HKCU\Software\Classes

ATTRIB

If you pass "/=" as the argument, ATTRIB will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, ATTRIB will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, ATTRIB will display a dialog to help you set the individual attributes.

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Sets three internal variables:
%_attrib_dirs - The number of directories modified
%_attrib_files - The number of files modified
%_attrib_errors - The number of errors

CD

Fuzzy directory searches are 250% faster.

Extended the ~ (home) path argument to take appended directory names (i.e., "~\music"). If CD cannot find HOME in the environment, it will look for HOMEDRIVE + HOMEPATH.

CDD

Fuzzy directory searches are 250% faster.

Extended the ~ (home) path argument to take appended directory names (i.e., "~\music"). If CDD cannot find HOME in the environment, it will look for HOMEDRIVE + HOMEPATH.

COPY

If you pass "/=" as the argument, COPY will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, COPY will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, COPY will display a dialog to help you set the individual attributes.

Sets three internal variables:
%_copy_dirs - The number of directories created
%_copy_files - The number of files copied
%_copy_errors - The number of errors

DEL

If you pass "/=" as the argument, DEL will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, DEL will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, DEL will display a dialog to help you set the individual attributes.

/W[n] - takes a new option to specify the number of wipe passes. The range is 1-9999; the default is 3. (It will be REALLY slow and probably really pointless at anything over 3-5.) See also the .INI directive DelWipePasses.

Sets three internal variables:
%_del_dirs - The number of directories deleted
%_del_files - The number of files deleted
%_del_errors - The number of errors

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DELAY

UNTIL [yyyy-mm-dd] hh:mm[:ss] - delay until the specified date/time. If no date is specified, default to today.

DESCRIBE

If you specify "/[=]" for the ranges, DESCRIBE will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, DESCRIBE will display a dialog to help you set the individual attributes.

DIR

If you pass "/=" as the argument, DIR will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, DIR will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, DIR will display a dialog to help you set the individual attributes.

Sets three internal variables:

%_dir_dirs - The number of directories displayed
%_dir_files - The number of files displayed
%_dir_errors - The number of errors

/B1 - display bare filenames with the relative path from the start, when used with /S. (Normally, /B shows
the full pathname for each file.)

DIRHISTORY

If you pass "/=" as the argument, DIRHISTORY will display a dialog to help you set the filename and command line options.

DO

If you specify "/[=]" for the ranges, DO will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, DO will display a dialog to help you set the individual attributes.

Sets three internal variables:

%_do_dirs - The number of subdirectories traversed
%_do_files - The number of files processed
%_do_errors - The number of errors

EVENTLOG

If you pass "/=" as the argument, EVENTLOG will display a dialog to help you set the command line options.

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FFIND

If you specify "/[=]" for the ranges, FFIND will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, FFIND will display a dialog to help you set the individual attributes.

Sets three internal variables:
%_ffind_matches - The number of matches
%_ffind_files - The number of files found
%_ffind_errors - The number of errors

FOR

If you specify "/[=]" for the ranges, FOR will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, FOR will display a dialog to help you set the individual attributes.

Sets two internal variables:
%_for_files - The number of files processed
%_for_errors - The number of errors

FTYPE

/U - display/set the types in HKCU\Software\Classes

GLOBAL

If you pass "/=" as the argument, GLOBAL will display a dialog to help you set the command line options.

GZIP

If you specify "/[=]" for the ranges, GZIP will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, GZIP will display a dialog to help you set the individual attributes.

HEAD

If you pass "/=" as the argument, HEAD will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, HEAD will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, HEAD will display a dialog to help you set the individual attributes.

/B - ignore Bell (ASCII 7) characters.

Sets two internal variables:

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%_head_files - The number of files displayed
%_head_errors - The number of errors

HISTORY

If you pass "/=" as the argument, HISTORY will display a dialog to help you set the command line options.

IFTP

If you pass "/=" as the argument, IFTP will display a dialog to help you set the command line options.

JABBER

If you pass "/=" as the argument, JABBER will display a dialog to help you set the command line options.

LIST

If you pass "/=" as the argument, LIST will display a dialog to help you set the file and command line options.

If you specify "/[=]" for the ranges, LIST will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, LIST will display a dialog to help you set the individual attributes.

MD

If you pass "/=" as the argument, MD will display a dialog to help you set the directory and command line options.

Sets two internal variables:
%_md_dirs - The number of directories created
%_md_errors - The number of errors

MKLINK

If you pass "/=" as the argument, MKLINK will display a dialog to help you set the file and command line options.

/A - create a link with an absolute path. (For CMD compatibility, MKLINK normally creates relative links if you don't pass the full pathname.)

/X - deletes a directory link.

Sets two internal variables:
%_mklink_links - The number of links created
%_mklink_errors - The number of errors

MKLNK

If you pass "/=" as the argument, MKLNK will display a dialog to help you set the file and command line options.

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Sets two internal variables:
%_mklnk_links - The number of links created
%_mklnk_errors - The number of errors

MOVE

If you pass "/=" as the argument, MOVE will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, MOVE will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, MOVE will display a dialog to help you set the individual attributes.

Sets three internal variables:
%_move_dirs - The number of directories created
%_move_files - The number of files moved
%_move_errors - The number of errors

PDIR

If you specify "/[=]" for the ranges, PDIR will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, PDIR will display a dialog to help you set the individual attributes.'

/B1 - display bare filenames with the relative path from the start, when used with /S.

Sets three internal variables:
%_pdir_dirs - The number of directories displayed
%_pdir_files - The number of files displayed
%_pdir_errors - The number of errors

PLAYAVI

If you pass "/=" as the argument, PLAYAVI will display a dialog to help you set the filename and command line options.

PLAYSOUND

If you pass "/=" as the argument, PLAYSOUND will display a dialog to help you set the filename and command line options.

PLUGIN

If you pass "/=" as the argument, PLUGIN will display a dialog to help you set the file and command line options.

RD

If you pass "/=" as the argument, RD will display a dialog to help you set the directory and command line options.

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If you specify "/[=]" for the ranges, RD will display a dialog to help you set the individual range arguments.

Sets two internal variables:
%_rd_dirs - The number of directories deleted
%_rd_errors - The number of errors
(Note that if you do an RD /S, the actual deletions are done by DEL, so check the DEL variables.)

REN

If you pass "/=" as the argument, REN will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, REN will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, REN will display a dialog to help you set the individual attributes.

Sets three internal variables:
%_ren_dirs - The number of directories renamed
%_ren_files - The number of files renamed
%_ren_errors - The number of errors

SELECT

If you pass "/=" as the argument, SELECT will display a dialog to help you set the command line options.

If you specify "/[=]" for the ranges, SELECT will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, SELECT will display a dialog to help you set the individual attributes.

Added support for @file lists.

SENDMAIL

If you pass "/=" as the argument, SENDMAIL will display a dialog to help you set the command line options.

/X - Send EHLO instead of HELO.

SET

/Q - don't echo result of /A when at the command line.

START

If you pass "/=" as the argument, START will display a dialog to help you set the command and options.

SWITCH

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Added new command CASEALL, which should follow all the CASE statements but precede the DEFAULT. If a CASE statement has been executed, then CASEALL will also be executed; otherwise it is ignored.

CASE arguments can be literals, variables, or functions.

SYNC

If you pass "/=" as the argument, SYNC will display a dialog to help you set the directory and command line options.

If you specify "/[=]" for the ranges, SYNC will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, SYNC will display a dialog to help you set the individual attributes.

Sets three internal variables:
%_sync_dirs - The number of directories created
%_sync_files - The number of files copied
%_sync_errors - The number of errors

TAIL

If you pass "/=" as the argument, TAIL will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, TAIL will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, TAIL will display a dialog to help you set the individual attributes.

/B - ignore Bell (ASCII 7) characters

Sets two internal variables:
%_tail_files - The number of files displayed
%_tail_errors - The number of errors

TAR

If you specify "/[=]" for the ranges, TAR will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, TAR will display a dialog to help you set the individual attributes.

Sets two internal variables:
%_tar_files - The number of files compressed
%_tar_errors - The number of errors

TASKLIST

If you pass "/=" as the argument, TASKLIST will display a dialog to help you set the command line options.

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TOUCH

If you pass "/=" as the argument, TOUCH will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, TOUCH will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, TOUCH will display a dialog to help you set the individual attributes.

Sets three internal variables:

%_touch_dirs - The number of directories touched
%_touch_files - The number of files touched
%_touch_errors - The number of errors

TREE

If you pass "/=" as the argument, TREE will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, TREE will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, TREE will display a dialog to help you set the individual attributes.

TYPE

If you pass "/=" as the argument, TYPE will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, TYPE will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, TYPE will display a dialog to help you set the individual attributes.

/B - ignore Bell (ASCII 7) characters.

Sets two internal variables:

%_type_files - The number of files displayed
%_type_errors - The number of errors

UNGZIP

If you specify "/[=]" for the ranges, UNGZIP will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, UNGZIP will display a dialog to help you set the individual attributes.

Added support for wildcards in the gzip filename.

Added range support.

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UNTAR

If you pass "/=" as the argument, UNTAR will display a dialog to help you set the archive name and command line options.

If you specify "/[=]" for the ranges, UNTAR will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, UNTAR will display a dialog to help you set the individual attributes.

Added support for wildcards in the tar filename.

Added range support.

Sets two internal variables:
%_untar_files - The number of files extracted
%_untar_errors - The number of errors

UNZIP

If you pass "/=" as the argument, UNZIP will display a dialog to help you set the archive name and command line options.

If you specify "/[=]" for the ranges, UNZIP will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, UNZIP will display a dialog to help you set the individual attributes.

Added support for wildcards in the zip filename.

Added range support.

Sets two internal variables:
%_unzip_files - The number of files extracted
%_unzip_errors - The number of errors

ZIP

If you pass "/=" as the argument, ZIP will display a dialog to help you set the filename and command line options.

If you specify "/[=]" for the ranges, ZIP will display a dialog to help you set the individual range arguments.

If you specify "/A:=" for the attributes, ZIP will display a dialog to help you set the individual attributes.

Sets two internal variables:
%_zip_files - The number of files compressed
%_zip_errors - The number of errors

ZIPSFX

Added ranges support.

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If you specify "/[=]" for the ranges, ZIPSFX will display a dialog to help you set the individual range arguments.

Sets two internal variables:
%_zipsfx_files - The number of files compressed
%_zipsfx_errors - The number of errors

Internal Variables:

_TCEXIT - the pathname of the TCEXIT.xxx file, as of the time %_TCEXIT is referenced. (The value could change before TCEXIT.xxx is called.)

_TCSTART - the pathname of the TCSTART.xxx file. It is set prior to TCSTART being executed.

Variable Functions:

* The maximum argument size (passed to and returned from) variable functions has been increased to 32,767 characters.

%@ASSOC - added second optional argument "U" for associations in HKCU\Software\Classes.

%@B64DECODE - Decode a Base64 file or string (MIME encoding format).

%@B64ENCODE - Encode a file or string to Base64 (MIME encoding format).

%@FILEOPEN - added support for CON:.

%@FTYPE - added second optional argument "U" for types in HKCU\Software\Classes.

%@GETDIR - now uses the newer Explorer-style dialog.

%@HEXDECODE - Decode a hex encoded file or string.

%@HEXENCODE - Encode a text file or string as hex.

%@LINE - is 50% faster.

%@LINES - is 50% faster.

%@SELECT - is 200% faster.

%@UTF8DECODE - Decode a UTF8 file or string.

%@UTF8ENCODE - Encode a UTF8 file or string.

%@UUDECODE - Decode a UU encoded file.

%@UUENCODE - Encode a file using the UU Encode format.

%@YDECODE - Decode a Y Encoded file

%@YENCODE - Encode file using the Y Encode format (similar to Base64, but uses 8-bit encoding to reduce the amount of data).

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NEW VERSION OVERVIEW - Take Command 12.11

Feature List:

* Added Spanish language support.

NEW VERSION OVERVIEW - Take Command 12.10

Feature List:

Added a Visual Studio 2010 theme to Take Command and the IDE/debugger.

* Added Italian language support.

* The non-English language support has been extended to include more menus, dialogs, and strings.

TCMD will now copy descriptions from DESCRIPT.ION when dragging & dropping in the Folders and List View windows.

TCMD and TCC will now display "Administrator:" on the title bar if the process is run as an administrator and no other title is defined.

Conditional tests (DO, IF, IFF, @IF) have two new tests:

string =~ expression Returns 1 if the string matches the regular expression

string !~ expression Returns 1 if the string does not match the regular expression

HTTP operations will now try to autodetect and use the system proxy settings, if available. (If not, they will fall back to using the values defined in OPTION / Internet.)

FTP / FTPS / SFTP operations will now try to autodetect and use the system firewall settings, if available. (If not, they will fall back to using the values defined in OPTION / Internet.)

Help file updates.

Commands:

CD

If the path argument is ~ (tilde), CD will change to the user's home directory (defined by HOME in the environment).

CDD

If the path argument is ~ (tilde), CDD will change to the user's home directory (defined by HOME in the environment).

GZIP

Fixed a (3rd party dll) bug when compressing with lzw.

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FFIND

Added /8 option for UTF-8 files.

LIST

Added /8 option for UTF-8 files.

Variable Functions:

@HTMLDECODE - Decodes an HTML string.

@HTMLENCODE - Encodes the string for HTML (i.e., replacing things like > with >).

Batch Debugger:

Conditional breakpoints - you can now add breakpoint conditions to break on the number of iterations, or on a conditional expression (like the tests in IF and DO). There is a new tabbed window that shows the breakpoints and their (optional) conditions.

Added the option to disable (without deleting) breakpoints.

The breakpoints and conditions are saved when the batch file is saved & restored when the batch file is reloaded.

NEW VERSION OVERVIEW - Take Command 12.0

This is a summary of the compatibility fixes and new features. For complete details, see the appropriate topics in this help file.

The new features that are supported in ***TCC/LE*** are marked with a ***.**

Feature List:

* Numerous optimizations to make everything a little faster.

* Added Russian language support.

* New icons for ***Take Command***, ***Take Command/LE***, ***TCC***, and ***TCC/LE***.

  The ***Take Command*** folder view now auto updates when folders are created, deleted, or renamed. (This can be disabled with the new .INI directive AutoUpdateFolders.)

  Added directory wildcard support to ***TCC***. You can control the subdirectory recursion by specifying * or ** in the path. A * will match a single subdirectory level; a ** will match any all subdirectory levels for that pathname. Directory wildcards also support regular expressions. Directory wildcards cannot be used with the /O:... option (which sorts entries before executing the command). And think very carefully before using directory wildcards with a /S (recurse subdirectories) option, as this will almost certainly return unexpected results! There are a few commands which do not support directory wildcards, as they would be meaningless or destructive (for example, TREE, @FILEOPEN, @FILEDATE, etc.).

  Take Command now supports customizing the color palettes used in the tab windows, via a "Tab Colors" button on the "Configure Take Command / Tab" dialog. ***Take Command*** will first try to

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retrieve the palette from the console (Windows and later only). If the console is using a custom palette, ***Take Command*** will use that palette for the tab window. If there is no custom palette for this console, ***Take Command*** will use the colors saved from the "Tab Colors" dialog.

The ***Take Command*** "Configure Take Command / Tabs / Windows" foreground and background colors combo boxes now display the actual colors instead of the color name. (This is necessary to support the custom color palettes, as otherwise if you redefined the palette the color names would have no relation to the colors used. It also makes it easier to select the color you want.)

You can now use environment variables in the TCMD.INI sections "[4NT]" and "[TCMD]", and the ini parser will expand them before setting the directives. (Note that if you were already setting a directive to a value with an embedded %, you'll need to double the %'s now.)

* TCMD.INI file parsing (and thus the startup time) is faster.

The ***TCC*** persistent History and DirHistory lists load significantly faster.

Changed the internal ***TCC*** Perl support from the hopelessly buggy & undocumented embedded Perl to PerlScript (the WSH COM interface to Perl). The good news is that Perl support is no longer version dependent, so you can use Perl 5.8, 5.10, or 5.12.

TCC now supports Python 3.1, 2.6, and 2.5. (***TCC*** will search for the Python dll's in that order.)

The ***Take Command*** tabbed toolbar will hide the tabs row if there is only one tab defined.

The default directory for the Command Input window is now set to the selected directory in the Folders view. (This allows tab completion in the Command Input window to match the List View when no path is specified.)

The ***Take Command*** "Tabs" menu now includes "Previous Tab" and "Next Tab", allowing you to define keys to change tabs from the keyboard.

The ***Take Command*** "Options" menu now includes "Configure Tabbed Toolbar", which allows you to add buttons or tabs, or save or reload the toolbar from TCMD.INI. (You can also do this by right clicking on the toolbar.) To edit an existing button, right click on the button.

Ranges now support multiple file exclusions (i.e., "dir /[!*.txt] /[!*.doc] *"). (Useful for aliases or variable substitution where a default file exclusion is specified.)

Added "Owner" to file ranges. The syntax is "/[O"owner"]" or "/![O"owner"]". It supports wildcard comparisons; the value returned is the same as shown in DIR /Q or %@owner[file].

If you left click on the current ***TCC*** command line while in a ***Take Command*** tab window, ***TCC*** will move the cursor position to the mouse position.

You can describe directories and files with the List View in ***Take Command*** when it is in "Details" view. Double click on the "Description" column, enter or edit the description in the edit box, and press Enter to save.

The toolbar button dialog now has a "Copy" button, which copies the properties of the current button to a new button.

* Changed the dialog fonts from MS Sans Serif to Tahoma.

The VK_APPS (menu) key will invoke the context menu in ***Take Command*** tab windows.

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The ***Take Command*** and ***TCC*** configuration dialogs have been reformatted to display correctly on Netbook (1024x600) displays.

Added (experimental) double-wide character set (i.e., Japanese, Chinese, etc.) support to ***Take Command***.

* File read operations are slightly faster.

Startup Options:

/C Run the specified command in a new ***TCC*** tab window. If there is already a ***Take Command*** session running, /C creates a new tab in the existing ***Take Command*** rather than starting a new session. **/C** must be the last option on the command line (otherwise ***Take Command*** can't tell if additional options belong to ***Take Command*** or the command to run in the ***TCC*** tab).

/NT Don't load the default startup tabs (usually only useful when combined with /C or /T).

.INI Directives:

AutoUpdateFolders=yes|NO - Updates the ***Take Command*** folder view automatically when folders are created, deleted, or renamed. This will slow things down slightly, so if you have processes that are modifying directories a lot (more than once every few seconds) you may want to disable the autoupdates.

* CMDVariables=yes|NO - Requires environment variables in ***TCC*** to be delineated by leading and trailing %'s. For those of you who just can't get enough of CMD compatibility, and the consistent way it handles variables. Which have to be enclosed in %'s, like "%varname%". Unless it's a batch variable, which only has a leading %. Or a FOR variable, which only has a leading %. Or sometimes two leading %'s.

CommandInputWrap=YES|no - If set to Yes, ***Take Command*** will wrap the input lines in the Command Input window instead of scrolling horizontally.

CompletePercents=yes|NO - If the tab-completed filename has embedded %'s, and the first argument of the command is an internal command, the %'s will be doubled so that variable expansion won't end up deleting (or unexpectedly expanding) the filename. (The tab completion routine cannot preparse aliases or environment variables, so if you're using one of those as your first argument, you're out of luck!)

DirHistoryOnEntry=yes|NO - ***TCC*** normally saves the previous directory to the directory history when you change to a new directory. This option saves the new directory to the directory history when you change directories.

IBeamCaret=yes|NO - use an IBeam caret instead of the default console underline caret. (***Take Command*** tab windows only.)

LockListView=yes|NO - Prevents modification of the ***Take Command*** List View (double clicking on the description column to edit the description, or selecting a file or directory and pressing F2 to rename it).

SmoothScroll=yes|NO - Scrolls the ***Take Command*** tab windows smoothly (1 pixel at a time instead of a line at a time). Slows things down and doesn't provide any extra functionality; it's just eye candy! (In order to reduce the slowdown, ***Take Command*** will only use smooth scrolling when the console has scrolled <= 3 lines. If the console is spitting out a lot of short lines, you won't see the smooth scroll, but then you can't really discern anything at that speed.)

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StartTabWait - the number of milliseconds to wait before loading the next ***Take Command*** startup tab. The range is 0 - 5000. (This should only be needed in rare cases, when tabs are interfering with one another while starting.)

Command Line Editing:

See the new .INI directive CompletePercents.

You can triple-click on a line to select the entire line (***Take Command*** "Command Input" and tab windows only).

Command completion (i.e., Tab or F9 for the first argument on the line) will append a space to the command name.

^P in the Command Input window will print the command history.

^P (last argument in previous command) on the ***TCC*** command line has been changed to ^B. (But it can still be remapped.)

New Commands:

CLIPMONITOR

Monitor the Windows clipboard, and execute a command when the contents change.

CLIPMONITOR [/C]
CLIPMONITOR n command

n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered
/C	Remove the clipboard monitor.

FONT

Change the console font characteristics. This command is only available in Windows 7 and later, and will only affect stand-alone ***TCC*** console windows. (You can already change the font in ***Take Command*** tab windows.) The syntax is:

FONT [/Ffamily /Nname /Wn /Xn /Yn]

/F - The font family:
decorative
dontcare
modern
roman
script
swiss

/N - Font face name

/W - Font weight (100 - 1000, in multiples of 100). The normal weight is 400; bold is 700.

/X - The width of each character, in logical units.

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/Y - The height of each character, in logical units.

GZIP

The GZIP command is compatible with the archives created by the UNIX gzip utility and supports RFC 1952. GZIP is used for compressing a single file; if you need to compress multiple files you should use the ZIP (or TAR) command. The syntax is:

GZIP [A:[[-][+]rhsdaecjot] /A /E /L /M /O:[-]adegnrstu /Q /V] g*ziparchive* [@*file*] *file*

gziparchive The .gz file to work with
path The path where the file will be extracted
file The file to extract

/A:... - Attribute selection

/A - Add file (default).

/E - Compression method (0 = deflate, 1 = lzw). The default is 0.

/L - Compression level (1 - 6). The default is 4.

/M - Move the file to the gzip archive and delete the original on disk

/O - Sort order

/Q - Quiet (don't display filenames as they are added to the archive).

/V - View date, time, and filename of the file in the archive. (Due to the limitations in the GZIP format, this can only display the first file in the archive.)

TAR

The TAR command is compatible with archives created by the UNIX tar utility. TAR also supports gzip compression and can be used to create .tar.gz archives.

TAR [A:[[-][+]rhsdaecjot] /A /C /D /F /G /M /O:[-]adegnrstu /P /Q /R /U /V] *tararchive* [@*file*] *file*...

tararchive The tar file to work with
file The files(s) to be added to the zip file

/A:... - Attribute selection

/A - Add files to the tar archive (default).

/C - Display contents of the tar archive.

/D - Delete the specified file(s) from the tar archive.

/F - Update only those files that currently exist in the tar archive, and which are older than the files on disk.

/G - Use gzip compression.

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/M - Move

/O - Sort order

/P - Display progress (in %) for each file.

/Q - Quiet (don't display filenames as they are added to the archive).

/R - If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the tar archive.

/U - Update which either don't exist in the tar archive, or which are older than the files on disk.

/V - View the list of files in the tar archive (date, time, size, and filename).

UNGZIP

The UNGZIP command is compatible with the UNIX gunzip utility and supports RTF 1952. The syntax is:

GZIP [/E /O /Q /V] *gziparchive* [*path*]

gziparchive	The .gz file to work with
path	The path where files will be extracted

/E - Extract file (default).

/O - Overwrite existing file.

/Q - Quiet (don't display filenames as they are extracted from the archive).

/V - View date, time, and filename of the file in the archive. (Due to the limitations in the GZIP format, this can only display the first file in the archive.)

UNTAR

The UNTAR command decompresses archives created by the TAR command. UNTAR also supports gzip decompression and can be used to extract .tar.gz archives.

UNTAR [/C /D /E /F /G /Nte /O /Q /U /V] tararchive path file ...

tararchive	The Tar file to work with
path	The path where files will be extracted
file	The file(s) to extract

/C - Display contents of the tar archive.

/D - Recreate the directory structure saved in the tar file.

/E - Extract (default)

/F - Extract only those files that currently exist in the target folder, and which are older than the file in the tar archive.

/G - Gzip

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/N[te] - Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.

/O - Overwrite existing files.

/P - Display progress (in %) for each file.

/Q - Quiet (don't display filenames as they are extracted from the archive).

/U - Extract files which either don't exist in the target folder, or which are older than the file in the zip archive.

/V - View the list of files in the archive (date, time, size, and filename)

ZIPSFX

ZipSFX creates a zip-compatible self-extracting archive. The syntax is:

ZipSFX [/B"text" /C"text" /D"path" /F"file" /Ln /M"message" /R /S"password" /X64] archive directory

archive The name of the self-extracting executable
directory The directory to be compressed into the self-extracting executable

/B - Banner text to display before the self-extraction begins.

/C - Caption for the self-extractor dialogs.

/D - Target directory for the self-extractor.

/F - Optional name of the file to execute (open) after the archive is extracted. This must be a relative path to a file in ***directory***. If this is set to ".", the folder in which the archive has been decompressed will open in Windows Explorer. If it is set to "" (empty string), the extractor will close and take no action.

/Ln - Compression level (0 - 6; the default is 4).

/M - Message to notify the user that the extraction has completed normally.

/R - Recurse subdirectories

/S - Password

/X64 - Create a 64-bit executable.

Commands:

ACTIVATE

ICON=file - Change a window's caption bar and task bar icon. The file can be an icon file or an executable. (If an executable, ACTIVATE will use the first icon.)

ALIAS

/O - Don't overwrite existing value (only valid in combination with /R)

DEL

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/W now uses DoD 5220.22-M (E) for secure deletion.

DIR

/G:nn - Set the disk cluster size to be used by /G. DIR will normally query the system for the cluster size on the specified drive, but you can override with /G:n if you know that the returned info is incorrect, or if you want to find the size required if the specified files were moved to another device with a different cluster size.

/NL - Don't display the link name for symbolic links.

DO

Now supports usage in aliases and on the command line. You need to enclose the body of the DO loop in a command group that follows the DO expression, and there is no ENDDO. The syntax is:

```
DO [n | FOREVER] (commands)
      or
DO varname = start TO end [BY n ] (commands)
      or
DO FOR n SECONDS | MINUTES | HOURS (commands)
      or
DO [WHILE | UNTIL [DATETIME yyyy-mm-dd hh:mm:ss]] condition (commands)
      or
DO varname IN [range] [/I"text"] [/D"path" /N[dj] /O:[-]adegnrstu /Sn] [/A:[[-][+]rhsdaecjot]
[/C /L /P /T"..."] [@]set (commands)
```

For example:

```
DO count = 1 to 10 (echo count = %count)
```

ITERATE and LEAVE are supported in command-line DO's.

ISHUNG is a new condition (for DO WHILE and DO UNTIL) that is true if the specified window is not responding.

ENDLOCAL

Restores the Function list.

FFIND

/Ln - The number of leading and trailing lines to display on a match. Each successive group of lines in a file will be separated by a "----" header.

/N[dehjs]

D - don't search hidden directories
E - don't display errors
H - no header
J - don't search junctions or symlinks
S - no footer

FOR

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/NJ - Don't recurse into search junctions or symlinks

/W - Indicates that the FOR set is to be treated as filenames, even if no wildcards are detected (or if you're using regular expressions).

FUNCTION

/O - Don't overwrite existing value (only valid in combination with /R)

HISTORY

/F"..." - Delete matching command lines. You can have multiple /F"..." arguments, and they can contain wildcards.

/R1 - Ignore duplicates and HistoryExclude and always append the lines. (This is considerably faster for large history lists.)

IF

ISHUNG is a new condition that is true if the specified window is not responding.

IFTP

/R - Automatically reconnect if the ftp session times out.

JABBER

Now supports SSL, so it will work with SSL servers like Google Talk.

/Tn - Set the port number (default is 5222).

/V - Display verbose output (useful for debugging).

LIST

Added horizontal mouse wheel scrolling in ***Take Command*** tab windows (requires Windows 7 or later).

MD

/D will change to the newly created directory.

MOVE

Now displays the empty source directories it is removing (with /S and no /Q).

/K - If the move was to a different drive, this option will move the original to the recycle bin instead of deleting it.

/Ns - Don't display the summary of files moved.

/W now implements DoD 5220.22-M (E) for secure deletion.

ON

DBLCLICK [command] - Execute the specified command on a left mouse button double click.

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OPTION

There is a new "Console Palette" button on the Windows tab that allows you to redefine the 16 console color attributes. (Requires Windows 7 or later.) This will *not* work when running ***TCC*** in a ***Take Command*** tab windows due to a bug in the Windows API (it insists on unhiding hidden console windows), but when in ***Take Command*** you can define a custom palette for the tab windows.

The "Windows" foreground and background colors combo boxes now display the actual colors instead of the color name. (This is necessary to support the custom color palettes, as otherwise if you redefined the palette the color names would have no relation to the colors used. It also makes it easier to select the color you want.)

QUERYBOX

/CUE="text" - Displays the cue text in light gray in the edit box (it disappears as soon as you enter a character).

SELECT

/O: - Added /O:o (sort by owner) option

/Q - Display owner (you'd better have a > 80 column display!)

SENDMAIL

/SSL[=n] - Use SSL to connect to the server. Supports automatic, implicit, and explicit modes.

SET

/O - Don't overwrite existing value (only valid in combination with /R)

SETLOCAL

Now saves the Function list as well as the environment & aliases

START

/ELEVATED - Start the program with full admin privileges. (Windows 7 or later only.)

TASKBAR

LOCKDESKTOP - Locks the desktop (Windows 7 and later)

LOGOFF - Display the log off dialog

USER - Display the switch user dialog

TASKLIST

/D - Show the modules loaded in each process

/M - Show the memory usage for each process

/N - Show the class names

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/T - Show the kernel and user cpu times

UNZIP

Is now using a different Zip library.

/CRC - Display the file CRCs (only when using /V).

/I - Save the compressed file's description ("File Comment") to the NTFS description or DESCRIPT.ION file.

/P - Display progress (in %) for each file.

ZIP

Is now using a different Zip library.

/CRC - Display the file CRCs (only when using /V).

/En - set the encryption level (0=default, 1=AES 128-bit, 2=AES 192-bit, 3=AES 256-bit)

/I - Save the file's description (from the NTFS description or DESCRIPT.ION) as the compressed file's "File Comment"

/Ln - set the compression level (0-6, where 0 = no compression and 6 = maximum compression). The default is 4.

/P - Display progress (in %) for each file.

/T - Save the file attributes (they will be written to the file system during extraction)

/Z"..." - set the comment for the zip file.

Internal Variables:

_EXECARRAY - The number of array elements assigned by the last @EXECARRAY function.

_INSERT - The current insert edit mode (0=overstrike, 1=insert)

_XMOUSE - The column position of the most recent left mouse click. (Note that this will only work in a ***Take Command*** tab window, or if you have enabled the console mouse in a stand-alone ***TCC*** session.)

_YMOUSE - The row position of the most recent left mouse click. (Note that this will only work in a ***Take Command*** tab window, or if you have enabled the console mouse in a stand-alone ***TCC*** session.)

Variable Functions:

@EVAL - The <<, >>, MOD, and \ operators now support large (up to 10,000 digit) numbers. (Previously they were "limited" to 64-bit integers). The bitwise operators (AND, OR, XOR) are still limited to 64-bit integers.

@EVAL - Now supports binary input by prefixing "0b" to the number:

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(%@eval[0b1001+2]

@EVAL - Now supports binary output by appending "=b" to the expression:

(%@eval[1+1=b]

@GETDATE[date] - Displays a calendar dialog and returns the selected date (yyyy-mm-dd). You can optionally pass the default date.

@GETDATETIME[datetime] - Displays a date and time picker and returns the selected date and time (yyyy-mm-dd hh:mm:ss). You can optionally pass the default date and time.

@INIWRITE - If you don't specify an entry, will now delete the specified section.

@PPID[file] - Returns the PID for the parent process of the specified executable

@REGBREAD[key,handle,length] - Read a registry value into a (previously created) binary buffer

@REGBWRITE[key,type,handle,length] - Write a registry value from a binary buffer

@REGEX - Removed the (unused and confusing) group count return value. @REGEX now only returns 1 (for a match) or 0 (for no match).

@REGSET - Added support for REG_MULTI_SZ. (The data values are separated by commas.)

@TARCOUNT[file] - Return the number of files in a .tar archive

@TARCFILE[file,i] - Return the compressed name of a file in a .tar archive

@TARDFILE[file,i] - Return the decompressed name of a file in a .tar archive

@TARFILEDATE[file,i]- Return the date & time of a file in a .tar archive

@TARFILESIZE[file,i]- Return the size of a file in a .tar archive

@URLDECODE[string] - Decode an URL encoded string (replacing %xx with the original characters)

@URLENCODE[string] - Encode a string for transmission (replacing non-alphanumeric characters with their %xx hex representation)

@ZIPCOUNT[file]- Return the number of files in a .zip archive

@ZIPCOMMENT[file] - Return the comment for the .zip archive

@ZIPCFILE[file,i] - Return the compressed name of a file in a .zip archive

@ZIPDFILE[file,i] - Return the decompressed name of a file in a .zip archive

@ZIPFILECOMMENT[file,i] - Return the comment for a file in a .zip archive

@ZIPFILECRC[file, i] - Return the CRC for a file in a .zip archive

@ZIPFILEDATE[file,i] - Return the date & time of a file in a .zip archive

@ZIPCFILESIZE[file,i] - Return the compressed size of a file in a .zip archive

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@ZIPDFILESIZE[file,i] - Return the decompressed size of a file in a .zip archive

Batch Debugger:

The batch debugger has been rewritten with a new editor and many new features.

If you hover the mouse over a variable, the debugger will display a tooltip with the current value.

If you hover the mouse over an internal ***TCC*** command, the debugger will display a tooltip with the command syntax.

If you hover the mouse over an array variable (1-dimensional only!), the debugger will display a tooltip with up to the first 20 elements with assigned values.

The "Aliases" and "Functions" windows now support syntax coloring.

Added "Add to Watch" to the context menu.

The Goto dialog now has an optional Column position.

The File menu has a new option:

Save Copy As - Saves a copy of the file to a new name, without changing the default name.

The Edit menu has new options:

Move Line Up - Moves the current line up one row.

Move Line Down - Moves the current line down one row.

Toggle Comment - Inserts / Removes a "rem " at the beginning of the current line.

Remove Blank Lines - Removes blank lines from the selection (or the entire file if no selection).

Compress Spaces - Removes extra spaces between words for the selection (or the entire file if no selection).

Make Selection Uppercase

Make Selection Lowercase

View Whitespace - Displays a marker (a small dot) in the columns for spaces or tabs.

View EOL - Display the end of line characters (CR and/or LF).

The Debug menu has a new option:

Pause On Error - Switches the debugger to single step mode when ***TCC*** encounters an error.

The Options menu entry has new options:

Tabs - Change the tab and indent settings.

Display Line Numbers - Toggles the line numbering on & off.

Display Folding Margin - Toggles the folding margin (the + indicator) on and off.

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Indentation Guides - Prints vertical lines at the current indent columns (useful for lining up code).

The Windows menu entry has new options:

Zoom In - Increase text size by one point.

Zoom Out - Decrease text size by one point.

Reset Zoom - Reset the text size to the original size.

Plugins:

Added UNKNOWN_CMD, PRE_INPUT, PRE_EXEC, and POST_EXEC support. ***TCC*** will first look for aliases of those names; if it doesn't find a match it will look in the plugins for a matching name. For UNKNOWN_CMD and PRE_EXEC, ***TCC*** will pass the command line to the plugin; PRE_INPUT and POST_EXEC will get a NULL.

2.17 Version 11

NEW VERSION OVERVIEW - Take Command 11.0

This is a summary of the compatibility fixes and new features. For complete details, see the appropriate topics in this help file.

The new features that are supported in TCC/LE (including the TCC/LE component of Take Command/LE) are marked with a ***.**

Feature List:

Both Take Command and TCC are now also available in x64 versions.

You can now put (simple) GUI apps into tabs. Note that this will not work for apps that have multiple parent windows!

The Take Command toolbar is now a "tabbed toolbar", allowing up to 20 tabs and 50 buttons per tab. You can also now right click on any button to edit it.

Take Command supports remapped console color palettes in the tab windows. If you are running Vista or later, Take Command will use the individual palette defined for each console.

Display output in Take Command tab windows is 20% faster than v10.

Take Command can now optionally automatically attach all console apps to tabs, regardless of how or when they are started.

The "Attach Tabs" menu option in TCMD now includes hidden console windows. (This allows you to reattach consoles that may have been orphaned from a TCMD crash or unusual shutdown.)

You can now drag and drop into the Folders View.

The popup windows (history, file searching, etc.) now display the current search string on the left side of the window toolbar.

TCC now loads more than twice as fast as in v10.

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Added SSH FTP (SFTP) support.

The FTP, FTPS, and SFTP syntax now accepts a "*" as the password as a request for an interactive password prompt; i.e.:

dir ftps://bob:*@ftp.jpsoft.com/mydir

The new environment variable PROMPT2 defines the prompt used for line continuations (i.e., when the last character on the line is an escape character). The default is "More? ".

* The directory stack (DIRS, PUSHD, POPD) size has been increased to 4K.

Added embedded Tcl / tk support.

The TCMD tab labels can be rotated 90 degrees (see TabRotation in the .INI directives), allowing you to fit a lot more labels at the cost of slightly smaller tab windows

* Added support for embedded variables in the CMD delayed expansion (!var!) syntax.

The Command Input window can now be autosaved & autoloaded. (See the CommandInputFile .INI directive below.)

* DESCRIPT.ION reads are 500% faster.

Increased the maximum number of Take Command startup tabs to 25.

Increased the maximum argument size in TCC to 8191 characters.

Added a "Run..." dialog option to the Take Command tab context menu.

The file processing commands (COPY, DEL,DO, FOR, MOVE, RENAME, etc.) have a new /O:... option to sort the files before they are processed. The sorted filenames are saved to memory before being passed to the command; this allows you to dispense with temporary files when the command might otherwise process the same filename twice (for example, with FOR and RENAME).

Startup Options:

TCC /IX - don't execute TCEXIT

TCC /Q - don't display copyright / version message (registered copies only)

.INI Directives:

This list is for your information only. You should always use OPTION (in TCC) or "Options / Configure Take Command" (in Take Command) to set your TCMD.INI options.

AutoAttachConsole - if Yes, TCMD will periodically look for and create a new tab for any unattached console windows. (Note that this means you cannot ever detach a console tab!)

AutoCDD - if No, disables the automatic directory changes (i.e., directory name with a trailing \) as the only argument on the command line

ClosePrompt - if 1, Take Command will pop up a message box to confirm exiting

CommandInputFile - name of a file used to save & restore the Command Input window

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HistCase - if Yes, command history comparisons will be case sensitive

LockExplorerBar - if 1, TCMD will lock the Explorer toolbar in place (so it cannot be moved or docked)

LockMenuBar - if 1, TCMD will lock the menu bar in place (so it cannot be moved or docked)

LockTabBar - if 1, TCMD will lock the tab toolbar in place (so it cannot be moved or docked)

NoINIErrors - if Yes, suppresses error messages when parsing TCMD.INI

SSHLocalPort - the TCP port in the local host where IPPort binds.

SSHLocalHost - the name of the local host or user-assigned IP interface through which connections are initiated or accepted.

SSHPort - the port on the SSH server where the SSH service is running (default is 22).

TabRotation - if 1, TCMD will rotate the tab labels (and text) 90 degrees. (This allows you to fit many more tabs in the window, at the cost of a reduced window size.)

Tcl - if Yes, TCC will execute *.tcl scripts.

Command Line Editing:

Tab completion now supports internal variables

Tab completion now supports variable functions

Tab completion now checks for ftp / ftps names (ftp://xxx) and won't break on the first /

New Commands:

UNZIP - Extract files from a zip archive. UNZIP will automatically use the Zip64 extensions if the archive is in Zip64 format. The UNZIP syntax is:

UNZIP [/C /D /E /F /O /S"password" /U /V] ziparchive path ...

VBEEP - flash the screen (by setting all the attributes to their inverse) and optionally beep the speaker. The syntax is the same as BEEP:

VBEEP [frequency duration...][asterisk | exclamation | hand | question | ok]

ZIP - Add, update, or delete files to a zip archive. UNZIP will automatically use the Zip64 extensions if the archive is in Zip64 format. The ZIP syntax is:

ZIP [A:[[-][+]rhsdaecjot] /A /C /D /F /M /O:[-]adegnrstu /P /Q /R /S"password" /U /V /YC] *ziparchive* [@*file*] *file*...

Commands:

ATTRIB

/O:xxx to sort files before they are processed

+C | -C - compress or uncompress the file or directory

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BEEP

Now supported in the x64 version of TCC. (Because 64-bit versions of Windows do not support playing sounds through the Windows Beep API, TCC x64 uses DirectSound for BEEP.)

CDD

/Un sets recursion depth for JPSTREE.IDX updates (like /Sn)

COPY

Added number of files that failed to copy to the result

/O:xxx to sort files before they are processed

/Nn will not update the file descriptions (either in DESCRIPT.ION or an NTFS stream)

/W will delete files in the target directory that don't exist in the source directory (use this instead of SYNC when you only want to synchronize "one-way")

DEL

/O:xxx to sort files before they are processed

Added number of files that failed to be deleted to the result

/S /X displays the directories removed (with a trailing \)

/L deletes symlinks instead of their contents

/Nn will not update the file descriptions (either in DESCRIPT.ION or an NTFS stream)

DESCRIBE

/O:xxx to sort files before they are processed

DIR

/F now supports colorization

/B /S now supports colorization

DIRS

+n / -n - rotate the directory stack up or down by the specified amount

/Q - don't display the directory stack (only useful when combined with +n or -n)

DO

/O:xxx to sort files before they are processed

ENDLOCAL

Can now be used at the command line (including aliases). The maximum nesting level is 10.

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FFIND

/H will skip binary files (user-configurable file extensions) when searching.

FOR

/O:xxx to sort files before they are processed

HEAD

/N+n - skip first n lines

/O:xxx to sort files before they are processed

HISTORY

/R - if you load a file that is larger than the history list size, HISTORY will only load the last part of the file that will fit

/Tn - if n is positive, only display the last 'n' history entries. If n is negative, skip the first 'n' entries.

/V - Display the history in reverse order (most recent first)

INPUT

/K"..." - only accept the specified characters

LIST

/O:xxx to sort files before they are processed

MD

/C - create a compressed directory

MOVE

/O:xxx to sort files before they are processed.

Added number of files that failed to be moved to the result

/Nn will not update the file descriptions (either in DESCRIPT.ION or an NTFS stream)

/Ns will not display the summary

OPTION

//directive with no value will reset to the default value

/U - check https://jpsoft.com for updates

PDIR

Added support for escaped characters in separator text

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PLUGIN

/C - only display commands

/F - only display variable functions

/K - only display keystroke plugins

/V - only display internal variables

REN

/O:xxx to sort files before they are processed

Added number of files that failed to be renamed to the result

/Ns will suppress the summary

/Nn will not update the file descriptions (either in DESCRIPT.ION or an NTFS stream)

SETLOCAL

Can now be used at the command line (including aliases). The maximum nesting level is 10.

SYNC

/O:xxx to sort files before they are processed

/Nn will not update the file descriptions (either in DESCRIPT.ION or an NTFS stream)

TAIL

/O:xxx to sort files before they are processed

TASKLIST

/C will display the current priority class for each process

/L will display the startup command line for the process (this replaces the window title in the output)

TCTOOLBAR

Added a new parameter at the beginning of the argument list to specify on which tab the button should be set. (The tab to use is specified by its label.)

TOUCH

/O:xxx to sort files before they are processed

/R can now copy an existing directory's timestamp to a newly created (/C) file

TREE

/O:xxx to sort files before they are processed

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/Z without /F will now display the directory tree sizes. (Each directory size is the size of the current directory and all of its subdirectories.)

TYPE

/O:xxx to sort files before they are processed

/X supports binary files

WHICH

Plugin commands now show the plugin name (i.e., "Foo is a plugin command (Foobar)")

WINDOW

DETACH - detach the TCC process from a TCMD tab window

Internal Variables:

_CONSOLEB - the handle to the console screen buffer

_ISODOWI - ISO 8601 numeric day of week (Mon=1, Sun=7)

_ISOWDATE - ISO 8601 current week date (yyyy-Www-d)

_ISOWEEK - ISO 8601 week of year

_ISOWYEAR - ISO 8601 week date year

_SERVICE - returns 1 if TCC was started as a service (TCC /N)

_TCTABACTIVE - returns 1 if this TCC instance is the active tab in Take Command

_WOW64DIR - returns the system Wow64 directory (x64 Windows only)

_X64 - returns 1 if TCC is the x64 (64-bit) version

Variable Functions:

@AGEDATE - added support for ISO 8601 formats 5 (yyyy-Www-d) and 6 (yyyy-ddd)

@BPEEK, @BPEEKSTR, @BPOKE, @BPOKESTR, @BREAD, @BWRITE - now accept either decimal or hex arguments for offset / size / length

@CONSOLEB[handle] - create or restore a console screen buffer. "Handle" is the handle to the desired screen buffer. If "handle is -1, @CONSOLEB just returns the current buffer handle. If "handle" is 0, @CONSOLEB will create and activate a new console screen buffer. If "handle" is non-zero, @CONSOLEB will switch to that screen buffer. @CONSOLEB returns the handle to the active screen buffer. @CONSOLEB allows you to preserve the contents of the current screen buffer by switching to a second buffer temporarily and and then back to the original buffer.

@DATECONV[date,format] - convert date from one format to another format (output):
0 system default
1 USA (mm/dd/yy)
2 European (dd/mm/yy)
3 Japan (yy/mm/dd)

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4 ISO 8601 (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

@DISKFREE, @DISKUSED, @DISKTOTAL, @DOSMEM, @WINMEMORY - added E/e (Exabytes) option. (Zettabytes and Yottabytes will have to wait for 128-bit CPUs and OS's.)

@EXECSTR - now supports a negative start line number to mean "starting at the end and counting back"

@EXPAND - added support for exclusion ranges

@FILESIZE - added support for Terabytes (t/T), Petabytes (p/P) and Exabytes (e/E)

@ISODOWI[date] - ISO 8601 numeric day of week

@ISOWEEK[date] - ISO 8601 numeric week of year

@ISOWYEAR[date] - ISO 8601 numeric week date year

@ISPRIME[n] - returns 1 if the (64-bit) n is a prime number

@MAKEAGE - added support for ISO 8601 yyyy-Www-d and yyyy-ddd dates

@MAKEDATE - added support for ISO 8601 formats 5 (yyyy-Www-d) and 6 (yyyy-ddd)

@PIDCOMMAND[pid] - return the startup command line for the specified process ID

@PLUGINVER[plugin] - returns the version number (major.minor.build) for the specified plugin

@PRIME[n] - returns the first prime >= (64-bit) n

@PRIORITY[pid] - return the priority class for the specified PID. The return values are (in hex):
8000 - Above normal
4000 - Below normal
100 - realtime
80 - High
40 - Idle
20 - Normal

@PROCESSTIME[pid,n] - return the process times as a fileage. n is the time to return:
0 - start time
1 - end time
2 - kernel mode time
3 - user mode time

@SYSTEMTIME[n] - return the system times as a fileage. n is the time to return:
0 - idle time
1 - kernel mode time
2 - user mode time

@TCL - execute a Tcl command

@TK - execute a Tk script

Batch Debugger:

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The evaluation window (Alt-F11) now supports copying the result to the clipboard

If you right click in the first column of the Watch window, the debugger will pop up an environment variable listbox. If you select an entry, it will be added to the watch list.

Plugins:

Updated the TakeCmd.h file with the new functions

Added some new functions for manipulating the directory history and command history:

DirHistoryStart(void) - returns a pointer to the beginning of the directory history

HistoryStart(void) - returns a pointer to the beginning of the command history

DeleteFromHistory(LPTSTR lpszLine) - deletes the line from the command history (this is a pointer to the line to be deleted, not a line to be matched!)

If the user tries to display online help with HELP, F1 or Ctrl-F1, TCC will check for a plugin variable, variable function, or command, and if the name matches search for, load and execute a "Help" function in the plugin. The plugin is responsible for displaying its own help. The "Help" function should NOT appear in the plugin's comma-delimited function list in pszFunctions. Help should return 1 if it displayed help (or if it doesn't want TCC to try to display help for this topic). The syntax of the Help function in the plugin should be:

Help(LPTSTR pszName);

If Take Command wants to display usage text, TCC will check for a plugin command, and if the name matches search for, load and execute a "Usage" function in the plugin. The plugin is responsible for displaying its own help. The "Usage" function should NOT appear in the plugin's comma-delimited function list in pszFunctions. The plugin should return a multi-line string containing the command syntax. The first line (terminated by a \r) is displayed in the Take Command status bar. The entire string is displayed as a tooltip popup when the mouse hovers over the status bar message. Usage should return 1 if it wrote something to pszUsage (or if it doesn't want TCC to try to display a usage string). The syntax of the Usage function in the plugin should be:

Usage(LPTSTR pszName, LPTSTR pszUsage);

The TakeCommandIPC function allows plugins to communicate with the controlling Take Command instance. The syntax is:

DLLExports int TakeCommandIPC(LPTSTR pszCommand, LPTSTR pszArguments);

The supported commands are:

HWND
Returns the Take Command window handle in pszArguments

TCTAB
Returns 1 if the process ID in pszArguments is running in a TC window

TCTABS
Returns the number of Take Command tab windows

HVIEW

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Returns the handle of the active tab window in pszArguments

HELP
Displays the Take Command help for the topic in pszArguments

USAGE
Display the usage message in pszArguments in the status bar. The first line (up to the first CR) is displayed in the
status bar; the rest is displayed in the tooltip if you hover the mouse over the status bar.

STATUSBAR
Display the message in pszArguments in the status bar

TCTOOLBAR
Update the Take Command tab toolbar with pszArguments

TCFILTER
Return the selected filter in the list view in pszArguments

TCFILTER_CMD
Set the selected filter in the list view to the value in pszArguments

CDD
Change the folder and list view to the directory in pszArguments

TCFOLDER
Return the selected folder in the Folders tree control in pszArguments

SHORTCUT
Return the name of the shortcut that started Take Command in pszArguments

SELECTED
Return the currently selected text in pszArguments

SELECT
Mark the selection specified in pszArguments (top, left, bottom, right) in Take Command

START
Attach a hidden console window whose hex PID is in pszArguments

ACTIVATE
Activate the window whose handle is in pszArguments

WINDOW
Has a number of arguments (specified in pszArguments) to control the Take Command window:
- MAX
- MIN
- HIDE
- RES
- TRAY
- TRANS=n
- FLASH=n
- DETACH n (where n is the PID of the process to detach)
- TOPMOST
- NOTOPMOST
- TOP
- BOTTOM

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2.18 Version 10

NEW VERSION OVERVIEW - Take Command 10.0

This is a summary of the compatibility fixes and new features. For complete details, see the appropriate topics in this help file.

The new features that are supported in TCC/LE (including the TCC/LE component of Take Command/LE) are marked with a *****.

Feature List:

* Take Command and TCC startup is faster.

* Most operations in Take Command and TCC are faster.

The quick help displayed on the TCMD status bar will now also identify aliases and display their value.

Holding down the Ctrl key while scrolling the mouse wheel will now change the font size in the Take Command tab windows. Note that not all apps will be happy about you randomly changing their font (and thus the console window size)!

Increased the maximum number of TCMD startup tabs from 10 to 20.

You can now drag files from the desktop to the List View window.

Added an option to set the popup window font for Take Command and TCC (Windows page of their configuration dialogs).

Added support for specifying attributes (/A:...) and ranges in the TCMD Filter combobox. (The syntax is the same as in TCC.) The attribute and range switches must come before the filename wildcards (or regular expressions).

The TCMD filter combobox now saves its entries (up to 10) and restores them when TCMD restarts.

When starting a tab, if the filename is "TCC.EXE" or "TCC" and there is no path specified and TCMD cannot find the filename in the path, it will default to running TCC.EXE in the TCMD installation directory.

The "Up" button on the Take Command toolbar will now take you to "Computer" if you're already at the root directory of a drive.

The Take Command "Find Files" dialog "Edit" button will now try to open the file with its associated app. If that fails, Take Command will use Notepad.

Added support for array variables. See SETARRAY / UNSETARRAY, SET, @ARRAYINFO, @EXECARRAY, and @FILEARRAY for details.

Added internal support for Python (.py). You must enable Python in the OPTION / Startup dialog.

Added an "in-process" pipe. This works like the old DOS pipes, by creating a temporary output file, redirecting STDOUT to that file, and then redirecting the temp file to STDIN of the following command. The syntax is:

```
command1 |! command2
```

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(This the same as doing "command1 > temp.dat & command2 < temp.dat", but is easier to type & to read.) There are some disadvantages to using this type of "pseudo-pipe" -- it will usually be slower than a true pipe; it will use some disk space for its temp file; and "command2" will not be started until "command1" has exited.

Added "here-string" input redirection to send a string to the program's standard input. The syntax is:

```
cmd <<< this is some input text
```

The popup windows (history, directory history, fuzzy directory search) now save their new size & position when moved.

* File & disk size variable functions (@DISKFREE, @FILESIZE, etc.) now support terabytes (trailing t or T) and petabytes (trailing p or P).

* Size ranges now support terabytes (trailing t or T) and petabytes (trailing p or P).

Date ranges now support ages for the first and/or second parameter.

* The Take Command and TCC configuration dialogs now display the name of the active TCMD.INI file in the titlebar. (Hopefully this will reduce some of the "bug" reports when people aren't writing to the TCMD.INI they think they are!)

If the cursor is hidden in a console running in tab window, the tab window cursor will now also be hidden.

Added a combo box to the Take Command and TCC configuration dialogs to allow you to select a language dll (default, English, French, or German).

HTTP and HTTPS addresses in TCMD and TCC will now have embedded spaces converted to "%20" before sending it to the server.

The TCCTABHERE.BTM file will create a "TCC tab window here" prompt in the Folders and List View context menus.

You can now mark text in a TCC tab window using the TCC alt-cursor keystrokes and copy/paste the text using the TCMD edit menu and right-click context menu. (Though it's easier & a lot more powerful to use the command window instead!)

* Fuzzy directory searching is now 30-50% faster.

A trailing & on the command line (with preceding white space) will start the command line in a detached process (like Linux). (This is the same as prefixing "DETACH" to the command, but a little easier to type and more natural for Linux users.)

Dropped support for obsolete & unsupported REXX interpreters -- Take Command now only supports ooREXX (Object REXX).

Startup Options:

.INI Directives:

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BackgroundImage=filename - BMP file to use as TCMD tab window background.

BatchAliases=YES|no - if set to NO, TCC won't try to expand command aliases when in a batch file. (Directory aliases will still be expanded.)

CloseIfNoTabs=YES|no - if set to NO, TCMD won't close if there are no tab windows open. (See the Take Command "Advanced" tab.)

* CompleteHidden - has been replaced by CompleteHiddenFiles and CompleteHiddenDirs. CompleteHidden will still be recognized if set in TCMD.INI (CompleteHidden=Yes will now be converted to a CompleteHiddenFiles=Yes and a CompleteHiddenDirs=Yes.) It has been removed from the OPTION dialog.

* CompleteHiddenFiles=yes|NO - if set to YES, tab completion will look for hidden files and system files as well as normal files.

* CompleteHiddenDirs=yes|NO - if set to YES, tab completion will look for hidden directories as well as normal directories.

Python=yes|NO - enable internal Python support.

Command Line Editing:

Ctrl-F (expand aliases) will now also expand any directory aliases on the line. (Useful when passing directory aliases to external apps.)

New Commands:

DISKMONITOR - monitor the free disk space. If it drops below the specified size, DISKMONITOR will execute the specified command.

DISKMONITOR [/C] drive size command

For example:

DISKMONITOR C: 2Gb sendmail bob@bob.com "Disk Status" Drive C: is full!

The drive can also be a sharename. The size format is the same as that used for size ranges (i.e., either a number or a number with an appended k, K, m, M, g, G, t, or T).

IDE - start the Take Command IDE / debugger with the specified files loaded into tab windows.

SETARRAY - define array variables. You can define up to 4-dimensional arrays. The syntax is:

SETARRAY name[a[,b[,c[,d]]]] [...]

where a, b, c, and d are the sizes. For example, to define a 5-row by 10-column array:

setarray array1[5,10]

(The array elements are addressed in base 0, so to reference this array you would use 0-4 for the rows and 0-9 for the columns.)

To set the variable elements, use the SET command (see below).

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If you don't enter any arguments, SETARRAY will display the currently defined arrays. If you don't enter any dimensions, SETARRAY will display the definition for that array. You can use wildcards in the array name.

SETERROR - set the %ERRORLEVEL value and the last-error code in Windows to the specified value. The syntax is:

SETERROR n

STATUSBAR - write text to the Take Command status bar. The syntax is:

STATUSBAR text

TASKBAR - call the Windows Taskbar to display dialogs or to manipulate the top level windows. The syntax is:

TASKBAR command

Where "command" is one of the following:

Cascade	Cascade all top level windows
Computers	Display the Find Computers dialog (requires Active Directory Domain Services)
Control	Display the Control panel
Customize	Display the Customize Taskbar dialog
Date	Display the Date and Time dialog
Desktop	Show the Windows desktop
Help	Display the Help and Support Center dialog
HTile	Horizontally tile all top level windows
Lock	Toggle the taskbar lock
Min	Minimize all windows
Max	Maximize all windows
Printers	Display the Printers and Faxes dialog
Properties	Display the Taskbar Properties dialog
Run	Display the Run dialog
Search	Display the Search dialog
Shutdown	Display the Shut Down Computer dialog
Start	Display the Start Menu
Task	Display the Windows Task Manager dialog
VTile	Vertically tile all top level windows

UNSETARRAY - remove array variables. The syntax is:

UNSETARRAY [/Q] name [...]

/Q - quiet (don't display an error for a non-existent array)

You can use wildcards in "name".

Commands:

ACTIVATE - added a new option:

/FLASH=type,count - flash the specified window. The arguments are:

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type - type of flash; one or more of the following values:
0 - stop flashing
1 - flash the window caption
2 - flash the taskbar button
4 - flash continuously until WINDOW is called again with the /FLASH type set to 0
12 - flash continuously until the window comes to the foreground (cannot be used with 4)

count - the number of times to flash the window

ATTRIB - added new options:

/N - do not actually change the attributes

/NE - no error messages

/NJ - no junctions (only useful with /S)

/S+n - start 'n' levels down from the source directory.

* CD / CDD - fuzzy directory searching is substantially faster (up to 50%).

CD / CDD - now allow a forward slash at the beginning of a directory name > 1 character (for unreconstructed Linux users). (In CDD, this may conflict with the multicharacter options; in that case, the options will win out over the directory.)

COPY - if you specify the /C or /U options, COPY will no longer return an error result (2) in %? if no files match.

COPY - added new options:

/CF - copy the source to the target if the target file exists and is more than 2 seconds older than the source.

/UF - copy the source to the target if the target file doesn't exist or is more than 2 seconds older than the source.

/S+n - start 'n' levels down from the source directory.

/Sx - subdirectory copy to a single target directory (implies /S). For example, to copy all of the .EXE files in "c:\files" and all of its subdirectories to the directory "d:\exefiles":

```
copy /sx c:\files\*.exe d:\exefiles\
```

DATE - added new options:

/Fn - where *n* is the format to use:

```
0 : "Mon  Jan 1, 2009"
1 : " 1/01/09"
2 : "Mon 1/01/2009"
```

/U - display or set the UTC date

DEL - added a new option:

/S+n - start 'n' levels down from the source directory.

* DEL - reformatted the summary to support up to 100 Tb partition sizes.

  DELAY - added a new option:

  /F - flush the keyboard buffer after the delay ends

  DIR - added a new option:

  /S+n - start 'n' levels down from the specified directory.

* DIR - reformatted the summary to support up to 100 Tb partition sizes.

* DIRHISTORY /R - is now 500% faster.

  DIRHISTORY /Tn - display the last n lines of the directory history. If n is negative, skip the first -n lines of the directory history.

  DO - added new options:

  DO var in /P command ... - parse the output of a command:

  /S+n - start 'n' levels down from the source directory.

  DO - the LEAVE option now accepts an optional parameter to leave nested DO's:

  LEAVE n -

  ESET - removed the /W option (a result of the batch debugger changes).

  FFIND /W - the "Edit" button will now try to open the file with its associated app. If that fails, FFIND will use Notepad.

  FFIND - added a new option:

  /S+n - start 'n' levels down from the source directory.

  FOLDERMONITOR - added a new option:

  /U - don't set the trigger until the file is unlocked.

* FREE - reformatted the output to support up to 100 Tb partition sizes.

  GLOBAL - added a new option:

  /S+n - start 'n' levels down from the current directory.

  IFTP - a /C will now prevent an automatic reconnection if you try something like a "dir ftp:" after the IFTP /C.

* HISTORY /R - is now 500% faster.

  HISTORY -- added new options:

  /Tn - display the last n lines of the history. If n is negative, skip the first -n lines of the history.

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/V - display the history in reverse order.

INKEY - added support for array variables.

INPUT - added a default value for the /E option. The syntax is:

/E"value"

If the environment variable doesn't exist, INPUT will display the default value for editing.

INPUT - added support for array variables.

KEYBD - added a new option:

/Kn - disable (0) or enable (1) the keyboard. (You can also reenable a disabled keyboard with Ctrl-Alt-End.)

LIST - The "E(dit)" option will now first try to edit the file using the editor associated with that filetype (if any). If that fails, LIST falls back to its previous behavior (using the Editor .INI directive if it exists or Notepad.exe if it doesn't).

LIST - added a new option:

/F - display the contents of the console screen buffer.

MOVE - added new options:

/CF - move the source to the target if the target file exists and is more than 2 seconds older than the source.

/UF - move the source to the target if the target file is more than 2 seconds older than the source.

/S+n - start 'n' levels down from the source directory.

/Sx - subdirectory move to a single target directory (implies /S). For example, to move all of the .EXE files in "c:\files" and all of its subdirectories to the directory "d:\exefiles":

```
move /sx c:\files\*.exe d:\exefiles\
```

MSGBOX - added new options:

/L - limit the maximum message box width to no more than 1/3 the screen width

/V - display the message box in the Vista style (the message background will be the current window color, the buttons will be right-justified and slightly bigger, and the position of icon and message will be adjusted.)

MSGBOX now supports Ctrl-C to copy the contents of the message box to the clipboard.

* OPTION - removed the popup windows from the Windows tab, as they are now auto-saved whenever the windows are moved or resized.

ON - added new options:

ON CONDITION test command ... - execute the command if the test is true. The test can be any valid test that is valid in IF.

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ON RESUME command - execute the command when the system resumes from a suspension (sleep or hibernation).

ON SUSPEND command - execute the command when the system is going to sleep or hibernation.

* PDIR - added support for quoting filenames (if necessary). The syntax is:

  pdir /(f[pnq]) - 'q' will cause the name and/or path to be double quoted if it contains white space or special characters.

* PDIR - will now suppress empty lines (for example, if you have an @IF conditional in PDIR and not every matching file results in output).

PDIR - added a new option:

/S+n - start 'n' levels down from the specified directory.

PROCESSMONITOR - added the HUNG test.

* REN - added some additional checking to REN /N to see if the rename would actually succeed (i.e., checking for things like the target filename already existing).

SET - added support for setting array variables. For example, to define a 5-row by 10-column array, you would first use SETARRAY (see above):

setarray array1[5,10]

To set the array values (0-based), the syntax is:

set array1[a[,b[,c[,d]]]

For example:

```
set array1[0,0]=Bob
set array1[0,1]=Bob's Job
```

To expand the array variable:

echo Name is %array1[0,0] and job is %array1[0,1]

SETDOS - the /Y option (which has been deprecated since 7.0) has been removed.

* START - changed the /Affinity option to match the new CMD.EXE behavior (in Vista and XP64). It now takes a hex argument for the processor mask -- i.e., to set the affinity for cpu's 1 and 3, set /affinity=5.

SYNC - added new options:

/S+n - start 'n' levels down from the specified directory.

/Y - suppress the prompt if you have the "COPY Prompt on Overwrite" option set.

/Z - overwrite read-only files

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TCTOOLBAR - added new options:

/I - reset toolbar to definition in TCMD.INI.

/W filename - save the toolbar to the specified file.

TIME - added a new option:

/U - display or set the UTC time

TOUCH - added a new option:

/S+n - start 'n' levels down from the specified directory.

TYPE - added new options:

/X - display the file in hex

/XS - display the file in hex, using spaces instead of periods for non-printable characters.

WINDOW - added a new option:

/FLASH=type,count - flash the TCC or TCMD window. The arguments are:

type - type of flash; one or more of the following values:
0 - stop flashing
1 - flash the window caption
2 - flash the taskbar button
4 - flash continuously until WINDOW is called again with the /FLASH type set to 0
12 - flash continuously until the window comes to the foreground (cannot be used with 4)

count - the number of times to flash the window

Internal Variables:

_elevated - (Vista and above) - returns 1 if the TCC process is elevated

_ide - returns 1 if in the IDE / debugger

_lastdir - previous directory (from directory history)

_selected - selected text in the current tab window. (This is normally only useful in toolbar buttons or key aliases, as the selected text will revert to normal on a keystroke.)

_tctabs - current number of Take Command tab windows (0 if not in TCMD).

_vermajor - TCC major version

_verminor - TCC minor version

_version - TCC version in "major.minor" format (i.e., "10.0").

_xwindow - width of the Take Command or TCC window in pixels

_ywindow - height of the Take Command or TCC window in pixels

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Variable Functions:

@ARRAYINFO[arrayname,option] - returns information about the specified array.

arrayname - name of the array (defined by SETARRAY) to query
option - the type of information:
0 - total number of dimensions
1 - # of elements in the first dimension
2 - # of elements in the second dimension
3 - # of elements in the third dimension
4 - # of elements in the fourth dimension
5 - total number of elements

@BALLOC[size] - alloc a buffer for binary operations. The function returns a handle to the buffer (which must be used for the subsequent binary functions). The only limit on the number & size of the binary buffers is the amount of virtual memory available.

@BFREE[handle] - free a binary buffer (previously allocated by @BALLOC).

@BPEEK[handle,offset,size] - read a value from a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

size - the size of the value (in bytes):
1 - character
2 - short
4 - int
8 - int64

@BPEEK returns the value read

@BPEEKSTR[handle,offset,type,length] - read a string from a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

type - the string type:
a - ASCII
u - Unicode

length - the maximum number of characters to read

@BPEEKSTR returns the string

@BPOKE[handle,offset,size,value] - write a value to a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

size - the size of the value (in bytes):

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1 - character
2 - short
4 - int
8 - int64

value - the value to poke

@BPOKE returns 0 on success.

@BPOKESTR[handle,offset,type,string] - write a string to a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

type - the type of the string to write:
a - ASCII
u - Unicode

string - the string to poke

@BPOKESTR returns 0 on success.

@BREAD[handle,offset,filehandle,fileoffset,length] - read from a file to a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

filehandle - a file handle opened for reading (from @FILEOPEN)

fileoffset - the read offset (from the current file position)

length - number of bytes to read

@BREAD returns the number of bytes actually read.

@BWRITE[handle,offset,filehandle,fileoffset,length] - write from a binary buffer to a file

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer

filehandle - a file handle opened for writing (from @FILEOPEN)

fileoffset - the write offset (from the current file position)

length - the number of bytes to write

@BWRITE returns the number of bytes written

@EVAL - added support for array names w/o a leading %.

@EVAL - added new operators and functions:

!a - return the inverse not (i.e., !0 = 1, !5 = 0)

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a>b - return 1 if a is greater than b
a<b - return 1 if a is less than b
fact(a) - return the factorial
ceil(a) - return the ceiling
floor(a) - return the floor
abs(a) - return the absolute value
gcd(a b) - return the greatest common divisor
lcm(a b) - return the least common multiple

ror(value shift precision) - rotate right
rol(value shift precision) - rotate left
value - integer value to rotate
shift - the number of bits to shift
precision - the size of "value" in bits

For example, to rotate the 32-bit integer "123" 2 bits to the right:

```
%@eval[ror(123 2 32)]
```

@EXECARRAY[array,command] - execute the specified command and store the resulting lines in the specified array. (You must define the array before running @EXECARRAY.) For example:

```
setarray aresult[10]
echo %@execarray[aresult,dir /u] >& nul
```

@EXECARRAY will read the number of lines specified in the array size definition.

@EXECSTR - added new option for the line to return. The syntax is:

@EXECSTR[[n,]command]

where "n" is the line you want (base 0). For example, to return the third line returned by VER /R:

```
echo %@execstr[2,command]
```

@FILEARRAY[array,filename] - read a file and store the lines in the array. (You must define the array before running @FILEARRAY.) For example:

```
setarray aresult[10]
echo %@filearray[aresult,test.dat]
```

@FILEARRAY will return the number of lines read. @FILEARRAY will not read more than the number of lines specified in the array size definition.

@FILEHANDLE[handle] - returns the filename for the specified file handle (opened with @FILEOPEN).

@FILES - added /S+n option to start 'n' levels down from the specified directory.

@FILESIZE - added /S+n option to start 'n' levels down from the specified directory.

@FILTER[chars,string] - removes any characters in "string" that aren't in "chars". For example, to remove all non-numeric characters from a variable:

```
%@filter[0123456789,%var]
```

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@FOLDERS[directory] - returns number of matching folders.

@ISFLOAT[string] - returns 1 if the string is composed only of numeric characters, a decimal separator, and an optional sign and/or thousands separator(s).

@ISLOWER[string] - returns 1 if the string is composed only of lower case letters.

@ISUPPER[string] - returns 1 if the string is composed only of upper case letters.

* @LINE - is now 700% faster.

* @LINES - is now 700% faster.

@MX[address] - return the email server for the specified user address.

@PID[filename] - returns the PID for specified name (or 0 if no match). If you have multiple copies of the same executable running, @PID will return the first one it finds.

@PYTHON[command] - execute the Python string. The Python interpreter is persistent; if you want to reset it pass an empty string to @PYTHON.

@REGCOPYKEY[source,target] - copy a registry key.

@REGCREATE, @REGDELKEY, @REGEXIST, @REGQUERY, @REGSET, @REGSETENV, and @REGTYPE - added an option to access the 64-bit registry in Win64. If you append "_64" to the HKEY name, TCC will access the 64-bit registry instead of the 32-bit registry. For example:

```
@regcreate["HKLM_64\Software\Company\Product\User"]
```

@SERVICE[*service,info*] : Returns information about the specified service.

service - the service name to query
info - the information you want:

1 The type of service
2 The current state of the service
3 The control codes the service accepts and processes in its handler function.
4 Returns the check-point value the service increments to report its progress during a lengthy start, stop, pause, or continue operation.
5 Returns the estimated time required for a pending start, stop, pause, or continue operation (in milliseconds).

@SNAPSHOT - added support for multiple monitors when using the DESKTOP argument.

@WINCLIENTSIZE[title] - returns the client window size in the format:

```
height,width
```

@WINPID[title] - returns the process ID for the window.

@WINSIZE[title] - returns the window size in the format:

```
height,width
```

Batch Debugger:

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The IDE / batch debugger is all new, and includes multiple tabbed editing windows and tabbed / dockable watch & variable windows.

The IDE now supports themes (Options / Theme).

In addition to batch files (.BTM, .BAT, and .CMD) the syntax coloring in the editor also supports editing C++, INI, Javascript, LUA, Pascal, Python, SQL, VBScript, and XML files.

The IDE maintains a list of the recently edited files.

There are new options in the File menu (Save All, Close All, Print Preview).

There are a number of new options in the Edit / Advanced menu (tabify / untabify, make selection uppercase / lowercase, collapse / expand, and view whitespace).

The "Pause" button / menu entry pauses debugging at the completion of the current command line.

The watch window now also supports internal variables, variable functions, and user-defined functions.

The IDE status bar is customizable (right click).

3 Take Command

This section provides a general description of *Take Command* operation.

- Installing Take Command
- Starting Take Command
- The Take Command Interface
- Configuration Options
- Take Command and TCC Integration
- Uninstalling Take Command

3.1 Installing Take Command

You can download the latest version of ***Take Command*** from our website at:

https://jpsoft.com/all-downloads/downloads.html

To install ***Take Command***, run the downloaded self-extracting installer (tcmd.exe). ***Take Command*** uses the Windows Installer, so the installation options will be the same as most other Windows applications.

After selecting the installation folder, the installer will ask if you want to create shortcuts on the Desktop, Start Menu Programs folder, and/or Startup folder. (The Desktop and Start Menu Programs folder are checked by default.)

The installer will then ask if you wish to associate .BAT, .BTM, and .CMD batch files with ***Take Command*** or ***TCC***. (You can select any combination, or none.)

The installer will not create any of the user-defined files (the TCMD.INI configuration file, or the TCSTART and TCEXIT batch files). If you are upgrading from a previous version of ***Take Command***, you can use

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your existing files. If you do not have a TCMD.INI file, one will be created for you automatically when you change any of the ***Take Command*** or ***TCC*** options (in the Options menu, or the TCC OPTION command).

3.2 Starting Take Command

You will typically start ***Take Command*** from a Windows shortcut, located:

- on the desktop, or
- in the **Programs** section of the **Start** menu (including its **Startup** subdirectory).

You may also start it from the **Start / Run** dialog.

The installation software will optionally create both a ***Take Command*** folder or group (in the **Programs** section of the **Start** menu) and a desktop object (shortcut) which starts ***Take Command***. Usually these are sufficient, but if you prefer, you can create multiple desktop objects or items to start ***Take Command*** with different startup commands or options, or to run different applications in the tab windows.

Each item or icon represents a different ***Take Command*** window. You can set any necessary command line parameters for ***Take Command*** such as a program to run in a tab window, and the name and path for the .INI file. See Take Command Startup Options for more information on startup command line options.

When you configure a ***Take Command*** item, place the full path and name for the file in the Command Line field, and put any startup options that you want passed to ***Take Command.*** For example:

Command Line:	`C:\Program Files\JPSoft\TCMD\TCMD.EXE`
Working directory:	`C:\`

You do not need to use the Change Icon button, because ***TCMD.EXE*** already contains icons.

Each Windows program has a command line which can be used to pass information to the program when it starts. The command line is entered in the Command Line field for each shortcut or each item in a Program Manager group (or each item defined under another Windows shell), and consists of the name of the program to execute, followed by any startup options.

The ***Take Command*** startup command line does not need to contain any information. When invoked with an empty command line, ***Take Command*** will configure itself from the TCMD.INI file, and then display a prompt and wait for you to type a command. However, you may add information to the startup command line that will affect the way ***Take Command*** operates.

3.2.1 Take Command Startup Options

The ***Take Command*** command line includes the program name with drive and path, followed by any options. For example:

```
"c:\program files\jpsoft\tcmd28\tcmd.exe" @c:\tcmd\tcmd.ini
```

There are several ***Take Command*** startup options. The complete syntax for the ***Take Command*** startup command line is (all on one line):

```
d:\path\tcmd.exe [[/]@d:\path\inifile] [//directive=value...] [/D d:\path]
   [/N /X] [/C command] [/T [d:\path\]program]
```

(Do not include the square brackets shown in the command line above. They are there to indicate that the items within the brackets are optional.)

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The command line must start with the full ***Take Command*** path and executable name (**TCMD.EXE**):

```
d:\path\tcmd.exe
```

The additional items below may be included on the command line:

```
@d:\path\inifile OR
/@d:\path\inifile
```

This option sets the path and name of the .INI file. You don't need this option if:

1) your .INI file is named *TCMD.INI,* and
2) it is in one of the following directories:
   2.1) the same directory as ***Take Command***
   2.2) the "%programdata%\JP Software\Take Command 28" directory
   2.3) the %localappdata% directory

This option is most useful if you want to start the program with a specific and unique .INI file.

To start ***Take Command*** without any .INI file, you can create an empty file and specify it as your .INI file.

To get around a Windows limitation that causes the displayed command line of a shortcut to be truncated when a parameter begins with `@`, you can use the alternative syntax

```
/@d:\path\inifile
```

Take Command will skip the leading forward slash.

Options:

//directive=value
This option tells ***Take Command*** to treat the text appearing between the `//` and the next space or tab as an initialization directive. The directive should be in the same format as a line in TCMD.INI, but may not contain spaces, tabs, or comments. This option may be repeated**.** It is a convenient way to place a few simple directives on the startup line without having to modify or create a new .INI file.

/C Run the specified command in a new ***TCC*** tab window. If there is already a ***Take Command*** session running, /C creates a new tab in the existing ***Take Command*** rather than starting a new session. **/C** must be the last ***Take Command*** option on the command line (otherwise ***Take Command*** can't tell if additional options belong to ***Take Command*** or the command to run in the ***TCC*** tab).

/D Start **File Explorer** in the specified directory.

/N Don't load *TCMD.INI* (useful when trying to isolate configuration problems).

/NT Don't load the default startup tabs (usually only useful when combined with /C or /T).

/T You can specify the program to start in the first tab with the /T option:

```
d:\path\tcmd.exe /t d:\path\program
```

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If there is already a ***Take Command*** session running, /T creates a new tab in the existing ***Take Command*** rather than starting a new session.

/T must be the last option on the command line (otherwise ***Take Command*** can't tell if additional options belong to ***Take Command*** or the program to start in the tab).

If you have Startup Tabs defined, ***Take Command*** will display them following the tab created by **/T**.

/X Retrieve and store the ***Take Command*** window layout in a file (*TCMD.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *TCMD.XML* file must be in the same directory as *TCMD.INI*.

3.3 Take Command Interface

The *Take Command* Window

- The Take Command Window
- Menus
- Tabbed Tool Bar
- File Explorer
- Command Input
- Tab Windows
- Status Bar
- Keyboard Shortcuts
- Context Menus
- Using the Scrollback Buffer
- Highlighting and Copying Text
- Resizing the Window
- Drag & Drop
- Macro Recorder
- Take Command Dialogs

Starting Applications

- Starting Windows Applications

***Take Command* and the Windows Environment**

- Resizing the Take Command Window
- Drag and Drop

Take Command* and *TCC

- Take Command and TCC Integration

3.3.1 Take Command Window

The ***Take Command*** window has seven parts:

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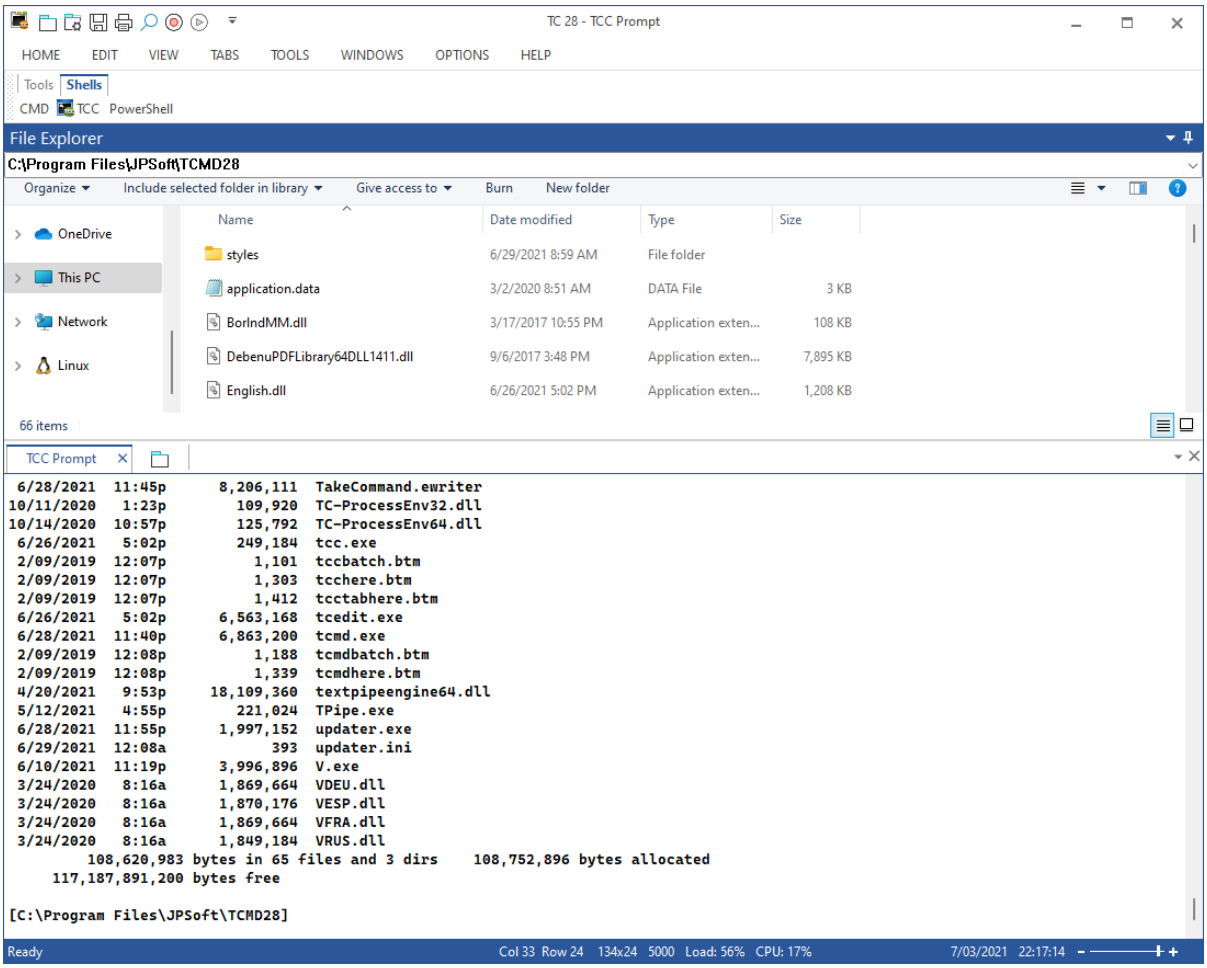

1. The **Title Bar** is the same as the one used in most Windows applications, with a control menu button on the left and the minimize, maximize, and close buttons on the right. You can also adjust the size of the ***Take Command*** window using standard window techniques, but see Resizing the Take Command Window for information about how ***Take Command***'s display changes when you do so.

2. See Take Command Menus for details about the **Menu Bar** and all of its submenus.

3. The Tabbed Toolbar is an optional tool bar that you can use to execute internal or external commands, aliases, or batch files with the click of a mouse (or an accelerator key). You can define up to 20 toolbar tabs, each with up to 50 buttons. To create buttons for the tab toolbar, right click on the toolbar and select "Add Button" or "Add Tab". This selection displays the tool bar dialog. You can also configure the tab toolbar from ***TCC*** with the TCTOOLBAR command.

4. The **File Explorer** window shows a tree view of your desktop on the left and the contents of the selected folder on the right. You can display the files in a number of ways (large icons, small icons, list, and details views).

5. The **Command Input** window allows you to create and edit commands before sending them to the active tab window. This is not limited to entering something at the command prompt; you can

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feed strings anywhere a console app is expecting input. You can scroll back to previous lines, edit, and reexecute them. The **Command Input** window also has full undo/redo (up to 31 levels), drag and drop, and both mouse and keyboard text selection.

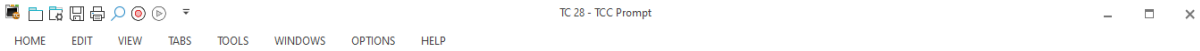
6. The **Tab Windows** run the **Take Command Console,** or any other Windows console application (including CMD, PowerShell, or bash). You can use the scroll bars or the **Alt** cursor keys to view text that has scrolled through the window. You can also save the contents of a tab window and scrollback buffer to a file, copy text from a tab Window to the clipboard, and copy text from the clipboard or from the tab window scrollback buffer to the command line. See Highlighting and Copying Text for information about saving and retrieving text in the tab window and The Command Line for complete details about using the **Take Command** console command line.

7. Finally, the **Status Bar** at the bottom of the ***Take Command*** window displays information about your system:

   - Tooltips for the menu selections
   - The tab window size (columns x rows)
   - The number of rows in the screen buffer
   - The CPU usage (0 - 100%)
   - The memory load (0-100%)
   - The state of the Caps Lock key
   - The state of the Num Lock key
   - The state of the Scroll Lock key
   - The current date
   - The current time
   - A slider control to change the ***Take Command*** transparency

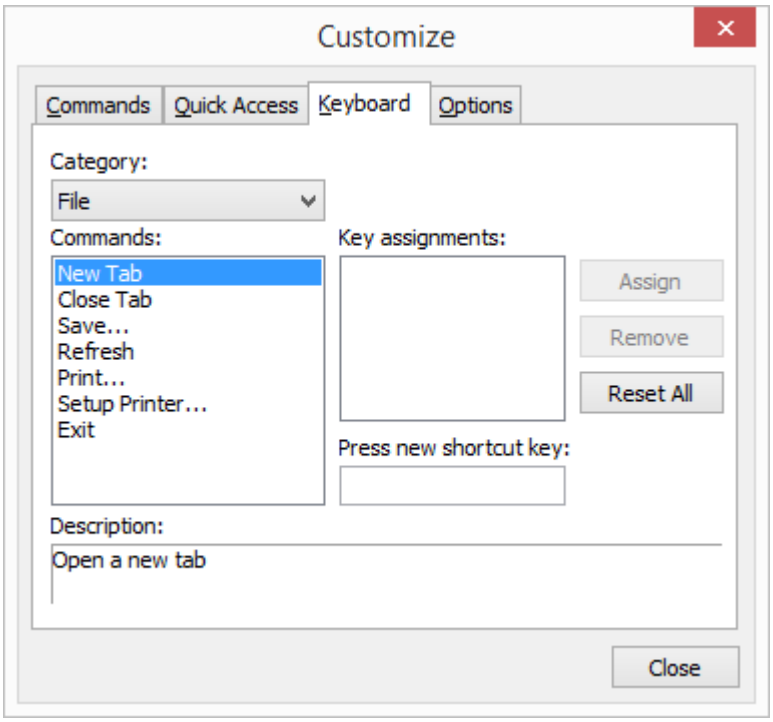
If you find the "I-Beam" cursor in the ***Take Command*** tab windows difficult to see, you can change it in the Tabs page of the configuration dialog to force the use of an arrow cursor in all parts of the window.

3.3.1.1 Menus



Like many Windows applications, ***Take Command*** displays a ribbon menu along the top of the ***Take Command*** window. The default behavior of the ribbon menu is to drop down when you select a menu entry, or you can specify that it always be displayed. (This requires additional screen space.) To select a particular menu item, click once on the menu heading, or use **Alt-x** where ***x*** is the underlined letter on the menu bar (for example, **Alt-H** displays the **Home** menu). You can also select a menu by pressing **Alt** and then moving the highlight with the cursor keys.

The ***Take Command*** Quick Options toolbar and ribbon menu bar are customizable. To customize Quick Options or the ribbon menu (including accelerator keys), click on the button on the right side of the Quick Options toolbar**.**



The menu bar entries allow you to select a variety of ***Take Command*** features:

Home
Edit
View
Tabs
Tools
Windows
Options
Help

3.3.1.1.1 Quick Options

The Quick Options toolbar is on the left side of the caption (title) bar. The Quick Options toolbar enables / disables the Tabbed Toolbar, and minimizes or displays the ***Take Command*** menu ribbon.

Quick Options can also display the Customize dialog, which allows you to add commands to Quick Options, drag & drop icons to the tabbed toolbar, and change the keyboard shortcuts.

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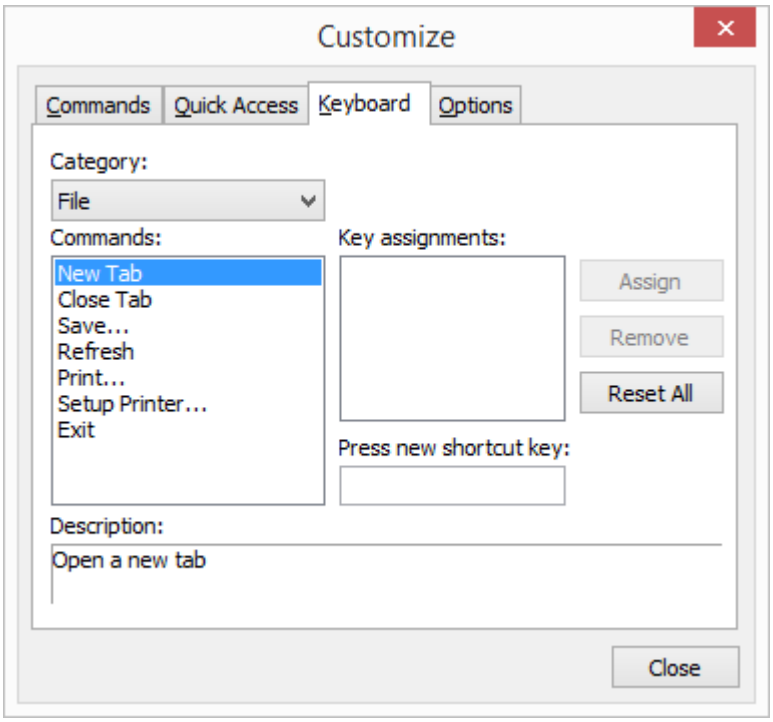
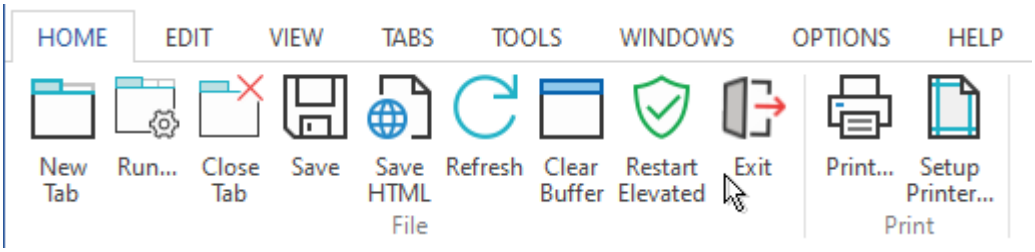


3.3.1.1.2 Home



The Home menu allows you to create new tabs, save or print the screen buffer, or exit ***Take Command***.

New Tab
Opens the default ***Take Command Console*** command processor in a new tab window. (If you want to run a different application in a new tab, use the Run menu entry in the Tabs menu.)

Run
Display the "Run Program" dialog.

Close Tab
Closes the active tab window.

Save to File...
Saves the contents of the current tab window's scrollback buffer to a file. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save HTML...
Saves the contents of the current tab window's scrollback buffer to an HTML file (including colors).

Refresh

Redraws everything in the current ***Take Command*** window (use this selection if the display appears incorrect).

Clear Buffer
Deletes the contents of the current tab window's screen buffer.

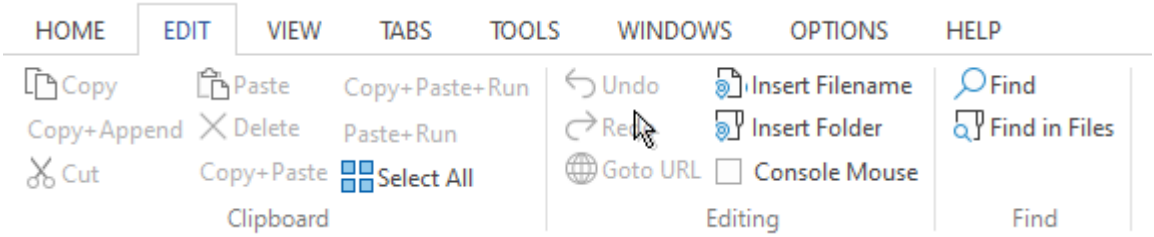
Restart Elevated
Detaches the tabs from the existing ***Take Command*** session, and reattaches them to a new ***Take Command*** in an elevated session.

Exit
Ends the current ***Take Command*** session.

Print...
Sends the contents of the current tab window's scrollback buffer to the printer. A Print dialog box appears in which you can choose the portion of the screen buffer you wish to print.

Printer Setup...
Displays a standard printer setup dialog box. The options available in the dialog box depend on the printer driver(s) you are using.

3.3.1.1.3 Edit



The Edit menu allows you to copy text between the ***Take Command*** windows and the Windows clipboard. You can also access the clipboard in ***TCC*** with redirection to or from the CLIP: device, or with the @CLIP variable function.

To use the Cut, Copy, or Delete commands, you must first select a block of text with the mouse, the keyboard, or with the Select All command, below.

If you have enabled Linux-style selection:

- The block will be copied to the clipboard automatically when you release the left mouse button.
- If you release the left mouse button with the shift key down, ***Take Command*** will append the selection to the clipboard.
- If you double click with the shift key down, ***Take Command*** will append the selection to the clipboard.
- If you triple click with the shift key down, ***Take Command*** will append the line to the clipboard.

For more information on copying text see Highlighting and Copying Text.

Copy
Copies selected text from the command line or scrollback buffer to the clipboard.

Paste

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Copies text from the clipboard to the command line. If the text you insert contains a line feed or carriage return, the command line will be executed just as if you had pressed Enter. If you insert multiple lines, each line will be treated like a command typed at the prompt. Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste. Alternately, you can set AppendCommandLines=YES in your TCMD.INI and a Ctrl+paste will insert " & " instead of the default " ".

Copy + Paste
Copies the selected text from the scrollback buffer directly to the command line. Copy+Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste. Alternately, you can set AppendCommandLines=YES in your TCMD.INI and a Ctrl+Copy+Paste will insert " & " instead of the default " ".

Copy + Paste + Run
Copies the selected text from the scrollback buffer directly to the command line and executes the resulting command line.

Copy+Append
Append the current selection to the existing clipboard contents.

Paste + Run
Copies text from the clipboard to the command line and executes the resulting command line.

Select All
Marks the entire contents of the scrollback buffer as selected text.

Undo
Undo the last action in the Command Input window.

Redo
Redo the last action in the Command Input window.

Goto URL
If you have highlighted an HTTP / HTTPS / FTP / FTPS name, the Edit menu will enable a "Goto URL" option that will open a browser window and take you to that URL..

Insert Filename
Displays the Windows file selection dialog and puts the selected filename at the current position on the command line.

Insert Folder
Displays the Windows folder selection dialog and puts the selected directory name at the current position on the command line.

Console Mouse
Send mouse moves and clicks to the console window. This option is specific to each tab, and is rarely necessary because few console apps use the mouse. You can also toggle this option with **Ctrl-M** in the tab window.

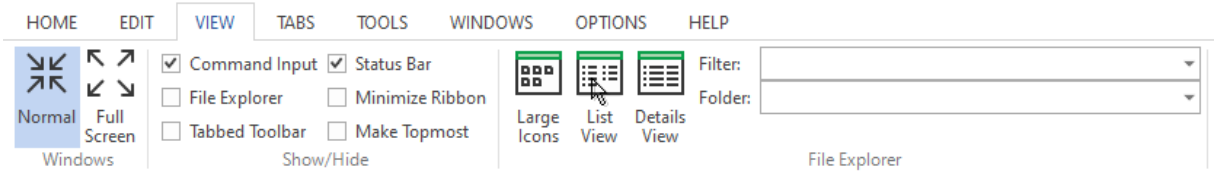
Find
Search the scrollback buffer of the current tab window using regular expressions.

Replace
Search and replace text in the Command Input window.

Find Files

Search for files or text within files.

3.3.1.1.4 View



Normal
Restores the Take Command window to its normal size, and restores the ribbon, File Explorer, and Command Input windows to their default state and size.

Full Screen
Maximizes the tab window size by autohiding the ribbon, File Explorer, and Command Input windows, and maximizing the Take Command window.

Command Input
Show or hide the Command Input window.

File Explorer
Show or hide the **File Explorer** window. If you want to have more room for your tab windows, you can set the **File Explorer** window to AutoHide (i.e., it will be collapsed to a single tab label when not in use). If you don't want the File Explorer window to appear at all, you can toggle it off with this option.

Tabbed Toolbar
Show or hide the tabbed toolbar.

Status Bar
Show or hide the status bar.

Minimize Ribbon
Show or autohide the Take Command ribbon menu.

Make Topmost
Make the Take Command window always on top of other (non-topmost) windows.

Large Icons
Display items in the File Explorer window using large icons.

List View
Display items in the File Explorer window as a list.

Details View
Display directory entries in the File Explorer window with a DIR-style display (Name, Size, Date/Time).

Filter
You can enter an expression to use to filter the directory entries displayed in the File Explorer window. The **Filter** combo box allows you to enter wildcards to filter the directories and files displayed in the File Explorer window.

You can also set the filter from ***TCC*** with the TCFILTER command.

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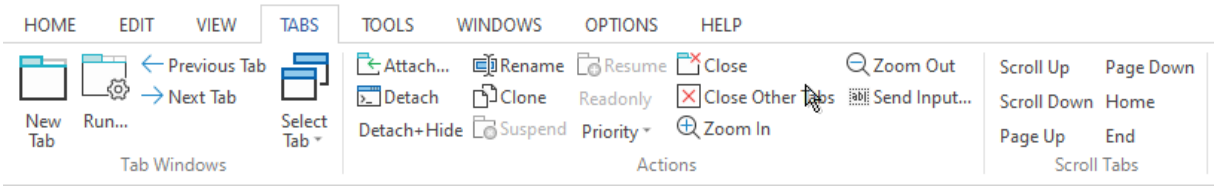
The **Filter** combo box will save its last 10 entries in each session and restore them when ***Take Command*** restarts.

Folder

The **Folder** combo box changes the current directory for the **File Explorer** window.

3.3.1.1.5 Tabs



New Tab

Opens the default command processor in a new tab window. ***Take Command*** defaults to the program specified in your COMSPEC environment variable; if that isn't found then ***Take Command*** will start **TCC.EXE**.

Run

Display the "Run Program" dialog.

Previous Tab

Switch to the next tab window.

Next Tab

Switch to the previous tab window.

Select Tab

Select a tab window to activate from a drop-down list.

Run

Displays the run dialog box from which you can run an application or batch file. ***Take Command*** remembers the commands you have run from this dialog in the current session. To select from this list click on the drop-down arrow to the right of the "Command Line" field, or press the down-arrow. If the filename is *TCC.EXE* or *TCC,* there is no path specified, and ***Take Command*** cannot find the filename in the path, it will default to running *TCC.EXE* in the ***Take Command*** installation directory.

Attach

Displays a popup dialog of all of the console sessions that are **not** already displayed in a ***Take Command*** tab window***,*** and allows you to select one or more to convert to a ***Take Command*** tab. You can select multiple sessions by clicking on individual entries and then on **OK**, or you can select a single session by double clicking on the entry.

Detach

Disconnects the current tab window from ***Take Command*** and displays it on the desktop.

Detach+Hide

Detaches the tab, but keeps it hidden. It can be reattached with the "Attach Tabs" option.

Rename

Rename the current tab text (and the console title). If you set the title with this option, ***Take Command*** will not change the tab title if the application subsequently changes the console title. If you set the title to an empty string, the title will revert to that set by the console application.)

Clone
Clone a ***TCC*** tab. ***Take Command*** will open a new ***TCC*** tab window with the same working directory and environment.

Close
Closes the current tab window.

Zoom In
Increase the tab window font size by one point.

Zoom Out
Decrease the tab window font size by one point.

Send Input
Send all input for that tab window to selected other tab windows.

Scroll Up
Scroll the current tab window up one line.

Scroll Down
Scroll the current tab window down one line.

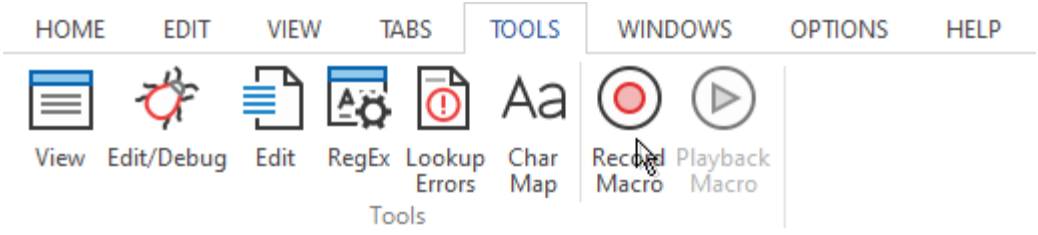
Page Up
Scroll the current tab window up one page.

Page Down
Scroll the current tab window down one page.

Home
Go to the beginning of the screen buffer for the current tab window.

End
Go to the end of the screen buffer for the current tab window.

3.3.1.1.6 Tools



View
Starts the file viewer (VIEW in ***TCC***).

Edit/Debug
The **Edit/Debug** button opens the ***Take Command*** batch debugger in a new ***TCC*** tab window.

Edit
Start the TCEdit file editor.

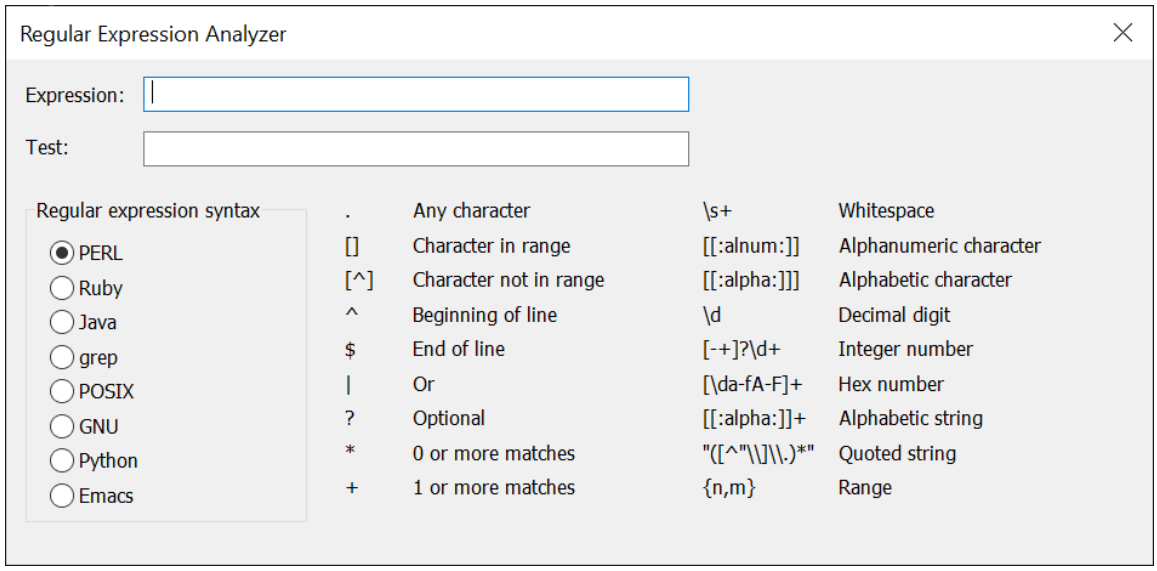
Regex

Take Command and ***TCC*** include a regular expression analyzer dialog (Ctrl-F7 from the ***TCC*** command line, or under the Tools menu in ***Take Command***.) There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.

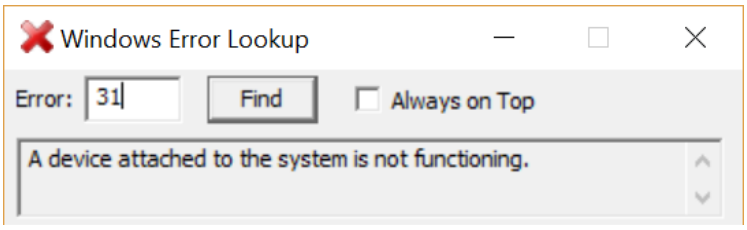
You can choose the regular expression syntax you want to use (Perl, Ruby, Java, etc.). The analyzer will default to the current default for ***Take Command*** and ***TCC***.

The analyzer has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.



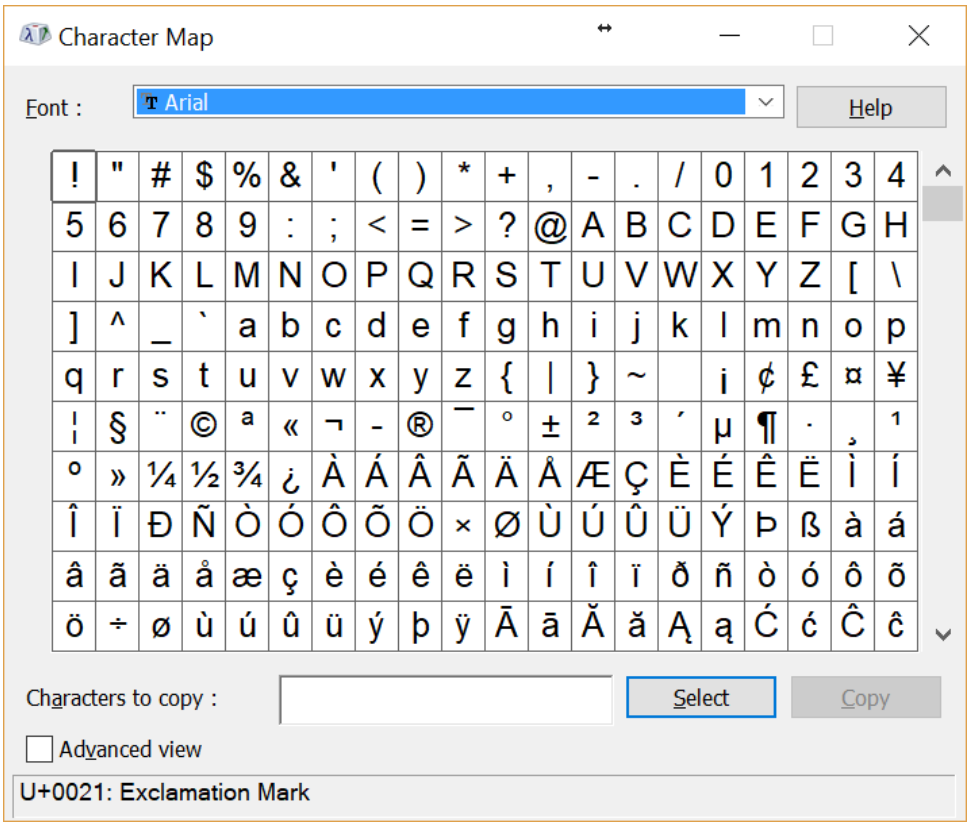
Lookup Errors

Opens a small dialog that lets you look up Windows, network, and NSTATUS error messages based on the integer value. You can enter hex input with a leading **x** or **0x**.



Char Map

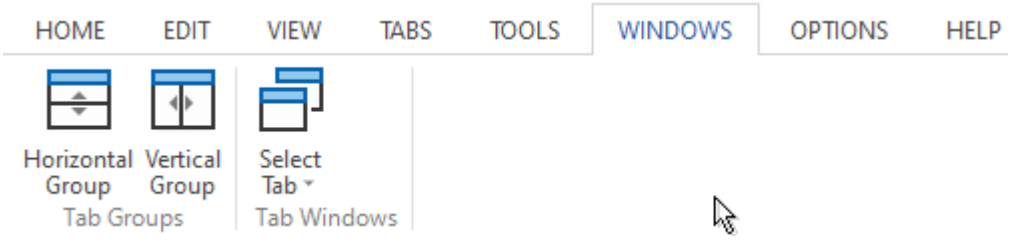
Opens the Windows Character Mapping dialog that lets you look up and copy characters for any font.



Record Macro
Start or stop the macro recorder. The recorder will save all keyboard and mouse events for playback later. See Macro Recorder for more information and other ways to start recording or playback.

Play Macro
Play a macro recorded previously with the **Record Macro** option.

3.3.1.1.7 Windows



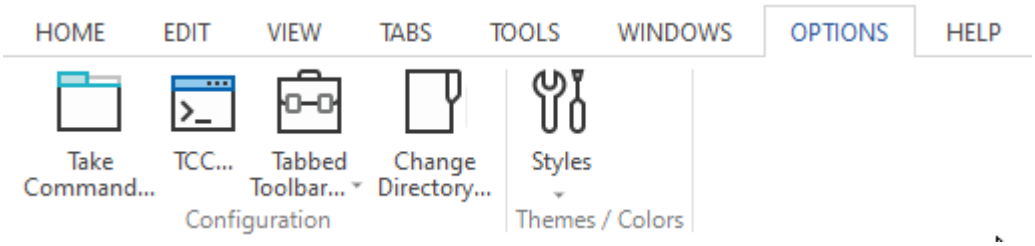
Horizontal Group
Create a new tab bar by splitting the tabs window horizontally, and move the current tab window to the new tab bar.

Vertical Group
Create a new tab bar by splitting the tabs window vertically, and move the current tab window to the new tab bar.

Select Tab

This menu will also display the names of all of the tabs, and allow you to switch to a new tab by selecting it in the menu.

3.3.1.1.8 Options



Take Command
Opens a dialog which you can use to change the ***Take Command*** configuration.

TCC
Opens a dialog which you can use to change the ***TCC*** configuration. This dialog does not affect any existing ***TCC*** windows, only new ones. If you want to change the configuration of an active ***TCC*** window, use the ***TCC*** OPTION command.

Tabbed Toolbar
Create a new toolbar button or tab, or save or reload the toolbar settings in TCMD.INI.

Change Directory
Change the current directory for ***Take Command*** (not the apps running in the tab windows). ***Take Command*** normally inherits its current directory from the app that started it (or the shortcut).

Styles
Select a predefined theme for ***Take Command***. This will change the color and appearance of the ***Take Command*** window and its components (such as the tab window labels). You can also change the default font size.

The available styles are:

Office 2007 Blue
Office 2007 Silver
Office 2007 Black
Office 2007 Aqua
Office 2007 System
Office 2010 Blue
Office 2010 Silver
Office 2010 Black
Office 2013 System
Office 2013 Light
Office 2013 Dark
Office 2016 White
Office 2016 Colorful
Office 2016 Gray
Office 2016 Black

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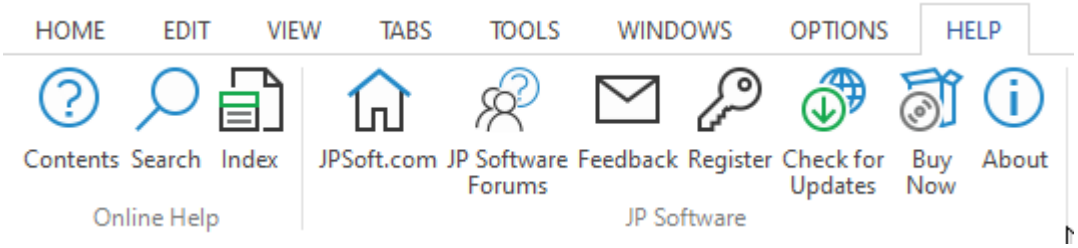
3.3.1.1.9 Help



See also: the Help File topic.

Contents
Displays the **Table of Contents** of the ***Take Command*** help file, from which you can directly navigate to any topic. This is the same display you will see if you select the **Contents** tab from within the help system.

JPSoft.com
A hyperlink to the JP Software web site. Clicking it will attempt to display the JP Software home page in your default browser.

JP Software Forums
A hyperlink to the JP Software support forums.

Feedback
Leave a suggestion in the JP Software feedback forum.

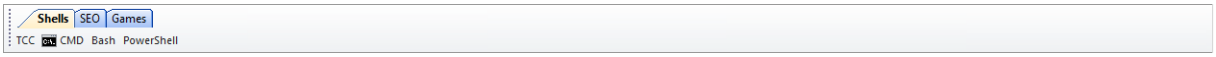
Register
Enter an activation key to register Take Command.

Check for Updates
Query the JP Software web server to see if there is an updated version of ***Take Command*** available. If there is, the new version information will be displayed and you can choose to download and automatically update your existing version.

Buy Now
A hyperlink to our secure online store. Clicking it will attempt to display the store's first page in your default browser. Depending on your configuration, you may need to first establish an Internet connection.

About
Displays the ***Take Command*** version, copyright, and license information.

3.3.1.2 Tabbed Tool Bar



You can hide or show the toolbar with the **View / Tabbed Toolbar** menu entry, and you can detach and dock the toolbar by clicking on the left edge of the toolbar and dragging it to its new position. The new position of the toolbar will be saved when you close ***Take Command*** and restored when you restart.

The Tabbed Toolbar is an optional tabbed tool bar that you can use to execute internal or external commands, aliases, or batch files with the click of a mouse (or an accelerator key). You can define up to

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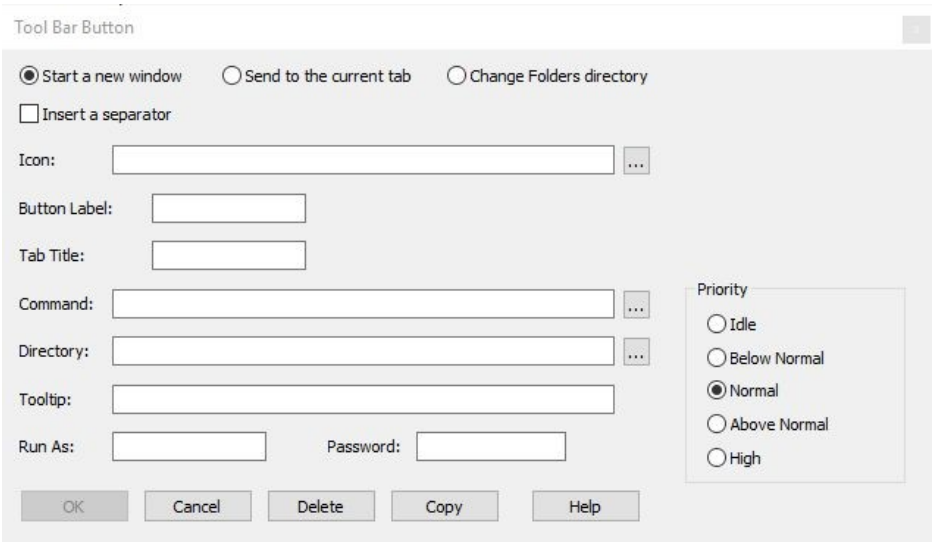
20 tabs, each with up to 50 toolbar buttons. If you have only defined one tab, ***Take Command*** will hide the tab (to save screen space).

To create buttons for the tabbed toolbar, right click on the toolbar. You can modify or delete a button by right clicking on it. A dialog will appear to let you define the button label, tab title, command, and startup directory. There is a Copy option on the toolbar dialog which will duplicate the selected button so you can quickly create multiple variants of a command. You can also configure the tab toolbar from ***TCC*** with the TCTOOLBAR command.

If you don't define a Tooltip, ***Take Command*** will display the Command.

You can also customize the Tabbed Toolbar by clicking on the button on the right side of the Quick Options menu and selecting **More Commands**, clicking on the Commands tab, and dragging icons to the toolbar.

You can reorder toolbar buttons by holding down the Alt key, pressing the left mouse button, and dragging a button to a new location.



3.3.1.3 File Explorer

The **File Explorer** window is an embedded Windows File Explorer window displays a tree view of the folders on your system and the contents of the selected folder (List View) on the right. You can optionally select the folder by entering the name in the combo box at the top of the **File Explorer** window, or on the View menu. You can choose the format (Large Icons, List, or Details) for the files window (on the right) with the Views button on the View menu.

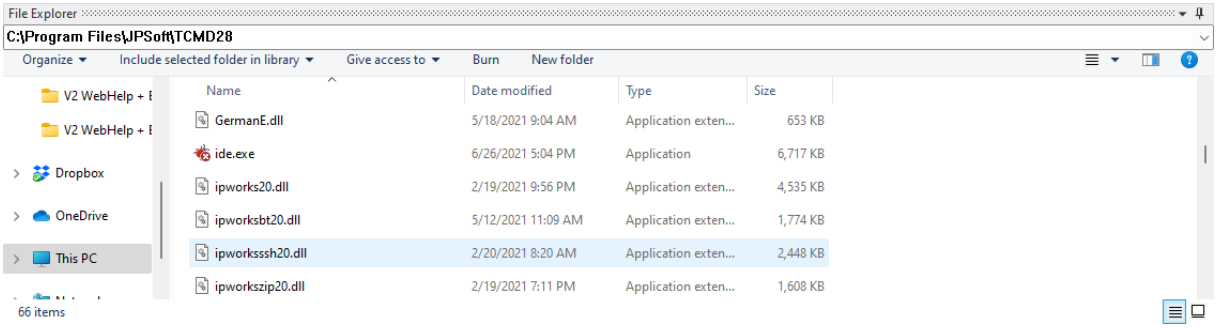
You can optionally filter the contents of the list view window by entering a wildcard filename in the Filter combo box on the View menu. You can also set the filter from ***TCC*** with the TCFILTER command.

You can detach, move and dock the **File Explorer** window by moving the mouse cursor to the title bar and holding the left mouse button down while dragging the window to its new location.

You can AutoHide the **File Explorer** window by clicking on the "push-pin" in the upper right corner, or selecting it from the drop-down menu. When in AutoHide, the window will be minimized to a single tab, and will automatically expand again when you move the mouse cursor over the tab.

You can completely hide the **File Explorer** window by toggling the **View / File Explorer** menu entry.

You can copy selected folders or files to the clipboard with the Ctrl-C or Ctrl-Ins keys, or drag and drop them on the active tab window.



3.3.1.4 Command Input

The **Command Input** window allows you to create and edit commands before sending them to the active tab window. This is not limited to entering something at the command prompt; you can feed strings anywhere a console app is expecting input. You can scroll back to previous lines, edit, and reexecute them. The **Command Input** window also has full undo/redo (up to 31 levels). You can automatically save the contents of the **Command Input** window when ***Take Command*** exits, and reload it when ***Take Command*** starts (see Auto Save File).

The **Command Input** window supports syntax coloring for command line input, using the same colors and keywords as the **IDE** / Batch Debugger.

You can detach, move and dock the **Command Input** window by moving the mouse cursor to the caption bar, and holding the left mouse button down while dragging the window to its new location.

You can "AutoHide" the **Command Input** window by clicking on the "push-pin" in the upper right corner, or selecting it from the drop-down menu. When in AutoHide, the window will be minimized to a single tab, and will automatically expand again when you move the mouse cursor over the tab. You can completely hide the **Command Input** window by toggling the **View / Command Input** menu entry.

The default directory for the **Command Input** window (used for filename completion) will be set to the selected directory in the **Folders** window.

You can use the following editing keys when you are entering a command (the words **Ctrl** and **Shift** mean to press the *Ctrl* or *Shift* key together with the other key named).

Cursor Movement Keys:

Left	Move the cursor left one character
Right	Move the cursor right one character
Ctrl-Left	Move the cursor left one word
Ctrl-Right	Move the cursor right one word
Home	Move the cursor to the beginning of the command
End	Move the cursor to the end of the command
PgUp	Scroll the Command Input window back one page
PgDn	Scroll the Command Input window forward one page

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Insert and Delete Keys:

Ins	Toggle between insert and overstrike mode
Del	Delete the character under (or to the right of) the cursor, *or* the highlighted text
Bksp	Delete the character to the left of the cursor, or the highlighted text
Ctrl-Del or Ctrl-R	Delete the word or partial word to the right of the cursor
Ctrl-Bksp or Ctrl-L	Delete the word or partial word to the left of the cursor
Esc	Delete the entire line

Text Selection and Clipboard Cut/Copy/Delete/Paste:

Shift-Right	Highlight character right of cursor and move cursor
Shift-Left	Highlight character left of cursor and move cursor
Shift-Home	Highlight from cursor to beginning-of-line and move cursor
Shift-End	Highlight from cursor to end-of-line and move cursor
Ctrl-Shift-Right	Highlight word right of cursor and move cursor
Ctrl-Shift-Left	Highlight word left of cursor and move cursor
Ctrl-A	Select all
Ctrl-C	Copy highlighted text to the clipboard
Ctrl-V	Paste the first line of text from the clipboard at the current cursor position
Ctrl-X	Cut the selected text and copy it to the clipboard
Ctrl-B	Paste the last argument from the previous command line
Ctrl-0 to Ctrl-9	Paste the corresponding argument from the previous command line

Execution:

Enter	Send the line to the active tab window
Ctrl-Enter	Send the line to the active tab window, but don't insert a CR/LF in the input window

Miscellaneous:

F1	Get help for the command (first argument on the line)
Ctrl-F1	Get help for the current word
Ctrl-Shift-Z	Undo last action
Ctrl-Shift-Y	Redo last undo
Tab or F7	Pop up the filename / sharename / variable completion window
Ctrl-E	Expand environment variables
Ctrl-.	Toggle between LFN and SFN
Ctrl-P	Print the command input window
Ctrl-Win-T	Create new tab window

Mouse Clicks:

Single left click	Move text caret
Double left click	Select the current word
Triple left click (or single click in left margin)	Select the current line
Single right click	Context menu
Left click+drag	Drag current selection

To highlight text on the command line use the mouse or hold down the **Shift** key and use any of the cursor movement keys listed above. Once you have selected or highlighted text on the command line, any new text you type will replace the highlighted text. If you press **Bksp** or **Del** while there is text highlighted on the command line, the highlighted text will be deleted.

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The command input window will optionally include aliases in filename / tab completion if the argument being expanded is at the beginning of the command line. See the new Options / Take Command / Windows tab.

The command input window will optionally include internal commands in filename / tab completion if the argument being expanded is at the beginning of the command line. See the new Options / Take Command / Windows tab.

3.3.1.5 Tab Windows

Take Command tab windows allow you to run multiple applications in their own tab inside a single ***Take Command*** session.

Although you can run any character-mode and many GUI applications in a tab window, the most common usage will be command processors or utilities. ***Take Command*** includes its own console-mode command processor (***TCC***, formerly known as ***4NT***), but you can run any other command processor, including CMD, PowerShell, bash, etc. in a tab window. You can even tell ***Take Command*** to detect new console windows and automatically convert them to ***Take Command*** tab windows!

Take Command has special support for ***TCC*** dialogs. When you click on another tab, ***Take Command*** will hide the dialogs belonging the non-active ***TCC*** tab windows.

You can use the scroll bars or the **Alt** cursor keys to view text that has scrolled through the window. You can also save the contents of a tab window and scrollback buffer to a file, copy text from a tab Window to the clipboard, and copy text from the clipboard or from the tab window scrollback buffer to the command line. See Highlighting and Copying Text for information about saving and retrieving text in the tab window and The Command Line for complete details about using the **Take Command** console command line.

You can display the tabs on the top, left, right, or bottom of the ***Take Command*** window. You can also rotate the tab labels 90 degrees, allowing you to fit more labels without scrolling at the cost of slightly smaller tab windows. The small tab on the right of the tab window labels will open a new default tab window.

Take Command supports remapped console palettes in the tab windows. Take Command will use the individual palette defined for each console.

Holding down the Alt key while spinning the mouse wheel will select tab windows.

If you press the left mouse button while the cursor is in a tab window, ***Take Command*** will pause output (and scrolling) until you release the key. This will make it easier to copy text while the app is still outputting text.

If you press the left mouse button while the cursor is on the slider in the vertical scrollbar, ***Take Command*** will pause output (and scrolling) until you release the key.

If you hold down the Ctrl key while dropping files in a ***Take Command*** tab window, ***Take Command*** will append a CR and execute the command.

If you have selected text in a tab window, a Ctrl-C will now copy that text to the clipboard and clear the selection. If you do not have any selected text (or if you press Ctrl-C again), it will act like a Ctrl-Break.

Holding down the Ctrl key while scrolling the mouse wheel will change the font size in the ***Take Command*** console tab windows. Not all apps will be happy about you randomly changing their font size (and thus the console window size)!

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If the cursor is hidden in a console application running in a tab window, the tab window cursor will also be hidden.

Right clicking on the tab window title will display a context menu containing the same options as in the ***Take Command*** TABS menu, with three additions:

Read-only Tab - If checked, keyboard input will be disabled in this tab.

New Horizontal Tab Group - Moves the current tab window into a new horizontal tab group.

New Vertical Tab Group - Moves the current tab window into a new vertical tab group.

You can also run simple GUI applications in tab windows. (This will not work for applications that have multiple parent windows.)

Splitter Windows

Take Command supports a splitter window option for each tab window. You must enable "Splitter Windows" in the Take Command configuration dialog (Tabs window), and restart ***Take Command*** to see the splitter.

To open a splitter window, drag the splitter button on the horizontal scrollbar to the right. The splitter window (on the right side) will not automatically scroll to the end when new output is displayed, or when you enter new commands. This allows you to scroll back in the screen buffer to review previous commands and output, and to select text from previous pages.

3.3.1.6 Status Bar

The ***Take Command*** window has a Status Bar that displays tooltips when you move the cursor over menu entries.

The status bar also displays the following information:

- The current cursor position (row and column)
- The tab window size (columns x rows)
- The tab buffer size (rows)
- The memory load (0 - 100%)
- The CPU usage (0 - 100%)
- The state of the Caps Lock key
- The state of the Num Lock key
- The state of the Scroll Lock key
- The current date
- The current time

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You can hide the status bar fields by right clicking on the status bar and unchecking the fields you don't want to see.

There is a slider in the right corner that allows you to dynamically change the transparency level of the ***Take Command*** window. (You can also change the transparency with Ctrl-Shift-Mousewheel, or set it in the **Options / Configure Take Command / Windows** dialog.) The tooltip for the slider will display the current transparency setting (20 - 255); higher values are more opaque.

If you are running ***TCC*** in a tab window and you enter an internal command, the status bar will display the brief syntax for that command. If you move the mouse over the status bar, a tooltip will pop up with the full syntax. If you enter an alias name, the status bar will identify it as an alias and display its value.

3.3.1.7 Keyboard Shortcuts

Take Command offers a number of keyboard shortcuts to change windows. If you are in a tab window, you need to set the **Left Alt Key** or **Right Alt Key** and **Left Ctrl Key** or **Right Ctrl Key** options in the ***Take Command*** tab options dialog. (Otherwise the keystroke will be sent to the console application rather than being interpreted by ***Take Command***.)

All Windows

Alt-F4	Closes the Take Command window
Ctrl-Tab	Pops up a window allowing you to select the **File Explorer**, or any of the tab windows.
Alt-F6	Cycle through the File Explorer, Command Input, and the active tab windows. If the File Explorer window is disabled, Alt-F6 will toggle between the Command Input window and the active tab window.

Tab Window

Ctrl-F4	Close the active tab window
Ctrl-W	Close the active tab window
Ctrl-T	Open a new tab
Ctrl-Ins	Copy the selected text to the clipboard
Ctrl-Shift-C	Append the selected text to the clipboard
Ctrl-V	Paste the clipboard contents to the command line
Alt-Left	Change to the previous tab window
Alt-Right	Change to the next tab window
Alt-Up	Scroll tab window buffer up one line
Alt-Down	Scroll tab window buffer down one line
Alt-PgUp	Scroll tab window buffer up one page
Alt-PgDn	Scroll tab window buffer down one page
Alt-Home	Scroll to the beginning of the tab window buffer
Alt-End	Scroll to the end of the tab window buffer

The Tab Window keys can be changed by right-clicking on the ***Take Command*** menu, and selecting Customize / Keyboard.

You can customize menu shortcut keys by right clicking on the ***Take Command*** menu bar and selecting "Customize / Keyboard".

3.3.1.8 Context Menus

Take Command displays a variety of context menus when you click on the right mouse button, depending on the location of the mouse cursor. If the mouse cursor is on the:

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Toolbar

You can customize the tabbed toolbar.

File Explorer caption bar

You can detach, dock, AutoHide, or Hide the **Folders** window.

File Explorer view

Displays the Windows Shell context menu.

Tab Bar

You can create a new tab, run an application (in a tab or stand-alone) or move an existing console window to a ***Take Command*** tab window.

Tab Labels

You can attach, detach, rename, and close tabs, search for text in the tab window, suspend or resume processes in the tab, and change the priority level of the process running in the tab window. You can also enable or disable notifications, triggered on either activity or silence in the tab window (see NOTIFY for details).

Tab Windows

You can copy selected text to the clipboard or paste the clipboard contents to the application in the tab window. (Paste works by sending the contents of the clipboard to the tab window as a series of keystrokes, so it will work with any application that accepts input.)

3.3.1.9 Using the Scrollback Buffer

Take Command retains the text displayed on its tab windows in a "scrollback buffer". You can scroll through this buffer using the mouse and the vertical scroll bar at the right side of the ***Take Command*** window, just as you can in any Windows application. You can also use the **Alt-Up** and **Alt-Down** keys to scroll the display one line at a time from the keyboard, and the **Alt-PgUp** and **Alt-PgDn** keys to scroll one page at a time.

If you scroll back through the buffer to view previous output, and then enter text on the command line, ***Take Command*** will automatically return to the bottom of the buffer to display the text.

You can set the size of the scrollback buffer on the Tabs tab of the configuration dialogs.

You can save the scrollback buffer to a file (in either text or HTML format) with the ***TCC*** SAVECONSOLE command, or with the ***Take Command*** "Home / Save" or "Home / Save HTML" menu options.

3.3.1.10 Highlighting & Copying Text

While you are working at the ***Take Command Console*** prompt you can use common Windows keystrokes to edit commands, and use the Windows clipboard to copy text between ***Take Command*** and other applications. You can also select all of the text in a ***Take Command*** tab window buffer by using the **Select All** command on the Edit menu.

The right mouse button will pop up an **Edit** context menu. The context menu will have a "Goto URL" option enabled if you have selected an HTTP / HTTPS / FTP / FTPS name, or if there is an HTTP / HTTPS /

FTP / FTPS name at the current mouse location. Selecting "Goto URL" will open a browser window at that URL.

Take Command allows both line and column selection. If you hold down the **Ctrl** or the **Alt** key while dragging the mouse, ***Take Command*** will select a rectangular block of text. Otherwise, as you drag the mouse down ***Take Command*** will highlight text to the end of the previous line.

You can resize a previous selection by clicking inside it and dragging the mouse left or right.

To copy text from a ***Take Command*** tab window to the clipboard, first use the mouse to highlight the text, then right click and select **Copy**, or use the **COPY** command on the Edit menu. You can optionally combine multiple selected lines into a single line before placing it in the clipboard by holding down the **Ctrl** key and selecting **Copy** (or **Copy+Paste** or **Copy+Paste+Run**) from the right-click context menu or the Edit menu. If you have an existing multiline selection in the clipboard, you can copy it to a single line (with the CR/LF's replaced by a space) in the ***Take Command*** window by holding down the **Ctrl** key and selecting **Paste**. (If you hold down the **Ctrl** key and the selection wraps around the last screen column, the lines will be appended without an intervening space.)

If you double-click on a word in the ***Take Command*** window, the entire word is highlighted or selected. If you triple click, the entire line is selected.

To highlight text on the command line use the **Shift** key in conjunction with the **Left**, **Right** , **Ctrl-Left**, **Ctrl-Right**, **Home**, and **End** cursor movement keys. The **Del** key will delete any highlighted text on the command line, or you can type new text to replace the highlighted text.

While ***Take Command*** tab windows contain text, they are not document windows like those used by word processors and other similar software, and you cannot move the cursor throughout the window as you can in text processing programs. As a result, you cannot use the Windows shortcut keys like **Shift-Left** or **Shift-Right** to highlight text in the window. These keys work only at the command line; to highlight text elsewhere in the window you must use the mouse.

To copy text from the clipboard to the command line use **Ctrl-V**, or the Paste command on the Edit menu.

To paste text from elsewhere in a ***Take Command*** tab window directly onto the command line, highlight the text with the mouse and press **Ctrl-Shift-Ins**, or use the **Copy+Paste** command on the Edit menu. This is equivalent to highlighting the text and pressing **Ctrl-Ins** followed by **Ctrl-V**,except that it will not change the contents of the clipboard. It's a convenient way to copy a filename from a previous DIR or other command directly to the command line.

You should use caution when pasting text containing carriage return or line feed characters onto the command line. If the text you insert contains one of these characters the command line will be executed just as if you had pressed Enter. If you insert multiple lines, the text will be treated just like multiple lines of commands typed at the prompt.

You can also use Windows' Drag and Drop facility to paste a filename from another application onto the command line, and you can access the clipboard with redirection to or from the CLIP: device, or with the @CLIP variable function.

3.3.1.11 Resizing the Window

You can resize the ***Take Command*** window at any time by dragging a corner with the mouse. Resizing the window changes the number of rows and columns of text which will fit in the command window (the actual number of rows and columns for any given window size depends on the font you are using). ***Take Command*** reacts to these changes using two sets of rules: one for the height and one for the width.

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When the height of the command window changes, future commands simply use the new height as you see it on the screen. For example, if you reduce the window to three rows high and do a DIR /P (display a directory of files and pause at the bottom of each visual "page"), DIR will display two lines of output, a prompt ("Press any key to continue ..."), and then pause. If you expand the window to 40 lines high and repeat the same command, DIR will display 39 lines, a prompt, and then pause.

However, when the width of the window changes, ***Take Command*** must check the current virtual screen width. The virtual width is the maximum number of characters on each line in ***Take Command***'s internal screen buffer. You can think of it as the width of the data which can be displayed in the ***Take Command*** window, including an invisible portion to the right of the window's right-hand edge. When the virtual width is larger than the actual width, a standard horizontal scroll bar is displayed to allow you to see any hidden output.

The _ROWS internal variable can be used to determine the current screen height.

The virtual screen width starts at 80 columns or the number of columns which fit into the startup ***Take Command*** window, whichever is larger. The _COLUMNS internal variable can be used to determine the current virtual screen width.

If you expand the ***Take Command*** window beyond its previous virtual width, the virtual width is automatically increased. This ensures that the internal buffer can hold lines which will fill the newly enlarged window. If you shrink the window, the virtual width is not reduced because this might require removing output already on the screen or in the scrollback buffer.

As a result, widening the window will make future commands use the new enlarged size (for example, as the window is widened DIR /W, which displays a "wide" directory listing, will display additional columns of file names). However, if the window is narrowed future commands will still remember the enlarged virtual width, and display data to the right of the window edge. Use the horizontal scroll bar to make this data visible.

When the font is changed, ***Take Command*** will recalculate the virtual screen width.

3.3.1.12 Drag & Drop

Take Command is compatible with the Drag-and-Drop facility in Windows.

To add a filename to the command line using drag and drop simply drag the file from an application (or the ***Take Command*** File Explorer window), and drop it anywhere inside a ***Take Command*** tab window. The full name of the file will be pasted at the current cursor position.

Take Command is a drag and drop "client", which means it can accept files dragged in from other applications and paste their names onto the command line as described above. It is not a drag and drop "server", so you cannot drag filenames from the ***Take Command*** tab windows into other applications. However you can copy filenames and other text from the ***Take Command*** window to other applications using the clipboard; see Highlighting and Copying Text for details.

3.3.1.13 Macro Recorder

Take Command has a macro recorder that will record and play back keystrokes and mouse actions. You can control the macro recorder several ways:

1. Win-F11 - Start / stop macro recording
2. Win-F12 - Start / stop macro playback
3. Record & Playback buttons on the Quick Access toolbar
4. Record & Playback buttons on the ***Take Command*** Tools menu
5. The ***TCC*** RECORDER internal command

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When the macro recorder is running, the buttons on the Quick Access toolbar and the ***Take Command*** Tools menu will be highlighted. ***Take Command*** will also display **macro recording** or **macro playback** in an OSD window on the bottom right corner of the display.

3.3.1.14 Take Command Dialogs

The ***Take Command*** menus lead to several dialog boxes. Each is listed here for quick reference, though in general you will find it easier to learn about each one from the context in which it is used (for example, the information referenced below on the tool bar dialog will be more useful after you have read the section on the tool bar).

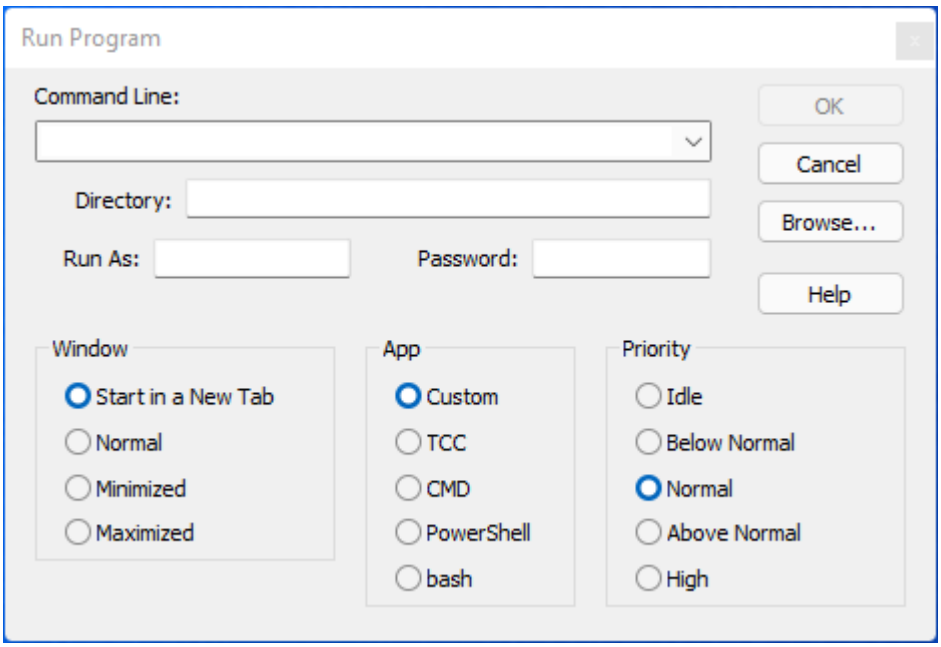
Take Command uses standard Windows dialogs for tasks like printing, selecting a font, or browsing files and directories. Since these dialogs are provided by Windows, not ***Take Command***, and are common to many different Windows programs; they are not documented within this help system.

The reference in parentheses after certain dialogs listed below shows the name of the menu you can use to access that dialog.

Run Program	(Tabs)
Find Files	(Edit)
Configure Take Command	(Options)
Windows Tab	(Options)
Tabs Tab	(Options)
AdvancedTab	(Options)
Configure Tab Toolbar	(Options)

3.3.1.14.1 Run Program

The Run Program dialog, started from the Tabs menu, allows you to run a program by typing its name or browsing the disk.



In the **Command Line** edit box, you can enter the name of any executable program plus command line parameters. If you click on the arrow to the right of the edit box, the dialog displays a list of previous commands you have entered during the current ***Take Command*** session.

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The **Browse** button leads to a standard file browser from which you can select any executable program. Your choice will be placed in the Command Line edit box, and you can add parameters before selecting OK to run the program.

You can enter an optional startup directory in the **Directory** edit box.

You can specify an optional user name and password in whose context the program should be run. (Depending on your user privileges, you may not be able to run the program in a ***Take Command*** tab window.)

Start in a New Tab will start the application in a new ***Take Command*** tab window. This will usually be a Windows console (character-mode) application, but ***Take Command*** can also run many simple GUI applications in a tab window (provided the application does not have multiple parent windows).

The **Normal**, **Minimized**, and **Maximized** buttons determine the type of window that will be used for the program. If you select Minimized, the program will start as an icon on the Taskbar. Maximized starts the program in a full-screen window. The Normal button lets the operating system select the size and position of the program's window.

The **App** group allows you to choose a pre-configured shell (TCC, CMD, PowerShell, or bash). If you want to execute something else, leave this option as "Custom".

You can opt to **Run as Administrator** to start the program with admin privileges. (This option will invoke the Windows UAC dialog).

You can set the priority level for the new process:

Idle	Idle priority (only executes when no higher priority task is scheduled)
Below	Below normal priority
Normal	Normal (default) priority
Above	Above normal priority
High	High priority

3.3.1.14.2 Find Files

The Find Files/Text dialog box, available from the Edit menu, gives you the same features as the FFIND command, in dialog form.

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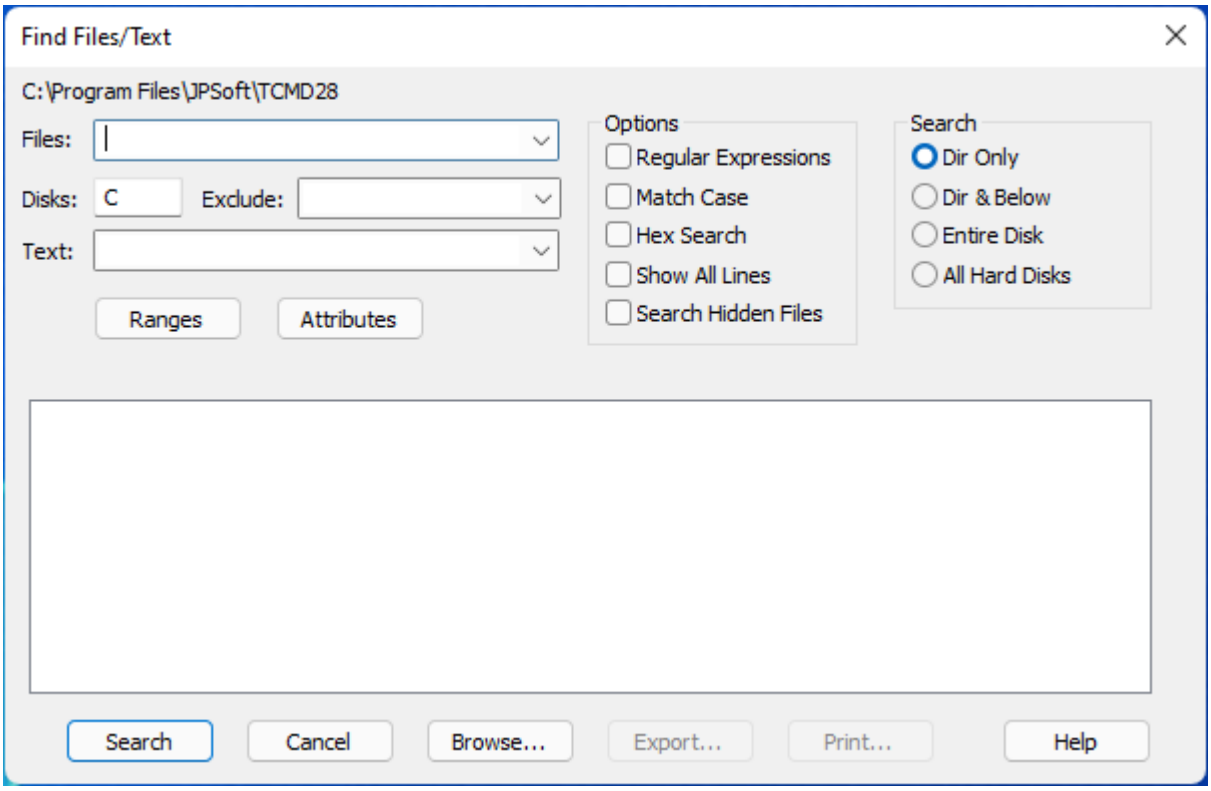

Enter the file name or names you wish search in the **Files** field. You can use wildcards and include lists as part of the file name. To select files from previous searches in the same ***Take Command*** session, click on the down arrow beside the Files field, or press the up or down arrow while the input cursor is in the Files field. You can also use the **Browse** button to find files to include in the search.

Enter the drive(s) you want to search in the **Disks** field. This field is ignored unless **Entire Disk** is selected in the **Search** portion of the dialog. If you select **All Hard Disks**, this field is set automatically to include all hard disk drive letters ***Take Command*** finds on your system.

If you use wildcards to specify the files to search, you can narrow the search with the **Exclude** field by specifying files that you want to exclude from the search. Like the **Files** field, the **Exclude** field can contain wildcards and include lists. For example, if you want to search all files with an extension beginning with ***I*** except for *.ICO* and .INI files, you could enter ****.i**** in the **Files** field and then **.ico;*.ini* in the **Exclude** field.

Enter the text (or hexadecimal values) you are searching for in the **Text** field. You can use extended wildcards in the search string to increase the flexibility of the search. Use back-quotes ` around the text if you want to search for characters which would otherwise be interpreted as wildcards. For example, to search for an **A**, followed by some number of other characters, followed by a **B**, enter the **A*B** as your search string. To search for the literal string **A*B** (**A**, followed by an asterisk, followed by **B**), enter **`A*B`** as your search string (the closing back-quote is optional).

You can search either using the ***TCC***-style extended wildcards or with regular expressions.

The **Match Case** box, when it is selected, makes the search case-sensitive. This option is ignored if **Hex Search** is selected. The **Hex Search** option signals that you are searching for hexadecimal values, not ASCII characters. See the FFIND command for more details.

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If you enable **All Lines**, every matching line from every file will be displayed; otherwise only the first matching line from each file will be displayed. Unless you enable the **Hidden Files** option, files with the hidden and system attributes will not be included in the search.

The radio buttons in the **Search** area let you specify where you want ***Take Command*** to look for files. If you select **Dir Only** or **Dir & Below**, the search will begin in the current default directory, shown above the Files box. If you select **Entire Disk**, ***Take Command*** will use the drives that you specified in the **Disks** field. If you select **All Hard Disks**, ***Take Command*** will search all the hard disk drives it finds on your system.

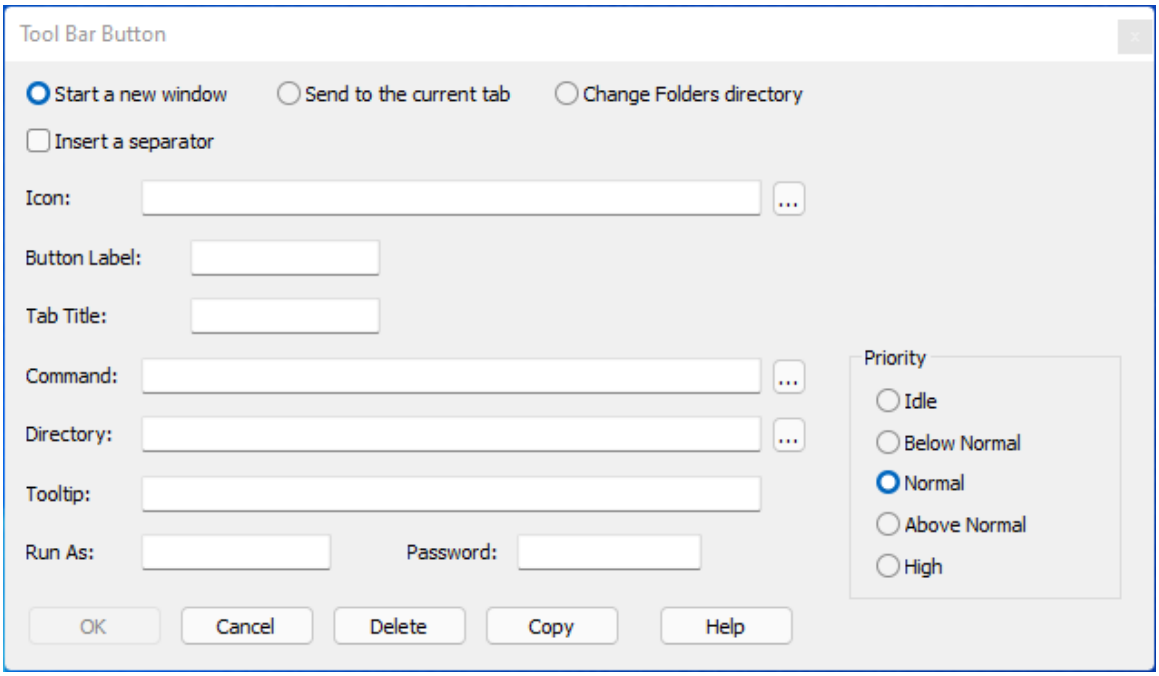
To start the search, press the **Search** button. Once the search has started the **Search** button changes to a **Stop** button, which you can use to interrupt the search before it is finished.

If the search yields a list of matching files, you can save that list with the **Export** button or send it to the default printer with the **Print** button.

If you select one of the matching files in the list (by double-clicking on it, or selecting it with the cursor and pressing Enter), ***Take Command*** will display another dialog with complete directory information about the file. From that dialog you can **Run** the file (if it is an executable file, a batch file, or has an executable extension), or **Edit** the file (with its associated app, or Notepad if there is no association). When you exit from the editor, the original list of matching files will still be available.

3.3.1.14.3 Tab Window Toolbar

You can create new buttons by right clicking on an empty part of the toolbar and selecting "Add Button" from the popup menu. You can modify or delete a button by right clicking on it. A dialog will open to let you define the button label, tab title, command, and startup directory.



A toolbar button can either open a new tab, send keystrokes to the current tab, or change the directory displayed in the File Explorer window.

You can define a toolbar button to display either an icon, a text label, or both. You must specify either the **Icon** or **Label** fields. If you enter both, ***Take Command*** will display the text to the right of the icon on the button.

In the **Icon** field, enter the filename for the icon (.ico) that you want to display on the button. If you specify an .exe filename, ***Take Command*** will use the first icon in that file. You can use the **Browse** button to find the file.

In the **Button Label** field, enter the text that you want to display on the button.

In the **Tab Title** field, enter the text that you want to display on the tab window title. This field is optional, and is only used when creating a new tab window.

In the **Command** field, you can enter either the command to be started in a new window ("Start a new window"), or the keystrokes to be sent to the current tab ("Send to current tab"). You can use the **Browse** button to find a file to be entered at the beginning of the Command field. If the command is a GUI app, it will be started in a new window outside of ***Take Command***. If it is a console app, it will be started in a new tab window. (You can start GUI apps in a ***Take Command*** tab window by using the START /TAB option.)

If the button is sending keystrokes to the current tab, the text is in the same format as the KEYSTACK command in the ***Take Command Console***:

If you're starting a new window, the **Directory** field will set the startup directory for the command. If you are changing the Folders directory, the **Directory** field specifies the new directory. You can use the **Browse** button to find the directory.

The ***command*** and ***directory*** fields can include environment variables and ***TCC*** internal variables and variable functions. Note that the variable expansion occurs in ***Take Command***, not ***TCC***, so internal variables like %_cwd will not probably work as expected.

You can set the priority level for the new process:

Idle	Idle priority (only executes when no higher priority task is scheduled)
Below	Below normal priority
Normal	Normal (default) priority
Above	Above normal priority
High	High priority

Keystroke Interpretation

Characters entered within double quotes, e.g., "***abc***" will be sent to the active console application as is. The only items allowed outside the quotes are key names, the **!** and **/W** options, and a repeat count.

If ***keyname*** is a number, it is interpreted as an ASCII character value.

Repetition. To send ***keyname*** several times, follow it with a space, left bracket **[**, the repetition count, and a right bracket **]**. For example, the command below will send the Enter key 4 times:

```
enter [4]
```

The repeat count works only with an individual ***keyname***. It cannot be used with quoted strings. You must have a blank space between the ***keyname*** and the repetition count.

If you exit by choosing the **OK** button, any changes you have made will be saved in TCMD.INI, and reloaded automatically the next time you start ***Take Command***. If you use the **Cancel** button, your changes will be discarded.

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The tool bar can also be configured with the TCTOOLBAR command.

3.4 Configuration Options

Take Command offers a wide range of configuration options, allowing you to customize their operation for your needs and preferences. The ***Take Command*** menu entry **Options / Configure Take Command** invokes the Take Command Configuration Dialog.

- ***Take Command configuration dialogs***
- Advanced Directives
- Take Command and TCC integration
- Uninstalling Take Command

3.4.1 Take Command Configuration Dialogs

This dialog, available from the Options menu in ***Take Command***, contains four pages or "tabs" of options that let you change the way ***Take Command*** looks and works.

The configuration dialog displays the name of the active *TCMD.INI* file in the title bar.

Unless you select the **Cancel** button, any changes you make will take effect immediately. If you select **Apply**, the settings will only apply for the duration of that session. If you select **OK**, the settings will be recorded in the appropriate section of the TCMD.INI file and will be in effect each time you start ***Take Command***.

While you are using the dialog, you can move between sets of configuration options by clicking on the individual tabs. The options available in this dialog are:

Windows
Tabs
Advanced
Registration

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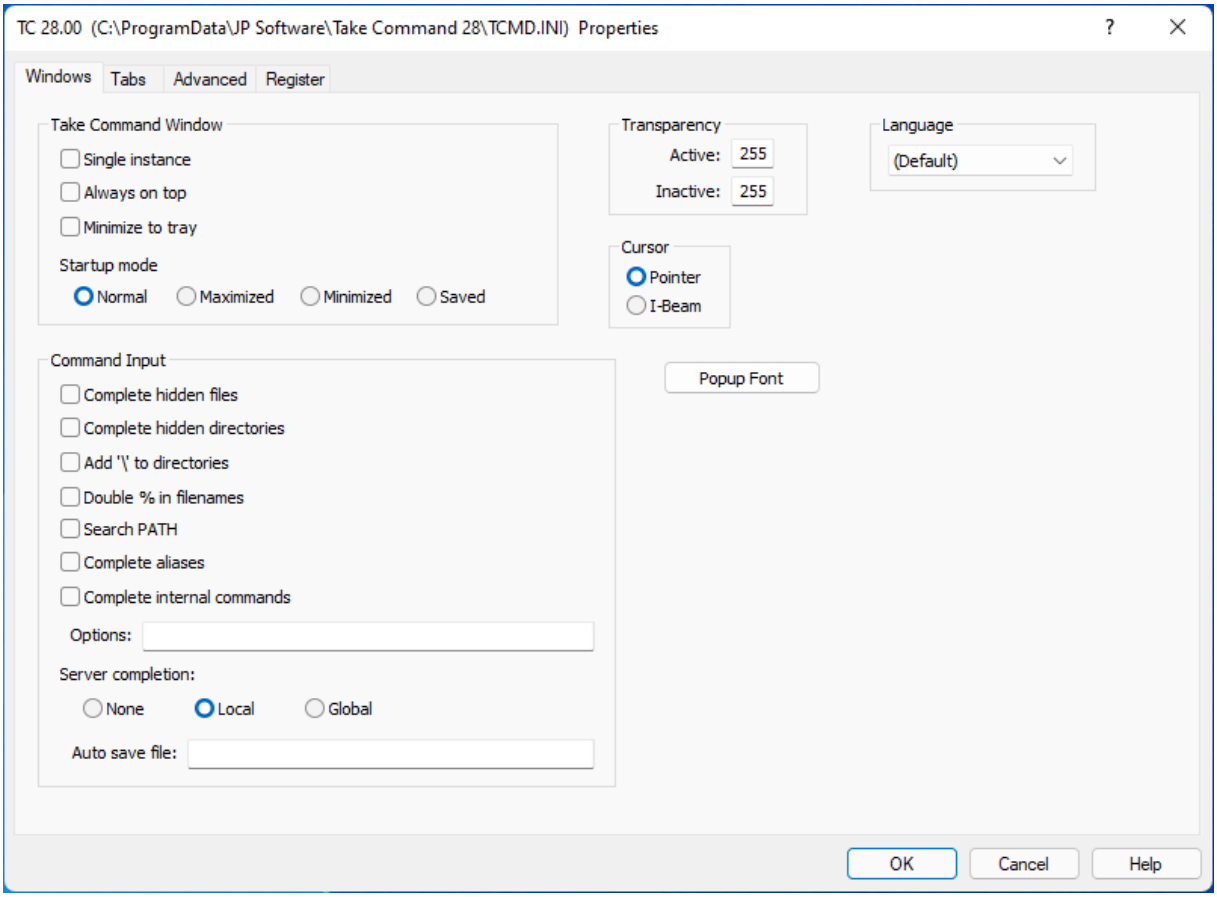
3.4.1.1 Windows



If you are not familiar with the purpose or use of the Windows configuration dialog, review the main configuration dialogs topic before continuing.

Take Command Window

Single Instance restricts ***Take Command*** to a single instance. (If you try to start another copy of ***Take Command***, the previous instance will be brought to the foreground.)

Always on Top makes ***Take Command*** a topmost window (i.e., it will remain on top of all other non-topmost windows).

Minimize to Tray minimizes ***Take Command*** to the system tray instead of the task bar.

Startup Mode - The **Normal**, **Max**, **Min,** and **Save** buttons select the initial state for the ***Take Command*** windows. Normal uses the default Windows size and position; Max maximizes the window, Min minimizes the window, and Save uses the size & position saved when ***Take Command*** last exited.

Command Input:

These options affect filename completion (tab or F7) in the optional Command Input window.

Complete hidden files : If enabled, hidden and system files will be displayed.

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Complete hidden directories : If enabled, hidden directories will be displayed.

Add '\' to Directories : If enabled, a \ (backslash) is automatically appended to directory names (or **/** to FTP directories).

Double % in filename : If enabled, and the filename has embedded % characters, and the first argument on the command line is an internal command, the % characters will be doubled so that variable expansion won't delete (or unexpectedly expand) the filename. (This will not affect filenames on lines beginning with aliases or variables.)

Complete Aliases : If enabled, ***Take Command*** will tab complete alias names. This option requires at least one ***TCC*** session (or SHRALIAS) using global aliases.

Complete Internal Commands : If YES, ***Take Command*** will tab complete internal command names.

Search PATH : If enabled, the directories in the PATH variable are searched if a match isn't found in the current directory.

Options : Sets the files returned during filename completion for selected commands. The format is the same as that used by the ***TCC*** FILECOMPLETION environment variable. See Customizing Filename Completion for a detailed explanation of selective filename completion.

Server Completion : Configures server name completion (see Filename Completion for information on how to use server name completion). **Local** lists only local servers (i.e., those in your "network neighborhood"). **Global** will enumerate the entire network. **None** will disable server completion; this may be necessary to prevent "hanging" if you start typing a server name and accidentally press Tab, and your local domain is very large or slow to respond.

Auto Save File: The name of a file used to save and restore the Command Input window when ***Take Command*** exits and starts.

Transparency:

Transparency sets the transparency level for the ***Take Command*** window. The range is from 20 (nearly invisible) to 255 (completely opaque). You can define both the active transparency (when ***Take Command*** is the foreground window, and the inactive transparency (when ***Take Command*** is in the background). You can change the transparency with Ctrl-Shift-Mousewheel, or the slider control at the right side of the ***Take Command*** status bar.

Cursor:

The **Pointer** and **I-Beam** buttons let you select the type of cursor which ***Take Command*** will use in the tab windows.

Language:

The **Language** combo box allows you to override the default language that ***Take Command*** uses for menus and dialogs.

Background Image:

A bitmap file (.BMP) to use as the background in ***Take Command*** tab windows. (Changing this option will not affect existing windows, only new ones.)

Pop-Up Font:

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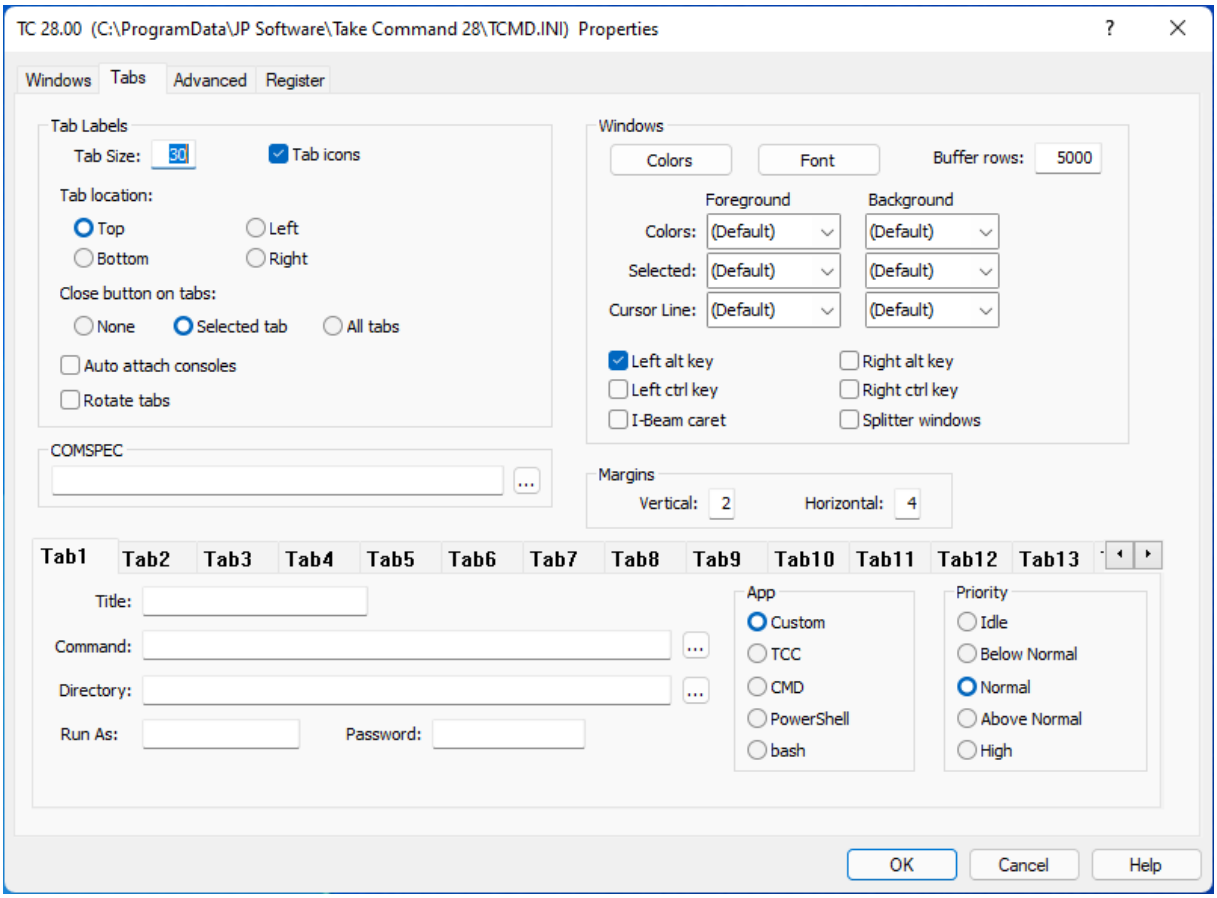
Set the font to use in the filename completion popup window.

3.4.1.2 Tabs



If you are not familiar with the purpose or use of the Tab Windows configuration dialog, review the main configuration dialogs topic before continuing.

Tabs:

Tab Size sets the maximum length of the tab label text (in characters).

Tab Icons displays the application's icon in the tab label.

You can position the tab labels with the **Top**, **Bottom, Left,** and **Right** options.

Close Tab Button defines the close button (X) on the tab labels. You must restart ***Take Command*** for this option to take effect.

Auto Attach Consoles converts all new console windows on the same virtual desktop as ***Take Command*** to ***Take Command*** tab windows.

Rotate Tabs rotates the tab labels 90 degrees. This allows you to fit many more tabs in the window, at the cost of a reduced window size.

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COMSPEC sets the program you want to start in new tabs. If no COMSPEC option is set, ***Take Command*** will run its default command processor (***TCC***).

Windows:

Tab Colors lets you define a custom color palette to use in the tab windows. ***Take Command*** will first try to retrieve a color palette from the console. If the console app is using a custom palette, ***Take Command*** will use that palette for the tab window. If there is no custom palette defined for this console, ***Take Command*** will use the palette set by **Tab Colors**.

The **Font** button opens a standard Windows font dialog that lets you select the font, point size, and font style for ***Take Command*** tab windows.

Colors lets you select the default foreground and background colors for text in the ***Take Command*** tab windows. (These colors will be overwritten if the application in the tab window sets its own colors.)

Selected lets you select the colors for selected text in the ***Take Command*** tab windows. (The selected text colors defaults to the inverse of the current color.)

Cursor Line lets you select the color for the current cursor row in ***Take Command*** tab windows.

Buffer Rows sets the number of rows in the console-mode screen buffer.

Left Alt Key sends the left Alt key to ***Take Command***, so you can use it to invoke the ***Take Command*** menu or scroll the window. (The right Alt key will be passed to the application in the tab window.)

Right Alt Key sends the right Alt key to ***Take Command***, so you can use it to invoke the ***Take Command*** menu or scroll the window. (The left Alt key will be passed to the application in the tab window.)

Left Ctrl Key sends the left Ctrl key to ***Take Command***. (The right Ctrl key will be passed to the application in the tab window.)

Right Ctrl Key sends the right Ctrl key to ***Take Command***. (The left Ctrl key will be passed to the application in the tab window.)

I-Beam Caret uses the I-Beam (vertical) caret in tab windows instead of the console underline (horizontal) caret.

Splitter Windows enables the splitter option on the horizontal scrollbar in tab windows.

ANSI colors enables ANSI escape sequence support for all console applications running in ***Take Command*** tab windows. If you are running Windows 10 Creators Update (or later), ***Take Command*** will use the built-in console ANSI support.

Margins:

Set the horizontal and vertical border margin values (in pixels) for ***Take Command*** tab windows.

Startup Tabs:

The **Startup Tabs** specify programs to run in each tab at startup. You can specify an optional title, the command line (the name of the program and any optional arguments), an optional startup directory, and optionally the user context where the tab should run. You can define up to 25 startup tabs.

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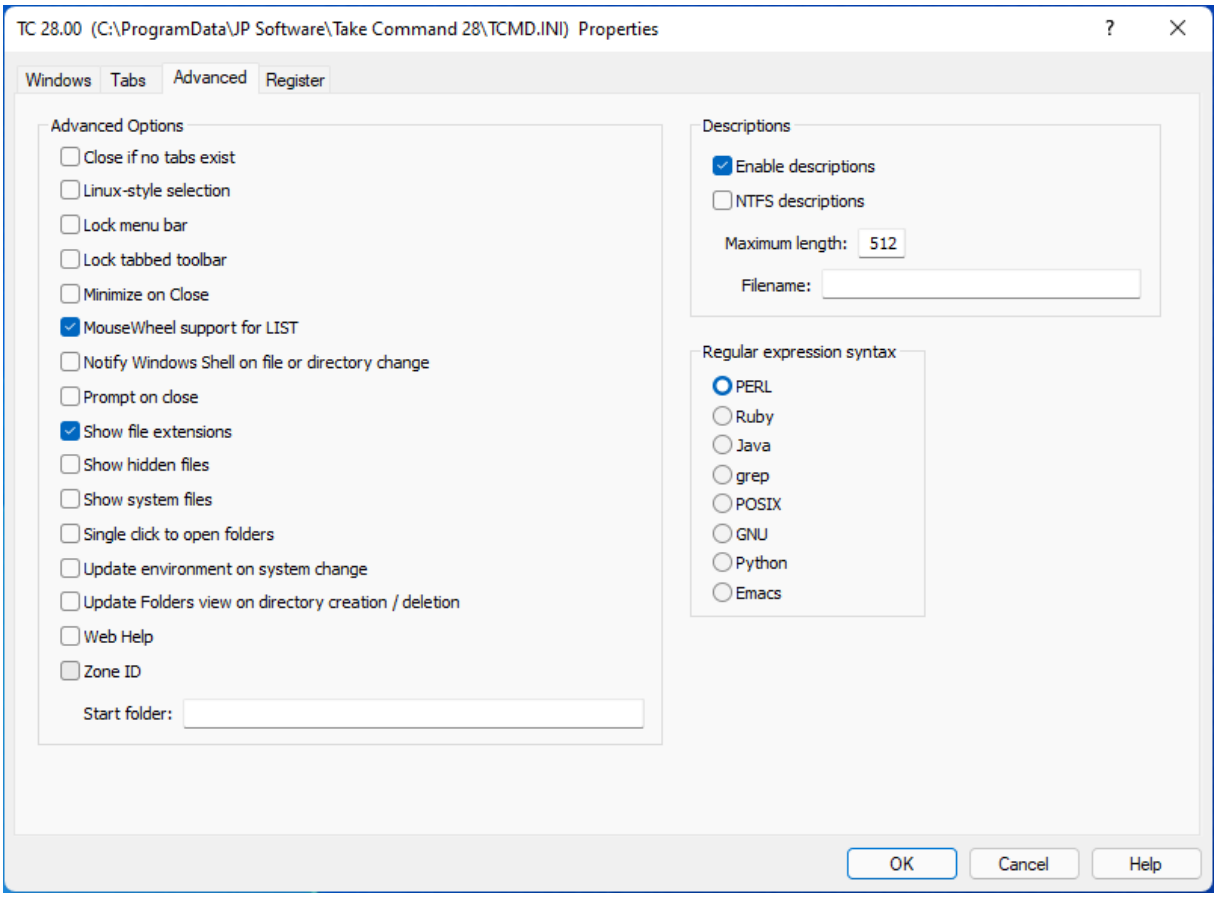
The **App** option allows you to prepopulate the Title and Command fields with the appropriate values for TCC, CMD, PowerShell, and bash.

You can set the priority level for the processes in the tab:

Idle	Idle priority (only executes when no higher priority task is scheduled)
Below	Below normal priority
Normal	Normal (default) priority
Above	Above normal priority
High	High priority

3.4.1.3 Advanced



If you are not familiar with the purpose or use of the Advanced Directives configuration dialog, review the main configuration dialogs topic before continuing.

Advanced Options:

Close if No Tabs Exist : If disabled, ***Take Command*** won't close if there are no tab windows open.

Linux-style Selection : Copy selected text automatically to the clipboard when the left mouse button is released. If you have the shift key down, the selected text will be appended to the clipboard.

Lock Menu Bar : Locks the menu in place so it cannot be moved or docked. (Takes effect after restarting ***Take Command***.)

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Lock Tabbed Toolbar : Locks the tabbed toolbar in place so it cannot be moved or docked. (Takes effect after restarting ***Take Command***.)

Minimize on Close : If enabled, clicking on the Close button or pressing Alt-F4 will minimize ***Take Command*** instead of closing it. To close ***Take Command***, select File / Exit.

MouseWheel Support for LIST : If enabled, ***Take Command*** will pass the mouse wheel messages to ***TCC*** when it detects that ***TCC*** is executing its internal LIST command.

Notify Windows Shell on File or Directory Change : Notify the system shell when changing files or directories.

Prompt on Close : ***Take Command*** will pop up a confirmation message box when exiting.

Show File Extensions : If enabled, **File Explorer** will always show file extensions even if they are disabled in the Windows Shell folder properties.

Show Hidden Files : If enabled, the **File Explorer** window will show hidden files. (You must restart ***Take Command*** after changing this option.)

Single Click to Open Folders : (Obsolete)

Update Environment on System Change : If enabled, ***Take Command*** will monitor the WM_SETTINGCHANGE message and if the environment is specified, update the environment from the User, Volatile, and System registry entries. The updates are done whenever ***Take Command*** displays a prompt (to prevent the environment from changing in the middle of a batch file).

Update Folder View on Directory Creation / Deletion : Obsolete. The **File Explorer** window will always be updated when folders or directories are added, deleted, or renamed.

Web Help : If enabled, ***Take Command*** will use the browser-based help (at https://jpsoft.com/help/index.htm) instead of the local help. Using web help allows you to add comments to the help topics.

Win64 File System Redirection : If disabled, overrides the default Win64 behavior of remapping *windows\system32* calls to *windows\SysWOW64*.

Zone ID : Set the NTFS Zone ID security when running executables downloaded from the Internet. (Note that CMD never checks for the Zone ID, so setting it may introduce a minor incompatibility.)

Start Folder : The initial directory to display in the **File Explorer** window.

Descriptions:

NTFS Descriptions : If set, ***Take Command*** uses the Comments field in the NTFS SummaryInformation stream for each file to hold its description, instead of the *DESCRIPT.ION* file. The advantages are that the description will always remain with the file regardless of what program copies, moves, or renames it. The disadvantage is that you cannot attach a description to directories.

Maximum Length : Set the description length limit. The allowable range is 20 to 512 characters.

Filename : Sets the file name in which to store file descriptions. The default file name is DESCRIPT.ION.

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Regular Expression Syntax:

Sets the regular expression syntax.

3.4.1.4 Register

There are no separate **trial** and **registered** versions of our products. Without registration, a trial version is fully functional for 30 days of use.

The Register tab allows you to register ***Take Command***. When you purchase a new or upgrade copy of ***Take Command***, you will receive an email with your name and registration key. Enter the registration information exactly as you received it in the email (preferably by copying & pasting with the clipboard). Remember to save your registration key in a safe place in case you need to reinstall. If you have lost your registration key, you can request a replacement by contacting JP Software at support@jpsoft.com.

If you need a manual key for a computer with no internet access, you will need to run ***Take Command*** from a computer that **does** have internet access, and click on the **Request Manual Key** button. You will be taken to a web page where you will be prompted for your activation key and the computer ID (name) of the computer you want to register. The manual registration key will be generated and displayed on the web page; copy it and enter it in the registration dialog on the computer you want to register.

If you need to remove your ***Take Command*** registration from a computer, click on the **Unregister Take Command** button and enter the activation key you used to register ***Take Command***.

You can register ***Take Command*** to be used on a USB drive by clicking on the **USB (Portable) key** button. This allows you to run your registered copy of ***Take Command*** by plugging the USB drive into other Windows computers.

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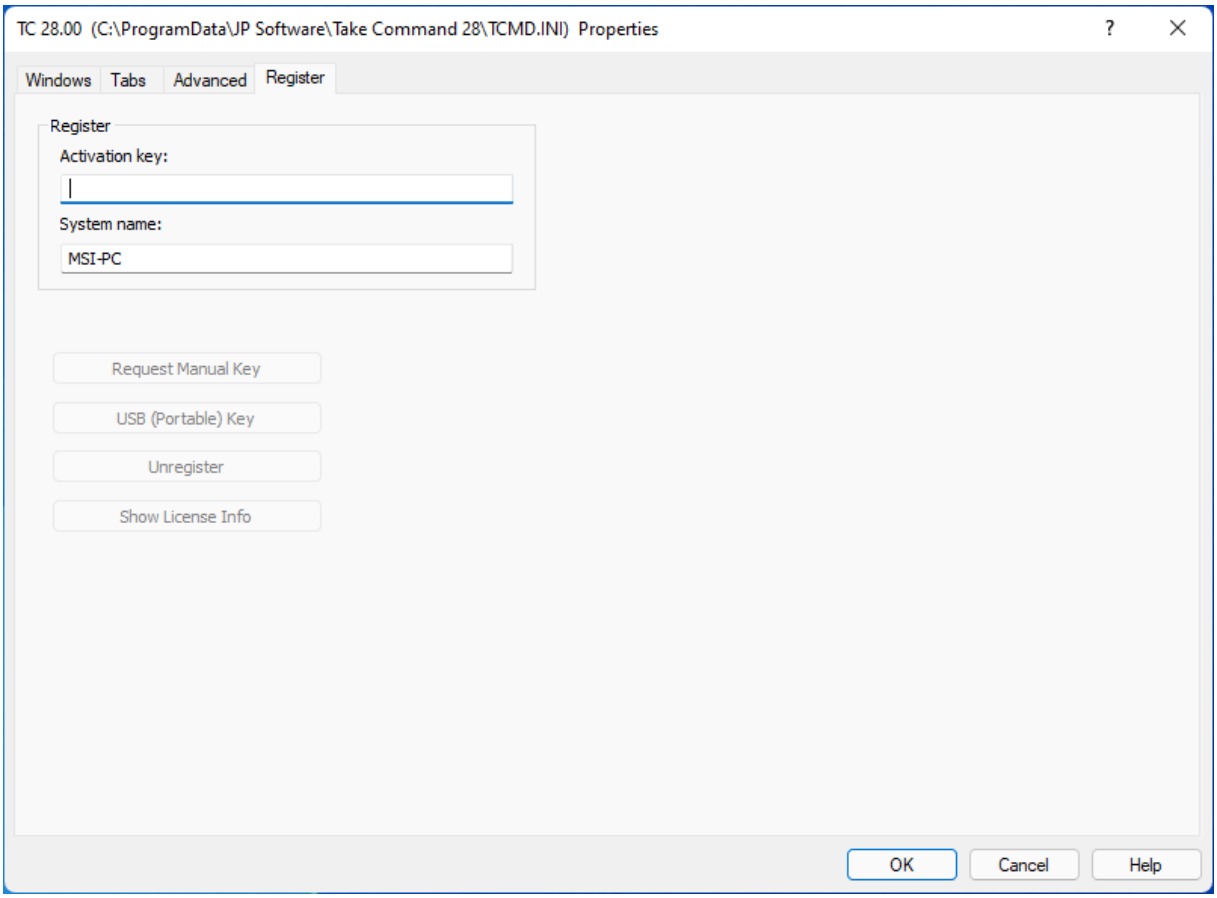

3.4.2 Initialization (.INI) Files

Part of the power of ***Take Command*** is its flexibility, in allowing you to alter its configuration to match your style of computing. ***Take Command***'s configuration is controlled through a file of initialization information.

See Locating the .INI files below to find out how ***Take Command*** locates its *TCMD.INI* file.

Modifying the TCMD.INI File

You can create, add to, and modify the *TCMD.INI* file with the **Configure Take Command** selection on the Options menu, or (for the ***TCC***-specific sections) with the configuration dialog, available via the OPTION command.

Most of the changes you make in the configuration dialog take effect immediately. A few (*e.g.*, startup tabs and buffer size) only take effect when you start a new ***Take Command*** session. See the online help for each individual dialog page if you are not sure when a change will take effect.

Take Command reads its *TCMD.INI* file (see Locating the .INI file) when it starts, and configures itself accordingly. The *.INI* file is not reread when you change it manually. For manual changes to take effect, you must restart ***Take Command***.

Each item that you can include in the *.INI* file has a default value. You only need to include entries in the file for settings that you want to change from their default values.

Using the TCMD.INI File

Some settings in the *.INI* file are initialized when you install ***Take Command***; others are modified as you use and when you exit ***Take Command***.

You can optionally include environment variables in the *TCMD.INI* [4NT] and [TCMD] sections; they will be expanded when *TCMD.INI* is loaded. If you want to delay expansion until command execution time (for example, with ColorDir) you will need to double the %'s.

Locating the TCMD.INI File

When starting ***Take Command*** or a ***Take Command Console (TCC)*** shell:

- If there is an ***@d:\path\inifile*** option on the startup command line, ***Take Command*** will use the path and file name specified there.
- Otherwise, the default *TCMD.INI* file name is used, and the search starts in the directory where the ***Take Command*** program file is stored. If the .INI file is not found, ***Take Command*** will look in the "%PROGRAMDATA%\JP Software\Take Command 28" directory, and finally in the %LOCALAPPDATA% directory.

If no *.INI* file is found, all options are set to their default values. A new *.INI* file will be created, using the default location and name, as explained above.

TCMD.INI File Sections

The *TCMD.INI* file has a number of sections. Each section is identified by the section name in square brackets on a line by itself. ***Take Command*** stores the user-defined options in **[TakeCommand]**; ***TCC*** stores its user-defined options in **[4NT].**

3.4.3 Advanced Directives

These directives are generally used for unusual circumstances, or for diagnosing problems. Most often they are not needed in normal use. They cannot be entered via the configuration dialogs; you must enter them manually (see the .INI file for details).

MacroRecorder	Enable / disable the TCMD macro recorder
NoINIErrors	Don't display error messages for TCMD.INI errors
QuakeHotKey	Key to minimize TCMD "Quake style"
RightClickPaste	Paste clipboard contents instead of context menu
ScreenUpdate	TCMD screen update frames/sec
SnapMargin	Snap the TCMD window to the screen edge when within *n* pixels
StartTabWait	Delay after starting each TCMD tab
TabClosePrompt	Display prompt when process in TCMD tab closes with an error
TabToolbar	Show / hide the tab toolbar
TooltipStyle	The tooltip style for TCMD to use
TrayHotKey	Hotkey to toggle TCMD to / from the system tray
XMLSettings	Save IDE window layout in TCMD.XML

3.4.3.1 MacroRecorder

MacroRecorder = yes | NO

MacroRecorder enables or disables the Take Command macro recorder.

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3.4.3.2 NoINIErrors

NoINIErrors = yes | NO

If set to YES, no TCMD.INI parsing error messages will be displayed for all lines following the NoINIErrors line. This directive would normally be placed at the beginning of the [TakeCommand] and/or [4NT] section. It will **not** apply to the other section, so if you want all parsing errors suppressed you need to add NoIniErrors=Yes to both sections.

Note that setting this directive is generally **not** recommended, as it will suppress potentially critical errors.

3.4.3.3 QuakeHotKey

QuakeHotKey=Enter : Hotkey to minimize the Take Command window by sliding it up off the top "Quake Console" style. The hotkey is always Ctrl-Alt-something; the value for QuakeHotKey is the last key. The default is Enter, so the actual hotkey is Ctrl-Alt-Enter.

3.4.3.4 RightClickPaste

RightClickPaste=yes | NO

If YES, a right click in a *Take Command* tab window will paste the clipboard contents instead of invoking the context menu.

Note that this isn't necessary for most users, as the middle mouse button already does a paste.

3.4.3.5 ScreenUpdate

ScreenUpdate=*n* **:** Number of frames per second for the ***Take Command*** tab windows updates. The range is 1-100; the default is 30.

3.4.3.6 SnapMargin

SnapMargin=*n*

Snaps the ***Take Command*** window to the screen edge if the window edges are within *n* pixels. The default value is 10; 0 will disable the snap.

3.4.3.7 StartTabWait

StartTabWait = n

The number of milliseconds to wait between launching each *Take Command* startup tab. The range is 0 (default) to 5000.

This should only be needed in rare cases when tabs are interfering with one another while starting (for example, in their TCSTART code).

3.4.3.8 TabClosePrompt

TABCLOSEPROMPT=NO | yes

if TabClosePrompt=YES, ***Take Command*** will display a message box when the process in a tab window exits with an error.

3.4.3.9 TabToolbar

TabToolbar=YES | no : Show or hide the tabbed toolbar. ***TCC*** will update this directive to match the current state of the toolbar if you hide or unhide it from the View / Tabbed Toolbar menu entry.

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3.4.3.10 TooltipStyle

ToolTipStyles=*style*

A string value specifying the tooltip style you wish to use. (***Take Command*** will default to using the tooltip style appropriate for the selected theme.) The possible values for *style* are:

Standard
Balloon
RTF
Luna
HTML
Office 2007
Office 2010
Office 2013
Office 2016

3.4.3.11 TrayHotKey

TrayHotKey = Z

The hotkey to toggle Take Command to and from the system tray. The specified alphabetic key is combined with Ctrl + Shift, so the default hotkey is Ctrl-Shift-Z.

3.4.3.12 XMLSettings

XMLSettings=NO | yes

If YES, retrieve and store the ***Take Command*** window layout and the ***IDE*** window layout in files (*TCMD.XML* and *IDE.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *XML* files are in the same directory as *TCMD.INI*.

The XMLSettings directive must be in the [Settings] section in *TCMD.INI*.

3.4.4 Windows Explorer Integration

Take Command includes five batch files to help integrate ***Take Command*** and ***TCC*** with Windows Explorer:

TCCBATCH.BTM	Batch file to make ***TCC*** the default handler (replacing CMD.EXE) in Windows Explorer for .BAT, .BTM, and/or .CMD batch files.
TCCHERE.BTM	Batch file to add a "TCC prompt here" menu entry to Explorer. Clicking on this will open a new copy of ***TCC*** in the selected directory.
TCCTABHERE.BTM	Batch file to create a "TCC tab window here" in the ***Take Command*** File Explorer context menu.
TCMDBATCH.BTM	Batch file to make ***Take Command*** the default handler (replacing CMD.EXE) in Windows Explorer for .BAT, .BTM, and/or .CMD batch files
TCMDHERE.BTM	Batch file to add "Take Command Prompt Here" menu entry to Windows Explorer. Clicking on this will open a new copy of ***TCC*** in the selected directory.

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3.5 Take Command and TCC Integration

Take Command and ***TCC*** are tightly integrated and pass messages and commands back and forth. (If you are running another application, such as CMD or PowerShell in a ***Take Command*** tab window, you will not have access to these commands and variables.)

The "Change Folder" combobox on the ***Take Command*** toolbar recognizes ***TCC*** directory aliases (if you are using a global alias list).

Internal commands:

CDD /T or /TO - Change the selected folder in the ***Take Command*** File Explorer window.

START /TAB - Start the process in a new ***Take Command*** tab window.

TCFILTER - Display or set the filter for the ***Take Command*** File Explorer.

TCTOOLBAR - Change the tool bar buttons.

WINDOW - When run in a tab window, the WINDOW options act on the ***Take Command*** window, not the ***TCC*** tab window.

Internal Variables:

_TCFILTER - returns the ***Take Command*** File Explorer filter.

_TCFOLDER - returns the selected folder in the Folders window if in a ***Take Command*** tab window.

_TCTAB - returns 1 if TCC is in a ***Take Command*** tab window.

Take Command also creates two environment variables that can be queried by its child tab window processes:

TCMD - the full pathname of the ***Take Command*** executable

TCMDVER - the version & build number (i.e., 28.00.02).

Syntax Messages:

Take Command will display the syntax for ***TCC*** internal commands on the status bar when you enter them on the ***TCC*** command line or in the Command Input window. If you move the mouse over the syntax message on the status bar, ***Take Command*** will display a tooltip with the full syntax and switch descriptions.

3.6 Uninstalling Take Command

Before uninstalling ***Take Command***, if you have registered it then click on the **Option** menu, select **Configure Take Command**, and click on the **Unregister** tab. Enter your original activation key, and click **OK**, and your registration info will be removed from the activation server, and from the local machine. This will prevent the local machine from continuing to use one of your activations. (A single-system license is allowed to activate up to three systems.)

You can uninstall ***Take Command*** from the "Programs and Features" option in the Windows Control Panel.

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Uninstalling ***Take Command*** from the control panel will remove all of the program files, but not the user-created files (i.e., TCMD.INI, TCSTART.BTM, TCEXIT.BTM). (This is by user request, as those files are often shared between different versions of ***Take Command***.)

The easiest way to remove these files is from a TCC command line before uninstalling ***Take Command***.

You can remove TCMD.INI with the command:

```
del %_ininame
```

You can remove TCSTART with the command:

```
del %_tcstart
```

You can remove TCEXIT with the command:

```
del %_tcexit
```

Take Command also writes some user-defined configuration options to the "c:\ProgramData\JP Software" directory. You can remove everything in that directory.

After uninstalling, ***Take Command*** will show an optional uninstall survey. Please take a moment to respond -- Your answers will help improve ***Take Command***.

4 TCC

TCC is a command processor compatible with CMD (the default command processor in Windows) but massively enhanced with thousands of additional features. ***TCC-RT*** is a runtime-only version of ***TCC***, distributed as a separate free product.

- Comparing TCC and TCC/LE
- Starting TCC
- Commands
- Variables & Functions
- The TCC Command Line
- Aliases & Batch Files
- File Selection
- Input / Output Redirection
- Configuration Options
- IDE / Batch Debugger

4.1 Comparing TCC, TCC/LE, and CMD

TCC comes in two versions: the full ***TCC*** as distributed with ***Take Command***, and ***TCC-RT,*** which is distributed separately in a free runtime-only version. We will refer to ***TCC*** in this section to mean the full ***TCC*** version. ***TCC-RT*** includes the full ***TCC*** command set, but has no command prompt and is only intended to run batch files.

The following table lists the commands supported in ***TCC*** and the default Windows command processor CMD. Note that CMD does not support any of the 600+ internal variables and variable functions in ***TCC***, and most of the CMD commands have only a limited subset of the options and/or functionality in the equivalent ***TCC*** command. (Commands marked with a * in the CMD column are external Windows commands.)

TCC	***CMD***

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?	
ACTIVATE	
ALIAS	
ASSOC	Y
ASSOCIATE	
ATTRIB	*
BATCOMP	
BDEBUGGER	
BEEP	
BTMONITOR	
BREAK	Y
BREAKPOINT	
BZIP2	
CALL	Y
CANCEL	
CD / CHDIR	Y
CDD	
CHCP	*
CHRONIC	
CLIPMONITOR	
CLS	Y
COLOR	Y
COPY	Y
COPYDIR	
DATE	Y
DATEMONITOR	
DEBUGMONITOR	
DEBUGSTRING	
DEDUPE	
DEFER	
DEL / ERASE	Y
DELAY	
DESCRIBE	
DESKTOP	
DETACH	
DIFFER	
DIR	Y
DIRHISTORY	
DIRS	
DISKMONITOR	
DO	
DRAWBOX	
DRAWHLINE	
DRAWVLINE	
ECHO	Y
ECHOERR	
ECHOS	
ECHOSERR	
ECHOX	
ECHOXERR	
EJECTMEDIA	
ENDLOCAL	Y
ENUMPROCESSES	

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ENUMSERVERS	
ENUMSHARES	
ESET	
EVENTLOG	
EVENTMONITOR	
EVERYTHING	
EXCEPT	
EXIT	Y
FFIND	
FIREWIREMONITOR	
FOLDERMONITOR	
FONT	
FOR	Y
FREE	
FTYPE	Y
FUNCTION	
GLOBAL	
GOSUB	
GOTO	Y
GZIP	
HASH	
HEAD	
HELP	*
HISTORY	
IDE	
IF	Y
IFF	
IFTP	
INKEY	
INPUT	
INSTALLED	
JABBER	
JAR	
JOBMONITOR	
JOBS	
KEYBD	
KEYS	Y
KEYSTACK	
LIST	
LOADBTM	
LOADMEDIA	
LOCAL	
LOCKMONITOR	
LOG	
LUA	
MD / MKDIR	Y
MEMORY	
MKLINK	Y
MKLNK	
MONITOR	
MOUNTISO	
MOUNTVHD	
MOVE	Y

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MOVEDIR	
MSGBOX	
NETMONITOR	
ON	
OPTION	
OSD	
PATH	Y
PAUSE	Y
PDIR	
PEE	
PIPEVIEW	
PLAYAVI	
PLAYSOUND	
PLUGIN	
POPD	Y
POSTMSG	
PRINT	
PRIORITY	
PROCESSMONITOR	
PROMPT	Y
PSHELL	
PSUBST	
PUSHD	Y
QUERYBOX	
QUIT	
RD / RMDIR	Y
REBOOT	
RECORDER	
RECYCLE	
REGDIR	
REGMONITOR	
REM	Y
REN / RENAME	Y
RESOLUTION	
RESTOREPOINT	
RETURN	
REXEC	
RSHELL	
SAVECONSOLE	
SCREEN	
SCREENMONITOR	
SCRIPT	
SCRPUT	
SELECT	
SENDHTML	
SENDMAIL	
SERVICEMONITOR	
SERVICES	
SET	Y
SETARRAY	
SETDOS	
SETERROR	
SETLOCAL	Y

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SHIFT	Y
SHORTCUT	
SHRALIAS	
SMPP	
SNMP	
SNPP	
SPONGE	
SSHEXEC	
START	Y
STATUSBAR	
SWITCH	
SYNC	
TABCOMPLETE	
TAIL	
TAR	
TASKBAR	
TASKDIALOG	
TASKEND	
TASKLIST	
TCDIALOG	
TCFILTER	
TCTOOLBAR	
TEE	
TEXT	
TIME	Y
TIMER	
TITLE	Y
TOUCH	
TPIPE	
TRANSIENT	
TREE	*
TRUENAME	
TS	
TYPE	Y
UNALIAS	
UNBZIP2	
UNFUNCTION	
UNGZIP	
UNJAR	
UNMOUNTISO	
UNMOUNTVHD	
UNQLITE	
UNSET	
UNSETARRAY	
UNTAR	
UNZIP	
UPTIME	
USBMONITOR	
UUID	
VBEEP	
VDESKTOP	
VER	Y
VERIFY	Y

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VIEW	
VOL	Y
VSCRPUT	
WAKEONLAN	
WEBFORM	
WEBUPLOAD	
WHICH	
WINDOW	
WINSTATION	
WMIQUERY	
WMIRUN	
WSETTINGS	
WSHELL	
WSHORTCUT	
Y	
ZIP	
ZIPSFX	
7UNZIP	
7ZIP	

4.2 Starting TCC

You will typically start ***TCC*** in a ***Take Command*** tab window. But you can also start ***TCC*** from a Windows shortcut, located:

- on the desktop, or
- in the Quick Launch bar, or
- in the **Programs** section of the **Start** menu (including its **Startup** subdirectory).

You may also start it from the **Start / Run** dialog.

See TCC Startup Options for more information on startup command line options.

When you configure a ***TCC*** shortcut, place the full path and name for the file in the Command Line field, and put any startup options that you want passed to ***TCC.*** For example:

```
Command Line:       C:\Program Files\JPSoft\TCMD\TCC.EXE
Working directory:  C:\
```

You do not need to use the Change Icon button, because ***TCC.EXE*** already contains icons.

Each Windows program has a command line which can be used to pass information to the program when it starts. The command line is entered in the Command Line field for each shortcut or each item in a Program Manager group (or each item defined under another Windows shell), and consists of the name of the program to execute, followed by any startup options.

The ***TCC*** startup command line does not need to contain any information. When invoked with an empty command line, ***TCC*** will configure itself from the TCMD.INI file, and then display a prompt and wait for you to type a command. However, you may add information to the startup command line that will affect the way ***TCC*** operates.

At startup, TCC will save the last directory in the directory history list (i.e., if you're running SHRALIAS or you've loaded the directory history in TCSTART) to the buffer used by "CD -".

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4.2.1 TCC Startup Options

The command line that starts ***TCC*** will typically include the program name with drive and path, followed by any options. For example:

```
"c:\program files\jpsoft\tcmd28\tcc.exe" @c:\jpsoft\tcmd.ini
```

Although the startup command line is usually very simple, you can add several options. You can do this manually in the Windows **RUN** dialog, in a Windows shortcut file (*.LNK)*, at the ***TCC*** prompt or in a batch file (with or without using the internal START command). Each of these methods will start a new instance of the selected command processor, which will run in a new window, except when ***TCC*** is started from ***TCC*** (either at the command prompt or within a batch file) without the START command.

When you use a pipe in a command, either at the command prompt or in a batch file, ***TCC*** starts another instance of itself, using the same command line parameters (except as required for the pipe).

The complete syntax for the ***TCC*** startup command line is (all on one line):

```
d:\path\tcc.exe [d:\path] [[/]@d:\path\inifile] [//directive=value...]
   [/A /H /I[IPSX]/L: /LA /LD /LF /LH /N/Q /S /T:bf /U /V /X ] [/C | /K]
   [command]
```

Do not include the square brackets shown in the command line above. They are there to indicate that the items within the brackets are optional. Some options are available only in specific products; see below for details.

If you include any of the options below, you should use them in the order that they are described. If you do not do so, you may find that they do not operate properly.

The command line must start with the path and name of the executable program file (**TCC.EXE**):

d:\path\tcc.exe

The additional items below may be included on the command line:

d:\path

If included, this second copy *d:\path* of ***TCC*** path must be identical to *d:\path* in the command line segment above. It sets the drive and directory where the program is stored, called the **COMSPEC** path. This option is included for compatibility with other character mode command processors, but is not needed in normal use. ***TCC*** can find its own directory without a **COMSPEC** path.

@d:\path\inifile ***OR***
/@d:\path\inifile

This option sets the path and name of the .INI file. You don't need this option if

1) your .INI file is named *TCMD.INI,* and
2) it is in one of the following directories:
   - 2.1) the same directory as ***TCC***
   - 2.2) the "%programdata%\JP Software\Take Command 28" directory
   - 2.3) the %localappdata% directory

This option is most useful if you want to start the program with a specific and unique .INI file.

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To start ***TCC*** without any .INI file, you can use the /I or /II options, or create an empty file and specify it as your .INI file.

To get around a Windows limitation that causes the displayed command line of a shortcut to be truncated when a parameter begins with `@`, you can use the alternative syntax

```
/@d:\path\inifile
```

TCC will skip the leading slash.

```
//directive=value
```

This option tells ***TCC*** to treat the text appearing between the `//` and the next space or tab as a directive. The directive should be in the same format as a line in the .INI file, but may not contain spaces, tabs, or comments. This option may be repeated**.** It is a convenient way to place a few simple directives on the startup line without having to modify or create a new .INI file.

Directives on the command line override any corresponding directive in the .INI file.

/A This option causes the output of internal commands to a pipe or redirected to a file to be in ASCII when ***TCC*** starts. This is the default value, and isn't necessary unless you want to override a Unicode Output configuration option.

/B This option tells ***TCC*** that you do not want it to set up a Ctrl-C / Ctrl-Break handler.

Warning: It may cause the system to operate incorrectly if you use this option without other software to handle Ctrl-C and Ctrl-Break. This option should be avoided by most users.

/D Disable execution of AutoRun commands from Registry. If /D is not specified when ***TCC*** starts, it will look for and execute the following registry variables:

HKEY_LOCAL_MACHINE\Software\Microsoft\Command Processor\AutoRun

and / or

HKEY_CURRENT_USER\Software\Microsoft\Command Processor\AutoRun

See also the AutoRun configuration option.

/H Start ***TCC*** in a hidden window. The window will not appear on the task bar, or in the Alt-tab list of applications.

/I Don't load the .INI file, execute TCSTART or TCEXIT, or load plugins. You can optionally specify individual arguments:

/II	Don't load the .INI file.
/IL	Don't load the default library functions.
/IP	Don't load plugins.
/IS	Don't execute TCSTART.
/IX	Don't execute TCEXIT.

/L Forces the use of local lists as the default for aliases, functions, directory history and command history, overriding any configuration options. This method allows you to use global lists as the default, but start a specific session with local aliases, functions and histories. See the topics ALIAS, FUNCTION, and Local and Global History Lists for more details.

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You can optionally specify individual arguments:

/LA Forces the use of local aliases.
/LD Forces the use of a local directory history.
/LF Forces the use of local functions.
/LH Forces the use of a local command history list.

/N If ***TCC*** was started as a service, use the /N option to prevent ***TCC*** from being closed on a Windows CTRL_LOGOFF_EVENT.

/Q Don't display version / copyright message (registered copies only).

/S CMD.EXE-compatible quoted string handling.

/T:*bf* This option sets the foreground and background colors in the ***TCC*** command window. Both ***b*** and ***f*** are hexadecimal digits. ***b*** specifies the background color and ***f*** specifies the foreground color. This option is included only for compatibility with CMD***.*** See the CMD color codes in Colors, Color Names & Codes.

In most cases you should set default colors with the corresponding Output Colors configuration option. If you use both, the /T switch overrides the configuration options.

/U This option causes the output of internal commands to a pipe or redirected to a file to be in Unicode when ***TCC*** starts. The command :

OPTION //UnicodeOutput=yes | no

may be used at any time to switch between Unicode and ASCII output.

/U8 This option causes the output of internal commands to a pipe or redirected to a file to be in UTF-8 when ***TCC*** starts. The command :

OPTION //UTF8Output=yes | no

may be used at any time to switch between UTF-8 and ASCII output.

/V Tells ***TCC*** to handle the CMD syntax ***!varname!*** as a delayed expansion of ***%varname***. Since CMD, unlike ***TCC***, doesn't support delayed expansion of variable references in the ***%varname%*** format, it introduced a special ***!varname!*** notation. Using **/V** simply tells ***TCC*** to handle that syntax as an alternative to ***%varname%*** or ***%varname*** or ***%[varname]***.

/X This option forces ***TCC*** to alter the operation of the MD (MKDIR) command to automatically create all necessary intermediate directories when it creates a new subdirectory. Its effect is the same as adding a /S option to all MD (MKDIR) commands. This option is included for compatibility with CMD, where it also enables other options. However, in ***TCC*** those options are already enabled by default.

/C *command* *or*
/K *command* *or*
command

Only one of these options may be used to specify for ***TCC*** what it must do after startup, and what it should do after completing ***command***. ***Command*** will be executed after the automatic ***TCC*** startup program TCSTART, but before a prompt is displayed. ***Command*** may be any valid alias, internal or external command, or batch file, including parameters.

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All other startup options must be placed before ***command***, because ***TCC*** will treat characters after ***command*** as parameters for ***command*** and not as additional startup options.

If ***command*** is preceded by **/C**, ***TCC*** will execute ***command*** and then exit, returning to the parent program or the desktop without displaying a prompt.

The **/K** switch has no effect. Using it is the same as placing ***command*** (with neither **/C** nor **/K**) at the end of the startup command line. It is included only for compatibility with CMD.

Example 1

Assume that you execute the command line below:

```
c:\TCMD\TCC.exe c:\TCMD\start.btm
```

The events below will take place in the order shown:

1 **Windows** starts `c:\TCC\TCC.exe`

2 ***TCC*** initializes from
- 1st choice: `c:\TCC\TCMD.INI`
- 2nd choice: TCMD.INI in the "%programdata\JP Software\Take Command 28" directory
- 3rd choice: TCMD.INI in the %localappdata% directory.

3.1 If the initialization file was found, **and** it contains the directive
TCStartPath=c:\start
and one of the files
```
c:\start\tcstart.btm
c:\start\tcstart.bat
c:\start\tcstart.cmd
c:\start\tcstart.exe
c:\start\tcstart.com
```
exists, that file is executed by ***TCC***.

3.2 If no initialization file was found in Step **2**, **or** the initialization file either does not contain the TCStartPath directive, or the value of the directive is ***c:\TCC***, and a **TCSTART** program is found in directory ***c:\TCC***, it is executed by ***TCC***

4 ***TCC*** executes *c:\tcmd\start.btm* (or, if not found, it displays an error message).

5 ***TCC*** displays the command prompt, unless an EXIT command was executed in *c:\tcmd\start.btm*, terminating ***TCC***.

Example 2

The command line below, when executed by ***TCC***, CMD, the RUN dialog, or a shortcut, will start ***TCC***, select local aliases, execute any **TCSTART** file you have created, execute the file ***PROCESS.BTM***, and exit. No prompt will be displayed by this session:

```
c:\tcmd28\tcc.exe /la /c c:\tcmd28\process.btm
```

4.2.2 TCSTART and TCEXIT

TCC Startup Program

Each time ***TCC*** starts, it looks for a program named TCSTART. TCSTART is normally a batch file (*.BAT*, *.BTM*, or *.CMD*), but it can be any executable file. If you specify a path in the TCSTART / TCEXIT configuration option, the file must be in the specified directory. If the configuration option is not used, the *TCSTART* program, if any, in the same directory as your command processor is executed. Use of

TCSTART is optional, and ***TCC*** will not display an error message if it cannot find the program. If you do not want to use a startup program, set the TCSTART / TCEXIT path to a directory which does not have one, or leave it unspecified, and make sure that no matching executable file is in ***TCC***'s directory.

TCSTART is a convenient place to change the color or content of the prompt for each session, LOG the start of a session, or execute other special startup or configuration commands. It is also one way to set aliases, functions, and environment variables. See the section below on Pipes etc. about changing directories via *TCSTART*.

With the exception of some initialization switches, the entire startup command line passed to ***TCC*** is available to *TCSTART* as batch file parameters (**%1**, **%2**, etc.). For example, to pause if any parameters are passed, you could include this command in *TCSTART*:

```
if %# GT 0 pause Starting %_cmdproc with parameters [%$]
```

You can disable TCSTART and/or TCEXIT

Pipes, Transient Sessions / Processes, and TCSTART

When you set up the *TCSTART* program, remember that it is executed every time the command processor starts, including when running a pipe or when a transient copy of ***TCC*** is started with the `/C` startup option. For example, suppose you enter a command line like this, which uses a pipe:

```
[c:\data] myprog | sort > out.txt
```

Normally this command would create the output file *C:\DATA\OUT.TXT*. However, if your ***TCSTART*** program changes to a different directory, the output file will be written there, not in *C:\DATA*. This is because ***TCC*** starts a second copy (instance) of itself to run the commands on the right hand side of the pipe, and that new copy executes ***TCSTART*** before processing the commands from the pipe.

The same thing occurs if you use a transient session (one started with the **/C** option) to run an individual command, then exit. The session will execute in the directory set by *TCSTART*, not the directory in which it was originally started (e.g., by specifying a working directory in a shortcut). For example, suppose you set up a desktop object with a command line like this, which starts a transient session:

Command:	`d:\tc\tcmd.exe /c list myfile.txt`
Working Directory:	`c:\data`

Normally this shortcut would LIST the file *C:\DATA\MYFILE.TXT*. However, if *TCSTART* changes the default to a different directory, ***TCC*** will look for *MYFILE.TXT* there, not in C:\DATA.

Similarly, any changes to environment variables, aliases, or other settings in *TCSTART* will affect all copies of ***TCC***, including those used for pipes and transient sessions.

You can work around these potential problems with the IF or IFF commands and the _PIPE and _TRANSIENT internal variables. For example, to skip all *TCSTART* processing when running in a pipe or in a transient session, you could use a command like this at the beginning of *TCSTART*:

```
if %_pipe != 0 .or. %_transient != 0 quit
```

TCC Termination Program

Whenever a ***TCC*** session ends, it looks for a program named TCEXIT. *TCEXIT* is normally a batch file (*.BAT*, *.BTM*, or *.CMD*), but it can be any executable file. The location of this optional program is

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determined by the same rule as the location of the *TCSTART* program for the session, and is not necessary in most circumstances. However, it is a convenient place to put commands to save information from one session to another, such as a (command) history list before ***TCC*** exits, or to LOG the end of the session. You can use a termination program even if you have no startup program.

No parameters are passed to the termination program.

4.2.3 TCC Exit Codes

If you start ***TCC*** from another program (*e.g.* to run a batch file or internal command), it will return a numeric code to the other program when it exits. This code indicates whether or not the operation performed was successful, with **0** indicating success and a non-zero value indicating a failure or other numeric result.

TCC's exit code is normally the numeric exit code from the last internal or external command. However, for CMD compatibility reasons and to avoid conflicts with external commands, only some internal commands set the exit code; others leave it unchanged from the most recent external command.

You can also use the EXIT ***n*** command to explicitly set the exit code. This overrides the rules above, and sets the return code to the parameter of your EXIT command.

4.3 Commands

TCC gives you instant access to more than 250 internal commands. (By contrast, Microsoft's CMD has fewer than 40 internal commands.) The best way to learn about commands is to experiment with them. This section will help you find the one(s) that you need, categorized in the lists below by name and by category.

- Commands By Name
- Commands By Category

Note: Remember that you can replace any internal command with an ALIAS or LIBRARY command or plugin. You can disable an internal command with COMMANDS or OPTION / Commands.

4.3.1 Commands by Name

See also: Internal Commands Listed by Category

	Description
?	Display list of internal commands or Prompt to execute a command
ACTIVATE	Activate or set window state
ALIAS	Define or display aliases
ASSOC	Windows file associations
ASSOCIATE	Combine ASSOC and FTYPE
ATTRIB	Change or display file attributes
BATCOMP	Batch file compression
BDEBUGGER	Batch file debugger
BEEP	Beep the speaker
BREAK	Define or display Ctrl-C state
BREAKPOINT	Set a batch debugger breakpoint
BTMONITOR	Monitor Bluetooth connections
BZIP2	Create bz2 archives

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CALL	Call another batch file
CANCEL	End batch file processing
CD	Display or change directory
CDD	Change drive and directory
CHCP	Display or change code page
CHDIR	Display or change directory
CHRONIC	Run command and hide STDOUT & STDERR
CLIPMONITOR	Monitor Windows clipboard
CLS	Clear the display window
COLOR	Change the display colors
COMMANDS	Enable, disable, or display internal commands
COMMENT	Enter multiline comments
COPY	Copy files and/or directories
COPYDIR	Copy directory tree
DATE	Display or change date
DATEMONITOR	Monitor the current date and time
DEBUGMONITOR	Monitor OutputDebugString calls
DEBUGSTRING	Send text to system debugger
DEDUPE	Search for duplicate files
DEFER	Defer a command until batch file exit
DEL	Delete files and/or directories
DELAY	Wait for specified time
DESCRIBE	Display or change descriptions
DESKTOP	Create or switch desktops
DETACH	Start app detached
DIFFER	Show directory differences
DIR	Display files and/or directories
DIRHISTORY	Display directory history list
DIRS	Display directory stack
DISKMONITOR	Monitor disk usage
DNS	Display DNS records
DO	Create batch file loops
DRAWBOX	Draw a box
DRAWHLINE	Draw a horizontal line
DRAWVLINE	Draw a vertical line
ECHO	Echo a message
ECHOERR	Echo a message to STDERR
ECHOS	Echo a message with no CR/LF
ECHOSERR	Echo with no CR/LF to STDERR
ECHOX	Echo with no expansion to STDOUT
ECHOXERR	Echo with no expansion to STDERR
EJECTMEDIA	Eject a removable drive
ENDLOCAL	Restore from a SETLOCAL
ENUMPROCESSES	Enumerate child processes
ENUMSERVERS	Enumerate network servers
ENUMSHARES	Enumerate network sharenames
ERASE	Delete files and/or directories
ESET	Edit variables or aliases

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EVENTLOG	Write Windows event log
EVENTMONITOR	Monitor event log
EVERYTHING	Search for files and/or directories
EXCEPT	Exclude files from a command
EXIT	Exit ***TCC***
FFIND	Search for files or text
FILELOCK	Show file locks
FIREWIREMONITOR	Monitor FireWire devices
FOLDERMONITOR	Monitor folders and/or files
FONT	Change console font
FOR	Repeat a command
FREE	Display disk space
FTYPE	Display or edit file types
FUNCTION	Create or edit user variable functions
GLOBAL	Run command in subdirectories
GOSUB	Call batch subroutines
GOTO	Branch in a batch file
GZIP	Compress files to .gz archive
HASH	Display file hash values
HEAD	Display beginning of file
HELP	Help for internal commands
HISTORY	Display or change history
IF	Conditional command execution
IFF	Conditional command execution
IFTP	Open FTP connection
INKEY	Get a single keystroke
INPUT	Get a text string
INSTALLED	Show installed applications
JABBER	Send an IM
JAR	Create Java JAR archive
JUMPLIST	Create taskbar jumplists
KEYBD	Set keyboard toggles
KEYS	Enable or disable history list
KEYSTACK	Send keystrokes to app
LIBRARY	Load, display, or delete library functions
LIST	Display content of files
LOADBTM	Load batch file as .BTM
LOADMEDIA	Close CD-ROM / DVD drive door
LOCAL	Local variables for batch files & library functions
LOCKMONITOR	Monitor session locking / unlocking
LOG	Save log of commands
LUA	Call the internal Lua interpreter
MD	Create subdirectories
MEMORY	Display memory statistics
MKDIR	Create subdirectories
MKLINK	Create NTFS symbolic links
MKLNK	Create NTFS hard or soft link
MONITOR	Get / set monitor settings

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MOUNTISO	Mount ISO disk
MOUNTVHD	Mount VHD or VHDX disk
MOVE	Move files or directories
MOVEDIR	Move directory tree
MSGBOX	Popup message box
NETMONITOR	Monitor networks
NOTIFY	Send notification request to ***Take Command***
ON	Batch file error trapping
OPTION	Configure the ***TCC*** console
OSD	Display floating text
PATH	Set or display PATH
PAUSE	Wait for input
PDIR	User-formatted DIR
PEE	Redirect STDOUT to multiple pipes
PLAYAVI	Display an .AVI file
PLAYSOUND	Play a sound file
PLUGIN	Load or unload plugin DLL
POPD	Restore from directory stack
POSTMSG	Send a message to a Window
POWERMONITOR	Monitor system power
PRINT	Print a file
PRIORITY	Set process priority
PROCESSMONITOR	Monitor processes
PROMPT	Change command line prompt
PSHELL	Execute Powershell script or command
PSUBST	Persistent SUBST
PUSHD	Save directory to stack
QUERYBOX	Popup input box
QUIT	Exit batch file
RD	Remove subdirectory
REBOOT	Reboot system
RECORDER	Macro recorder
RECYCLE	Display or empty recycle bin
REGMONITOR	Monitor Windows Registry keys
RESOLUTION	Change display resolution
RESTOREPOINT	Create / delete / list system restore points
REXEC	Remotely execute commands
REM	Remark
REN	Rename files or directories
RENAME	Rename files or directories
RETURN	Return from GOSUB
RMDIR	Remove subdirectory
RSHELL	Remotely execute commands
SAVECONSOLE	Save console screen buffer to file
SCREEN	Position cursor
SCREENMONITOR	Monitor screen saver
SCRPUT	Write directly to screen
SELECT	Select files for a command

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SENDHTML	Send HTML email
SENDMAIL	Send email
SERVICEMONITOR	Monitor Windows services
SERVICES	Display, stop, or start system services
SET	Set or display environment variables
SETARRAY	Define array variable
SETDOS	Set or display console options
SETLOCAL	Save environment, aliases & functions
SETP	Set environment variable in another process
SHIFT	Shift batch file parameters
SHORTCUT	Create a Windows shortcut
SHRALIAS	Share aliases
SMPP	Simple message transfer
SNMP	Send SNMP traps
SNPP	Send message to pager
SPONGE	Read STDIN and write to file
SSHEXEC	SSH to remote host & run shell
START	Start a new session
STATUSBAR	Display text on status bar
SWITCH	Batch file switch / case
SYNC	Synchronize directories
TABCOMPLETE	TCC tab completion scripts
TAIL	Display end of file
TAR	Add files to .tar archive
TASKBAR	Call Windows Taskbar functions
TASKDIALOG	Popup Windows task dialog
TASKEND	End a task
TASKLIST	Display Windows task list
TCDIALOG	Display command dialogs
TCFILTER	Filter ***Take Command*** File Explorer window
TCFONT	Set font in ***Take Command*** tab window
TCTOOLBAR	Edit Toolbar
TEE	Pipe "tee-fitting"
TEXT	Display text in batch file
THREAD	Run command in a separate thread
TIME	Set or display time
TIMER	Stopwatch
TITLE	Set window title
TOAST	Display Windows Toast notification
TOUCH	Change file timestamps
TPIPE	Text filtering and substitution
TRANSIENT	Toggle shell transient mode
TREE	Display directory tree
TRUENAME	Display true pathname
TS	Timestamp pipe output
TYPE	Display files
UNALIAS	Remove aliases
UNBZIP2	Uncompress bz2 archives

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UNFUNCTION	Remove user-defined functions
UNGZIP	Extract files from .gz archive
UNJAR	Extract files in a Java JAR archive
UNLIBRARY	Remove library functions
UNTAR	Extract files from .tar archive
UNMOUNTISO	Unmount ISO
UNMOUNTVHD	Unmount VHD or VHDX
UNQLITE	NoSQL database
UNSET	Remove environment variable
UNSETARRAY	Remove array variable
UNSETP	Remove environment variable in another process
UNZIP	Unzip files from zip archive
USBMONITOR	Monitor USB devices
VBEEP	Flash the screen and beep
VDESKTOP	Manage Windows 10 virtual desktops
VER	Display version
VERIFY	Display or set disk verification
VIEW	Display file contents
VOL	Display or set disk volume label
VSCRPUT	Write text vertically
WAKEONLAN	Send "Wake-On-LAN" packet
WEBFORM	Post data to web forms
WEBUPLOAD	Upload files to web servers
WHICH	Display command information
WINDOW	Window management
WMIQUERY	WMI queries
WMIRUN	Run WMI methods
Y	Pipe "y-fitting"
ZIP	Zip files to zip archive
ZIPSFX	Create self-extracting executable
7UNZIP	Extract files from 7Zip archive
7ZIP	Compress files to 7Zip archive

4.3.2 Commands by Category

See also: Internal Commands Listed by Name

The best way to learn about commands is to experiment with them. The lists below categorize the available commands by topic and will help you find the one(s) you need.

- File and directory management
- Subdirectory management
- Input and output
- Window management commands
- Commands primarily for use in or with batch files and aliases
- Environment and path commands
- System configuration and status
- Monitoring commands
- Compression / Decompression
- Other commands

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File and directory management

	Description
ATTRIB	Change or display file attributes
COPY	Copy files and/or directories
COPYDIR	Copy directory tree
DEDUPE	Delete / Link duplicate files
DEL	Delete files and/or directories
DESCRIBE	Display or change descriptions
DIFFER	Show differences between directories
ERASE	Delete files and/or directories
EVERYTHING	Search for files and/or directories
FFIND	Search for files or text
FILELOCK	Show / release file locks
HEAD	Display beginning of file
IFTP	Open FTP connection
LIST	Display contents of files
MOVE	Move files or directories
MOVEDIR	Move directory tree
PSUBST	Persistent SUBST
RECYCLE	Display or empty recycle bin
REN	Rename files or directories
RENAME	Rename files or directories
SELECT	Select files for a command
SYNC	Synchronize directories
TAIL	Display end of file
TOUCH	Change file dates/times
TPIPE	Text filtering and substitution
TREE	Display directory tree
TRUENAME	Display true pathname
TYPE	Display files
UNZIP	Unzip files from archive
VIEW	Display file contents
Y	Pipe "y-fitting"
ZIP	Zip files to archive

Subdirectory management

	Description
CD	Display or change directory
CDD	Change drive and directory
CHDIR	Display or change directory
DIR	Display files and/or directories
DIRS	Display directory stack
MD	Create subdirectories
MKDIR	Create subdirectories
MKLNK	Create NTFS hard or soft link
PSUBST	Persistent SUBST
PDIR	User-formatted DIR

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POPD	Restore from directory stack
PUSHD	Save directory to stack
RD	Remove subdirectory
RMDIR	Remove subdirectory

Input and output

	Description
DRAWBOX	Draw a box
DRAWHLINE	Draw a horizontal line
DRAWVLINE	Draw a vertical line
ECHO	Echo a message
ECHOERR	Echo a message to stderr
ECHOS	Echo a message with no CR/LF
ECHOSERR	Echo with no CR/LF to stderr
ECHOX	Echo with no expansion
ECHOXERR	Echo with no expansion to stderr
FONT	Change console font
INKEY	Get a keystroke
INPUT	Get an input line
KEYSTACK	Send keystrokes to app
MSGBOX	Popup message box
OSD	Display floating text
PLAYAVI	Play an .AVI file
PLAYSOUND	Play a sound file
PRINT	Print a file
QUERYBOX	Popup input box
SAVECONSOLE	Save console screen buffer to file
SCREEN	Position cursor
SCRPUT	Write directly to screen
SENDHTML	Send HTML email
SENDMAIL	Send email
SMPP	Send SMS message
SNMP	Send SNMP trap
SNPP	Send message to pager
STATUSBAR	Display text on status bar
TABCOMPLETE	Tab completion scripts
TASKDIALOG	Popup Windows task dialog
TCFONT	Set font in ***Take Command*** tab window
VSCRPUT	Write text vertically

Window management commands

	Description
ACTIVATE	Activate or set window state
DESKTOP	Create or switch desktops
POSTMSG	Send a message to a Window
TITLE	Set window title
VDESKTOP	Manage Windows 10 virtual desktops

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WINDOW	Window management

Commands primarily for use in or with batch files and aliases
(some work only in batch files; see the individual commands for details)

	Description
ALIAS	Define or display aliases
BATCOMP	Batch file compression
BDEBUGGER	Batch file debugger
BEEP	Beep the speaker
BREAKPOINT	Set a batch debugger breakpoint
CALL	Call another batch file
CANCEL	End batch file processing
COMMENT	Enter multiline comments
DEBUGSTRING	Send text to system debugger
DEFER	Defer a command until the batch file exits
DELAY	Wait for specified time
DO	Batch file looping
ENDLOCAL	Restore a SETLOCAL
EJECTMEDIA	Eject a removable drive
FOR	Repeat a command
FUNCTION	Create or edit user functions
GLOBAL	Run command in subdirectories
GOSUB	Call batch subroutines
GOTO	Go to a batch file label
IF	Conditional command execution
IFF	Conditional command execution
JABBER	Send an IM
LOADBTM	Load batch files as .BTM
LOADMEDIA	Close CD-ROM / DVD drive door
LOCAL	Local variables for batch files and library functions
ON	Batch file error trapping
PAUSE	Wait for input
QUIT	Exit batch file
RECORDER	Keyboard / mouse macro recorder
REM	Remark
RETURN	Return from GOSUB
SETLOCAL	Save environment, aliases, and functions
SHIFT	Shift batch file parameters
SWITCH	Batch file switch / case
TEXT	Display text in batch file
TRANSIENT	Toggle shell transient mode
UNALIAS	Remove aliases
UNFUNCTION	Remove user-defined functions
UNLIBRARY	Remove library functions
UNQLITE	NoSQL database
VBEEP	Flash the screen and beep
WEBFORM	Post data to web servers
WEBUPLOAD	Upload files to web servers

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Environment and path commands

	Description
ESET	Edit variables or aliases
PATH	Set or display PATH
SET	Set or display environment variables
SETARRAY	Define array variable
SETP	Set or display environment variables in another process
UNSET	Remove environment variables
UNSETARRAY	Remove array variable
UNSETP	Remove environment variables in another process

System configuration and status

	Description
ASSOC	Windows file associations
ASSOCIATE	Combine ASSOC and FTYPE
BREAK	Define or display Ctrl-C state
CHCP	Display or change code page
CLS	Clear the display window
COLOR	Change the display colors
COMMANDS	Enable or disable TCC internal commands
DATE	Display or change date
DIRHISTORY	Display directory history list
EVENTLOG	Write to Windows event log
FREE	Display disk space
FTYPE	Display or edit file types
HISTORY	Display or change history
JUMPLIST	Create taskbar jumplist
KEYBD	Set keyboard toggles
KEYS	Enable or disable history list
LOG	Save log of commands
MEMORY	Display memory statistics
MONITOR	Get / set display settings
MOUNTISO	Mount ISO disks
MOUNTVHD	Mount VHD and VHDX disks
OPTION	Configure the ***TCC*** console
PLUGIN	Load or unload plugin DLL
PROMPT	Change command line prompt
PSUBST	Persistent SUBST
REBOOT	Reboot system
RESOLUTION	Change display resolution
RESTOREPOINT	Create / delete / display system restore points
SETDOS	Internal options
SERVICES	Display, stop, or start services
SHORTCUT	Create a Windows shortcut
TASKBAR	Call Windows Taskbar functions
TASKEND	End a task

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TASKLIST	Display Windows task list
TCFILTER	Filter ***Take Command*** File Explorer window
TCTOOLBAR	Edit ***Take Command*** toolbar
TIME	Set or display time
UNMOUNTISO	Unmount ISO disk
UNMOUNTVHD	Unmount VHD and VHDX disks
VERIFY	Display or set disk verification
VER	Display version
VOL	Display or set disk volume label
WAKEONLAN	Send "Wake-On-LAN" packet
WMIQUERY	Query the Windows Management Interface
WMIRUN	Run WMI methods

Monitoring commands

	Description
BTMONITOR	Monitor Bluetooth connections
CLIPMONITOR	Monitor Windows clipboard
DATEMONITOR	Monitor current date and time
DEBUGMONITOR	Monitor OutputDebugString API
DISKMONITOR	Monitor disk usage
EVENTMONITOR	Monitor event log
FIREWIREMONITOR	Monitor FireWire devices
FOLDERMONITOR	Monitor folders and/or files
LOCKMONITOR	Monitor session locking / unlocking
NETMONITOR	Monitor network connections
PROCESSMONITOR	Monitor processes
POWERMONITOR	Monitor system power
REGMONITOR	Monitor Windows registry keys
SCREENMONITOR	Monitor Windows screen saver
SERVICEMONITOR	Monitor Windows services
USBMONITOR	Monitor USB devices

Compression / Decompression commands

	Description
BZIP2	Compress files to bz2 archive
GZIP	Compress files to .gz archive
JAR	Add files to Java jar archive
TAR	Add files to tar archive
UNBZIP2	Extract files from bz2 archive
UNGZIP	Extract files from .gz archive
UNJAR	Extract files from Java jar archive
UNTAR	Extract files from tar archive
UNZIP	Unzip files from archive
ZIP	Zip files to archive
ZIPSFX	Create self-extracting executable
7UNZIP	Extract files from 7Zip archive
7ZIP	Compress files to 7Zip archive

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Other commands

	Description
?	Display list of internal commands, or prompt to execute a command
CHRONIC	Run command and hide STDOUT & STDERR
DETACH	Start app detached
EXCEPT	Exclude files from a command
EXIT	Exit ***TCC***
HELP	***TCC*** help
LIBRARY	Load, display, or delete library functions
LUA	Call the internal Lua interpreter
PEE	Redirect STDOUT to multiple pipes
PSHELL	Execute Powershell script or command
REXEC	Remotely execute command
RSHELL	Remotely execute command
SHRALIAS	Share aliases & functions
SPONGE	Read STDIN and write to file
SSHEXEC	Connect to remote host and run shell
START	Start a new session
TCDIALOG	Display command dialogs
TEE	Pipe "tee-fitting"
TIMER	Stopwatch
TS	Timestamp pipe output
WHICH	Display command information

4.3.3 Command Dialogs

Many of the internal TCC file handling commands have an alternate dialog form. This simplifies invoking the command when using some of the more obscure options, and also allows you to test commands and copy the generated command line to your batch files.

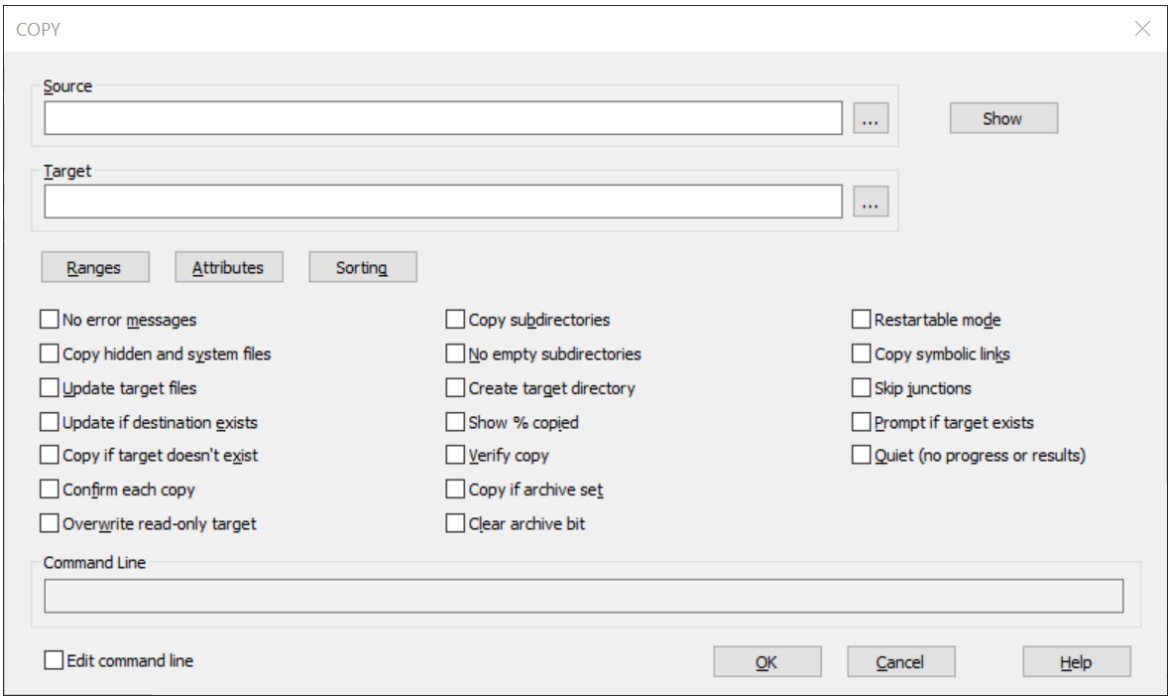
You can invoke the command dialogs three different ways:

- With the TCDIALOG command
- With the **/=** command line argument
- With the Alt-F2 key after entering the command name at the command line

The command dialog will be displayed, and when you press OK it will pass the generated command line on to the command.

For example:

```
copy /=
```



You can enter a partial command line, and the command dialog will set the matching fields.

The "Show" button in a command dialog will show all of the files that match the file specification in the edit field to the left. This may include subdirectories if you've selected that option (for example, in COPY or DIR), so it may take a few seconds to populate the list before displaying it.

The "Edit command line" option allows you to modify the generated command line. Use with caution - the command dialogs probably know the syntax better than you do!

4.3.4 ?

Purpose: Display a list of internal and plugin commands, or prompt for a command

Format: ? ["prompt" command]

Usage:

The **?** command has two separate meanings:

1. When you use the ? command by itself, it displays a list of internal and plugin commands. For help with any individual command, see the HELP command. If you have disabled a command with SETDOS /I, it will not appear in the list.

2. The second function of ? is to prompt the user before executing a specific command line. If you add a ***prompt*** and a ***command***, ? will display the prompt followed by **(Y/N)?** and wait for the user's response. If the user presses **Y** or **y**, the command line will be executed. If the user presses **N** or **n**, it will be ignored.

Example:

```
? "Load the network" call netstart.btm
```

When this command is executed, you will see the prompt

```
Load the network (Y/N)?
```

If you answer Y, the CALL command will be executed:

4.3.5 ACTIVATE

Purpose: Activate a window, set its state, or change its title

Format: ACTIVATE [/=] [/R] "*title*" [MAX | MIN | RESTORE | DESKTOP | CLOSE | ENABLE | DISABLE | TOPMOST | NOTOPMOST | TOP | BOTTOM | HIDE | FORCEMIN | VDESKTOP=*id* | /FLASH=*type,count* | /ICON=*iconfile* | /POS=*left,top,width,height* | /TRANS=*n* | TRAY | "*newtitle*"]

/=	Call the ACTIVATE command dialog
title	Current title of the window to be activated
left	New location of the left border of the window, in pixels
type	One or more of the following values: 0 - stop flashing 1 - flash the window caption 2 - flash the taskbar button 4 - flash continuously until WINDOW is called again with the /FLASH type set to 0 12 - flash continuously until the window comes to the foreground (cannot be used with 4)
count	Number of times to flash the window
top	New location of the top border of the window, in pixels
iconfile	New caption / task bar icon (an .ico file or an executable)
width	New width of the window, in pixels
height	New height of the window, in pixels
newtitle	New title for window

/R(estore original window)

See also: START, TITLE, and WINDOW.

Usage:

ACTIVATE activates, and optionally modifies, another session's window. It is not intended to modify the characteristics of the current ***TCC*** session (use TITLE or WINDOW for that purpose).

Title specifies the name of the target window to be activated. You can use wildcards, including extended wildcards, in ***title***. This is useful with applications that change their window title to reflect the file currently in use. ***Title*** must be enclosed in quotes.

If ***title*** begins with a **=**, it is assumed to be a process ID instead of a title. (Note that this is less reliable than providing a title, as a process can have multiple top-level windows.)

Each execution of ACTIVATE allows you to modify one property of the target window. To perform multiple operations, use multiple ACTIVATE commands.

The options are:

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MAX	Expands the window to its maximum size and activates it.
MIN	Reduces the window to an icon.
RESTORE	Activates the window at its default size and location.
DESKTOP	Activates the Windows desktop.
CLOSE	Sends a "close" message to close the window.
ENABLE	Enable mouse and keyboard input.
DISABLE	Disable mouse and keyboard input.
TOPMOST	Keeps the window on top of all other windows until it closes, or **NOTOPMOST** is used.
NOTOPMOST	Allows other windows to overlay the window (this is the normal state for most windows).
TOP	Moves the window to the top of the window order, above all other non-**TOPMOST** windows.
BOTTOM	Moves the window to the bottom of the window order.
HIDE	Makes the window invisible (to make the window visible again, use **RESTORE**).
FLASH	Flash the window.
ICON	Change the window's caption and task bar icon.
POS	Sets the window position and size (in pixels).
TRANS	Transparency level, where n=0 (invisible) to 255 (opaque) (does not work for console windows).
TRAY	Move the specified window to the system tray.
VDESKTOP	Move the window to another virtual desktop. *id* can be either a desktop number (1-n), the GUID for that desktop, or the desktop name. See VDESKTOP for more details.
FORCEMIN	Force the window to be minimized even if the thread that owns the window is not responding.
"newtitle"	Changes the window title.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

If you specify ***newtitle***, it must be enclosed in double quotes (which will not appear as part of the title text).

ACTIVATE is often used before KEYSTACK to make sure the proper window receives the keystrokes.

ACTIVATE works by sending messages to the named ***window***. If the window ignores or misinterprets the messages, ACTIVATE may not have the effect you want.

If ACTIVATE is used in a batch file, and the batch file is not itself running in the active window (the window with its title bar highlighted), then ACTIVATE may not activate the desired window. This is because under Windows you cannot make another window active except when the window which issues the command is itself active already. This is a Windows feature which helps to prevent windows which are not in the foreground from grabbing input intended for other windows.

/POS - accepts a * value for any of the arguments. If the value is *, ACTIVATE will use the existing position / width / height value. For example, to resize a window without moving it:

```
ACTIVATE "title" /POS=*,*,1200,800
```

To move a window without resizing it:

```
ACTIVATE "title" /POS=200,400,*,*
```

Examples:

The examples below first maximizes, and then renames the window originally called "Take Command":

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```
activate "Take Command" max
activate "Take Command" "Take Command is Great!"
```

4.3.6 ALIAS

Purpose: Create new command names that execute one or more commands or redefine default options for existing commands; assign commands to keystrokes; load or display the list of defined alias names

Format: Display mode:
ALIAS [/= /GL /LL /P] [*wildname*]

Definition mode:
ALIAS [/= /G /GL /LL /O] [/R [/Z] file...] | *name*[=]*value*

/=	Call the ALIAS command dialog
file	One or more input files to read alias definitions from
wildname	Name of alias whose definition is to be displayed (may contain * and ? wildcards)
name	Name for an alias, or for the key to execute the alias
value	Text to be substituted for the alias name or key

/G(lobal)	/O(verwrite)
/GL (global list)	/P(ause)
/L(ocal)	/R(ead file)
/LL (local alias list)	/Z (replace list)

See also: UNALIAS, ESET, and Aliases.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1] aliases [2*] ***

Usage:

- Overview
- Displaying Aliases
- Multiple Commands and Special Characters in Aliases
- Nested Aliases
- Temporarily Disabling Aliases
- Partial (Abbreviated) Alias Names
- Keystroke Aliases
- Directory Aliases
- Saving and Reloading Your Aliases
- Alias Parameters
- Expanding Aliases at the Prompt
- Local and Global Aliases
- Retaining Global Aliases with SHRALIAS
- The PRE_INPUT, PRE_EXEC, and POST_EXEC Aliases
- The CD_Enter and CD_Leave Aliases
- The UNKNOWN_CMD Alias
- Warnings

Overview

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The ALIAS command lets you create new command names or redefine internal commands. It also lets you assign one or more commands to a single keystroke. An alias is often used to execute a complex series of commands with a few keystrokes or to create "in memory batch files" that run much faster than disk-based batch files.

For example, to create a single-letter command ***d*** to display a wide directory, instead of using DIR /W, you could use the command:

```
alias d = dir /w
```

Now when you type a single ***d*** as a command, it will be translated into a **DIR /W** command.

If an ALIAS command specifies a ***value***, and there was an alias already assigned to ***name***, the old alias value is discarded.

If you define aliases for commonly used application programs, you can often remove the directories they're stored in from the PATH. For example, if you use Microsoft Word and had the ***C:\WINWORD*** directory in your path, you could define the following alias:

```
alias ww = c:\winword\winword.exe
```

With this alias defined, you can probably remove ***C:\WINWORD*** from your path. Word will now load more quickly than it would if ***TCC*** had to search the PATH for it. In addition, PATH can be shorter, which will speed up searches for other programs.

If you apply this technique for each application program, you can often reduce your PATH to just two or three directories containing utility programs, and significantly reduce the time it takes to load most software on your system. Before removing a directory from the PATH, you will need to define aliases for all the executable programs you commonly use which are stored in that directory.

TCC also supports Directory Aliases, a shorthand way of specifying pathnames.

An Alias name can be ***contained*** in a variable. When ***TCC*** does variable expansion on a command line, it will check if the expansion changed the first argument on the line, and if so ***TCC*** will check to see if the new argument is an alias. For example:

```
Alias %AliasName=Echo Hello

:: Will output: Echo Hello
Alias MyAlias

:: Will output: Hello
%MyAlias
```

Aliases are stored in memory, and are not saved automatically when you turn off your computer or end your current ***TCC*** session. See below for information on saving and reloading your aliases.

Displaying Aliases

If you want to see a list of all currently defined aliases, type:

```
alias
```

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You can view the definition of a single alias. For example, if you want to see the definition of the alias **LIST**, you can type:

```
alias list
```

You can also view the definitions for all aliases matching a specific pattern by specifying a single parameter containing wildcards (***** or **?**). For example:

```
alias *win*
```

will display all aliases containing the string **win**.

You can use the /P option to control display scrolling when displaying aliases.

Multiple Commands and Special Characters in Aliases

An alias can represent more than one command. For example:

```
alias letters = `cd \letters & tedit`
```

This alias creates a new command called ***LETTERS***. The command first uses CD to change to a subdirectory called ***\LETTERS*** of the directory current at the time of its execution, and then runs a program called ***TEDIT***.

Aliases make extensive use of the command separator and the parameter character, and may also use the escape character.

When an alias contains multiple commands, the commands are executed one after the other. However, if any of the commands runs an external Windows application, you must be sure the alias will wait for the application to finish before continuing with the other commands. This behavior is controlled by the **Wait for completion** setting in the configuration dialogs.

When you use the alias command at the command prompt or in a batch file, you must use back quotes ` around the alias definition if it contains multiple commands, or parameters (discussed below), or environment variables, or variable functions, or redirection, or piping. If you do not use back quotes, parameters, variables and functions are evaluated, and redirection or piping performed during the alias definition, and only the first command becomes part of the alias, the remaining ones are performed immediately. The back quotes prevent this premature expansion. You may use back quotes around other definitions, but they are not required. You do not need back quotes when your aliases are loaded from an ALIAS /R file; see below for details. The examples above and below include back quotes only when they are required.

Nested Aliases

Aliases may invoke internal commands, external commands, or other aliases. However, an alias may not invoke itself, except in special cases where an IF or IFF command is used to prevent an infinite loop. The two aliases below demonstrate alias nesting (one alias invoking another). The first line defines an alias which runs in the current directory, and executes **Word** located in the ***E:\WINWORD***. The second alias changes directories with the PUSHD command, runs the ***WP*** alias, and then returns to the original directory with the POPD command:

```
alias wp = e:\winword\winword.exe
alias w = `pushd c:\wp & wp & popd`
```

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The second alias above could have included the full path and name of ***WINWORD.EXE*** instead of calling the ***WP*** alias. However, writing two aliases makes the second one easier to read and understand, and makes the first alias available for independent use. If you rename the ***WINWORD.EXE*** program or move it to a new directory, only the first alias needs to be changed.

Temporarily Disabling Aliases

If you put an asterisk ***** immediately before a command in the ***value*** of an alias definition (the part after the equal sign), it tells ***TCC*** not to attempt to interpret that command as another (nested) alias. An asterisk used this way must be preceded by a space or the command separator and followed immediately by an internal or external command name.

By using an asterisk, you can redefine the default options for any internal or external command. For example, suppose that you always want to use the DIR command with the **/2** (two column) and **/P** (pause at the end of each page) options:

```
alias dir = *dir /2/p
```

If you didn't include the asterisk, the second DIR on the line would be the name of the alias itself, and ***TCC*** would repeatedly re invoke the **DIR** alias, rather than running the DIR command. This would cause an "Alias loop" or "Command line too long" error. The asterisk forces interpretation of the second DIR as a command, not an alias.

An asterisk also helps you keep the names of internal commands from conflicting with the names of external programs. For example, suppose you have a program called *DESCRIBE.EXE*. Normally, the internal DESCRIBE command will run anytime you type DESCRIBE. But two simple aliases will give you access to both the *DESCRIBE.EXE* program and the DESCRIBE command:

```
alias describe = c:\winutil\describe.exe
alias filedesc = *describe
```

The first line above defines **describe** as an alias for the *DESCRIBE.EXE* program. If you stopped there, the external program would run every time you typed DESCRIBE and you would not have easy access to the internal DESCRIBE command. The second line defines **FILEDESC** as a new name for the internal DESCRIBE command. The asterisk is needed in the second command to indicate that the following word means the internal command DESCRIBE, not the **describe** alias which runs your external program.

Another way to understand the asterisk is to remember that a command is always checked for an alias first, then for an internal or external command, or a batch file. The asterisk at the beginning of a command name simply skips over the usual check for aliases when processing that command, and allows ***TCC*** to go straight to checking for an internal command, external command, or batch file.

You can prevent alias expansion by using an asterisk before a command that you enter at the command line or in a batch file. This can be useful when you want to be sure you are running the original command and not an alias with the same name, or temporarily defeat the purpose of an alias which changes the meaning or behavior of a command. For example, above we defined an alias for DIR which made directories display in 2-column paged mode by default. If you wanted to see a directory display in the normal single-column, non-paged mode, you could enter the command ***DIR** and the alias would be ignored for that command.

You can disable aliases temporarily with the SETDOS /X command.

Partial (Abbreviated) Alias Names

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You can also use an asterisk in the ***name*** of an alias. When you do, the characters following the asterisk are optional when you invoke the alias command. (Use of an asterisk in the alias ***name*** is unrelated to the use of an asterisk in the alias ***value*** discussed above.) For example, with this alias:

```
alias wher*eis = dir /s /p
```

The new command, ***WHEREIS***, can be invoked as WHER, WHERE, WHEREI, or WHEREIS. Now if you type:

```
where myfile.txt
```

The ***WHEREIS*** alias will be expanded to the command:

```
dir /s /p myfile.txt
```

Keystroke Aliases

There are two kinds of keystroke aliases: insert-only and autoexecute.

Insert-only Keystroke Aliases

Assignment: To assign an insert-only alias to a keystroke, use the key name on the left side of the equal sign, preceded by one at sign **@**, and the value of the alias on the right side of the equal sign:

```
alias @key=value
```

Operation: When you press the key to which you assigned an insert-only alias, ***TCC*** displays and inserts the alias value in the current command line, at the current cursor position. If your command line editing mode is overwrite, and the cursor is not at the end of the line, the alias value will overwrite part of the command line. You can continue to edit the command line, e.g., adding other parameters to the command. You must press **Enter** to execute the command.

Examples:

To assign the command **DIR /W** to the ***F4*** key, type:

```
alias @F4 = dir /w
```

To use it, press ***F4*** at the command prompt, and `DIR /W` will be placed on the command line for you. You can type additional parameters if you wish, and press **Enter** to execute the command. With the example alias, you can define the files that you want to display after pressing ***F4*** and before pressing ***Enter*** to execute the command.

You can also define a keystroke alias to insert a frequently used string into the middle of a command, e.g.,

```
alias @shift-F4 =%@expand[
```

which specific example can assist in processing wildcards for a program without such a feature.

Autoexecute Keystroke Aliases

Assignment: To assign an autoexecute alias to a keystroke, use the key name on the left side of the equal sign, preceded by two at signs **@@**, and the value of the alias on the right side of the equal sign:

```
alias @@key=value
```

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Operation: When you press the key to which you assigned an autoexecute alias, ***TCC*** inserts the alias value in the current command line, at the current cursor position. If your command line editing mode is overwrite, and the cursor is not at the end of the line, the alias value will overwrite part of the command line. After the insertion/overwrite the command line is automatically executed.

Example: This command will assign an alias to the ***F11*** key that uses the CDD command to take you back to the previous default directory:

```
alias @@f11 = cdd -
```

Special Considerations for Keystroke Aliases

When you define keystroke aliases, the assignments will only be in effect at the command line, not inside application programs or batch files.

To insure that a keystroke alias, esp. an autoexecute one, is on the command line by itself, use the character defined by the EraseLine key directive option (by default, the **Esc** key, represented as **^e**) as the first character of the alias value.

To force a visible indication that an autoexecute keystroke alias was used, include a descriptive ECHO command in the alias value.

Be careful if you assign aliases to keys that are already used at the command line (e.g., ***F1*** for HELP). The keystroke alias definitions take precedence, so they will disable the matching command line editing key.

The ***value*** of an alias, including a keystroke alias, may contain only characters. It cannot contain representations of keys such as **F1** .. **F12**, **Home**, etc.

See Keys and Key Names for a complete listing of key names and a description of the key name format.

Directory Aliases

Directory Aliases are a shorthand way of specifying pathnames. For example, if you define an alias:

```
alias pf:=c:\program files
```

You can then reference the files in **c:\program files\jpsoft** by entering **pf:\jpsoft**. Directory aliases work in places that accept filenames and directory names (internal command arguments or the first argument in a command line), including filename completion. You cannot use them in arguments to external applications, as ***TCC*** has no way of knowing what is a valid argument for external applications.

Directory alias names can be either two or more alphanumeric characters followed by a colon, or a single digit followed by a colon. You cannot abbreviate directory aliases.

Directory aliases support environment variable expansion.

Saving and Reloading Your Aliases

You can save your aliases to a file:

```
alias > alias.lst
```

You can then reload all the alias definitions in the file the next time you start up with the command:

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```
alias /r alias.lst
```

This is much faster than defining each alias individually in a batch file. If you keep your alias definitions in a separate file which you load when ***TCC*** starts, you can edit them with a text editor, reload the edited file with **ALIAS /R**, and know that the same alias list will be loaded the next time you start ***TCC***.

When you define aliases in a file that will be read with the **ALIAS /R** command, do not use back quotes around the value, even if back quotes would normally be required when defining the same alias at the command line or in a batch file.

To remove an alias, use the UNALIAS command.

Alias Parameters

Aliases can use command line parameters or parameters like those in batch files. The command line parameters are numbered from %0 to %511. (%0 contains the alias name.) You can use double quotes to pass spaces, tabs, commas, and other special characters in an alias parameter; see Parameter Quoting for details. (Alias examples in this section assume the ***TCC*** default of ParameterChar=$.)

Parameters that are referred to in an alias, but which are missing on the command line, appear as empty strings inside the alias. For example, if you only put two parameters on the command line, any reference in the alias to `%3` or any higher-numbered parameter will be interpreted as an empty string.

The parameter **%n$** has a special meaning. ***TCC*** interprets it to mean "the entire command line, from parameter ***n*** to the end." If ***n*** is not specified, it has a default value of **1**, so **%$** means "the entire command line after the alias name."

The parameter **%-n$** means "the command line from parameter 1 to ***n*** - 1".

The special parameter **%#** contains the number of command line parameters.

For example, the following alias will change directories, perform a command, and return to the original directory:

```
alias in `pushd %1 & %2$ & popd`
```

When this alias is invoked as:

```
in c:\comm mycomm /zmodem /56K
```

The first parameter, **%1**, has the value ***c:\comm.*** **%2** is ***mycomm***, **%3** is ***/zmodem***, and **%4** is ***/56K***. The command line expands into these three separate commands:

```
pushd c:\comm
mycomm /zmodem /56K
popd
```

This next example uses the IFF command to redefine the defaults for SET. It should be entered on one line:

```
alias set = `iff %# == 0 then & *set /p & else & *set %$ & endiff`
```

This modifies the SET command so that if SET is entered with no parameters, it is replaced by SET /P (pause after displaying each page), but if SET is followed by a parameter, it behaves normally. Note the use of asterisks (*set) to prevent alias loops.

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If an alias uses parameters, command line parameters will be deleted up to and including the highest referenced parameter. For example, if an alias refers only to `%1` and `%4`, then the first and fourth parameters will be used, the second and third parameters will be discarded, and any additional parameters beyond the fourth will be appended to the expanded command (after the ***value*** portion of the alias). If an alias uses no parameters, all of the command line parameters will be appended to the expanded command. A convenient way to prevent unwanted command line parameters from being appended is to add a reference to `%511` within the alias.

Aliases also have full access to all variables in the environment, internal variables, and variable functions. For example, you can create a simple command line calculator this way:

```
alias calc = `echo The answer is: %@eval[%$]`
```

Now, if you enter:

```
calc 5 * 6
```

The alias will display:

```
The answer is: 30
```

Expanding Aliases at the Prompt

You can expand an alias on the command line and view or edit the results by pressing **Ctrl-W** after typing the alias name, but before the command is executed. This replaces the alias with its contents, and substitutes values for each alias parameter, just as if you had pressed the **Enter** key. However, the command is not executed; it is simply redisplayed on the command line for additional editing.

Ctrl-W is especially useful when you are developing and debugging a complex alias, or if you want to make sure that an alias that you may have forgotten won't change the effect of your command.

Local and Global Aliases

Aliases can be stored in local and/or global lists. The selection is made during ***TCC*** startup, using the **/L** or **/LA** START or startup options, or by the Local Aliases and Global Aliases configuration options, or interactively with the **ALIAS /G, /GL, /L, and /LL** options. The global alias list is limited to 256 K characters; the local alias list is limited only by memory size.

With a local alias list, any changes made to the aliases will only affect the current copy of ***TCC***. They will not be visible in other shells or other sessions.

With a global alias list, all copies of ***TCC***, which are started with global alias list will share the same alias list, and any changes made to the aliases in one copy will affect all other copies. This is the default for ***TCC***.

If you don't specify /GL or /LL, ***TCC*** will first look for aliases in the local list. If there is no local list or the alias is not found, ***TCC*** will search the global list (if it exists).

There is no fixed rule for determining whether to use local or global alias lists. Depending on your work style, you may find it most convenient to use one type, or a mixture of types in different sessions or shells. We recommend that you start with the default approach, then modify it if you find a situation where the default is not convenient.

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When you use SETLOCAL / ENDLOCAL inside a batch file, changes in local alias definitions (or in global definitions if you don't have a local alias list) are restored by the ENDLOCAL.

Retaining Global Aliases with SHRALIAS

If you select a global alias list for ***TCC*** you can share the aliases among all running copies of ***TCC***. When you close all ***TCC*** sessions, the memory for the global alias list is released, and a new, empty alias list is created the next time you start ***TCC***.

If you want the alias list to be retained in memory even when no ***TCC*** session is running, you need to execute the SHRALIAS command, which performs this service for the global alias list, the global user-defined functions list, the global command history list, and the global directory history list. You may find it convenient to execute SHRALIAS from your TCSTART file.

SHRALIAS retains the global alias list in memory, but cannot preserve it when Windows itself is shut down. To save your aliases when restarting Windows, you must store them in a file and reload them after the system restarts. For details on how to do so, see Saving and Reloading Your Aliases above.

The PRE_INPUT, PRE_EXEC, and POST_EXEC Aliases

When at the command prompt (i.e., not executing a batch file), ***TCC*** will look for (and execute them if found) the following aliases:

PRE_INPUT - executed immediately before accepting input for a new command line.

PRE_EXEC - executed immediately after a command line is entered (before any expansion or redirection).

POST_EXEC - executed immediately after returning from a command and before displaying the prompt.

None of these aliases will be passed any arguments.

If the alias does not exist, ***TCC*** will search the plugins for **PRE_INPUT / PRE_EXEC / POST_EXEC** functions and execute them if found.

The CD_ENTER and CD_LEAVE Aliases

When changing directories, ***TCC*** will look for (and execute if found) the following aliases:

CD_Leave - ***TCC*** will execute this alias when it is about to change the current directory. ***TCC*** will pass the name of the current directory (%1) and the name of the new directory (%2).

CD_Enter - ***TCC*** will execute this alias immediately after changing the current directory. ***TCC*** will pass the name of the new directory (%1).

These aliases let you customize your environment based on the current directory.

The UNKNOWN_CMD Alias

If you create an alias with the name **UNKNOWN_CMD**, it will be executed any time ***TCC*** would normally issue the "`Unknown command`" error message. This allows you to define your own handler for unknown commands. When the **UNKNOWN_CMD** alias is executed, the command line which generated the error is passed to the alias for possible processing. For example, to just display the command that caused the error:

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```
alias unknown_cmd `echo Error in command "%$"`
```

If the **UNKNOWN_CMD** alias contains an unknown command, it will call itself repeatedly. If this occurs, ***TCC*** will loop up to 10 times, then display the **UNKNOWN_CMD loop** error.

If an **UNKNOWN_CMD** alias does not exist, ***TCC*** will search the plugins for an UNKNOWN_CMD command and execute it if found.

Warnings

When you define an alias in the command line (i.e., without using the /R option), variables and functions not protected by back quotes or doubled % signs are immediately evaluated, and the result becomes part of the alias value.

Syntax errors in an alias are not detected until the alias is executed.

Options:

/= Display the ALIAS command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/G Switch from a local to a global alias list. If you already have a global alias list (for example, in another ***TCC*** instance or in SHRALIAS), ALIAS will not do the conversion. The /G must be the only argument.

/GL Read from and write to the global alias list. If you have both local and global alias lists defined and do not specify /GL, ALIAS will default to using the local list.

/L Switch from a global to a local alias list. If you already have a local alias list, ALIAS will not do the conversion. The /L must be the only argument.

/LL Read from and write to the local alias list.

/O Don't overwrite existing values (only valid in combination with /R).

/P This option is only effective when ALIAS is used to display existing definitions. It pauses the display after each page and waits for a keystroke before continuing (see Page and File Prompts).

/R This option loads an alias list from a file. The format of the file is the same as that of the ALIAS display:

name=value

where ***name*** is the *name* of the alias and ***value*** is its *value*. You can use an equal sign = or space to separate ***name*** and ***value***. Do not use back quotes around the value with /R. Variables and functions referenced in the definitions remain in the definitions, to be evaluated each time the alias is executed. You can add comments to the file by starting each comment line with a colon `:`. You can load multiple files with one **ALIAS /R** command by placing the names on the command line, separated by spaces:

```
alias /r alias1.lst alias2.lst
```

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ALIAS /R definitions can span multiple lines in the file if each line of the definition, except the last, is terminated with an escape character.

ALIAS /R will read from stdin if no filename is specified and input is redirected:

```
alias /r <
```

/Z Overwrite the existing alias list with the contents of the specified file. Can only be used with a single /R file argument. ALIAS /R /Z is 20x faster than an ALIAS /R, because it doesn't have to check for existing aliases and append new aliases to the end of the list. Do not use single back quotes around your alias arguments with /Z.

4.3.7 ASSOC

Purpose: Modify or display relationships between file extensions and file types stored in the Windows registry

Format: ASSOC /= [/P /R [*file*...] | [.*ext*[=[*filetype*]] /U]

file	One or more input files to read association definitions from.
.ext	The file extension whose file type you want to display or set.
filetype	A file type stored in the Windows registry.

/P(ause) /U(ser)
/R(ead)

See also: FTYPE, ASSOCIATE, and Executable Extensions.

Usage:

ASSOC allows you to create, modify, or display associations between file extensions and file types stored in the Windows registry.

ASSOC manages Windows file associations stored under the registry handle HKEY_CLASSES_ROOT, and discussed in more detail under Windows File Associations. If you are not familiar with file associations be sure to read about them before using ASSOC.

If you invoke ASSOC with no parameters, it will display the current associations. If you include a ***.ext***, with no equal sign or ***filetype***, ASSOC will display the current association for that extension.

If you include the equal sign and ***filetype***, ASSOC will create or update the association for extension ***.ext*** to refer to the specified file type. The valid file types depend on the contents of your Windows registry. See the FTYPE command or your Windows documentation for additional details.

ASSOC cannot delete an extension from the registry. However, you can create a similar effect by associating the extension with an empty file type using **ASSOC .ext=**, without the ***filetype*** parameter.

ASSOC should be used with caution, and only after backing up the registry. Improper changes to file associations can prevent applications and / or the operating system from working properly.

Options:

/= Display the ASSOC command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

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/P Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts.

/R This option loads an association list from a file. The format of the file is the same as that of the ASSOC display:

```
.ext=filetype
```

where ***.ext*** is an extension, which is to be associated with ***filetype***.

You can load multiple files with one ASSOC /R command by placing the names on the command line, separated by spaces:

```
assoc /r assoc1.lst assoc2.lst
```

You can insert comments in the file by prefixing the line with a colon (**:**).

ASSOC /R will read from stdin if no filename is specified and input is redirected.

/U Display or set the association in HKCU\Software\Classes.

4.3.8 ASSOCIATE

Purpose: Display, create, or delete file / command associations.

Format: ASSOCIATE [/= /D /F /P[*n*] /R [*file*...] /U /V:*verb* [.*ext*[=[*command*]]]

file	One or more input files to read association definitions from.
.ext	The file extension whose associated command you want to display or set.
command	The executable command to run for the specified file extension

/D(elete)	/R(ead)
/F(orce)	/U(ser)
/P(ause)	/V(erb)

See also: ASSOC, FTYPE, and Executable Extensions.

Usage:

You must be running in an elevated session to use ASSOCIATE (unless you're using the /U option).

ASSOCIATE combines the ASSOC and FTYPE commands. It allows you to create, modify, or display associations between file extensions and commands types stored in the Windows registry.

ASSOCIATE manages Windows file associations stored under the registry handle HKEY_CLASSES_ROOT (or HKEY_CLASSES_USER), and discussed in more detail under Windows File Associations. If you are not familiar with file associations be sure to read about them before using ASSOCIATE.

If you invoke ASSOCIATE with no parameters, it will display the current associations. If you include a ***.ext***, with no equal sign or ***command***, ASSOCIATE will display the command associated with that extension.

If you include the equal sign and ***command***, ASSOCIATE will create or update the association for extension ***.ext*** to refer to the specified command.

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ASSOCIATE should be used with caution, and only after backing up the registry. Improper changes to file associations can prevent applications and / or the operating system from working properly.

Options:

/= Display the ASSOCIATE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Delete the association for the specified *.ext.*

/F Force an overwrite of an existing association.

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. (Only useful when running ASSOCIATE with no arguments.) The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/R This option loads an association list from a file. The format of the file is the same as that of the ASSOCIATE display:

```
.ext=command
```

where ***.ext*** is an extension, which is to be associated with ***command***.

You can load multiple files with one ASSOCIATE /R command by placing the names on the command line, separated by spaces:

```
associate /r assoc1.lst assoc2.lst
```

You can insert comments in the file by prefixing the line with a colon (**:**).

ASSOCIATE /R will read from stdin if no filename is specified and input is redirected.

/U Display or set the association in HKCU\Software\Classes.

/V:*verb* ASSOCIATE defaults to reading and writing to SHELL\OPEN\COMMAND. You can use a different verb by specifying the /V option. For example, to create a PRINT verb for .TXT files:

```
ASSOCIATE /V:PRINT .txt=%%SystemRoot%%\system32\NOTEPAD.EXE /p %
%1
```

If you use * for the verb, ASSOCIATE will display all of the shell verbs and their commands for the specified extension.

4.3.9 ATTRIB

Purpose: Change or view file and subdirectory attributes

Format: ATTRIB [/= /A:[[-+]rhsa] /D /E /I"*text*" /L /N[EJ] /O:[-]acdeginorstuz /P[*n*] /Q /S[[+]n]] [+|-[AHIOPRSTUVX]] [@*file*] *files* ...

files A file, directory, or list of files or directories to process.

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@file A text file containing the names of the files to process, one per line (see @file lists for details).

/A: (Attribute select)
/D(irectories)
/E (No error messages)
/I"text" (match description)
/L (symbolic Link)
/N(o)
/O:...(order)
/P(ause)
/Q(uiet)
/S(ubdirectories)

Attribute flags:

Clear	Set	Attribute affected
-A	+A	archive
-C	+C	compressed
-H	+H	hidden
-I	+I	not content indexed
-O	+O	offline
-P	+P	pinned (Windows 10 and OneDrive only)
-R	+R	read-only
-S	+S	system
-T	+T	temporary
-U	+U	unpinned (Windows 10 and OneDrive only)
-V	+V	integrity (Windows Server 2012R2+ ReFS only)
-X	+X	no_scrub_data (Windows Server 2012R2+ ReFS only)

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

Every file and subdirectory has attributes that can be turned on (set) or turned off (cleared): **Archive**, **Hidden**, **Not content indexed**, **Offline**, **Read-only**, **System,** and **Temporary**. For details on the meaning of each attribute, see File Attributes.

The ATTRIB command lets you view, set, or clear attributes for any file, group of files, or subdirectory.

You can view file attributes by entering ATTRIB without specifying new attributes (*i.e.*, without the **[+|-[AHIOPRSTUVX]]** part of the format), or with the DIR /T command.

The primary use of ATTRIB is to set attributes. For example, you can set the read-only and hidden attributes for the file *MEMO*:

```
attrib +rh memo
```

Attribute options apply to the file(s) that follow the options on the ATTRIB command line. The example below shows how to set different attributes on different files with a single command. It sets the archive attribute for all *.TXT* files, then sets the system attribute and clears the archive attribute for *TEST.EXE*:

```
attrib +a *.txt +s -a test.exe
```

When you use ATTRIB on an LFN drive, you must double quote any file names which contain white space or special characters.

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To change directory attributes, use the **/D** switch. If you give ATTRIB a directory name instead of a file name, and omit **/D**, it will append "*" to the end of the name and act on all files in that directory, rather than acting on the directory itself.

NTFS also supports **D** (subdirectory), **V** (virtualized), **E** (encrypted), **J** or **L** (junction / symbolic link) and **P** (sparse file) attributes. These attributes will be displayed by ATTRIB, but cannot be altered; they are designed to be controlled only by Windows.

ATTRIB will ignore underlines in the new attribute (the **[+|-[ADHIOPRSTUVX]]** part of the command). For example, ATTRIB sees these 2 commands as identical:

```
attrib +a filename
attrib +__A_ filename
```

This allows you to use a string of attributes from either the @ATTRIB variable function or from ATTRIB itself (both of which use underscores to represent attributes that are not set) and send that string back to ATTRIB to set attributes for other files. For example, to clear the attributes of *FILE2* and then set its attributes to match those of *FILE1*:

```
attrib -arhs file2 & attrib +%@attrib[file1] file2
```

When ATTRIB encounters a `+D` or `-D` in the attribute string it treats it as equivalent to the **/D** switch, and allows modification of the attributes of a directory. When combined with @ATTRIB, or with ATTRIB's output, both of which return a **D** to signify a directory, this feature allows you to transfer attributes from one directory to another. For example, to clear the attributes of all files and directories beginning with *ABC* and then set their attributes to match those of *FILE1* (enter this on one line):

```
attrib -arhs abc* & attrib +%@attrib[file1] abc*
```

ATTRIB sets three internal variables:

%_attrib_dirs	The number of directories modified
%_attrib_files	The number of files modified
%_attrib_errors	The number of errors

Options:

/= Display the ATTRIB command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Warning: the colon after /A is not optional.

This switch specifies which files to select, not which attributes to set. For example, to remove the archive attribute from all hidden files, you could use this command:

```
attrib /a:h -a *
```

Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/D If you use the **/D** option, ATTRIB will modify the attributes of directories in addition to files (yes, you can have a hidden directory):

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```
attrib /d +h c:\mydir
```

If you use a directory name instead of a file name, and omit **/D**, ATTRIB will append "*" to the end of the name and act on all files in that directory, rather than acting on the directory itself.

/E Suppress all non-fatal error messages, such as "File Not Found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files and aliases, and when recursing through the directory hierarchy, where many directories have no files matching your selection criteria. .

/I"text" Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must immediately follow the **/I**, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/L Set or display the attributes of the symbolic link versus the target of the symbolic link.

/N Do everything except actually change the attributes. This option is useful for testing what the result of a complex ATTRIB command will be.

A **/N** with one of the following arguments has an alternate meaning:

e	Don't display errors.
j	Skip junctions (when used with /S)

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

n	Sort by filename and extension, unless **e** is explicitly included. This is the default.
-	Reverse the sort order for the next sort key
a	Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
c	Sort by compression ratio
d	Sort by date and time (oldest first); also see **/T:acw**
e	Sort by extension
g	Group subdirectories first, then files
i	Sort by description
o	Sort by owner
r	Reverse the sort order for all options
s	Sort by size
t	Same as **d**
u	Unsorted
z	Same as **s**

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

.

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/Q This option turns off ATTRIB's normal screen output. It is most useful in batch files.

/S If you use the **/S** option, the ATTRIB command will be applied to all matching files in the current or named directory and all of its subdirectories. Do not use /S with @file lists; see @file lists for details.

If you specify a number after the /S, ATTRIB will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, ATTRIB will not modify any file attributes until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not modify anything in *\a* or *\a\b*.

4.3.10 BATCOMP

Purpose: Compress and encrypt batch files. See Batch File Compression for additional details.

Format: BATCOMP [/O /Q] *InputFile OutputFile*

InputFile	A file to compress and/or encrypt.
OutputFile	A file to hold the output from the command

/O(verwrite) /Q(uiet)

File Selection

The input file must be specified explicitly (no wildcards).

File Completion Syntax:

The default filename completion syntax is: **btm bat cmd dirs**

Usage:

BATCOMP is a batch file compressor and encryptor. Compressed batch files run at approximately the same speed as uncompressed *.BTM* files. You may want to consider encrypting your batch files if you want to keep your code secret or prevent your users from altering them.

Large batch files will be reduced in size by at least a half. Much larger reductions are possible if you strip the batch file of all comments before compressing it. However, compressing a small file will not significantly reduce its size and might even cause it to grow.

If you do not specify an extension for ***OutputFile***, it defaults to **BTM**. If ***OutputFile*** already exists it will not be overwritten unless **/O** is used.

The output BTM file will not be viewable, but it will run under ***TCC***. The behavior and performance of the file should be the same as if it were run in its original source form as a ***.BTM*** file.

Compression is not effective for very small files and may even result in a larger file.

Example:

Compress and encrypt the input file "MyBatch.btm" and write it to "Production.btm" (overwriting Production.btm if it already exists) :

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```
batcomp /o Mybatch.btm Production.btm
```

Options:

/O Forces overwriting of an existing ***OutputFile***.

/Q Suppresses all progress reports sent to STDOUT. Errors (sent to STDERR) are still shown.

4.3.11 BDEBUGGER / IDE

Purpose: Calls the ***Take Command*** IDE / batch debugger (IDE.EXE)

Format: BDEBUGGER [/C] *batchfilename* [/Gotoline:*nn*] [*parameters*]
or
IDE [/C /Gotoline:*nn*] *file*...

batchfilename	Full name of the batch file to debug.
parameters	Parameters for the batch file
file	File(s) to edit

/C(reate new file) /Gotoline:nn (go to line nn)

File Completion Syntax:

The default filename completion syntax is: **[1] dirs btm bat cmd [2*] ***

Usage:

BDEBUGGER and IDE open a development environment in which files can be edited and (in the case of batch files) debugged. The difference between the two commands is that BDEBUGGER assumes that you're trying to edit & debug a batch file. BDEBUGGER will add a missing .BTM, .CMD, or .BAT extension on the filename, and it assumes that any arguments following the batch file name are batch file parameters. The IDE command is intended as a generic file editor (it supports syntax colorization for several scripting languages, including .BAT, .BTM, and .CMD batch files, Perl, Python, Ruby, and Tcl). Each argument on the command line is assumed to be a filename to be opened in a separate tab window. IDE also does not process any variables, quotes, escape characters, or redirection on the command line.

See the IDE / Batch Debugger Operation help topic for details on the IDE menus, windows, editing, and debugging commands.

Options:

/C If the specified batch file doesn't exist, create it without prompting.

/GOTOLINE:*n* Go to the specified line in the file after opening the tab window. For example:

```
bdebugger mytest.cmd /gotoline:24 [yourtest.cmd /gotoline:12
...]
```

4.3.12 BEEP

Purpose: Beep the speaker or play simple music

Format: BEEP [*frequency duration* ...] [asterisk | exclamation | hand | question | ok]

frequency	The beep frequency in Hertz (cycles per second).
duration	The beep length in 1/18th second intervals.
asterisk	Plays the system default "asterisk" sound.
exclamation	Plays the system default "exclamation" sound.
hand	Plays the system default "hand" sound.
question	Plays the system default "question" sound.
ok	Plays the system default "ok" sound.

See also: the Length and Frequency configuration options.

Usage:

BEEP generates a sound through your computer's speaker. You can use it in batch files to signal that an operation has been completed, or that the computer needs attention.

Because 64-bit versions of Windows do not support playing sounds through the Windows Beep API, ***TCC*** uses DirectSound for BEEP.

Because BEEP allows you to specify the frequency and duration of the sound, you can also use it to play simple music or to create different kinds of signals for the user.

You can include as many frequency and duration pairs as you wish. No sound will be generated for frequencies less than 20 Hz, allowing you to use BEEP as a way to create short delays. The default value for *frequency* is 440 Hz; the default value for *duration* is 2.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

The following table gives the *frequency* values for a five octave range (middle C is 262 Hz):

C	131	262	523	1046	2096
C# / Db	139	277	554	1108	2217
D	147	294	587	1175	2349
D# / Eb	156	311	622	1244	2489
E	165	330	659	1318	2637
F	175	349	698	1397	2794
F# / Gb	185	370	740	1480	2960
G	196	392	784	1568	3136
G# / Ab	208	415	831	1664	3322
A	220	**440**	880	1760	3520
A# / Bb	233	466	932	1866	3729
B	248	494	988	1973	3951

Example:

This batch file fragment runs a program called *DEMO*, then plays a few notes and waits for you to press a key:

```
demo
beep 440 4  600 2  1040 6
pause Finished with the demo - hit a key...
```

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4.3.13 BREAK

Purpose: Enable or disable Ctrl-C and Ctrl-Break

Format: BREAK [ON | OFF]

Usage:

BREAK OFF will disable all **Ctrl-C** and **Ctrl-Break** handling in ***TCC*** (though not necessarily in child processes). In CMD, BREAK OFF doesn't actually do anything, so setting it in ***TCC*** will introduce a possible incompatibility with existing batch files.

4.3.14 BREAKPOINT

Purpose: Set a batch debugger breakpoint on the current line

Format: BREAKPOINT

Usage:

If the batch debugger is active, BREAKPOINT sets a breakpoint on the current line, stopping a "Step Out" sequence. If the batch debugger is not active, BREAKPOINT is ignored.

4.3.15 BTMONITOR

Purpose: Monitor when a Bluetooth device is connected or disconnected.

Format: BTMONITOR [name /C]
BTMONITOR [/=] *name* [Connected | Disconnected] [*n* | FOREVER] *command*

/C(lear)

Usage:

The Bluetooth name can include wildcards.

The command line will be parsed and expanded before BTMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. BTMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, BTMONITOR will display the Bluetooth devices it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

BTMONITOR creates several environment variables when a Bluetooth device is connected or disconnected that can be queried by ***command***. The variables are deleted after ***command*** is executed.

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_btindex	The index of the Bluetooth device being connected or disconnected (for the @btdevice... functions)
_btaddress	The address of the Bluetooth device being connected or disconnected
_btname	The name of the Bluetooth device being connected or disconnected

Options:

/= Display the BTMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove the Bluetooth monitor.

4.3.16 BZIP2

Purpose: Create bzip2 (*.bz2) compressed archives

Format: BZIP2 [/= /A:[[-][+]rhsdaecjot] /A /M /Q /V] *bzip2archive* [@*file*] *file*

bzip2archive The .bz2 file to work with
file The file to compress

/A:... (attribute switch) M(ove)
/A(dd) /Q(uiet)
/C(ontents) /V(iew)

See also: UNBZIP2.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs bz2 [2*] ***

Usage:

BZIP2 is normally used for compressing a single file; if you need to compress multiple files you should use the ZIP (or TAR) command.

You can specify a pathname for *bzip2archive*. If you don't provide an extension, and the filename as entered doesn't exist, BZIP2 adds ".bz2". If you don't specify an operation, BZIP2 will default to Add.

Options:

/= Display the BZIP2 command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file to the archive. (This is the default.)

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/C Display (on standard output) the contents of a file in the zip archive.

/M Delete the file from the disk after adding them to the bzip2 file.

/Q Don't display the file being compressed.

/V View the contents of the .bz2 file (date, time, and filename).

4.3.17 CALL

Purpose: Execute one batch file from within another.

Format: CALL *file* | :*label* [*p1* [*p2* ...]]

file	The batch file to execute.
:label	A label in the current batch file.
p1, p2,...	Parameters for the batch file or subroutine

See also: CANCEL and QUIT.

Usage:

Calling other batch files

CALL allows batch files to call other batch files (batch file nesting). The calling batch file is suspended while the called (second) batch file runs. When the second batch file finishes (without executing the CANCEL command), execution of the original batch file resumes at the next command.

WARNING! If you execute a batch file from inside another batch file without using CALL, the original batch file is terminated before the other one starts**.** This method of invoking a batch file from another is usually referred to as chaining. Note that if the batch file *A.BTM* uses **CALL B**, and *B.BTM* chains to the batch file *C.BTM***,** on exit from *C.BTM* (without executing a CANCEL command) processing of batch file *A.BTM* is resumed as if it had used **CALL C**.

File *A.BTM :*

```
...
call b
echo xxx
```

File *B.BTM :*

```
...
C
```

File *C.BTM :*

```
...
quit
```

In the example above, after execution of the QUIT command in *C.BTM* the **ECHO xxx** command in *A.BTM* is executed next.

The following batch file fragment compares an input line to ***wp*** and calls another batch file if it matches:

```
input  Enter your choice:  %%option
if "%option" == "wp" call wp.bat
```

Batch files may be nested up to 64 levels deep.

The current ECHO state is inherited by a called batch file.

The called batch file should always either return (by executing its last line, or by using the QUIT command), or it should terminate batch file processing with CANCEL. Do not restart or CALL the original batch file from within the called file as this may cause an infinite loop or a stack overflow.

Calling a label

To provide compatibility with CMD, which does not support the GOSUB command for subroutines in the same batch file, you may create a subroutine starting with a label and terminated by any of the following:

- the end of the batch file
- QUIT
- EXIT
- CANCEL

Note that the last two do NOT return control to the CALL command. Do not use the RETURN command!

Parameters passed to the subroutine are accessible as **%1**, **%2**, etc., in the same manner as in a batch file.

Exit code

CALL returns an exit code which matches the batch file return code. You can test this exit code with conditional commands (**&&** and **||**).

See also GOSUB and user-defined functions.

4.3.18 CANCEL

Purpose: Terminate batch file processing

Format: CANCEL [*value*]

value The numeric exit code to return to ***TCC***.

See also: CALL and QUIT.

Usage:

The CANCEL command ends all batch file processing, regardless of the batch file nesting level. Use QUIT to end a nested batch file and return to the previous batch file.

You can CANCEL at any point in a batch file. If CANCEL is used from within an alias it will end execution of both the alias and any batch files which are running at the time.

The following batch file fragment compares an input line to "end" and terminates all batch file processing if it matches:

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```
input Enter your choice:  %%option
if "%option" == "end" cancel
```

If you specify a ***value***, CANCEL will set the ERRORLEVEL or exit code to that value (see the IF command, and the %? variable).

4.3.19 CD / CHDIR

Purpose: Display or change the current directory

Format: CD [/= /D /N /R /X] [*path* | - | *:path*]

path	The directory to change to, optionally including a drive letter
folder	A Windows Shell folder name

/D(rive)	/R(eparse point)
/N(o extended search)	/X (exclude)

See also: CDD, MD, PUSHD, RD, and Directory Navigation.

Internet: Can be used with FTP Servers.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

CD and CHDIR are synonyms. You can use either one.

CD lets you navigate through a drive's subdirectory structure by changing the current working directory. If you enter CD and a directory name, the named directory becomes the new current directory. For example, to change to the subdirectory *C:\FINANCE\MYFILES*:

```
[c:\] cd \finance\myfiles
[c:\finance\myfiles]
```

Every disk drive on the system has its own current directory. Specifying both a drive and a directory in the CD command will change the current directory on the specified drive, but will not change the default drive (unless you use the /D option). For example, to change the default directory on drive **A**:

```
[c:\] cd a:\utility
[c:\]
```

Notice that this command does not change to drive A:. Use the /D option, or preferably the CDD command to change the current drive and directory at the same time.

If ***path*** contains white space or special characters (which is valid only for an LFN drive), you must enclose it in double quotes.

If ***path*** begins with a **~** (tilde), CD will substitute to the user's home directory, as defined by HOME in the environment. (If HOME doesn't exist, TCC will look for %HOMEDRIVE + HOMEPATH.)

You can change to the parent directory with **CD ..**; you can also go up one additional directory level with each additional **.** . For example, **CD ....** will go up three levels in the directory tree (see Extended Parent

Directory Names). You can move to a sibling directory (one that branches from the same parent directory as the current subdirectory) with a command like **CD ..\newdir .**

If you enter CD with no parameter or with only a disk drive name, it will display the current directory on the default or named drive.

If CD cannot change to the directory you have specified it will attempt to search the CDPATH and the extended directory search database in order to find a matching directory and switch to it. You can disable this default extended search with /N. You can also use wildcards in ***path*** to force an extended directory search. Read the section on Directory Navigation for complete details on these and other directory navigation features.

If the EverythingSearch option is set, CD will use **Everything Search** (http://www.voidtools.com) instead of JPSTREE.IDX for fuzzy directory searches. Everything Search is faster, but will only work on local NTFS drives. Setting EverythingSearch is the equivalent of setting FuzzyCD=3 (***name***). The ***Take Command*** installer will install **Everything Search** automatically.

CD saves the current directory before changing to a new directory. You can switch back to the previous directory by entering CD -. (There must be a space between the CD command and the hyphen.) You can switch back and forth between two directories by repeatedly entering CD -. The saved directory is the same for both the CD and CDD commands. Drive changes and automatic directory changes also modify the saved directory, so you can use CD - to return to a directory that you exited with an automatic directory change. ***TCC*** recognizes a single hyphen on the command line as an internal alias for **CDD -**.

Directory changes made with CD are recorded in the directory history list and can be displayed in the directory history window, which allows you to return quickly to a recently-used directory.

You can also use CD to display or change the current directory on an FTP server opened with IFTP. For example:

```
cd ftp:
ftp://ftp.microsoft.com/

cd ftp:/pub
```

Note: FTP directory changes use neither the CDPATH feature nor the Extended Directory Searches database.

CD never changes the default drive, unless the /D option is specified. If you change directories on one drive, switch to another drive, and then enter CD -, the directory will be restored on the first drive but the current drive will not be changed.

At startup, TCC saves the last directory from SHRALIAS or (if loaded by TCSTART) the directory history list to the "CD -" buffer.

You can also CD to one of the predefined Windows folders. The syntax is:

```
CDD :foldername
```

where *foldername* can be:

```
AccountPictures
AddNewProgramsFolder
AdministrativeTools
AppData
```

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```
ApplicationShortcuts
AppsFolder
AppUpdatesFolder
Cache
CameraRoll
CDBurning
ChangeRemoveProgramsFolder
CommonAdminTools
CommonAppData
CommonDesktop
CommonDocuments
CommonDownloads
CommonMusic
CommonPictures
CommonPrograms
CommonRingtones
CommonStartMenu
CommonStartup
CommonTemplates
CommonVideo
ConflictFolder
ConnectionsFolder
Contacts
ControlPanelFolder
Cookies
Cookies\Low
CredentialManager
CryptoKeys
Desktop
DeviceMetadataStore
DocumentsLibrary
Downloads
dpapiKeys
Favorites
Fonts
Games
GameTasks
History
HomeGroupCurrentUserFolder
HomeGroupFolder
ImplicitAppShortcuts
InternetFolder
Libraries
Links
LocalAppData
LocalAppDataLow
MusicLibrary
MyComputerFolder
```

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```
MyMusic
MyPictures
MyVideo
Nethood
NetworkPlacesFolder
OneDrive
OneDriveCameraRoll
OneDriveDocuments
OneDriveMusic
OneDrivePictures
Personal
PicturesLibrary
PrintersFolder
PrintHood
Profile
ProgramFiles
ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
ProgramFilesX64
ProgramFilesX86
Programs
Public
PublicAccountPictures
PublicGameTasks
PublicLibraries
QuickLaunch
Recent
RecordedTVLibrary
RecycleBinrFolder
ResourceDir
RingTones
RoamedTileImages
RoamingTiles
SavedGames
Screenshots
Searches
SearchHistoryFolder
SearchHomeFolder
SearchTemplatesFolder
SendTo
StartMenuStart Menu
Startup
SyncCenterFolder
SyncResultsFolder
SyncSetupFolder
System
SystemCertificates
```

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```
SystemX86
Templates
ThisPCDesktopFolder
UsersFilesFolder
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
UsersLibrariesFolder
VideosLibrary
Windows
```

Options:

/= Display the CD command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Changes the current drive as well as directory. This option is included only for compatibility with the same option available in some versions of CMD. In most cases you should use CDD, which performs the same function.

/N Skips the standard extended directory search when the directory is not found. This option is useful in batch files to force an error (rather than an extended search) if a directory is not found.

/R Change to the target of the reparse point (hard or symbolic link).

/X Don't save the current directory to the Directory History list..

4.3.20 CDD

Purpose: Change the current disk drive and directory

Format: CDD [/= /A /D[*drive* ...] /N[J] /S[n][*drive* ...] /U[n][*drive* ...] /X] [*path* | - | *:folder*]

path The name of the directory (or drive and directory) to change to.
folder A Windows Shell folder name
drive A drive or list of drives to include in the extended directory search database.

/A(ll drives)
/D(elete from JPSTREE.IDX)
/N(o extended search)
/NJ (Skip junctions)
/R(eparse point)
/S(earch tree)
/T (Also change Folders directory)
/TO Only change Folders directory)
//U(pdate tree)
/X (exclude from directory history)

See also: CD, MD, PUSHD, RD, and Directory Navigation.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

CDD is similar to the CD command, except that it also changes the default disk drive if one is specified. For example, to change from the root directory on drive A to the subdirectory *C:\WP:*

```
[a:\] cdd c:\wp
[c:\wp]
```

If no drive / path argument is supplied, CDD displays the current drive and directory.

CDD can also be used to create and update the Extended Directory Search database (*JPSTREE.IDX*).

If ***path*** begins with a **~** (tilde), CD will substitute to the user's home directory, as defined by HOME in the environment. (If HOME doesn't exist, TCC will look for %HOMEDRIVE + HOMEPATH.)

You can change to the parent directory with **CDD ..**; you can also go up one additional directory level with each additional [**.**]. For example, **CDD ....** will go up three levels in the directory tree.

CDD can also change to a network drive and directory specified with a UNC name (see File Systems for details).

When you use CDD to change to a directory on an LFN drive, you must quote the ***path*** name if it contains white space or special characters.

If CDD cannot change to the directory you have specified it will first search the CDPATH, then the extended directory search database in order to find a matching directory and switch to it. You can disable this default extended search with **/N**. You can also use wildcards in the ***path*** to force an extended directory search. Read the section on Directory Navigation for complete details on these and other directory navigation features.

If the EverythingSearch option is set, CDD will use **Everything Search** (http://www.voidtools.com) instead of JPSTREE.IDX for fuzzy directory searches. Everything Search is slightly faster, but will only work on local NTFS drives. Setting EverythingSearch is the equivalent of setting FuzzyCD=3 (***name***). The ***Take Command*** installer will install **Everything Search** automatically.

CDD saves the current drive and directory before changing to a new directory. You can switch back to the previous drive and directory by entering **CDD -.** (There must be a space between the CDD command and the hyphen.) You can switch back and forth between two drives and directories by repeatedly entering **CDD -**. The saved directory is the same for both the CD and CDD commands. Drive changes and automatic directory changes also modify the saved directory, so you can use **CDD -** to return to a directory that you exited with a drive change or an automatic directory change. ***TCC*** recognizes a single hyphen on the command line as an internal alias for **CDD -**.

At startup, TCC saves the last directory from SHRALIAS or (if loaded by TCSTART) the directory history list to the "CD -" buffer.

Directory changes made with CDD are recorded in the directory history list and can be displayed in the directory history window, which allows you to return quickly to a recently-used directory.

Windows limits the permissible length of the full subdirectory name (see the Directories and Subdirectories topic for information on directory names).

When changing directories, ***TCC*** maintains the original case of each path element. This is necessary for a few programs which are case-sensitive in their use of directory names.

You can also CD to one of the predefined Windows shell folders. The syntax is:

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```
CDD :foldername
```

where *foldername* can be:

```
AccountPictures
AddNewProgramsFolder
AdministrativeTools
AppData
ApplicationShortcuts
AppsFolder
AppUpdatesFolder
Cache
CameraRoll
CDBurning
ChangeRemoveProgramsFolder
CommonAdminTools
CommonAppData
CommonDesktop
CommonDocuments
CommonDownloads
CommonMusic
CommonPictures
CommonPrograms
CommonRingtones
CommonStartMenu
CommonStartup
CommonTemplates
CommonVideo
ConflictFolder
ConnectionsFolder
Contacts
ControlPanelFolder
Cookies
Cookies\Low
CredentialManager
CryptoKeys
Desktop
DeviceMetadataStore
DocumentsLibrary
Downloads
dpapiKeys
Favorites
Fonts
Games
GameTasks
History
HomeGroupCurrentUserFolder
HomeGroupFolder
```

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```
ImplicitAppShortcuts
InternetFolder
Libraries
Links
LocalAppData
LocalAppDataLow
MusicLibrary
MyComputerFolder
MyMusic
MyPictures
MyVideo
Nethood
NetworkPlacesFolder
OneDrive
OneDriveCameraRoll
OneDriveDocuments
OneDriveMusic
OneDrivePictures
Personal
PicturesLibrary
PrintersFolder
PrintHood
Profile
ProgramFiles
ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
ProgramFilesX64
ProgramFilesX86
Programs
Public
PublicAccountPictures
PublicGameTasks
PublicLibraries
QuickLaunch
Recent
RecordedTVLibrary
RecycleBinrFolder
ResourceDir
RingTones
RoamedTileImages
RoamingTiles
SavedGames
Screenshots
Searches
SearchHistoryFolder
SearchHomeFolder
SearchTemplatesFolder
```

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```
SendTo
StartMenuStart Menu
Startup
SyncCenterFolder
SyncResultsFolder
SyncSetupFolder
System
SystemCertificates
SystemX86
Templates
ThisPCDesktopFolder
UsersFilesFolder
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
UsersLibrariesFolder
VideosLibrary
Windows
```

Options:

/= Display the CDD command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A When CDD is used with this option, it displays the current directory on all drives from C: to the last drive in the system. You cannot move to a new drive and directory and use **/A** in the same command.

/D Removes the specified drives or directory trees from the Extended Directory Search database (*JPSTREE.IDX)*. Uses the same syntax for drive and directory names as **/S**. For example, to delete the directories under *F:\MYDIR* from *JPSTREE.IDX*:

```
cdd /d f:\mydir
```

/N Skips the standard extended directory search when the directory is not found. This option is useful in batch files to force an error -- rather than an extended search -- if a directory is not found.

/NJ Skips junctions when indexing directories (see /S).

/R Change to the target of the reparse point (hard or symbolic link).

/S Builds or rebuilds the Extended Directory Search database (*JPSTREE.IDX)*. You cannot move to a new drive and directory and use **/S** in the same command.

To include all local hard drives in the database, use the command:

```
cdd /s
```

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To limit or add to the list of drives included in the database, list the drives and network volume names after the **/S** switch. For example, to include drives C, D, and E, and the sharename \\server\dir1, use this command:

```
cdd /s c:\ d:\ e:\ \\server\dir1
```

All non-hidden directories on the listed drives will be indexed. CDD /S will also index the hidden directories if the Complete Hidden Files option is set. Each time you use **/S**, everything in the previous directory database is replaced by the new database that is created. To update the database see **/U** below.

You can index specific subdirectories rather than an entire drive. For example, to index all directories on drive C but only the MSSDK directory tree on drive D:

```
cdd /s c:\ d:\mssdk
```

If you specify a number after the /S, CDD will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only index the "a", "b", and "c" directories.

/T Also change the current directory in the ***Take Command*** File Explorer window.

/TO Change the current directory in the ***Take Command*** File Explorer window without changing the ***TCC*** current directory.

/U Updates the Extended Directory Search database (*JPSTREE.IDX)* with the specified drives and directories instead of rebuilding the whole directory database. Uses the same syntax for drive and directory names as **/S**. For example, to update the *D:\MSSDK* tree and all of drive E:

```
cdd /u d:\mssdk e:\
```

If you specify a number after the /U, CDD will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only update the "a", "b", and "c" directories.

Note: The TREEEXCLUDE variable can be used to specify which drives and directories should be ignored when updating the directory database.

/X Don't save the current directory to the Directory History list.

4.3.21 CHCP

Purpose: Display or change the current system code page

Format: CHCP [/I /P[*n*] /S] [*n*]

n A system code page number.

/I(nstalled)
/P(ause)
/S(upported)

Usage:

Code page switching allows you to select different character sets for language support.

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If you enter CHCP without a number, the current code page is displayed.

```
chcp
Active code page: 437
```

If you enter CHCP plus a code page number, the code page is changed. For example, to set the code page to multilingual:

```
chcp 850
```

When you use CHCP under Windows it only affects the current process, and any new programs started from within that process; the active code page in other processes remains unchanged.

Options:

/I Show all installed code pages.

/P[*n*] Pause after each page (only valid with /I or /S). Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/S Show all supported code pages.

4.3.22 CHRONIC

Purpose: Run a command and hides its STDOUT and STDERR output unless the command fails

Format: CHRONIC [/R] *command ...*

/R (stderr)

Usage:

CHRONIC runs a command and hides its STDOUT and STDERR output unless the command fails (i.e., the return code is != 0). If the command succeeds, no output is displayed.

CHRONIC will display the STDOUT and STDERR output separately. For example:

```
c:\> CHRONIC testcommand
Exit code: 2
STDOUT:
stdout output here ...
STDERR:
stderr output here ...
```

CHRONIC will only display the STDOUT: / STDERR: labels if the command actually wrote to the matching output.

Options:

/R Display the output if the command writes to STDERR, even if the return code = 0. If /R is not specified, CHRONIC will only display the output if the command returns a non-zero exit code.

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4.3.23 CLIPMONITOR

Purpose: Monitor changes in the Windows clipboard

Format: CLIPMONITOR [/C]
CLIPMONITOR [/=] *n command*

n Number of repetitions (or **FOREVER**)
command Command to execute when the clipboard is modified

/C(lear)

Usage:

If you don't enter any arguments, if CLIPMONITOR is active it will display the repeat count and the command.

The command line will be parsed and expanded before CLIPMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. CLIPMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Options:

/= Display the CLIPMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove the clipboard monitor.

4.3.24 CLS

Purpose: Clear the window and move the cursor to the upper left corner; optionally change the default display colors

Format: CLS [/C /S] [[BRIght] *fg* ON [BRIght] *bg*

fg The new foreground color
bg The new background color

/C(lear buffer) /S(croll buffer)

Usage:

CLS can be used to clear the window without changing colors, or to clear the window and change the colors simultaneously, or to clear the entire scrollback buffer. These two examples show how to clear the window to the default colors, and to bright white letters on a blue background:

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```
cls
cls bright white on blue
```

CLS is often used in batch files before displaying text.

See Colors and Color Names for details about colors.

Options:

/C Clears the entire scrollback buffer. If **/C** is not used, only the visible portion of the window is cleared.

/S Clear the screen by scrolling the buffer, rather than filling the screen with blanks (the default method). This saves the text on the screen into the scrollback buffer if it is larger than the visible window. This switch may not give the expected results when the buffer size is less than twice the window size.

4.3.25 COLOR

Purpose: Change the default display colors

Format: COLOR [/F *filename*] [BRIght] *fg* ON [BRIght] bg
COLOR [/FG:*rgb* /BG:*rgb*]
COLOR [/FT:*color* /BG:*color*]
COLOR /P[*color*]

fg The new foreground color
bg The new background color

See also: CLS and Colors and Color Names for details about using colors and the name and numeric codes for colors.

Usage:

COLOR is normally used in batch files before displaying text. For example, to set screen colors to bright white on blue, you can use this command:

```
color bright white on blue
```

TCC also supports the CMD `syntax`:

```
COLOR bf
```

In this syntax, ***b*** is a hexadecimal digit that specifies the background color and ***f*** is a hexadecimal digit that specifies the foreground color.

If you do not specify a new foreground and background color, COLOR will revert the display colors to those used when ***TCC*** was started (for compatibility with CMD).

If you have ANSI enabled and StdColors and/or InputColors set, they will override a COLOR command.

COLOR now supports changing the console color palette with either an .INI file (for example, as used by the ColorTool utility), or an .ITERMCOLORS file. The syntax is:

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```
COLOR /F filename
```

If you are running in a Take Command tab window, COLOR will pass the new colors to ***Take Command*** to update the tab window. You can have a different color palette in each tab window.

You can set the foreground and background color in a TCC console window (not a TCMD tab window) to 16 million or 256 colors with the /FG and /BG options. You must be running Windows 10 and have ANSI enabled.

Options:

/FG:*rgb* Sets the foreground color to the 16 million color RGB value specified. Valid ranges for r, g, and b are 0-255.

/BG:*rgb* Sets the background color to the 16 million color RGB value specified. Valid ranges for r, g, and b are 0-255.

/FG:*color* Sets the foreground color to the 256 color (xterm) value specified. Valid range for *color* is 0 - 255.

/FG:*color* Sets the background color to the 256 color (xterm) value specified. Valid range for *color* is 0 - 255.

/P Displays a color picker dialog to select a color. Must be used with /FG or /BG, and cannot be combined with /F.

4.3.26 COMMANDS

Purpose: Display, enable, or disable the ***TCC*** internal commands

Format: COMMANDS [/D /E /P] *commandname ...*

Usage:

If you do not enter any arguments, COMMANDS will display all of the internal commands. Disabled commands will be enclosed in parentheses. If you enter command names without a /D or /E, COMMANDS will show the current state of those commands.

Example:

To disable the internal WINSTATION command:

```
commands /d winstation
```

Options:

/D Disable one or more commands. If you do not provide any command names, COMMANDS will display all of the disabled commands.

/E Enable one or more commands. If you do not provide any command names, COMMANDS will display all of the enabled commands.

/P Pause after displaying each page.

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4.3.27 COMMENT

Purpose: Mark a block of comments in a batch file

Format:
```
COMMENT
  .
  .
  .
ENDCOMMENT
```

Usage:

COMMENT can only be used in batch files. Both COMMENT and ENDCOMMENT must be entered as the only commands on their respective lines, and cannot be included in a command group.

The COMMENT command is useful for entering multiline comments without having to prefix each line with a REM.

The lines between COMMENT and ENDCOMMENT are not parsed. As a consequence, no environment variable expansion or other processing is performed. This makes it easy to include special characters, e.g., < | > in the text.

4.3.28 COPY

Purpose: Copy data between disks, directories, files, or physical hardware devices (such as your printer or serial port)

Format: COPY [/= /I"*text*"]
[/A:... /C /CF /CRC:type:*filename* /D /E /F /FTP:A /G /GZ /H /J /K /L /M /MD /N[dejnrstz] /O /O:[-]acdeginorstuz /P /Q /R /S[[+]n] /SX /T /U /UF /V[n] /W /WAIT=*n* /X /Z] [@file]
source [+] ... [/A|/B] [TO:] *target* [...] [/A|/B]

source	A file or list of files or a device to copy from
target	A file, directory, or device to copy to
@file	A text file containing the names of the source files, one per line (see @file lists for details)

/A(SCII) copy
/A:... (Attribute select)
/B(inary copy)
/C(hanged source files)
/CDA (copy directory attributes)
/CF (changed 2s+ resolution)
/CRC (create CRC for each file)
/D (Copy encrypted files)
/E (No error messages)
/F (No empty subdirectories)
/FTP:A (ASCII copy)
/G (Display percentage)
/GZ (gzip HTTP files)
/H (Include hidden files)/G
/I"text" (Match description)
/J (Restartable)
/K (Keep read-only attribute)
/L Copy symbolic links
/MD (Create target directory)
/N (Disable)
/O(nly if no target)
/O:... (order)
/P(rompt)
/Q(uiet)
/R(eplace)
/S(ubdirectories)
/SX (single target directory)
/T(otals)
/U(pdate target)
/UF (update 2s+ resolution)
/V(erify)
/W (one-way sync)
/WAIT=*n*
/X (Clear archive)
/Y (suppress prompt)

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/LD (create link) /Z (overwrite)
/M(odified files

See also: ATTRIB, MOVE, and REN.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, delayed variable expansion, and include lists. Date, time, size or exclude ranges anywhere on the line apply to all *source* files. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Internet

Can be used with FTP / FTPS / TFTP / HTTP / HTTPS Servers.

Usage

If you don't specify any arguments, COPY will display its command dialog.

The simplest use of COPY is to make a copy of a file, like this example which makes a copy of a file called *FILE1.ABC*:

```
copy file1.abc file2.def
```

You can also copy a file to another drive and/or directory. The following command copies ***FILE1*** to the *\MYDIR* directory on drive **E**:

```
copy file1 e:\mydir
```

When you COPY files to or from an LFN drive, you must quote any file names which contain white space or special characters.

If you specify the /C, /CF, /R, /U, or /UF options, COPY will append a **!** to the copy specifier if the target exists and is being overwritten. For example:

```
[d:\] copy file1 file2
file1 =>! file2
```

To emulate an approach used by some implementations of CMD, see the COPYCMD topic.

COPY sets three internal variables:

%_copy_dirs	The number of directories created
%_copy_files	The number of files copied
%_copy_errors	The number of errors

- **Copying Files**

You can copy several files at once by using wildcards:

```
copy *.txt e:\mydir
```

You can also list several ***source*** files in one command. The following command copies 3 specific files from the current directory to the *\MYDIR* directory on drive ***E:***

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```
copy file1 file2 file3 e:\mydir
```

COPY also understands include lists, so you can specify several different kinds of files in the same command. This command copies the *.TXT*, *.DOC*, and *.BAT* files from the *E:\MYDIR* directory to the root directory of drive ***A:***

```
copy e:\mydir\*.txt;*.doc;*.bat a:\
```

If there is only one parameter on the line, COPY assumes it is the ***source***, and uses the current drive and directory as the ***destination***. For example, the following command copies all the ***.DAT*** files from the current directory on drive ***A*** to the current directory on the current drive:

```
copy a:*.dat
```

If there are two or more parameters on the line separated by spaces, then COPY assumes that the last parameter is the ***destination*** and copies all ***source*** files to this new location. If the ***destination*** is a drive, directory, or device name, the ***source*** files are copied individually to the new location. If the ***destination*** is a file name, the first ***source*** file is copied to the ***destination***, and any additional ***source*** files are then appended to the new ***destination*** file.

For example, the first of these commands copies the *.DAT* files from the current directory on drive **A** individually to *C:\MYDIR* (which must already exist as a directory); the second appends all the ***.DAT*** files together into one large file called *C:\DATA* (assuming *C:\DATA* is not a directory):

```
copy a:*.dat c:\mydir\
copy a:*.dat c:\data
```

When you copy to a directory, if you add a backslash **** to the end of the name as shown in the first example above, COPY will display an error message if the name does not refer to an existing directory. You can use this feature to keep COPY from treating a mistyped ***destination*** directory name as a file name and attempting to append all your ***source*** files to a single ***destination*** file, when you really meant to copy them individually to a ***destination*** directory.

To copy text to or from the clipboard use **CLIP:** as the device name. Using **CLIP:** with non-text data will produce unpredictable results. See Redirection for more information on **CLIP:**.

- **Appending Files**

A plus sign **+** tells COPY to append two or more ***source*** files to a single ***destination*** file. If you list several ***source*** files separated with **+** and don't specify a ***destination***, COPY will use the name of the first ***source*** file as the destination, and append each subsequent file to the first file.

For example, the following command will append the contents of *MEMO2* and *MEMO3* to *MEMO1* and leave the combined contents in the file named *MEMO1*:

```
copy memo1+memo2+memo3
```

To append the same three files but store the result in *BIGMEMO:*

```
copy memo1+memo2+memo3 bigmemo
```

If no ***destination*** is specified, the destination file will always be created in the current directory even if the first ***source*** file is in another directory or on another drive. For example, this command will append *C:\MEM\MEMO2* and *C:\MEM\MEMO3* to *D:\DATA\MEMO1*, and leave the result in *C:\MEM\MEMO1*:

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```
[c:\mem] copy d:\data\memo1+memo2+memo3
```

You cannot append files to a device (such as a printer); if you try to do so, COPY will ignore the + signs and copy the files individually. If you attempt to append several ***source*** files to a ***destination*** directory or disk, COPY will append the files and place the copy in the new location with the same name as the first ***source*** file.

You cannot append a file to itself.

- **FTP Usage**

If you have appropriate permissions, you can copy to and from Internet URLs (FTP, TFTP and HTTP). Many FTP servers use case sensitive file systems. For example:

```
copy ftp://ftp.abc.com/xyz/index index
```

Files copied to or from FTP/HTTP Servers are normally transferred in binary mode. To perform an ASCII transfer use the /L switch. File descriptions are not copied when copying files to an Internet URL.

COPY supports the special syntax

```
copy con: ftp:...
```

to directly copy text from the console to an ftp location.

Wildcard characters such as * and ? will be treated as wildcards in FTP URLs, but will be treated as normal characters in HTTP URLs.

Note: The /G option (percentage copied) may report erratic values during transfer of files larger than 4 Gb (an ftp limitation) and during http downloads.

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want. For more information, see Using FTP/HTTP Servers and IFTP.

- **NTFS File Streams**

COPY supports file streams on NTFS drives. You can copy an individual stream by specifying the stream name, for example:

```
copy myfile:mystream stream.copy
```

If no stream name is specified the entire file is copied, including all streams. However, if you copy a file to a drive or device which does not support streams, only the file's primary data is copied; any additional streams are not processed.

See NTFS File Streams for additional details.

- **Advanced Features**

If your ***destination*** has wildcards in it, COPY will attempt to match them with the ***source*** names. For example, this command copies the *.DAT* files from drive **A** to *C:\MYDIR* and gives the new copies the extension ***.DX***:

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```
copy a:*.dat c:\mydir\*.dx
```

This feature can give you unexpected results if you use it with multiple ***source*** file names. For example, suppose that drive ***A*** contains *XYZ.DAT* and *XYZ.TXT*. The command:

```
copy a:\*.dat a:\*.txt c:\mydir\*.dx
```

will copy *A:XYZ.DAT* to *C:\MYDIR\XYZ.DX*. Then it will copy *A:XYZ.TXT* to *C:\MYDIR\XYZ.DX*, overwriting the first file it copied.

You can use date, time, and size ranges to further define the files that you want to copy. This example copies every file in the *E:\MYDIR* directory, which was created or modified yesterday, and which is also 10,000 bytes or smaller in size, to the root directory of drive **A**:

```
copy /[d-1] /[s0,10000] e:\mydir\* a:\
```

You can also use file exclusion ranges to restrict the list of files that would normally be selected with wildcards. This example copies every file in the *E:\MYDIR* directory except backup (*.BAK* or *.BK*) files:

```
copy /[!*.bak *.bk] e:\mydir\* a:\
```

COPY will normally process ***source*** files which do not have the hidden or system attribute, and will ignore the read-only and archive attributes. It will always set the archive attribute and clear the read-only attribute of ***destination*** files. In addition, if the ***destination*** is an existing file with the read-only attribute, COPY will generate an **Access Denied** error and refuse to overwrite the file. You can alter some of these behaviors with switches:

- /A:.. Forces COPY to process ***source*** files with the attributes you specify after the :, or to process all ***source*** files regardless of attributes, if /A: is used by itself.
- /H Forces COPY to process hidden and system ***source*** files, as well as normal files. The hidden and system attributes from each source file will be preserved when creating the ***destination*** files.
- /K Retains the read-only attribute from each ***source*** file when creating the ***destination*** file. See /K below for a special note if you are running under Novell NetWare.
- /Z Forces COPY to overwrite an existing ***destination*** file regardless of its attributes.

You can copy files to multiple destinations with the TO: option. For example, to copy ***letter.doc*** to three different directories:

```
copy letter.doc TO: \save\ f:\backups\ q:\letters\
```

Note: The wildcard expansion process will attempt to allow both CMD-style "*extension*" matching (assumes only one extension, at the end of the word) and the advanced ***TCC*** string matching (allowing things like ****.*.abc***) when an asterisk is encountered in the ***destination*** of a COPY command.

COPY supports regular expression back references in the target name. If you are using back references, you must also use a regular expression in the source name. The syntax is:

```
copy ::filename ::target
```

COPY supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is copied, COPY will look for a folder in the same directory with the same name and an extension of ".files". If it is

found, the .files directory will be copied to the target directory. You can disable connected web folders by setting the registry key:

```
HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\NoFileFolderConnection=0
```

You can override the default HTTP proxy server, proxy user, and proxy password (set in TCMD.INI) with the /Proxy... options.

/Proxy=*server*
/ProxyUser=*username*
/ProxyPwd=*password*

Options

The /A (ASCII copy) and /B (binary copy) options apply to the preceding filename and to all subsequent filenames on the command line until the file name preceding the next /A or /B, if any. All other options apply to all filenames on the command line, no matter where you put them.

Some options do not make sense in certain contexts, in which case COPY will ignore them. For example, you cannot prompt before replacing an existing file when the ***destination*** is a device such as the printer; there's no such thing as an "existing file" on the printer. If you use conflicting output options, like /Q and /P, COPY will generally take a "conservative" approach and give priority to the option which generates more prompts or more information.

/= Display the COPY command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A If you use **/A** with a ***source*** filename, the file will be copied up to, but not including, the first Control-Z (ASCII: 26) character in the file. If you use **/A** with a ***destination*** filename, a Control-Z will be added to the end of the file. **/A** is the default when appending files, or when the ***destination*** is a device like **NUL**, rather than a disk file.

This option applies to the filename immediately preceding it, and to all subsequent filenames until the file name preceding the next /A or /B option.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. See the cautionary note under **Advanced Features** above before using **/A:** when both ***source*** and ***destination*** directories contain file descriptions. You must include the colon with this option to distinguish it from the /A switch, above. Do not use **/A:** with ***@file*** lists. See @file lists for details. Hidden or system files selected by this option overwrite hidden or system files.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B If you use **/B** with a ***source*** filename, the entire file is copied; Ctrl-Z characters, if any, in the file are considered ordinary data to be copied. Using **/B** with a ***destination*** filename prevents addition of a Ctrl-Z to the end of the ***destination*** file. **/B** is the default unless source files are appended to the target file, or the target is a device, e.g., **NUL**.

This option applies to the filename immediately preceding it, and to all subsequent filenames until the file name preceding the next /A or /B option.

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/C Copy files only if the ***destination*** file exists and is older than the ***source*** (see also /U). This option is useful for updating the files in one directory from those in another without copying any files not already in the target directory. Before using **/C** in a network environment, be sure to read the note under /U. Do not use **/C** with ***@file*** lists. See @file lists for details.

/CDA Copy the attributes from each of the source subdirectories to the target subdirectories.

/CF Copy files only if the ***destination*** file exists and is more than 2 seconds older than the ***source*** (see also /C and /UF). Do not use **/CF** with ***@file*** lists. See @file lists for details.

/CRC Create a file that contains a CRC + file name for every file copied.

type - The type of CRC to create. Possible types are:
MD5
CRC32
SHA1
SHA256
SHA384
SHA512

filename - The file that contains the CRC and file names (one per line).

/D Force copy of an encrypted file even when the target will be decrypted (for CMD compatibility).

/E (No error messages) Suppress all non-fatal error messages, such as **File not found** or **Can't copy file to itself**. Fatal error messages, such as **Drive not ready**, will still be displayed. This option is most useful in batch files and aliases.

/F When used with **/S**, COPY will not create any empty subdirectories.

/FTP:A Perform FTP transfers in ASCII mode, instead of the default binary mode.

/G Displays the percentage copied, the transfer rate (in Kbytes/second), and the estimated time remaining. Useful when copying large files across a network or via FTP / HTTP to ensure the copy is proceeding. When /V is also used, reports percentage verified.

/GZ When copying to an HTTP / HTTPS target, COPY will compress the file using gzip before uploading it.

/H Copy all matching files including those with the hidden and/or system attribute set. See the cautionary note under **Advanced Features** above before using /H when both ***source*** and ***destination*** directories contain file descriptions.

/I"*text*" (Match descriptions) Select ***source*** files by matching text in their descriptions. See Description Ranges for details.

/J Copy the file in restartable mode. The copy progress is tracked in the destination file in case the copy fails. The copy can be restarted by specifying the same source and destination file names. **/J** will not work with HTTP or FTP files.

/K (Keep read-only attribute) To maintain compatibility with CMD, COPY normally maintains the hidden and system attributes, sets the archive attribute, and removes the read-only attribute on the target file. **/K** tells COPY to also maintain the read-only attribute on the ***destination*** file. However, if the ***destination*** is on a Novell NetWare volume, this option will fail to

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maintain the read-only attribute. This is due to the way NetWare handles file attributes, and is not a problem in COPY.

/L If the source is a symbolic link, copy the link to the target instead of the actual file.

/LD When used with /S, if the source is a symbolic or hard link to a directory, COPY will create the link in the target directory instead of copying the subdirectory tree.

/M Copy only those files with the archive attribute set, *i.e.*, those which have been modified since the last backup. The archive attribute of the ***source*** file will not be cleared after copying; to clear it use the /X switch, or use ATTRIB. Do not use /M with ***@file*** lists. See @file lists for details.

/MD Create the target directory if it doesn't exist. Note that you *must* either terminate the target directory name with a trailing \ or specify a filename component; otherwise COPY cannot tell what you want for the directory and what you want for the filename.

/N Do everything except actually perform the copy. This option is useful for testing what the result of a complex COPY command will be. /N displays how many files would be copied.

A **/N** with one or more of the following arguments has an alternate meaning:

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors.
- **j** Skip junctions (when used with /S)
- **n** Don't copy/update the file descriptions
- **r** A COPY /W will delete to the recycle bin (unless the file matches the RECYCLEEXCLUDE environment variable).
- **s** Don't display the summary.
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.
- **z** Skip system directories (when used with /S)

/O Only copy the source file if the target file doesn't exist.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted

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z Same as **s**

The /O:... option saves all of the matching filenames and then performs the copy. This avoids the potential problem of copying files more than once.

/P Ask the user to confirm each *source* file. Your options at the prompt are explained in detail under Page and File Prompts. Note: the Copy Prompt on Overwrite configuration option can be used to force prompting at the command line only. See also: the /Q option below.

/Proxy=*server*

/ProxyUser=*username*

/ProxyPwd=*password*

/Q Don't display filenames, percentage copied, total number of files copied, etc. When used in combination with the /P option above, it will prompt for filenames but will not display the totals. This option is most often used in batch files. See also /T.

/R Prompt the user before overwriting an existing file. Your options at the prompt are explained in detail under Page and File Prompts. See also: the Copy Prompt on Overwrite configuration option. (For compatibility with CMD, a /Y option on the command line is changed to /R.)

/S Copy the subdirectory tree starting with the files in the ***source*** directory plus each subdirectory below that. The ***destination*** must be a directory; if it doesn't exist, COPY will attempt to create it. COPY will also attempt to create needed subdirectories on the tree below the ***destination***, including empty ***source*** directories. If COPY /S creates one or more destination directories, they will be added automatically to the extended directory search database.

If you attempt to use COPY /S to copy a subdirectory tree into part of itself, COPY will detect the resulting infinite loop, display an error message and exit. Do not use **/S** with ***@file*** lists. See @file lists for details.

If you specify a number after the **/S**, COPY will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", **/S2** will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, COPY will not copy any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not copy anything in *\a* or *\a\b*.

/SX Copy the subdirectory tree to a single target directory (implies /S). For example, to copy all of the .EXE files in "c:\files" and all of its subdirectories to the directory "d:\exefiles":

```
copy /sx c:\files\*.exe d:\exefiles\
```

/T Turns off the display of filenames, like /Q, but does display the total number of files copied.

/U Copy each ***source*** file only if it is newer than a matching ***destination*** file or if a matching ***destination*** file does not exist (see also /C). This option is useful for keeping one directory matched with another with a minimum of copying. Do not use **/U** with @file lists. See @file lists for details. When used with file systems that have different time resolutions (such as FAT and NTFS), /**U** will attempt to use the "coarsest" resolution of the two.

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/UF Copy each ***source*** file only if it is more than 2 seconds newer than a matching ***destination*** file or if a matching ***destination*** file does not exist (see also /CF and /U). Do not use **/UF** with @file lists. See @file lists for details.

/Vn Verify each disk write by performing a true byte-by-byte comparison between the source and the newly-created target file. This option will significantly increase the time necessary to complete a COPY command. /V will not work for FTP, TFTP, or HTTP copies. If ***n*** is set, it specifies the number of retries (0-***n***) if the verification fails. If ***n*** is specified and all of the retries fail, the target file will be deleted.

/W Delete files in the target directory that don't exist in the source directory. (Use this instead of SYNC when you only want to synchronize "one way".)

/WAIT=*n* Pause for *n* milliseconds between each block copied from the source to the target file. This is useful for users with slow networks and very large file copies; it prevents COPY from monopolizing all of the network I/O.

/X Clear the archive attribute from the source file after a successful copy. This option is most useful if you are using COPY to maintain a set of backup files. **/X** should not be used with multiple targets, because the archive attribute will be cleared after the first copy.

/Y If you have the COPY Prompt on Overwrite option set, you can suppress the prompt with /Y.

/Z Overwrite ***destination*** files regardless of their attributes. Without this option, COPY will fail with an "Access denied error" if the ***destination*** file has its read-only attribute set, or (depending on other options) its hidden or system attribute set. Required to overwrite read-only targets regardless of other options. Required to overwrite hidden or system targets unless the source also has the attribute, and either /H or /A: is used to select it.

4.3.29 COPYDIR

Purpose: Copy a directory tree

Format: COPYDIR *source destination*

source The source directory tree
destination The target directory tree

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

Both *source* and *destination* must be directory names. If *destination* does not exist, COPYDIR will create *destination* and copy *source* to *destination*. If *destination* already exists, COPYDIR will append the last subdirectory name in *source* to *destination,* create the new subdirectory, and copy *source* to *destination*. (This allows you to rename the target directory.)

Example:

To copy ***d:\test\mydir*** to ***x:\mydir:***

```
copydir d:\test\mydir x:\
```

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To copy ***d:\test\mydir*** to ***x:\myolddir:***

```
copydir d:\test\mydir x:\myolddir
```

4.3.30 DATE

Purpose: Display and optionally change the system date

Format: DATE [/Fn /T /U *"format"*] [*mm -dd -yy*]

mm	The month (1 - 12)
dd	The day (1 - 31)
yy	The year (80 - 99 or a 4- digit year)
"..."	Date display format

/F(ormat) /U (UTC date)
/T (Display only)

See also: TIME.

Usage:

If you simply type DATE without any parameters, you will see the current system date and time, and be prompted for a new date. Press **Enter** if you don't wish to change the date. If you type a new date, it will become the current system date, which is included in the directory entry for each file as it is created or altered:

```
date
Wed 16/06/2021  10:40:36a
New date (mm-dd-[yy]yy):
```

You can also enter a new system date by typing the DATE command plus the new date on the command line:

```
date 30/06/2021
```

You can use hyphens, slashes, or periods to separate the month, day, and year entries. The year can be entered as a 2-digit or 4-digit value. Two-digit years between 80 and 99 are interpreted as 1980 - 1999; values between 00 and 79 are interpreted as 2000 - 2079.

DATE adjusts the format it expects depending on your country settings. When entering the date, use the correct format for the country setting currently in effect on your system.

You can also use the international date format **yyyy-mm-dd**.

The day of week and month are translated into your local language (English, French, German, Italian, Russian, and Spanish).

Options:

"..."	Custom date / time format to use when displaying the current date. The formatting characters are the same as used by the @DATEFMT function.

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/F Date format to use. The formats are:

0 : Tue Jan 1, 2019
1 : 1/01/19
2 : Tue 1/01/2019
4 : 2019-01-01

/T Displays the current date but does not prompt you for a new date. If a new date is specified in the same command as **/T** the new date will be ignored.

/U Display or enter the UTC date.

4.3.31 DATEMONITOR

Purpose: Monitor the current date and time

Format: DATEMONITOR [/C [*yyyy-mm-dd hh:mm*]]
DATEMONITOR [/=] *yyyy-m-dd hh:mm n command*

n	Number of repetitions (or **FOREVER**)
yyyy-mm-dd	The date to match
hh:mm	The time to match
command	Command to execute when the specified date and time matches the current date and time

/C(lear)

Usage:

DATEMONITOR monitors the current date and time, and executes the specified command when the current date and time match the saved date and time. You can use a * in the date fields if you want to run a command at a specific time every day. For example:

```
datemonitor *-*-* 23:59 forever echo It's almost midnight!
```

If you want to run a command on the first day of every month:

```
datemonitor *-*-1 00:01 forever echo It's the beginning of a new month!
```

If you don't enter any arguments, if DATEMONITOR is active it will display the repeat count and the command.

DATEMONITOR sets two environment variables when the date and time match and the trigger is set:

_datemonitor The current date in yyyy-mm-dd format

_timemonitor The current time in hh:mm (24-hour) format

The command line will be parsed and expanded before DATEMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. DATEMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

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The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Options:

/= Display the DATEMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove date monitors. You can optionally specify a specific date monitor to remove by entering the date and time (which may include wildcards) for that monitor.

4.3.32 DEBUGMONITOR

Purpose: Monitor the OutputDebugString API

Format: DEBUGMONITOR [/C]
DEBUGMONITOR [/=] *n command*

n Number of repetitions (or **FOREVER**)
command Command to execute when condition is triggered

/C(lear)

Usage:

DEBUGMONITOR looks for any process calling the Windows OutputDebugString API. You cannot use DEBUGMONITOR If you are running a debugger (for example, Visual Studio), as DEBUGMONITOR will not see the OutputDebugString calls.

DEBUGMONITOR will set the environment variable _OUTPUTDEBUGSTRING to the value specified in the OutputDebugString call.

The command line will be parsed and expanded before DEBUGMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. DEBUGMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Options:

/= Display the DEBUGMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove the OutputDebugString monitor.

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4.3.33 DEBUGSTRING

Purpose: Write text to the debugger for display

Format: DEBUGSTRING *string*

Usage:

If the application has no debugger, the system debugger displays the message. If the application has no debugger and the system debugger is not active, DEBUGSTRING does nothing.

4.3.34 DEDUPE

Purpose: Search for and optionally delete or symlink duplicated files.

Format: DEDUPE [*ranges*] [/= /A:[[-|+]rhsadecijopt /D /H /L /N[defjnstz] /P /Q /R /S[[+]n] /SHA1 /SHA256 /SHA384 /SHA512 /T /V /W[n]] *filename directory* [*directory*...]

filename	The filename to search for (* for everything)
directory	The directories (and optionally subdirectories) to search

/A:... (attributes)	/Q (quiet)
/D (delete)	/R (recycle)
/H (hard links)	/S[n] (subdirectories)
/L (symlinks)	/SHAx (Hash type)
/N (disable)	/V (verbose)
/P (prompt)	/Wn (wipe)

File Selection

Supports command dialog, attribute switches, extended wildcards and, ranges. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

File Completion Syntax:

The default filename completion syntax is: **[1] * [2*] dirs**

Usage:

DEDUPE searches one or more directories, assigns a hash value to files, and then compares the hash value to all the other files. On slow systems (and particularly in x86 Windows) this can take a while, so you should try to reduce the amount of searching & hashing by using ranges, and not try to dedupe an entire disk at one time.

DEDUPE assumes that the first file it finds for each hash is the original file.

Example:

Remove all the duplicate files from the E: drive:

```
dedupe /d /s /SHA256 * e:\
```

Options:

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/= Display the DEDUPE command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Dedupe those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/D Delete duplicate files

/H Convert duplicate files to hard links to the first file.

/L Convert duplicate files to symlinks of the first file. Note that to create symlinks, you must be in an elevated session.

/N Change default options. This can be any combination of the following:

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors
- **f** Don't display the bytes freed in the summary
- **j** Skip junctions (when used with /S)
- **s** Don't display the summary
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*
- **z** Skip system directories (when used with /S)

/P Prompt before deleting or symlink'ing files.

/Q Quiet (don't display directories or files as they are processed)

/R Delete to the recycle bin

/S*n* Search subdirectories

/SHA*x* Hash algorithm to use. The default is SHA256; you can optionally use SHA1 or SHA512. SHA1 is slightly faster but potentially insecure.

/V Verbose output

/Wn Wipe deleted files

4.3.35 DEFER

Purpose: Execute a command after the batch file exits

Format: DEFER *command*

Usage:

A batch file can have multiple DEFER commands. They will be executed in first in, first out order when the batch file exits.

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If you have variables on the DEFER command line, they will be expanded before the DEFER command is processed, not when ***command*** is executed. To delay variable expansion until ***command*** is executed, use single back quotes around the variable names, or double the %'s before the variable names.

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. DEFER will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

4.3.36 DEL / ERASE

Purpose: Erase one file, a group of files, or entire subdirectories

Format: DEL [*ranges*] [/= /A:[[-|+]rhsadecijopt /E /F /I"*text*" /K /L /N[defjnstz] /O:[-]acdeginorstuz /P /Q /R /S[[+]n] /T /W[n] /X /Y /Z] [@*file*] *file*...

file The file, subdirectory, or list of files or subdirectories to erase.
@file A text file containing the names of the files to delete, one per line (see @file lists for details).

/A: (Attribute select)
/B (Delete after reboot)
/E (No error messages)
/F(orce delete)
/I (match descriptions)
/K (no Recycle Bin)
/L (delete symlinks)
/N (Disable)
/O:... (Order)
/P(rompt)
/Q(uiet)
/R(ecycle bin)
/S(ubdirectories)
/T(otal)
/W(ipe)
/X (remove empty subdirectories)
/Y(es to all prompts)
/Z(ap hidden and read-only files)

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Internet

Can be used with FTP/HTTP Servers.

Usage

DEL and ERASE are synonyms. You can use either one. In the description below, every reference to DEL applies equally to ERASE. If you don't specify any arguments, DEL will display its command dialog.

Use the DEL command with caution. The files and subdirectories that you erase may be impossible to recover without specialized utilities and a lot of work.

To erase a single file, simply enter the file name:

```
del letters.txt
```

You can also erase multiple files in a single command. For example, to erase all the files in the current directory with a *.BAK* or *.PRN* extension:

```
del *.bak *.prn
```

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When you use DEL on an LFN drive, you must quote any file names which contain white space or special characters.

To exclude files from a DEL command, use a file exclusion range. For example, to delete all files in the current directory except those whose extension is *.TXT*, use a command like this:

```
del /[!*.TXT] *
```

When using exclusion ranges or other more complex options you may want to use the **/N** switch first, to preview the effects of the DEL without actually deleting any files.

If you enter a subdirectory name, or a filename composed only of wildcards (* and/or ?), DEL asks for confirmation (Y or N) unless you specified the /Y option. If you respond with a Y, DEL will delete all the files in that subdirectory (hidden, system, and read-only files are only deleted if you use the /Z option). NOTE: The Windows command processor, CMD, behaves the same way but does not ask for confirmation if you use /Q to delete files quietly. If you want ***TCC*** to follow CMD's approach and skip the confirmation prompt when /Q is used, set the Prompt on Wildcard Deletes configuration option. Use caution if you disable this option, as this will allow DEL /Q to delete an entire directory without prompting for confirmation.

DEL displays the amount of disk space recovered, unless the /Q option is used (see below). It does so by comparing the amount of free disk space before and after the DEL command is executed. This amount may be incorrect if you are using a deletion tracking system which stores deleted files in a hidden directory, or if another program performs a file operation while the DEL command is executing.

Remember that DEL removes file descriptions along with files. Most deletion tracking systems will not be able to save or recover a file's description, even if they can save or recover the data in a file. This applies to the use of DEL with the Windows Recycle Bin, too - the description will be lost.

When a file is deleted without using the Recycle Bin, its disk space is returned to the operating system for use by other files. However, the contents of the file remain on the disk until they are overwritten by another file. If you wish to obliterate a file or wipe its contents clean, use the /W option, which overwrites the file before deleting it. Use this option with caution! Once a file is obliterated, it is impossible to recover. Remember: /W overrides using the Recycle Bin.

DEL returns a non-zero exit code if no files are deleted, or if another error occurs. You can test this exit code with the %_? internal variable, and use it with conditional commands (**&&** and **||**).

Use caution when using wildcards with DEL on LFN drives, because ***TCC***'s wildcard matching can match both short and long filenames. This can delete files you did not expect; see LFN File Searches for additional details.

If you are deleting a stream, DEL will check for a symlink and delete the stream from the linked file. (Windows does not support deleting a symlink'd stream.)

DEL sets three internal variables:

%_del_dirs	The number of directories deleted
%_del_files	The number of files deleted
%_del_errors	The number of errors

- **Recycle Bin**

When you delete files with DEL, ***TCC*** does not move the deleted files to the Windows Recycle Bin by default. You can change this default with the Delete to Recycle Bin configuration option. If you have

disabled the recycle bin, you can override the setting and place deleted files in the recycle bin with the /R option:

```
del /r letters.txt
```

If you have enabled Recycle Bin support, but want to override the default setting on a one-time basis, and delete some files without placing them in the recycle bin, use the /K option:

```
del /k letters.txt
```

You can also exclude files from the Recycle bin, even if Delete to Recycle Bin is enabled, or if the command use the /R option, with the RecycleExclude environment variable.

If you are deleting to the recycle bin, the DEL result will say "xx files sent to the recycle bin" instead of "xx files deleted".

- **FTP Usage**

If you have appropriate permissions, you can delete files on FTP servers. For example:

```
del ftp://ftp.abc.com/index
```

You can also use the IFTP command to start an FTP session on a server and then use one of the following syntax examples:

```
del ftp:path/*.txt
del ftp:/path/*.txt
```

The first syntax will normally be interpreted by the server as relative to the path you specified when you used the `IFTP` command to start the FTP session. The second syntax, with a slash before the path name, is interpreted as starting from the root.

- **NTFS File Streams**

DEL supports file streams on NTFS drives. You can delete an individual stream by specifying the stream name, for example:

```
del streamfile:s1
```

If no stream name is specified the entire file is deleted, including all streams.

See NTFS File Streams for additional details.

Options

/= Display the DEL command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Delete only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

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/B If DEL can't delete the file (for example, if access is denied) it will schedule it to be deleted at the next reboot.

/E Suppress all non-fatal error messages, such as "File Not Found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files and aliases.

/F This option has the same effect as /Z (see below): it deletes read-only, hidden, and system files as well as normal files.. It is included for compatibility with CMD.

/I"text" Select filenames by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**.

/K Physically delete files instead of sending them to the Windows Recycle Bin.

/L Delete symlinks instead of their contents.

/N Do everything except actually delete the file(s). This is useful for testing the result of a DEL.

A **/N** with one or more of the following arguments has an alternate meaning:

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors
- **f** Don't display the bytes freed in the summary
- **j** Skip junctions (when used with /S)
- **n** Don't update the file descriptions
- **s** Don't display the summary
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*
- **z** Skip system directories (when used with /S)

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

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/P Prompt the user to confirm each erasure. Your options at the prompt are explained in detail under Page and File Prompts.

/Q Don't display filenames as they are deleted, or the number of files deleted or bytes freed. If Prompt on Wildcard Deletes is disabled then **/Q** also disables the normal confirmation prompt when performing wildcard deletions (*e.g.* DEL *), for compatibility with CMD. Use caution if you disable Prompt on Wildcard Deletes, as this will allow DEL /Q to delete an entire directory without prompting for confirmation. See also /T.

/R Delete files to the Windows Recycle Bin.

/S Delete the specified files in this directory and all of its subdirectories. This is like a GLOBAL DEL, and can be used to delete all the files in a subdirectory tree or even a whole disk. Do not use `/S` with @file lists. See @file lists for details.

If you specify a number after the /S, DEL will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, DEL will not delete any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not delete anything in *\a* or *\a\b*.

/T Don't display filenames as they are deleted, but display the total number of files deleted plus the amount of free disk space recovered.

/W[n] Overwrite the file contents using the DoD 5220.22-M (E) standard for secure deletion. (This overwrites every byte in the file with different values). You can optionally specify the number of passes (1-999); the default is 3. See also DelWipePasses. Use this option to completely obliterate a file's contents from your disk. Once you have used this option it is impossible to recover the file even if you are using an undelete utility, because the contents of the file are destroyed before it is deleted. /W will override a /R.

/X Removes empty subdirectories (only useful when used with /S). If DEL deletes one or more directories, they will be removed automatically from the extended directory search database. DEL will display the directories being removed (with a trailing \), and the total number of directories removed.

/Y The reverse of /P . It assumes a Y response to everything, including deleting an entire subdirectory tree. ***TCC*** normally prompts before deleting files when the name consists only of wildcards or a subdirectory name (see above); /Y overrides this protection and should be used with extreme caution!

/Z Delete read-only, hidden, and system files as well as normal files. Files with the read-only, hidden, or system attribute set are normally protected from deletion; /Z overrides this protection, and should be used with caution. Because EXCEPT works by hiding files, /Z will override an EXCEPT command. However, files specified in a file exclusion range will not be deleted by DEL /Z.

For example, to delete the entire subdirectory tree starting with `C:\UTIL`, including hidden and read- only files, without prompting (use this command with CAUTION!):

```
del /s /x /y /z c:\util\
```

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4.3.37 DELAY

Purpose: Pause for a specified length of time

Format: DELAY [/B /F /M *time hh:mm:ss*]
DELAY UNTIL [*yyyy-mm-dd*] *hh:mm*[:*ss*]

time The number of seconds or milliseconds to delay
hh:mm:ss Wait for the specified interval, or (UNTIL) the specified time

/B(reak enabled) /M(illiseconds)
/F(lush keyboard)

Usage:

DELAY is useful in batch file loops while waiting for something to occur. For example, to wait for 10 seconds:

```
delay 10
```

DELAY is most useful when you need to wait a specific amount of time for an external event, or check a system condition periodically. For example, this batch file checks the battery status (as reported by your Advanced Power Management drivers) every 15 seconds, and gives a warning when battery life falls below 30%:

```
do forever
   iff %_apmlife lt 30 then
      beep 440 4 880 4 440 4 880 4
      echo Low Battery!!
   endiff
   delay 15
enddo
```

The maximum ***time*** value is limited to about 585 million years in Windows. If you don't enter a ***time***, the default is 1 second.

You can optionally wait until the specified date and time. If no date is specified, DELAY defaults to today.

TCC uses the minimum possible processor time during a DELAY, in order to allow other applications full use of system resources.

You can cancel a delay by pressing **Ctrl-C** or **Ctrl-Break**.

Options:

/B Allows terminating a DELAY by pressing a key.

/F Flush the keyboard buffer when DELAY ends.

/M Count by milliseconds instead of seconds. Normally only used for delays of less than 1 second.

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4.3.38 DESCRIBE

Purpose: Create, modify, or delete file and subdirectory descriptions

Format: Creating or modifying descriptions
DESCRIBE [*ranges*... /I"*text*"] [/= /A:atrlst /O:[-]acdeginorstuz /C*n* /R /W] [@file] *file* [[/D]"*description*"]] ...]

Description file updating
DESCRIBE /U [[*d:\path\descript.ion*] ...]]

file	The file or files to operate on.
@file	A text file containing the names of the files to describe, one per line (see @file lists for details).
"description"	The description to attach to the file.

/A: (Attribute select)
/D(escription follows)
/Cn (convert description format)
/I (match description)
/O:... (Order)
/R(emove)
/U(pdate) descriptions file
/W (description dialog)

See also: @DESCRIPT, DIR, and SELECT

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

DESCRIBE adds descriptions to files and subdirectories. (Volume root directories cannot have descriptions.) The descriptions are displayed by DIR in single-column mode and by SELECT, and can be retrieved using the @DESCRIPT function. Descriptions let you identify your files in much more meaningful ways than you can in a filename alone.

If you don't specify any arguments, DESCRIBE will display its command dialog.

You enter a description on the command line by typing the DESCRIBE, the filename, and the description in double quotes, like this:

```
describe memo.txt "Memo to Bob about party"
```

If you don't put a description on the command line, DESCRIBE will prompt you for it:

```
describe memo.txt
Describe "memo.txt" : Memo to Bob about party
```

If you use wildcards or multiple filenames with the DESCRIBE command and don't include the description text, you will be prompted to enter a description for each file. If you do include the description on the command line, all matching files will be given the same description.

When you use DESCRIBE on an LFN drive, you must quote ***file*** if it contains white space or special characters.

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If you enter a quoted description on the command line, and the text matches the name of a file in the current directory, ***TCC*** will treat the string as a quoted file name, not as description text as you intended. To resolve this problem use the **/D** switch immediately prior to the quoted description (with no intervening spaces). For example, if the current directory contains the files *DATA.TST* and *"Test File"*, the first of these commands will work as intended, but the second will not (in the second example the string "test file" will be treated as a second file name, when it is intended to be description text):

```
describe data.tst /D"test file"     correct command
describe data.tst "test file"       incorrect command
```

On LFN drives you will not see file descriptions in a normal DIR display, because DIR must leave space for the long filenames. To view the descriptions, use DIR /Z to display the directory in FAT format. See DIR for more details.

Each description can be up to 511 characters long. You can change this limit with the Maximum Length configuration option. In order to fit your descriptions on a single line in a standard DIR display, keep them to 40 characters or less (longer descriptions are wrapped in the DIR output). DESCRIBE can edit descriptions longer than Maximum Length (up to a limit of 511 characters), but will not allow you to lengthen the existing text.

The descriptions are stored either in the NTFS SummaryInformation stream (if you have set the NTFS Descriptions configuration option), or in each directory in a hidden file called *DESCRIPT.ION*. Use the ATTRIB command to remove the hidden attribute from this file if you need to copy or delete it. *DESCRIPT.ION* is always created as a hidden file, but will not be rehidden by ***TCC*** if you remove the hidden attribute.

You can change the description file name with the Description Filename configuration option or the SETDOS /D command, and retrieve it with the %_DNAME internal variable. Use caution when changing the description file name, as changing the name from the default will make it difficult to transfer file descriptions to another system.

The description file is modified appropriately whenever you perform an internal command which affects it (such as COPY, MOVE, DEL, or RENAME), but not if you use an external program (such as XCOPY or Explorer). You can disable description processing with the Enable Descriptions configuration option, or with SETDOS /D.

When you COPY, MOVE or REN files between two directories, both of which have descriptions, and you use switches which enable processing of hidden files (or you have removed the hidden attribute from DESCRIPT.ION), you must use caution to avoid overwriting existing file descriptions in the ***destination*** directory with the DESCRIPT.ION file from the ***source*** directory. See the notes under the **Advanced Features** sections of COPY and MOVE for additional details.

If you disable descriptions with the SETDOS /D0 option, DESCRIBE will return with an error message.

Options:

/= Display the DESCRIBE command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **`/A:`**. Do not use **`/A:`** with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

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/C*n dir* Convert descriptions between DESCRIPT.ION and the NTFS file summary formats. The argument following /C*n* is the start directory; DESCRIBE will convert the descriptions in that directory and all of its subdirectories.

/C0	convert descriptions from NTFS to DESCRIPT.ION
/C1	convert descriptions from DESCRIPT.ION to NTFS

/D"description**"**
The quoted string following the **/D** switch without any separation is used as a description, not a file name, avoiding ambiguity in the meaning of quoted strings. See the **Usage** section above for details.

/I"text**"**
Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use **/I** with @file lists. See @file lists for details.

/O:... Sort the files before processing. You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

n	Sort by filename and extension, unless **e** is explicitly included. This is the default.
-	Reverse the sort order for the next sort key
a	Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
c	Sort by compression ratio
d	Sort by date and time (oldest first); also see **/T:acw**
e	Sort by extension
g	Group subdirectories first, then files
i	Sort by description
o	Sort by owner
r	Reverse the sort order for all options
s	Sort by size
t	Same as **d**
u	Unsorted
z	Same as **s**

/R Remove the old description after converting (only valid when used with /C*n*).

/U Update the *DESCRIPT.ION* file (or the file specified by the Description Filename configuration option), deleting the entries for any nonexistent files. If no filename is supplied, DESCRIBE will process *DESCRIPT.ION* in the current directory. Otherwise, DESCRIBE will process *DESCRIPT.ION* in the specified path(s). This option may not be used in conjunction with other DESCRIBE options.

/W Description editor dialog for creating / editing / deleting descriptions.

4.3.39 DESKTOP

Purpose: Create or switch desktops

Format: DESKTOP [/C [/N] *newdesktopname* [,*startapp*]]

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DESKTOP *desktopname*

startapp The program to launch in the new desktop.

/C(reate) /N(o activate)

Usage:

DESKTOP will create a new Windows desktop, or switch to an existing desktop.

You can specify the program DESKTOP should launch in the new desktop. The default is USERINIT.EXE (which will launch Windows Explorer).

If you don't specify any arguments, DESKTOP displays all of the existing desktops.

NOTE: This command is deprecated, because DESKTOP does not support the Virtual Desktops introduced in Windows 10. Use VDESKTOP to manage Virtual Desktops.

Options:

/C Create a new desktop.

/N Don't switch to the new desktop.

4.3.40 DETACH

Purpose: Start a console (character-mode) application in detached mode

Format: DETACH [/Q] *command*

/Q(uiet)

command The name of a command to execute, including an optional drive and path specification and any parameters. The name must be enclosed in double quotes if it contains any spaces.

See also: START and TASKEND.

Usage:

When you start a program with DETACH, that program cannot use the keyboard, mouse, or video display. It is "detached" from the normal means of user input and output. However, you can redirect the program's standard I/O to other devices if necessary, using redirection symbols. In most cases, you should only DETACH text-mode programs, since most graphical applications cannot run without a screen or keyboard, or have their input and output redirected.

The ***command*** can be an internal command, external command, alias, or batch file. If it is not an external command, ***TCC*** will detach a copy of ***TCC*** to execute the command.

Once the program has started, ***TCC*** returns to the prompt immediately. It does not wait for a detached program to finish.

The Process ID of the detached program is returned in the _DETACHPID variable.

You can use the TASKEND command to stop a detached program which does not terminate on its own.

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Examples:

The following command will detach a copy of ***TCC*** to run the batch file *XYZ.BTM*:

```
detach xyz.btm
```

You can also include any parameters or command line switches which the command knows how to interpret:

```
detach "xyz.btm Monday Nebraska"
```

If you prefer, you can use the Linux syntax of putting a trailing **&** on the command line instead of specifying DETACH. (***TCC*** will convert it to DETACH before executing the command.)

```
xyz.btm &
```

Options:

/Q Don't display the new process's ID.

4.3.41 DIFFER

Purpose: Compare directories

Format: DIFFER [*ranges*] [/= /A:[[-|+]rhsadecijopt /A /C /D /N[ejs] /S *source target*

source - source directory
target - target directory

/A:... (Attributes)
/A (Added files)
/C (Changed files)
/D (Deleted files)
/N (disable)
/S[n] (Subdirectories)
/SHAx (Hash type)

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

DIFFER will compare two directories and display files that have been added, changed, or deleted. If you don't specify the /A, /C, and/or /D options, DIFFER will prefix the line with a [*] for changed files, [+] for added files, and [-] for deleted files.

DIFFER will not by default search *target* to see if there are additional directories that are not in *source*. You can either reverse the source & target, or specify the /A:D option if you want to find new target subdirectories.

Examples:

Compare the directories C:\DEV and D:\DEV (and their subdirectories) and display the differences:

```
differ /S /SHA256 c:\dev d:\dev
```

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Options

/= Display the DIFFER command dialog to help you set the directory and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Compare only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:.**

/A Only look for files that have been added to the target directory.

/C Only look for files that have been changed in the target directory.

/D Only look for files that have been deleted from the target directory,

/N A **/N** with one or more of the following arguments has an alternate meaning:

e	Don't display errors
j	Skip junctions (when used with /S)
s	Don't display the summary

/S Also compare subdirectories in *source* and *target*. If you specify a number after the **/S**, DIFFER will limit the subdirectory recursion to that depth. For example, if you have a directory tree "\a\b\c\d\e", **/S2** will only compare the "a", "b", and "c" directories.

/SHAx Hash type to use for the file comparison. You can use /SHA1, /SHA256, or /SHA512. If you don't specify a hash type, then DIFFER will compare the file times (which is much faster, but can't determine that two files are identical if the date/times are different).

4.3.42 DIR

Purpose: Display information about files and subdirectories

Format: DIR [*ranges*] [*options*] [*file*...]

ranges	one or more ranges
options	one or more file selection or report format options
file	The file, directory, or list of files or directories to display.

/1	1 column output	/L	Lower case
/2	2 column output	/M	suppress footer
/4	4 column output	/N[desfhjlmvz]	New format or disable options
/:	show streams	/O	Order
/A	Attribute select	/P[*n*]	Pause
/B	Bare (name only)	/Q	show owner
/C	show Compression	/R	disable wrap
/CD:...	COLORDIR string	/Sn	show Subdirectories to depth ***n***
/D	Disable color coding	/T	show aTtributes
/E	upper case	/T:	time type
/F	Full path	/U	show summary information
/G[:n]	allocated size	/V	Vertical sort
/H	Hide dots	/W	Wide
/HL	Show hard links	/X	show short names
/I"text"	description range	/Z	use FAT format
/J	Justify names	/=	command dialog

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/K	suppress header	/\	Trailing \ for directory names

See also: ATTRIB, DESCRIBE, PDIR, SELECT, and SETDOS.

File Selection

Supports command dialog, extended wildcards, ranges, multiple file names, and include lists.

Internet: Can be used with FTP servers.

Usage:

DIR can be used to display information about files from one or more directories (local or remote), in a wide range of formats. Depending on the options chosen, you can display the file name, attributes, and size; the time and date of the last change to the file; the file description; and the file's compression ratio. You can also display information in 1, 2, 4, or 5+ columns, sort the files several different ways, use color to distinguish file types, and pause after each full screen.

If you want to produce customized output that will be subsequently parsed by another program or batch file, or if you need a special-purpose directory display, see the PDIR command. DIR and PDIR are related, but they do not have identical switches and they are not intended to produce identical output.

The various DIR displays are controlled through options or switches. The best way to learn how to use the many options available with the DIR command is to experiment. You will soon know which options you want to use regularly. You can select those options permanently by using the ALIAS command.

For example, to display all the files in the current directory, in 2 columns, sorted vertically (down one column then down the next), and with a pause at the end of each page:

```
dir /2/p/v
```

To set up this format as the default, using an alias:

```
alias dir=*dir /2/p/v
```

When you use DIR on an LFN drive, you must quote any file names which contain white space or special characters.

DIR sets three internal variables:

%_dir_dirs	The number of directories displayed
%_dir_files	The number of files displayed
%_dir_errors	The number of errors

The following sections group DIR's features together in several categories. Many of the sections move from a general discussion to more technical material. If you find some of the information in a category too detailed for your needs, feel free to skip to the beginning of the next section. The sections are:

- Selecting Files
- Default DIR Output Format
- Switching Formats
- Multiple Column Displays
- Color-Coded Directories
- Redirected Output
- Other Notes
- Options

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- FTP usage

Selecting Files

DIR can display information about a single file or about several, dozens, hundreds, or thousands of files at once. To display information about a single file, just add the name of the file to the DIR command line:

```
dir january.wks
```

The simplest way to view information about several files at once is to use wildcards. DIR can work with the normal wildcard characters (* and ?) and the extended wildcards. For example to display all of the *.WKS* files in the current directory:

```
dir *.wks
```

To display all *.TXT* files whose names begin with **A**, **B**, or **C**:

```
dir [abc]*.txt
```

If you don't specify a filename, DIR defaults to ***** on LFN drives, and ***.*** on drives which do not support long file names. This default displays all non-hidden files and subdirectories in the current directory. If you specify a filename for a **non-LFN** drive which includes some wildcards, and does not include an extension, DIR will append **.*** to it to match all extensions.

If you link two or more filenames together with spaces, DIR will display all of the files that match the first name and then all of the files that match the second name. You may use a different drive and path for each filename. This example lists all of the *.WKS* and then all of the *.WK1* files in the current directory:

```
dir *.wks *.wk1
```

If you use an include list to link multiple filenames, DIR will display the matching filenames in a single listing. Only the first filename in an include list can have a path; the other files must be in the same path. This example displays the same files as the previous example, but the *.WKS* and *.WK1* files are intermixed:

```
dir *.wks;*.wk1
```

You can include files in the current or named directory plus all of its accessible subdirectories by using the **/S** option. This example displays all of the *.WKS* and *.WK1* files in the D:\DATA directory and each of its subdirectories:

```
dir /s d:\data\*.wks;*.wk1
```

You can also select files by their attributes by using the **/A** option. For example, this command displays the names of all of the subdirectories of the current directory:

```
dir /a:d
```

Finally, with the **/I** option, DIR can select files to display based on their descriptions (see DESCRIBE for more information on file descriptions). DIR will display a file if its description matches the text after the **/I** switch. The search is not case sensitive. You can use wildcards and extended wildcards as part of the text. For example, to display any file described as a "Test File" you can use this command:

```
dir /i"test file"
```

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If you want to display files that include the words "test file" anywhere in their descriptions, use extended wild cards like this:

```
dir /i"*test file*"
```

To display only those files which do not have descriptions, use:

```
dir /I"[]"
```

In addition, you can use ranges to select or exclude specific sets of files. For example, to display all files modified in the last week, all files except those with a *.BAK* extension, and all files over 500 KB in size:

```
dir /[d-7]
dir /[!*.bak]
dir /[s500K]
```

You can mix any of these file selection techniques in whatever ways suit your needs.

Default DIR Output Format

DIR's output varies based on the type of volume or drive on which the files are stored. If the volume supports long file names, the default DIR format contains 4 columns: the date of the last file modification or write, the time of last write, the file size in bytes, and the file name. The name is displayed as it is stored on the disk, in upper, lower, or mixed case. DIR will wrap filenames from one line to the next if they are too long to fit the width of the display. The standard output format is:

```
 Volume in drive C is unlabeled      Serial number is 3aaf:c891
 Directory of  C:\release\version12\*

2018-08-30   0:39         <DIR>    .
2018-08-30   0:39         <DIR>    ..
2018-08-25  11:30         <DIR>    tcmd
2018-08-25  23:07       4,801,840  tcmd.exe
```

(See Switching Formats below for information on changing the standard long filename format to allow room for file descriptions.)

On FAT volumes which do not support long file names, the default DIR format contains 5 columns: the file name, the file size in bytes, the date of the last write, the time of the last write, and the file's description. File names are listed in lower-case; directory names in upper case:

```
Volume in drive C is C - BOOTUP    Serial ...
 Directory of  C:\*

.           <DIR>       8-24-18  12:17
..          <DIR>       8-24-18  12:17
TEST         <DIR>       8-01-18  16:21
jpstree.idx    196967    8-28-18  17:57 JP fuzzy directory index
```

DIR's output is normally sorted by name, with directories listed first. You can change the sort order with the **/O** option. For example, these two commands sort the output by date. The first command lists the oldest file first; the second command lists the oldest file last:

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```
dir /o:d
dir /o:-d
```

When displaying file descriptions, DIR wraps long lines to fit on the screen. DIR displays a maximum of 40 characters of text in each line of a description (unless your screen width allows a wider display). If you disable description wrapping with the **/R** option, the description is truncated at the right edge of the screen, and a right arrow is added at the end of the line to alert you to the existence of additional description text.

DIR's default output is sorted. It displays directory names first, with "<DIR>" inserted instead of a file size, and then filenames. DIR assumes that sequences of digits should be sorted numerically (for example, the file *DRAW2* is listed before *DRAW03* because 2 is numerically smaller than 03), rather than strictly alphabetically (where *DRAW2* would come second because "2" follows "0" in alphanumeric order). You can change the sort order with the **/O** option. When DIR displays file names in a multi-column format, it sorts file names horizontally unless you use the **/V** option to display vertically sorted output.

DIR's display can be modified in many ways to meet different needs. Most of the following sections describe the various ways you can change DIR's output format.

Switching Formats

On volumes which support long file names, you can force DIR to use a FAT-like format (file name first, followed by file information) with the **/Z** option. If necessary, DIR /Z truncates long file names on LFN drives, and adds a right arrow to show that the name contains additional characters.

The standard LFN output format does not provide enough space to show descriptions along with file names. Therefore, if you wish to view file descriptions as part of the DIR listing on a volume which supports long file names, you must use the **/Z** option.

DIR will display the alternate, short file names for files with long file names if you use the **/X** option. Used alone, **/X** causes DIR to display names in 2 columns after the size, time, and date: one column for alternate or short file names and the other for long file names. If a file does not have a short or alternate name which is different from the long filename, the first filename column is empty.

If you use **/X** and **/Z** together, DIR will display the short or alternate file names in the FAT-style display format.

If you use the **/B** option, DIR displays just file names and omits the file size, time stamp, and description for each file, for example:

```
[c:\] dir w* /b
WINDOWS
WINNT
WINALIAS
WINENV.BTM
.....
```

There are several ways to modify the display produced by **/B**. The **/F** option is similar to **/B**, but displays the full path and name of each file, instead of just its name. To view the same information for a directory and its subdirectories use **/B /S** or **/F /S.** You can use **/B /X** to display the short name of each file, with no additional information.

Multiple Column Displays

DIR has three options, **/2**, **/4**, and **/W**, that create multi-column displays.

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The **/2** option creates a 2-column display. On drives which support long filenames, only the name of each file is displayed, with directory names placed in square brackets to distinguish them from file names. On drives which do not support long filenames, or when **/Z** or **/X** is used (see below), the display includes the short name, file size, and time stamp for each file.

The **/4** option is similar to **/2**, but displays directory information in 4 columns. On drives which do not support long filenames, or when **/Z** or **/X** is used (see below), the display shows the file name and the file size in kilobytes (KB) or megabytes (MB), with "<D>" in the size column for directories.

The **/W** option displays directory information in 5 or more columns, depending on your screen width. Each entry in a DIR /W display contains either the name of a file or the name of a directory. Directory names are placed in square brackets to distinguish them from file names.

If you use one of these options on a drive that supports long file names, and do not select an alternate display format with **/Z** or **/X**, the actual number of columns will be based on the longest name to be displayed and your screen width, and may be less than the number you requested (for example, you might see only three columns even though you used **/4**). If the longest name is too long to fit in on a single line the display will be reduced to one column, and each name will be wrapped, with "extra" blank lines added so that each name takes the same number of lines.

On LFN drives you can use **/Z** with any of the multi-column options to create a FAT-format display, with long names truncated to fit in the available space. If you use **/X**, the FAT-format display is also used, but short names are displayed (rather than truncated long names). The following table summarizes the effects of different options when using ***TCC*** on an LFN drive:

	default or /1	**/2** or **/4 columns**	**/W (wide)**
Normal	date, time, size, LFN	2 - 4 columns, LFNs only	No. of columns based on longest LFN
/Z (FAT)	truncated LFN, size, date, time	2 - 4 columns, truncated LFN plus date, time, size	5+ columns, truncated LFNs only
/X (SFN)	date, time, size, SFN, LFN	2 - 4 columns, SFNs plus date, time, size	5+ columns, SFNs only
/X /Z	SFN, size, date, time	(Same as /X)	(Same as /X)

Color-Coded Directories

DIR can display each file name and the associated file information in a different color, depending on the file's extension, attributes, or matching range.

To choose the display colors, you must either use the SET command to create an environment variable called COLORDIR, or use the Directory Colors configuration option. If you use neither the variable nor the configuration option, DIR will use the default screen colors for all files.

If you use the COLORDIR variable, it will override the Directory Colors option. You may find it useful to use the COLORDIR variable for experimenting, then to set permanent directory colors with the Directory Colors option.

The format for both the COLORDIR environment variable and the Directory Colors option is:

```
ext ... :ColorName; ...
```

where "ext" is either a file extension (which may include wildcards), one or more of the following file types:

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type	*files affected*
ARCHIVE	Files with archive attribute set (modified since the last backup)
COMPRESSED	Compressed files
DIRS	Directories
ENCRYPTED	Encrypted files
HIDDEN	Hidden files
JUNCTION	Junctions or symbolic links
NORMAL	File with no attribute set
NOTINDEXED	Files whose content is not indexed
OFFLINE	Offline files
RDONLY	Read-only files
SPARSE	Sparse files
SYSTEM	System files
TEMPORARY	temporary files

or a range (size, date, time, description, owner, and/or exclusion), or a file subsystem type:

EXETYPE_WIN32GUI	Windows x86 GUI app
EXETYPE_WIN32CUI	Windows x86 console app
EXETYPE_WIN64GUI	Windows x64 GUI app
EXETYPE_WIN64CUI	Windows x64 console app
EXETYPE_DOS	DOS (16-bit) app (obsolete)
EXETYPE_POSIX	POSIX app (obsolete)
EXETYPE_EFI	EFI app

and "ColorName" is any valid color name (see Colors and Color Names for information on color names). Specifying a subsystem type will significantly slow down the directory display, as ***TCC*** has to read the header of each file to find a match.

Note that if a file uses one of the reserved file type names shown above as its extension (e.g. *xyz.hidden*) , that file will receive the color defined for the file type.

Unlike most color specifications, the background portion of the color name may be omitted for directory colors. If you don't specify a background color, DIR will use the current screen background color.

For example, to display *.COM* and *.EXE* files in red on the current background, *.C* and *.ASM* files in bright cyan on the current background, read-only files in green on white, and everything else in the default color:

```
set colordir=exe:red; c asm:bright cyan; rdonly:green on white
```

To display 32-bit console apps in bright green and 64-bit console apps in bright red:

```
set colordir=EXETYPE_WIN32CUI:bri green;EXETYPE_WIN64CUI:bri red
```

Extended wildcards can be used in directory color specifications. For example, to display *.BAK*, *.BAX*, and *.BAC* files in red, and everything else in the default color:

```
set colordir=BA[KXC]:red
```

You can combine attribute tests with the **.and.** / **.or.** / **.xor.** / **.not.** keywords. For example, to display directories that are also hidden in blue:

```
set colordir=dirs .and. hidden:blue
```

COLORDIR processes the line from left to right, and does not support parentheses.

Redirected Output

The output of the DIR command, like that of most other internal commands, can be redirected to a file, printer, serial port, or other device. However, you may need to take certain DIR options into account when you redirect DIR's output.

DIR wraps both long file names and file descriptions at the width of your display. Its redirected output will also wrap at the screen width. Use the **/R** option if you wish to disable wrapping of long descriptions.

If you redirect a color-coded directory to a file or a character device, DIR will remove the color data as it sends the directory information to a file.

To redirect DIR output to the clipboard, use **CLIP:** as the output device name, for example:

```
dir *.exe > clip:
```

FTP Usage

You can display directories on FTP servers. For example:

```
dir ftp://ftp.microsoft.com/
```

You can also use the IFTP command to start an FTP session on a server, and then use a simplified syntax to specify the files and directories you want.

Other Notes

If you have selected a specific country code for your system, DIR will display the date in the format for that country. The default date format is U.S. (mm-dd-yy). The separator character in the file time will also be affected by the country code. Thousands and decimal separators in numeric displays are affected by the country code, and by the ThousandsChar and DecimalChar settings selected with the configuration dialogs or in the .INI file.

DIR can generally display any file date between January 1, 1980 and December 31, 2099 if the date is supplied properly by the operating system.

If you are using NTFS disk compression, you can use the **/C** switch to view the amount of compression achieved for each file. When you do, the compression ratio is displayed instead of the file's description. You can also sort the display by compression ratios with the **/O:c** switch. Details for both switches are in the Options section below. **/C** and **/O:c** will be ignored for uncompressed drives. **/C** will not display compression ratios on drives that support long file names unless you also use **/Z** to switch to the old-style short filename format.

If the OFFLINE attribute is set, DIR will display the file size enclosed in parentheses (for compatibility with CMD).

Options:

Options on the command line apply only to the filenames which follow the option, and options at the end of the line apply to the preceding filename only. This allows you to specify different options for different

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groups of files, yet retains compatibility with the traditional DIR command when a single filename is specified.

/= Display the DIR command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/ Display directory names with a trailing \.

/1 Single column display -- display the filename, size, date, and time; also displays the description on drives which do not support long filenames. This is the default. If **/T** is used the attributes are displayed instead of the description; if **/C** or **/O:c** is used the compression ratio is displayed instead of the description. This option is most useful if you wish to override a default **/2**, **/4**, or **/W** setting stored in an alias. On NTFS drives, single column displays will also show the target of symbolic links following the filename.

/2 Two column display -- display just the name (on LFN drives), or display the filename, size, date, and time on other drives. See **Multiple Column Displays** above for more details.

/4 Four column display -- display just the name (on LFN drives); or display the filename and size, in K (kilobytes) or M (megabytes) on other drives, with files between 1 and 9.9 megabytes in size displayed in tenths (*i.e.*, "2.4M"). See **Multiple Column Displays** above for more details.

/: Display file stream names and sizes on NTFS volumes. When combined with the /B or /F options, the size is omitted.

When **/:** is used in conjunction with **/B** (Bare), the file name is displayed on the first line, then any streams, indented two spaces, on subsequent lines:

```
c:\test\myfile.dat
   xyz:$DATA
   abc:$DATA
```

When **/:** is used in conjunction with **/F** (Full path), the file name is displayed on the first line, then any streams are appended to the filename on subsequent lines:

```
c:\test\myfile.dat
c:\test\myfile.dat:xyz
c:\test\myfile.dat:abc
```

/A[:] Display only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Suppress the header and summary lines, and display file or subdirectory names only, in a single column. This option is most useful when you want to redirect a list of names to a file or another program. If you use **/B** with **/S**, DIR will show the full path of each file (the same display as **/F**) instead of simply its name and extension. If you use **/B** with **/X** on an LFN drive, DIR will display the short name of each file instead of the long name. **/B** also sets **/H.**

/B1 will display relative paths when used with /S. (Normally, /B shows the full pathname for the file.)

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/C Display per-file and total compression percentage on NTFS drives with compression enabled. **/C** only works in single-column mode; it is ignored if **/2**, **/4**, or **/W** is used.

/CD: Define a custom directory colorization string to use instead of the COLORDIR environment variable, or the ColorDir option in TCMD.INI.

/D Temporarily disable directory color coding. May be required when color-coded directories are used and DIR output is redirected to a character device like a serial port (*e.g.*, COM1). **/D** is not required when DIR output is redirected to a file.

/E Display filenames in upper case.

/F Display each filename with its drive letter and path in a single column, without other information. If you use **/F** with **/X**, the "short" version of the entire path is displayed.

/G[:n] Display the allocated disk space instead of the actual size of each file. You can optionally specify the disk cluster size to be used by /G. (DIR will normally query the system for the cluster size on the specified drive, but you can override with /G:n if you know that the returned info is incorrect, or if you want to find the size required if the specified files were moved to another device with a different cluster size.)

/H Suppress the display of the "**.**" and "**..**" directories.

/HL Show the hard links for files and directories. **/HL** can only be used in single-column mode.

/I"*text***"** Select filenames by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**.

The **/I** option may be used to select files even if descriptions are not displayed (for example, if **/2** is used). However, **/I** will be ignored if **/C** or **/O:c** is used.

/J Justify (align) filename extensions and display them in the FAT format. If on an LFN drive, you must also specify the **/X** and **/Z** options.

/K Suppress the header (disk and directory name) display.

/L Display file and directory names in lower case.

/M Suppress the footer (file and byte count totals) display.

/N Use the long filename display format, even if the files are stored on a volume which does not support long filenames. See also **/Z**.

A **/N** with one of the following arguments has an alternate meaning:

d Skip hidden directories (when used with /S)
e Don't display an error message if no files match
f Don't display "bytes free" in the summary
h Don't display the header
j Skip junctions (when used with /S)
l Don't display the link name for symbolic links
m:n Display a maximum of ***n*** directory entries
s Don't display the summary.
v Don't display the volume information.

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z Skip system directories (when used with /S)

/O Set the sorting order. You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio (the least compressed file in the list will be displayed first). For single-column directory displays in the short filename format, the compression ratios will be used as the basis of the sort and will also be displayed. For wider displays (**/2**, **/4**, and **/W**) and displays in LFN format, the compression ratios will be used to determine the order but will not be displayed. For information on supported compression systems see **/C** above.
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by file description (ignored if **/C** or **/O:c** is also used)
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **x** When combined with /S, sorts the results from all directories together and displays them in a single listing. (Unless you're also specifying /F, you probably won't get a comprehensible result.) Note that /O:x will turn off headers and footers.

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Q Display the file or directory owner (NTFS and remote directories only).

/R Forces long descriptions to be displayed on a single line, rather than wrapped onto two or more lines. Use **/R** when output is redirected to a character device, such as a serial port or the printer; or when you want descriptions truncated, rather than wrapped, in the on-screen display.

/S Display file information from the current directory and all of its accessible subdirectories. DIR will only display headers and summaries for those directories which contain files that match the filename(s), ranges, and attributes that you specify on the command line. DIR will display hidden subdirectories for compatibility with CMD.

If you specify a number after the /S, DIR will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, DIR will not display any filenames until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not display the contents of *\a* or *\a\b*.

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/T Display the filenames and attributes in the format **RHSADENTPCOIJ**, regardless of volume type:

R	Read-only	**A**	Archive
H	Hidden	**D**	Subdirectory
S	System	**C**	Compressed
E	Encrypted	**O**	Offline
N	Normal	**I**	Not content-indexed
T	Temporary	**L**	Junction or symbolic link
P	Sparse file		

Attributes which are set are represented by their letter, unset attributes by the _ (underscore) character.

If you wish to add another option after **/T**, you must start the next option with a forward slash. If you don't, ***TCC*** will interpret the **/T** as the **/T:{acw}** time display switch (see below) and the following character as a time selector. For example:

```
dir /tz          incorrect, will display an error
dir /t /z        correct
```

/T:a|c|w[u] Specify which of the date and time fields on a drive which supports long filenames should be displayed and used for sorting:

- **a** Last access date and time (on VFAT volumes access time is always midnight).
- **c** Creation date and time.
- **w** Last modification (write) date and time (default).

If you append a ***u*** after the field, DIR will display the file time in UTC.

/U Only display the number of files, the total file size, and the total amount of disk space used. Information on individual files is not displayed. **/U1** will display summaries for each directory, but no total summary for each parent directory. **/U2** displays the grand total only.

/V Display the filenames sorted vertically rather than horizontally (use with the /2, /4 or /W options).

/W Display filenames only, horizontally across the screen. On drives which do not support long filenames, or when used with **/Z** or **/X**, **/W** displays as many columns as it can fit into ***TCC*** window, using 16 characters in each column. Otherwise (*i.e.*, when long filenames are displayed) the number of columns depends on the width of the longest name in the listing. See **Multiple Column Displays** above for more details.

/X Display both the short name (8-character name plus 3-character extension) and the long name of each file on an LFN drive. In normal single-column output the short name is displayed first, followed by the long name. The short name column is left blank if the short name and long name are the same. On ***NTFS*** volumes this means case insensitive match, but on ***VFAT*** volumes this means case sensitive match (i.e., no lower case letters in the ***SFN***). /X also selects short filenames in the /2, /4, /B, /W , and /Z displays, and short file and path names in the /F display.

/Z Display filenames on LFN drives in the old-style format, with the filename on the left and the description (when available) on the right. Long names will be truncated to 12 characters unless /X is also used. If the name is longer than 12 characters, it will be followed by a ➔ "right arrow" symbol to show that one or more characters have been truncated. If a

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description file exists, /Z defaults to using the name of the . and .. directories as description for those entries

4.3.43 DIRHISTORY

Purpose: Display, add to, clear, or read the directory history list

Format: DIRHISTORY [/= /A *directory* /F /G /GL /L /LL /M /P /R *filename* /Tn]

directory The name of a directory to be added to the directory history.
filename The name of a file containing entries to be added to the directory history.

/A(dd)
/F(ree)
/G(lobal)
/GL (global list)
/L(ocal)
/LL (local list)
/M (number lines)
/P(ause)
/R(ead)
/T (display last n lines)

See also: HISTORY.

File Selection

Supports command dialog.

File Completion Syntax:

The default filename completion syntax is: **[/a] dirs [/r] * [1*] dirs**

Usage

Every time you change to a new directory or drive, ***TCC*** saves the previous directory in an internal directory history list. The directory history window allows you to use the list to return to a previous directory. See also: directory navigation.

The DIRHISTORY command lets you view and manipulate the directory history list directly. If no parameters are entered, DIRHISTORY will display the current directory history list:

```
dirhistory
```

With the options explained below, you can clear the list, add new directories to the list without changing to them, save the list in a file, or read a new list from a file.

The number of directories saved in the directory history list depends on the length of each directory name. The list size can be specified at startup with the Directory History Buffer Size configuration option. The default size is 4,096 characters.

Your directory history list can be stored locally (a separate list for each copy of ***TCC***) and/or globally (all copies of ***TCC*** share the same list). For details see the discussion of local and global history lists. If you use global lists, SHRALIAS can save the list when no copy of ***TCC*** is active, as long as you do not restart Windows.

NOTE: TCC as of version 26 supports simultaneous local and global directory history lists. This is for advanced users only; it is not generally recommended to have both types. If you have only a local directory history list or only a global directory history list, directory history recall will work the same as in previous versions. If you have both local and global directory history lists, searching backwards through the

directory history will first search the local list. If you reach the beginning of the local list, the next directory history entry returned will be from the end of the global list. If you search forwards through the global list, when you reach the end the next directory history entry returned will be the beginning of the local list. If you try to go beyond the beginning of the global list or the end of the local list ***TCC*** will beep.

When displaying, creating or deleting directory history entries, you can specify which list you want DIRHISTORY to search with the /GL or /LL options. When searching the directory history, ***TCC*** will look first in the local list (if it exists), and then in the global list (if it exists).

If you use the /G option to convert a local directory history list to a global directory history list, DIRHISTORY will not do the conversion if a global directory history list already exists (for example, in another ***TCC*** session or in SHRALIAS).

You can save the directory history list by redirecting the output of DIRHISTORY to a file. This example saves the history to a file called *DIRHIST* and reads it back again.

```
dirhistory > dirhist
    .....
dirhistory /r dirhist
```

Because the directory history stores each name only once, you don't have to delete its contents before reading back the file unless you want to delete the directories that were visited by the intervening commands.

TCC can also load and save the history list automatically if you use the Directory History File configuration option.

Options

/= Display the DIRHISTORY command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Add a directory to the directory history list.

/F Erase all entries in the directory history list.

/G Switch from a local to a global directory history list. If you already have a global directory history list (for example, in another ***TCC*** instance or in SHRALIAS), DIRHISTORY will not do the conversion.

/GL Read from and write to the global directory history list. If you have both local and global lists defined and do not specify /GL, DIRHISTORY will default to using the local list.

/L Switch from a global to a local directory history list.

/LL Read from and write to the local directory history list.

/M Number the lines when displaying the directory history list.

/P Wait for a key after displaying each page of the list. Your options at the prompt are explained in detail under Page and File Prompts.

/R Read the directory history from the specified file and append it to the list currently held in memory.

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/Tn Display the last n lines of the directory history. If n is negative, skip the first -n lines of the directory history.

4.3.44 DIRS

Purpose: Display the current directory stack

Format: DIRS [+n -n /M /P /Q] [*name*]

+n / -n Rotate the directory stack up or down ***n*** entries
name Display only directories which match *name*

/M (number lines)
/P(ause)
/Q(uiet)

See also: PUSHD, POPD, @DIRSTACK and Directory Navigation.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

The PUSHD command adds the current default drive and directory to the directory stack, a list maintained by ***TCC***. The POPD command removes the top entry of the directory stack and makes that drive and directory the new default. The DIRS command displays the contents of the directory stack, with the most recent entries last (*i.e.*, the next POPD will retrieve the last entry that DIRS displays).

The name to match can include wildcards.

The directory stack holds 16K characters, enough for 400+ typical drive and directory entries.

Examples:

To change directories and then display the directory stack:

```
[c:\] pushd c:\database
[c:\database] pushd d:\wordp\memos
[d:\wordp\memos] dirs
c:\
c:\database
```

You can optionally display only those directories in the stack which match a name. For example:

```
DIRS c:             (only display directories on the C: drive)
DIRS \\server\share    (only display directories on this UNC share name)
```

Options

/M Number the lines when displaying the DIRS list.

/P Wait for a key after displaying each page of the list. Your options at the prompt are explained in detail under Page and File Prompts.

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/Q Don't display the directory stack (only useful when combined with +n or -n).

4.3.45 DISKMONITOR

Purpose: Monitor free disk space

Format: DISKMONITOR [/C [*disk*]]
DISKMONITOR [/=] disk size command

disk Disk drive to monitor
size Minimum free disk space
command Command to execute when condition is triggered

/C(lear)

Usage:

If the free disk space for the drive drops below the specified size, DISKMONITOR will execute the specified command. For example, to send an email when the C: drive has less than 2Gb free:

```
DISKMONITOR C: 2Gb sendmail bob@bob.com "Disk Status" Drive C: is full!
```

The drive can also be a sharename. The size format is the same as that used for size ranges (i.e., either a number or a number with an appended k, K, m, M, g, G, t, or T).

The command line will be parsed and expanded before DISKMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. DISKMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, DISKMONITOR will display the disk drives it is currently monitoring.

DISKMONITOR will poll the drives it is monitoring once every 10 seconds.

Options:

/= Display the DISKMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If *disk* is specified, remove the monitor for that disk drive. Otherwise, remove all disk monitors.

4.3.46 DNS

Purpose: Display the DNS records for the specified DNS server and host domain.

Format: DNS [/Nh] *server hostname*

server - The address of the DNS server
hostname - The host domain to query

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Usage:

For example:

```
DNS 1.1.1.1 jpsoft.com
```

4.3.47 DO

Purpose: Create loops in batch files

Format:
DO *loop_control*
  commands
[ITERATE]
  commands
[LEAVE [n]]
  commands
ENDDO

Loop_control formats

DO count
DO FOREVER
DO varname = start TO end [BY step] [(command)]
DO WHILE condition [(command)]
DO UNTIL condition [(command)]
DO UNTIL DATETIME date time [(command)]
DO FOR n [SECONDS | MINUTES | HOURS] [(command)]
DO varname IN [range...] /D"directory" [/I:"text" /S[[+]n] /A:[[-|+]rhsadecijopt /O:[-]acdeginorstuz fileset [(command)]
DO varname IN [/T"delimiters"] /L stringset [(command)]
DO varname IN /C stringset [(command)]
DO varname IN /L stringset [(command)]
DO varname in /P command ... [(command)]
DO varname IN /Q stringset [(command)]
DO varname IN @file [(command)]

count	Integer in the range [0, 9223372036854775807], or an internal variable or variable function that evaluates to such a value, specifying the number of times the loop is executed.
varname	The environment variable containing the current value of the loop index, or the current filename or string, or the current line from a file. Do not prefix the variable name with **%**.
start, end, step	Integers in the range [-9223372036854775807, 9223372036854775807] or internal variables or variable functions that evaluate to such values, controlling the number of times the loop is executed.
condition	A conditional expression to determine whether or not the loop should be executed
fileset	A filename or list of filenames, possibly using wildcards
stringset	An arbitrary set of strings. Wildcards are not interpreted.
file	A file each line of which contains a string the loop is to be executed for
range	A date, time, size or exclusion range. At most one of each, in any order.
commands	One or more commands to execute each time through the loop. If you use multiple commands, they must be separated by command separators or be placed on separate lines.

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date	The loop termination date in ISO 8601 format
time	The loop termination time in 24-h ***hh:mm:ss*** format
/A:	Attribute select
/C	Loop through each character in expression
/D"directory"	Start directory
/I"text"	(Match description) Description range.
/L(iteral)	Members of ***set*** are strings, not filenames
/O:... (Order)	Sort order
/P	Parse the output of the command, saving the next output line in ***varname*** each time the loop is executed.
/Q	Like /L, but treats double quoted arguments (with embedded whitespace) as a single argument.
/S	Perform the loop in the current directory and all its subdirectories

Supports extended wildcards, ranges, and include lists for the ***set***. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage

DO can be used in batch files, aliases, or at the command prompt. To use them in aliases or at the prompt, you need to define the DO on a single line, and enclose the body of the DO loop in a command group following the DO expression. (There is no ENDDO statement in a single-line DO). For example:

```
do count=1 to 10 by 1 (echo count=%count)
```

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. DO will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

When you use DO on an LFN drive, you must quote any file names which contain white space or special characters. The same restriction may apply to names returned in the DO variable, if you pass them to ***TCC*** internal commands, or other commands which require quoting filenames with white space. DO does not quote returned names automatically, even if you included quotes in the original argument.

DO sets four internal variables:

%_do_dirs	The number of directories traversed (with /S) for the current DO loop. (I.e., nested DO's each have their own _do_dirs, _do_files, _do_errors, and _do_loop.)
%_do_files	The number of directory entries (files or subdirectories) processed for the current DO loop.
%_do_errors	The number of errors for the current DO loop.
%_do_loop	The number of times the current DO loop has been executed.

Types of DO Loops

DO can be used to create several different kinds of loops.

- DO ***count***, is a counted loop. The batch file lines between DO and ENDDO are repeated ***count*** times.
- DO FOREVER creates an endless loop. You must use LEAVE or GOTO to exit such a loop.
- DO ***varname*** **=** ***start*** TO ***end*** **[**BY ***step*****]** is similar to a "for loop" in programming languages like BASIC. DO creates an environment variable, ***varname***, and sets it equal to the value ***start***. If ***varname*** already exists in the environment, it will be overwritten. DO then begins the loop process by comparing the value of ***varname*** with the value of ***end***. If ***step*** is positive or not specified, and ***varname*** is less

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than or equal to ***end***, DO executes the batch file lines up to the ENDDO. Next, DO adds to the value of ***varname*** either the value of ***step*** if BY ***step*** is specified, or **1**, and repeats the compare and execute process until ***varname*** is greater than ***end***. This example displays the even numbers from 2 through 20:

```
do i = 2 to 20 by 2
 echo %i
enddo
```

DO can also count down, rather than up. If ***step*** is negative, ***varname*** will be decreased by the absolute value of ***step*** with each loop, and the loop will stop when ***varname*** is less than ***end***. For example, to display the even numbers from 2 through 20 in reverse order, replace the first line of the example above with:

```
do i = 20 to 2 by -2
```

- DO WHILE ***condition*** evaluates ***condition*** each time through the loop as a conditional expression **before** executing the loop, and will execute it only if it is true. If ***condition*** is FALSE when the DO is first executed, the loop will never be executed.

- DO UNTIL ***condition*** evaluates ***condition*** as a conditional expression each time **after** execution of the loop, and repeats the loop only if it is FALSE. Therefore, the statements within the loop will always be executed at least once.

- DO UNTIL DATETIME ***date time*** executes the loop until the current date and time is equal to or greater than the specified date (ISO format) and time (24-hour format). The date and time can be in either YYYY-MM-DD HH:MM:SS or YYYYMMDDHHMMSS format. (The date and/or time can be a variable.)

- DO FOR ***n*** SECONDS | MINUTES | HOURS executes the loop for the specified amount of time.

- DO ***varname*** IN ***fileset*** executes the commands between DO and ENDDO by creating an environment variable, ***varname***, and setting it equal to every filename in the ***fileset,*** ignoring items not matching file or directory names. This is similar to the ***set*** used in the FOR command, but it can only include file and directory names, not arbitrary text strings. If ***varname*** already exists in the environment, it will be overwritten (unlike the control variable in FOR). For example:

```
do x in *.txt
  ...
enddo
```

will execute the loop once for every *.TXT* file in the current directory; each time through the loop the variable ***x*** will be set to the name of the next file that matches the file specification. The order of matches is dependent on the file system, and is totally unrelated to any characteristics of the filenames matched.

If, between DO and ENDDO, you create a new file that could be included in the list of files, it may or may not appear in an iteration of the DO loop. Whether the new file appears depends on its physical location in the directory structure, a condition over which ***TCC*** has no control.

To use date, time, size, description, or file exclusion ranges for the ***set*** place them just before the filename(s), for example:

```
do x in /[d9-1-2018,9-31-2018] *.txt
```

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- DO ***varname*** IN /L ***stringset*** executes the commands between DO and ENDDO once for every string literal in ***stringset***, setting ***varname*** to each in turn.

- DO ***varname*** IN /C ***stringset*** executes the commands between DO and ENDDO once for every character in ***stringset*** (including whitespace and special characters), setting ***varname*** to each in turn.

- DO ***varname*** IN ***@file*** executes the commands between DO and ENDDO once for every line in ***file***, setting ***varname*** to the content of each one in turn. Beware of characters with special meaning to ***TCC***, such as redirection and piping symbols, within the file (use SETDOS /X as needed).

  To execute the loop once for each line of text in the clipboard, use **CLIP:** as the file name (*e.g.* `DO X IN @CLIP:`). **CLIP:** will not return any data unless the clipboard contains text. See Redirection for more information on **CLIP:**.

Special DO keywords: ITERATE and LEAVE

Two special keywords, ITERATE and LEAVE, may be used inside a DO / ENDDO loop. ITERATE ignores the remaining commands inside the loop and returns to the beginning of loop for another iteration, unless DO determines that the loop is finished. LEAVE exits from the current DO loop and continues with the command following its ENDDO. Both keywords may be repeated as often as desired. Both ITERATE and LEAVE are most often used in an IF or IFF command (group):

```
do while "%var" != "%val1"
 ...
 if "%var" == "%val2" leave
enddo
```

LEAVE accepts an optional numeric argument (>=1) which specifies the DO nesting level you want to leave. For example, "LEAVE 2" will exit two nested DO loops. You can optionally pass a variable as the LEAVE argument.

Usage Notes

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

DO loops can be nested, i.e. you can have a DO / ENDDO loop within another DO / ENDDO loop.

You can exit from all DO / ENDDO loops in a batch file by using GOTO to a line past the corresponding ENDDO. However, be sure to read the cautionary notes about GOTO and DO under the GOTO command before using GOTO in any other way inside any DO loop.

You cannot use RETURN to return from a GOSUB while inside a DO loop.

Note: Do not confuse the DO command with the unrelated optional ***do*** keyword of the FOR command.

Options:

/A: Select the files in a DO x IN `...` by their specified attribute(s). See Attribute Switches for information on the attributes which can follow **/A:**.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C For each loop, assign the next character (including whitespace and special characters) in the expression to the DO variable.

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/D"*directory*" Set the start directory (for use with /S). /D supports Windows shell folder names; see CDD for details.

/I"*text*" Select files in a DO x IN ... by matching ***text*** in their descriptions. See Description Ranges for details.

/L The parameters following DO x IN /L are strings, not filenames. Each parameter will be assigned in sequence, from left to right, to the loop control variable on consecutive passes through the loop. /L will not treat double quotes as delimiters; use /Q if you want to pass arguments with embedded white space.

/N Disable options:

- **d** Skip hidden directories (when used with /S)
- **j** Skip junctions (when used with /S)

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

The /O:... option saves all of the matching filenames and then performs the requested operation. This avoids the potential problem of processing files more than once.

/P For each loop, assign the next output line from ***command*** to the DO variable.

/Q The parameters following DO x IN /Q are strings, not filenames. Each parameter will be assigned in sequence, from left to right, to the loop control variable on consecutive passes through the loop. Unlike /L, /Q will treat double quoted arguments with embedded whitespace as a single argument.

/S Perform the DO loop in the current directory and then on all of its subdirectories. (DO also supports /R as a synonym, for compatibility with FOR.)

If you specify a number after the /S, DO will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

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If you specify a **+** followed by a number after the /S, DO will not execute ***command*** until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not execute ***command*** in *\a* or *\a\b*.

/T"*text*" Specify the delimiters to be used when parsing a string set.

4.3.48 DRAWBOX

Purpose: Draw a box on the screen

Format: DRAWBOX *ulrow ulcol lrrow lrcol style* [BRIght] *fg* ON [BRIght] *bg* [FILL [BRIght] *bgfill*] [ZOOm] [SHAdow]

ulrow	Row for upper left corner
ulcol	Column for upper left corner
lrrow	Row for lower right corner
lrcol	Column for lower right corner
style	Box drawing style: **0** No lines (box is drawn with blanks) **1** Single line **2** Double line **3** Single line on top and bottom, double on sides **4** Double line on top and bottom, single on sides
fg	Foreground character color
bg	Background character color
bgfill	Background fill color (for the inside of the box)

See also: DRAWHLINE and DRAWVLINE.

Usage:

DRAWBOX is useful for creating attractive screen displays in batch files.

See Colors and Color Names for details about colors.

If you use ZOOM, the box appears to grow in steps to its final size. The speed of the zoom operation depends on the speed of your computer and video system.

If you use SHADOW, a drop shadow is created by changing the characters in the row under the box and the 2 columns to the right of the box to normal intensity text with a black background (this will make characters displayed in black disappear entirely).

The row and column values are zero-based, so on a standard 25 line by 80 column display, valid rows are 0 - 24 and valid columns are 0 - 79.
Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). DRAWBOX checks for valid row and column values, and displays a "Usage" error message if any values are out of range.

The maximum ***row*** value is determined by the current height of the ***TCC*** window. The maximum ***column*** value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

If ***ulrow*** is set to 999, ***lrrow*** is assumed to be the desired height, and the box will be centered vertically. If ***ulcol*** is set to 999, ***lrcol*** is assumed to be the desired width, and the box will be centered horizontally.

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Unlike DRAWHLINE and DRAWVLINE, DRAWBOX does not automatically connect boxes to existing lines on the screen with the proper connector characters. If you want to draw lines inside a box and have the proper connectors drawn automatically, draw the box first, then use DRAWHLINE and DRAWVLINE to draw the lines.

DRAWBOX uses the standard line and box drawing characters in a Unicode or U.S. English extended ASCII character set. If you use an ASCII or raster font which does not include these line drawing characters, the box or lines will not be displayed correctly.

Example:

To draw a box around the edge of an 80x25 window with bright white lines on a blue background:

```
drawbox 0 0 24 79 1 bri whi on blu fill blu
```

4.3.49 DRAWHLINE

Purpose: Draw a horizontal line on the screen

Format: DRAWHLINE *row column len style* [BRIght] *fg* ON [BRIght] *bg*

row	Starting row
column	Starting column
len	Length of line
style	Line drawing style: **1** Single line **2** Double line
fg	Foreground character color
bg	Background character color

See also: DRAWBOX and DRAWVLINE.

Usage:

DRAWHLINE is useful for creating attractive screen displays in batch files. It detects other lines and boxes on the display, and creates the appropriate connector characters when possible (not all types of lines can be connected with the available characters).

The *row* and *column* values are zero-based, so on a 25 line by 80 column display, valid *rows* are 0 - 24 and valid *columns* are 0 - 79.
Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). If either value is out of range, DRAWHLINE displays a "Usage" error message.

The maximum *row* value is determined by the current height of the ***TCC*** window. The maximum *column* value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

If ***row*** is set to 999, the line will be centered vertically. If ***column*** is set to 999, the line will be centered horizontally.

See Colors and Color Names for details about colors.

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DRAWHLINE uses the standard line and box drawing characters in a Unicode or U.S. English extended ASCII character set. If you use an ASCII or raster font which does not include these line drawing characters, the box or lines will not be displayed correctly.

Example:

The following command draws a double line along the top row of the display with green characters on a blue background:

```
drawhline 0 0 80 2 green on blue
```

4.3.50 DRAWVLINE

Purpose: Draw a vertical line on the screen

Format: DRAWVLINE *row column len style* [BRIght] *fg* ON [BRIght] *bg*

row	Starting row
column	Starting column
len	Length of line
style	Line drawing style: **1** Single line **2** Double line
fg	Foreground character color
bg	Background character color

See also: DRAWBOX and DRAWHLINE.

Usage:

DRAWVLINE is useful for creating attractive screen displays in batch files. It detects other lines and boxes on the display, and creates the appropriate connector characters when possible (not all types of lines can be connected with the available characters).

The *row* and *column* values are zero-based, so on a 25 line by 80 column display, valid rows are 0 - 24 and valid columns are 0 - 79. Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). If either value is out of range, DRAWVLINE displays a "Usage" error message.

The maximum *row* value is determined by the current height of the ***TCC*** window. The maximum *column* value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

See Colors and Color Names for details about colors.

DRAWVLINE uses the standard line and box drawing characters in a Unicode or U.S. English extended ASCII character set. If you use an ASCII or raster font which does not include these line drawing characters, the box or lines will not be displayed correctly.

Example:

To draw a double width line along the left margin of the display with bright red characters on a black background:

```
drawvline 0 0 25 2 bright red on black
```

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4.3.51 ECHO

Purpose: Enable or disable batch file or command line echoing, display the echoing status on stdout, or display a message on stdout

Format: ECHO [ON | OFF | *message*]

message Text to display.

See also the commands ECHOS, ECHOSERR, ECHOERR, ECHOX, ECHOXERR, SCREEN, SCRPUT, TEXT and VSCRPUT, and the internal variable _ECHO.

Usage:

The ECHO command has two unrelated, independently functioning purposes:

- Command line echoing
- Message display

Command line echoing

When command line echoing is enabled, each command is displayed on stdout after it is fully parsed, aliases, functions, and variables expanded, but before it is executed.

Echoing control

TCC controls command line echoing in batch files and at the interactive prompt independently.

Executing ECHO ON at the command prompt enables, and ECHO OFF disables echoing at the command prompt. ECHO defaults to OFF at the command line. The command-line ECHO is most useful when you are learning how to use advanced features.

Similarly, executing ECHO ON in a batch file enables, and ECHO OFF disables echoing of batch file commands. ECHO defaults to ON in batch files. The current ECHO state is inherited by called batch files. You can change the default setting to OFF with the SETDOS /V0 command, or the Batch Echo configuration option.

Regardless of the relevant echoing state, any command prefixed with the at-sign `@` will not be echoed.

Echoing state display

To see the current echoing state, use the ECHO command with no parameters. This displays either the batch file or command line echo state, depending on where the ECHO command is performed. Alternately, you can examine the value of the internal variable _ECHO.

Message display

If the ECHO command has a message (the whole command tail, excluding redirection or piping, if any), and message is neither of the words ON or OFF (though it can include those words), message is fully parsed, then displayed on stdout, regardless of the applicable echoing state. Any display sent to stdout after message has been displayed will start on a new line.

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.

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- Functions and variables not enclosed between back quotes are evaluated.
- To include special characters, .e.g, < | >, in ***message***, enclose them in double quotes or back quotes (see Parameter Quoting) or precede them with the escape character, or use the /X option of the SETDOS command.
- To display `%` you may alternately use two `%` marks for each one to be displayed, e.g., `%%`
- To display trailing spaces, either enclose them in back quotes, or append a pair of back quotes behind them, e.g., **`echo trailers `` `**
- The ASCII **NUL** character cannot be included in ***message*.**
- If stdout is the console, after displaying ***message*** on the current line, the cursor will be moved to the beginning of the next line.
- If stdout is a file, the **CR LF** sequence will be appended to ***message***.

To display a blank line, use one of the forms below:

`echo ```	(two consecutive back quotes), or
`echo.`	(special syntax for compatibility with CMD).

Examples:

This command will display a message:

```
echo Processing your print files...
```

The command

```
echo    This text is indented 3 spaces   ``
```

will display 3 leading and 3 trailing spaces.

4.3.52 ECHOERR

Purpose: Display a message to the standard error device (stderr)

Format: ECHOERR *message*

message Text to display.

See also: ECHO, ECHOS, ECHOSERR, ECHOX, and ECHOXERR.

Usage:

ECHOERR (like ECHO in message display mode) parses and expands ***message***, and displays it on stderr (usually the screen), instead of stdout. Even if stdout of a batch file is redirected or piped, ECHOERR will still display a screen message, unless stderr is redirected or piped (see Redirection). Any display sent to stderr after ***message*** has been displayed will start on a new line.

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.
- Functions and variables not enclosed between back quotes are expanded.
- To include special characters, .e.g, < | >, in ***message***, enclose them in double quotes or back quotes (see Parameter Quoting) or precede them with the escape character, or use the /X option of the SETDOS command.

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- To display % you may alternately use two % marks for each one to be displayed, e.g., %%
- To display trailing spaces, either enclose them in back quotes, or append a pair of back quotes behind them, e.g., **echoerr trailers ``**
- The ASCII **NUL** character cannot be included in ***message*.**
- If stderr is the console, after displaying ***message*** on the current line, the cursor will be moved to the beginning of the next line.
- If stderr is a file, the **CR LF** sequence will be appended to ***message***.

4.3.53 ECHOS

Purpose: Display a message to standard output (stdout) without a trailing carriage return / line feed

Format: ECHOS *message*

message Text to display.

See also: ECHO, ECHOERR, ECHOSERR, ECHOX, ECHOXERR, SCREEN, SCRPUT, TEXT, and VSCRPUT.

Usage:

ECHOS, like ECHO in message display mode, parses, expands, and displays ***message*** on stdout. However, any display sent to stdout after ***message*** has been displayed will continue on the same line.

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.
- Functions and variables not enclosed between back quotes are evaluated.
- To include special characters, .e.g, < | >, in ***message***, enclose them in double quotes or back quotes (see Parameter Quoting) or precede them with the escape character, or use the /X option of the SETDOS command.
- To display % you may alternately use two % marks for each one to be displayed, e.g., %%
- To display trailing spaces, either enclose them in back quotes, or append a pair of back quotes behind them, e.g., **echo trailers ``**
- The ASCII **NUL** character cannot be included in ***message*.**
- ECHOS keeps the cursor on the same line, thus permitting building a line of display using multiple commands

ECHOS is useful for text output when you don't want to add a carriage return / linefeed pair at the end of the line. This is useful if your whole line of text requires more than one command to build, and also for controlling character devices.

4.3.54 ECHOSERR

Purpose: Display a message to the standard error device (stderr) without a trailing carriage return / line feed

Format: ECHOSERR *message*

message Text to display.

See also: ECHO, ECHOS, and ECHOERR.

Usage:

ECHOSERR acts as a combination of ECHOS and ECHOERR. It parses and expands ***message***, and displays it on stderr. However, any display sent to stderr after ***message*** has been displayed will continue on the same line.

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.
- Functions and variables not enclosed between back quotes are evaluated.
- To include special characters, .e.g, < | >, in ***message***, enclose them in double quotes or back quotes (see Parameter Quoting) or precede them with the escape character, or use the /X option of the SETDOS command.
- To display `%` you may alternately use two `%` marks for each one to be displayed, e.g., `%%`
- To display trailing spaces, either enclose them in back quotes, or append a pair of back quotes behind them, e.g., **`echo trailers`** ``
- The ASCII **NUL** character cannot be included in ***message*.**
- ECHOSERR keeps the cursor on the same line, thus permitting building a line of display using multiple commands

4.3.55 ECHOX

Purpose: Display a message to standard output (stdout) without performing any variable expansion or redirection.

Format: ECHOX *message*

message Text to display.

See also: ECHO, ECHOERR, ECHOSERR, ECHOXERR, SCREEN, SCRPUT, TEXT, and VSCRPUT.

Usage:

ECHOX will echo the message text to STDOUT without doing any of the parser processing (variables, redirection, escaped characters, etc.).

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.
- The ASCII **NUL** character cannot be included in ***message*.**

ECHOX is useful for text output when you want to display some text that may have embedded special characters (like %, <. >, or |).

4.3.56 ECHOXERR

Purpose: Display a message to standard error (STDERR) without performing any variable expansion or redirection.

Format: ECHOXERR *message*

message Text to display.

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See also: ECHO, ECHOERR, ECHOSERR, ECHOX, SCREEN, SCRPUT, TEXT, and VSCRPUT.

Usage:

ECHOXERR will echo the message text to STDERR without doing any of the parser processing (variables, redirection, escaped characters, etc.).

Display rules

- The first space after the command name is ignored.
- Trailing spaces in ***message*** are ignored.
- The ASCII **NUL** character cannot be included in ***message*.**

ECHOXERR is useful for text output when you want to display some text that may have embedded special characters (like %, <. >, or |).

4.3.57 EJECTMEDIA

Purpose: Eject removable media in the specified drive(s)

Format: EJECTMEDIA *drive* ...

Usage:

EJECTMEDIA will eject removable media, such as CD-ROMs, DVDs, removable USB drives, etc.

Example:

To eject the E: drive:

```
ejectmedia e:
```

See also LOADMEDIA.

4.3.58 ENDLOCAL

Purpose: Restore the saved disk drive, directory, environment, local alias and function lists, and special characters, and exports selected variables

Format: ENDLOCAL [/D] [*exportvar* ...]

/D(ont restore)

See also: SETLOCAL.

Usage:

The SETLOCAL command saves the current disk drive, default directory, all environment variables, the alias and function lists, the directory stack (PUSHD), and the command separator, escape character, parameter character, decimal separator, and thousands separator. It does not save the user-defined function list or array variables. ENDLOCAL restores everything that was saved by the previous SETLOCAL command, except as described below.

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If you have only global aliases and/or functions, SETLOCAL will copy them to a local list for the duration of the SETLOCAL. The matching ENDLOCAL will reset them to the global list. If you have both local and global aliases or functions, ENDLOCAL will only restore the local list (that was saved by SETLOCAL).

For example, this batch file fragment saves everything, removes all aliases so that user aliases will not affect batch file commands, changes the disk and directory, changes the command separator, runs a program, and then restores the original values:

```
setlocal
unalias *
cdd d:\test
setdos /c~
program ~ echo Done!
endlocal
```

SETLOCAL / ENDLOCAL may be nested within a single batch file up to 32 levels deep. You can also have multiple, separate SETLOCAL / ENDLOCAL pairs within a batch file, and nested batch files can each have their own SETLOCAL / ENDLOCAL. If you do not provide an ENDLOCAL in the batch file, ***TCC*** will do it automatically when the batch file exits.

You can also use SETLOCAL and ENDLOCAL in an alias, a library function, or at the command line. The maximum nesting level from a command line or alias is 32 levels. Unlike batch files, you are responsible for matching the SETLOCAL / ENDLOCAL calls from an alias or command line; ***TCC*** will not perform an automatic ENDLOCAL.

An ENDLOCAL is performed automatically at the end of a batch file, or when returning from a "GOSUB filename". If you invoke one batch file from another without using CALL, the first batch file is terminated, and an automatic ENDLOCAL is performed; the second batch file inherits the settings as they were prior to any SETLOCAL.

- **Exporting environment variables**

The environment variables whose names are specified in the ENDLOCAL command are exported. This means that their names and values from inside the SETLOCAL / ENDLOCAL will be placed into the restored environment, either adding variables, or possibly modifying them. In the example below, the variable TEST will have the value **abcd** after the ENDLOCAL is executed, regardless of what its value was, or even if it had not been previously defined:

```
setlocal
set test=abcd
endlocal test
```

The list of variables to export may contain wildcards. All variables matching the requested pattern will be exported.

- **Exporting current working directory**

See option /D below.

Options:

/D (Don't restore directory) Export the current directory: the original drive and directory saved by SETLOCAL will not be restored.

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4.3.59 ENUMPROCESSES

Purpose: Display the child processes for the specified process

Format: ENUMPROCESSES *pid*

pid The parent process ID whose child processes you want to enumerate.

Usage:

ENUMPROCESSES will show all of the active processes started by the specified process.

4.3.60 ENUMSERVERS

Purpose: Enumerate the servers on the network

Format: ENUMSERVERS [/Domain=*domain* /P[*n*] /Type=*xxx*] *server* ...

server The machine name to match

/P(ause)
/Type=type

Usage:

The optional server name may contain wildcards, including regular expressions.

Option:

/Domain The NetBIOS name of the domain to enumerate. If you do not specify a domain, ENUMSERVERS will use the primary domain.

/P[*n*] Pause after each page. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Type Return only servers of this type. If you do not specify /Type, ***TCC*** will return all servers. Other possible types are:

WORKSTATION - All workstations
SQLSERVER - Any server running Microsoft SQL Server
DOMAIN - Primary domain controller
DOMAINBACKUP - Backup domain controller
DOMAIN_ENUM - Primary domain
LOCAL - Servers maintained by the browser
AFP - Apple File Protocol servers
TIME - Servers running the Timesource service
PRINTQ - Server sharing print queue
TERMINAL - Terminal Servers
CLUSTER - Server clusters in the domain
VSCLUSTER - Cluster virtual servers in the domain
MASTER - Server running the master browser service

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4.3.61 ENUMSHARES

Purpose: Enumerate the share names for the specified server

Format: ENUMSHARES [/= /A /D /F /I /P[*n*] /Q /R /U /V] *server**sharename*

server The machine name
sharename The sharename(s) to match. Sharenames may contain wildcards, including regular expressions.

/A(dmin)
/D(isk)
/F (local path)
/I(PC)
/P(ause)
/Q(ueues)
/R(emarks)
/U(ses)
/V (devices)

Usage:

ENUMSHARES will show the share names of the specified type for a network server. ENUMSHARES will enumerate a single server; you cannot specify any wildcards in the server name.

If you don't enter any arguments, ENUMSHARES will display its command dialog.

Option:

/= Display the ENUMSHARES command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Display the admin shares (i.e., ADMIN$, C$, print$, etc.)

/D Display the disk shares (default unless /F, /I, or /Q is set)

/F The local path for the shared resource. For disks, this member is the path being shared. For print queues, this is the name of the print queue being shared.

/I Display the shared IPC (interprocess communication).

/P[*n*] Pause after each page. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Q Display the shared print queues

/R Display the optional comment about the sharename (in quotes)

/U Display the current number of uses and the maximum allowed uses in the format "[n] [n]".

/V Display the shared communication devices

4.3.62 ESET

Purpose: Edit an environment variable, alias or function definition

Format: ESET [/= /A /B /D /F /GL /LL /S /U /V] [/C *var1 var2*] *name*

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name The name of an environment variable, function or alias to edit.

/A(lias)
/B(atch variable)
/C(opy value)
/D(efault environment)
/F(unction)
/GL (global list)
/K"::regex" (regex mask)
/LL (local list)
/S(ystem variable)
/U(ser variable)
/V(olatile variable)
/W(indow)

See also: ALIAS, FUNCTION, SET, UNALIAS, UNFUNCTION, and UNSET.

File Completion Syntax:

The default filename completion syntax is: **[/a] aliases [/f] functions [1*] variables**

Usage:

ESET allows you to edit environment variables, aliases or user-defined functions using line editing commands (see Command Line Editing), or in a popup window.

Unless a specific data type is specified by one of the option switches **/A**, **/D**, **/F**, **/S**, **/U** or **/V**, ESET will search for ***name*** among environment variables first and then among aliases, thus if ***name*** is both a variable and an alias, ESET will edit the variable ***name***, and ignore the alias ***name***.

To edit variables defined in the Windows Registry or to edit functions, you **must** use the appropriate option switch.

If you are editing a typed environment variable (see SET /T), ESET will create a matching regular expression mask for the input.

If you don't enter any arguments, ESET will display its command dialog.

Note: You cannot use ESET with GOSUB variables.

If you have enabled global aliases (see ALIAS), any changes made to an alias with ESET will immediately affect all other copies of ***TCC*** which are using the same alias list. Similarly, if you have enabled global functions (see FUNCTION), any changes made to a function using ESET /F will immediately affect all other copies of ***TCC*** which are using the same function list.

ESET will default to looking in the local alias or function list (if it exists). If the name isn't found, ESET will look in the global list (if it exists).

ESET supports filename completion and completion of internal variables and variable functions.

Registry Variables: Default, **System**, **User**, and **Volatile** registry variables can be manipulated with the ESET command's **/D**, **/S**, **/U** and **/V** switches, respectively. For example, to edit volatile variable ***myvar*** from the registry, use:

```
eset /v myvar
```

Use caution when directly modifying registry variables as they may be essential to various Windows processes and applications.

Examples:

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To edit the executable file search path:

```
eset path
path=c:\;c:\dos;c:\util
```

To create and then edit an alias:

```
alias d = dir /d/j/p
eset d
d=dir /d/j/p
```

Options:

/= Display the ESET command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Edit the named alias even if an environment variable of the same name exists. If you have an alias and an environment variable with the same name, you must use this switch to be able to edit the alias.

/B Edit a batch variable (%1 - %n). Only valid when ***TCC*** is executing a batch file.

/C Copy the value from an existing variable, alias, or function. The syntax is:

ESET /c var1 var2

where *var1* is the variable whose value you want to copy, and *var2* is the variable (new or existing) that you want to update.

/D Edit a "default" variable in the registry (HKU\.DEFAULT\Environment).

/F Edit a user-defined function.

/GL Look for the alias or function in the global list

/K"::*regex*" Regular expression mask for the input.

/LL Look for the alias or function in the local list

/S Edit a "system" variable in the registry (HKLM\System\CurrentControlSet\Control\Session Manager\Environment).

/U Edit a "user" variable in the registry (HKCU\Environment).

/V Edit a "volatile" variable in the registry (HKCU\Volatile Environment).

/W Open the alias list / environment / function list in a popup window and select the line to edit. You can search, edit, and delete entries in the window. If you include an argument after the /W option, the popup window will display only those entries that match the argument (including wildcards).

ESET /W can be combined with a registry environment key (/S, /U, /D, /V) to edit the Windows registry environment values.

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4.3.63 EVENTLOG

Purpose: Write a string to the Windows event log

Format: EVENTLOG [/= /S"*source*" /Cn /E /I /W] *message*

message	The text to write.
source	The source for this message.

/C(ategory) /S(ource)
/E(rror) /W(arning)
/I(nformational)

See also: HISTORY and LOG.

Usage:

EVENTLOG posts messages to the Windows application event log. You cannot use the command separator character ([**&**]) or the redirection symbols (**| > <**) in an EVENTLOG message, unless you enclose the message in quotes or precede the special characters with the escape character.

By default, the text written with EVENTLOG is stored in the event log as informational messages. You can store warning and error messages by using the **/W** and **/E** switches.

Messages in the log can be reviewed with the Windows Event Log viewer.

If you do not have proper registry permissions when you execute the EVENTLOG command and/or the key cannot be created, EVENTLOG will fail and display an error. EVENTLOG is intended for use by users with **Administrator** status. You will also need to be running an elevated session.

Options:

/= Display the EVENTLOG command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/Cn Set the event category. The value can be from 0-65535; Windows defines 0-7 as:

0 - None
1 - Devices
2 - Disk
3 - Printers
4 - Services
5 - Shell
6 - System
7 - Network

/E Store the message as an error entry in the event log.

/I Store the message as an informational entry in the event log. This is the default if no switch is used.

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/S Specify the event log entry source. If you use the /S option, it must be the first option on the EVENTLOG command line. If the source contains white space, it must be double-quoted. For example:

```
eventlog /sCompiling /I Your message here.
```

/W Store the message as a warning entry in the event log.

4.3.64 EVENTMONITOR

Purpose: Monitor event logs

Format: EVENTMONITOR [/C [*name*]]
EVENTMONITOR [/=] *server name* /S"source" /T"*type*" /D"*description*" *n command*

server	UNC name of the machine with the log file
name	log name
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear) /S"source"
/D"description" /T"type"

Usage:

If you don't enter any arguments, EVENTMONITOR will display the events it is currently monitoring.

The command line will be parsed and expanded before EVENTMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. EVENTMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

You can specify multiple **/D**, **/S**, and **/T** arguments. If you want to monitor multiple events in a log, put them into a single EVENTMONITOR command. EVENTMONITOR creates a separate thread for each EVENTMONITOR command, so if you have multiple commands you will be wasting CPU time, RAM, and risk having ***command*** executed simultaneously in different threads.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

EVENTMONITOR creates environment variables when an event is triggered that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_eventcomputer	The name of the computer than generated the event
_eventcount	The number of times the condition has been triggered
_eventdesc	The event description
_eventlog	The name of the event log

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_eventsource The name of the source that wrote the event

_eventtype The event type (see /T below)

Options:

/= Display the EVENTMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that event. Otherwise, remove all event monitors.

/D Description for the event to be monitored. Only events with a matching description will set the trigger. The description may contain regular expressions.

/S Source for the event to be monitored. Only events with a matching source will set the trigger. The source may contain regular expressions.

/T Type of event to be monitored. Only events with a matching type will set the trigger. The types of events are:

Success
Error
Warning
Information
Audit_Success
Audit_Failure

4.3.65 EVERYTHING

Purpose: Search for files and/or directories

Format: EVERYTHING [/= /B /C /D /E /F /H /I /M=*n* /O /P /R /S /V /W @*file*] *filename* [...]

filename The file or directory name to search for
@file A text file containing the names of the files to search for, one per line (see @file lists for details)

/B (rebuild)
/C(ase sensitive)
/D(irectories only)
/E(verything dialog)
/F(iles only)
/H (delete history)
/I (update indexes)
/M=n (maximum files)
/O(ptions dialog)
/P(ath names)
/R(egular expression)
/S(ort)
/V(ersion)
/W (match whole word)

File Selection:

Supports command dialog, extended wildcards, and multiple file names. Date, time, size or exclude ranges anywhere on the line apply to all *source* files. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

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Search for files and/or directories on local NTFS drives using "Everything Search" (http://www.voidtools.com). EVERYTHING by default does a wildcard search equivalent to "***filename***", and outputs the full pathname of all matching files and/or directories.

You need to install Everything Search and index your local NTFS drives before using EVERYTHING.

Examples:

To locate all .DOCX files on all of your previously indexed drives:

```
everything /f *.docx
```

To locate all .DOCX files on drive C: (assuming it has been previously indexed):

```
everything /f c:*.docx
```

Use a more complete path to restrict the search even further — for example:

```
everything /f c:\MyFiles\*.docx
```

Options:

/= Display the EVERYTHING command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/B Rebuild the Everything Search database

/C Filename matching is case sensitive

/D Only search for directories

/E Display the Everything Search dialog. You can combine /E with the other EVERYTHING options (except /D and /F).

/F Only search for files

/H Delete the Everything Search run history

/I Rescan all of the folder indexes

/M=n Only return a maximum of *n* files / directories

/O Display the Everything options dialog

/P Match path names

/R *filename* is a regular expression (EVERYTHING will automatically set the regular expression flag if the filename begins with **::**)

/S Sort results by path, then by file name. (This can take several seconds with a large number of search results.)

/V Display the Everything Search version (major.minor.build)

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/W Match whole word

4.3.66 EXCEPT

Purpose: Perform a command on all available files except those specified

Format: EXCEPT [/I"text" /N[em]] [(@*file*) | (*file* ...)] *command*

file	The file or files to exclude from the command.
@file	A text file containing the names of the files to exclude, one per line (see @file lists for details).
command	The command to execute, including all appropriate parameters and switches.

/I (match description) /NM (no matches)
/Ne (no errors)

See also: ATTRIB and File Exclusion Ranges.

File Selection

Supports extended wildcards, ranges, multiple file names, and include lists. Date, time, size, or file exclusion ranges must appear immediately after the EXCEPT keyword.

Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

EXCEPT provides a means of executing a command on a group of files and/or subdirectories, and excluding a subgroup from the operation. The ***command*** can be an internal command or alias, an external command, or a batch file. Using internal commands with EXCEPT is not recommended. File exclusion ranges provide a faster and more flexible method of excluding files from internal commands, and do not manipulate file attributes, as EXCEPT does. However, exclusion ranges can only be used with internal commands; you must use EXCEPT for external commands.

You may use wildcards to specify the files to exclude from the ***command***. When you use EXCEPT on an LFN drive, you must quote any file names inside the parentheses which contain white space or special characters.

EXCEPT will assume that the files to be excluded are in the current directory, unless another directory is specified explicitly.

EXCEPT prevents operations on the specified file(s) by setting the hidden attribute, performing the command, and then clearing the hidden attribute. If the command is aborted in an unusual way, you may need to use the ATTRIB command to remove the hidden attribute from the file(s). Files which already had the hidden attribute, and are included in the set matching EXCEPT, will not be hidden after EXCEPT is competed. The hidden attribute of files not matching EXCEPT will not be changed.

Caution: EXCEPT will not work with programs or commands that ignore the hidden attribute or which work explicitly with hidden files, including DEL /Z, and the **/A:H** or **/H** (process hidden files) switches available in internal file processing commands.

Date, time, and size ranges can be used immediately after the word EXCEPT to further qualify which files should be excluded from the ***command***. If the ***command*** is an internal command that supports ranges, an independent range can also be used in the ***command*** itself. You can also use a file exclusion range

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within the EXCEPT command; however, this will select files to be excluded from EXCEPT, and therefore included in execution of the ***command***.

You can use command grouping to execute multiple ***commands*** with a single EXCEPT. For example, the following command copies all files in the current directory whose extensions begin with *.DA*, except the *.DAT* files, to the *D:\SAVE* directory, then changes the first two characters of the extension of the copied files to *.SA*:

```
except (*.dat) (copy *.da* d:\save & ren *.da* *.sa*)
```

If you use filename completion (see Filename Completion) to enter the filenames inside the parentheses, type a space after the open parenthesis before entering a partial filename or pressing Tab. Otherwise, the command line editor will treat the open parenthesis as the first character of the filename to be completed.

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. EXCEPT will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

Option:

/I"text" Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/Ne Don't display an error message if EXCEPT can't find a matching file.

/NM If EXCEPT cannot find any file matches for the arguments in the exception list, EXCEPT will not execute the command.

4.3.67 EXIT

Purpose: Exit the current ***TCC*** session

Format: EXIT [/B] [*value*]

value The numeric exit code to return.

/B (exit from batch file)

Usage:

EXIT terminates the current copy of the command processor.

The *value* is a number you can use to inform the program of some result, such as the success or failure of a batch file. It can range from 0 - 4,294,967,295.

Examples:

To close the session, or to return to the application that started the command processor, type:

```
exit
```

If you specify a value, EXIT will return that value to the program that started the command processor. For example:

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```
exit 255
```

Option:

/B Exit the current batch file, rather than the shell. This switch is for compatibility with CMD. The CANCEL and QUIT commands are generally more flexible for use in batch files.

4.3.68 FFIND

Purpose: Search for files by name or contents

Format: FFIND [/8 /A[[:][-]
rhsadecijopt /B /C /D[*list*] /E["*text*"] /F /G /H /I /I"text" /K /L /L*n* /M /N[dehjs] /O:[-]
acdeginorstuz /P /Q /R /S[[+]n] /[T|X]"xx" /U /V /W /Y /+n /-n] [@*file*] *file*...

list A list of disk drive letters (without colons).
file The file, directory, or list of files or directories to display.

/[+|-] skip matches
/8 (UTF-8)
/A(ttribute select)
/B(are)
/C(ase sensitive)
/D(rive)
/E (upper case)
/E"xx" (regular expression)
/F (stop after match)
/G (goto directory)
/H (ignore binary files)
/I(gnore wildcards)
/I"text" (match description)
/K (no headers)
/L(ine numbers or header/footer lines)
/M (no footers)
/N(ot)
/O(rder)
/P(ause)
/Q(uiet)
/R(everse search order)
/S(ubdirectories)
/T"xx" (text search string)
/TE"xx" (convert text search string to regular expression)
/U (summary only)
/V (verbose)
/W (Find dialog)
/X["xx"] (hex display / search string)
/Y (prompt to stop after match)

File Selection

Supports extended wildcards, ranges, multiple file names, and include lists.

Internet: Can be used with FTP Servers.

Usage:

FFIND is a flexible search command that looks for files based on their names and their contents. Depending on the options you choose, FFIND can display filenames, matching text, or a combination of both in a variety of formats.

If you don't supply a file name, FFIND will read from standard input. (This allows you to pipe or redirect input to FFIND.)

If you want to search for files by name, FFIND works much like the DIR command. For example, to generate a list of all the *.BTM* files in the current directory, you could use the command

```
ffind *.btm
```

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The output from this command is a list of full pathnames, followed by the number of files found.

For example, if you want to limit the output to a list of *.*BTM* files which contain the string *color*, you could use this command instead:

```
ffind /t"color" *v.btm
```

The output from this command is a list of files that contain the string *color* along with the first line in each file that contains that string. By default, FFIND uses a case-insensitive search, so the command above will include files that contain *COLOR*, *Color*, *color*, or any other combination of upper-case and lower-case letters.

If you would rather see the last line of each file that contains the search string, use the **/R** option, which forces FFIND to search from the end of each file to the beginning. This option will also speed up searches somewhat if you are looking for text that will normally be at the end of a file, such as a signature line:

```
ffind /r /t"Sincerely," *.txt
```

You can use ***TCC*** extended wildcards in the search string to increase the flexibility of FFIND's search. For example, the following command will find *.TXT* files which contain either the string *June* or *July*. It will also find *Juny* and *Jule*. The **/C** option makes the search case-sensitive:

```
ffind /c/t"Ju[nl][ey]" *.txt
```

If you want to search for text that contains wildcard characters (*****, **?**, **[**, or **]**), you can use the **/I** option to force FFIND to interpret these as normal characters instead of wildcards. The following command, for example, finds all *.TXT* files that contain a question mark:

```
ffind /i/t"?" *.txt
```

Sometimes you may need to search for data that cannot be represented by ASCII characters. You can use FFIND's **/X** option to represent the search string in hexadecimal format (this option also changes the output to show hexadecimal offsets rather than text lines). With **/X**, the search must be represented by pairs of hexadecimal digits separated by spaces (in the example below, 41 63 65 is the hex code for "Ace**"**):

```
ffind /x"41 63 65" *.txt
```

You can also search using regular expressions using the **/E** option. See Regular Expression Syntax for supported expressions.

When you use FFIND on an LFN drive, you must quote any file names which contain white space or special characters.

FFIND can also find files on FTP servers. For example:

```
ffind /t"Windows" ftp://ftp.microsoft.com/windows
```

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want. For more information, see Using FTP/HTTP Servers and IFTP.

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Note that searching for text in files on FTP servers (as in the command above) will be slow as the data from each file searched must be retrieved from the server and transferred to your computer to be checked for the search string.

FFIND sets three internal variables:

%_ffind_matches	The number of matches
%_ffind_files	The number of files found
%_ffind_errors	The number of errors

Options:

/8 The file is interpreted as UTF-8.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Display file names only and omit the text that matches the search. This option is only useful in combination with **/T** or **/X**, which normally force FFIND to display file names and matching text.

/C Perform a case-sensitive search. This option is only valid with **/T**, which defaults to a case-insensitive search. It is not needed with a **/X** hexadecimal search, which is always case-sensitive.

/D Search all files on one or more drives. If you use **/D** without a list of drives, FFIND will search the drives specified in the list of files. If no drive letters are listed, FFIND will search all of the current drive. You can include a list of drives or a range of drives to search as part of the **/D** option. For example, to search drives C:, D:, E:, and G:, you can use either of these commands:

```
ffind /dcdeg ...
ffind /dc-eg ...
```

Drive letters listed after **/D** will be ignored when processing file names which also include a drive letter. For example, this command displays all the *.BTM* files on C: and E:, but only the *.BAT* files on D:

```
ffind /s /dce *.btm d:\*.bat
```

/E Display filenames in upper case.

/E"text" Search for a regular expression. The regular expression must be contained in double quotes if it contains spaces, punctuation, or wildcard characters. See also **/T**. The maximum line length supported by /E is 16Mb.

/F Stops the search after the first match.

/G Change to the directory where the match was found (must be used with **/F**).

/H Don't search for text in binary files. By default, this includes .exe, .sys, .dll, .zip, and .chm extensions. You can define your own list by setting the "BINARY_FILES" environment variable. For example, to ignore .exe, .sys, and .dll files:

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```
BINARY_FILES=.exe;.sys;.dll
```

/I Only meaningful when used in conjunction with the **/T "text"** option. Suppresses the recognition of wildcard characters in the search text. This option is useful if you need to search for characters that would normally be interpreted as wildcards: *****, **?**, **[**, and **]**.

/I"text" Select filenames by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**.

/K Suppress the display of the header or filename for each matching line for text searches.

/L Include the line number for each text line displayed for text searches. FFIND numbers lines beginning with **1**. A new line is counted for every CR or LF character (FFIND determines automatically which character is used for line breaks in each file), or when line length reaches the command line length limit, whichever comes first.

/Ln The number of leading and trailing lines to display on a text search match. Each successive group of lines in a file will be separated by a "----" header.

/M Suppress the footer (the number of files and number of matches) at the end of FFIND's display.

/N Reverse the meaning of the search, i.e., report only files which contain no match. Setting **/N** will also set **/B**, i.e. searches are on a file-by-file basis; FFIND cannot search for all lines without match.

A **/N** with one or more of the following arguments has an alternate meaning:

- **d** Skip hidden directories
- **e** Don't display errors.
- **h** No headers
- **j** Skip junctions
- **s** Don't display the summary.

/O Set the sort order for the files that FFIND displays

You may use any combination of the following sorting options; if multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **-** Reverse the sort order for the next option
- **a** Sort names and extensions in standard ASCII order, rather than sorting numerically when digits are included in the name or extension
- **c** Sort by compression ratio (the least compressed file in the list will be displayed first)
- **d** Sort by date and time (oldest first); for drives which support long file names
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by file description (ignored if **/O:c** is also used)
- **n** Sort by filename (this is the default)
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size

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u Unsorted

/P Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts.

/Q Don't display any output, but set the FFIND internal variables (%_ffind_matches, %_ffind_files, and %_ffind_errors).

/R Only meaningful when used in text searches in conjunction with the **/T "text"** or **/X** options. Searches each file from the end backwards to the beginning. This option is useful if you want to display the last occurrence of the search string in each file instead of the first (the default). It may also speed up searches for information that is normally at the end of a file, such as a signature.

/S Display matches from the source directory and all of its subdirectories. If you don't specify a path with the *file* to search, FFIND will default to starting in the current directory.

By default, FFIND processes only those subdirectories without the Hidden or System attributes. To view hidden or system subdirectories use **/A** along with **/S**.

If you specify a number following the **/S,** FFIND will limit the subdirectory recursion to the number specified. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only go to the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, FFIND will not search for files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not find anything in *\a* or *\a\b*.

/T"text" Specify the text search string. **/T** must be followed by a text string in double quotes (*e.g.*, /t"color"). FFIND will perform a case-insensitive search unless you also use the **/C** option. For a hexadecimal search and/or hexadecimal display of the location where the search string is found, see **/X**. You can specify a search string with either **/T** or **/X**, but not both.

/TE*"text"* Converts a text string (see /T above) to a regular expression and then does a regex search. You don't need to learn regular expressions, and /TE will run 10x faster than /T. The only limitation is the maximum line length in the file must be < 16Mb.

/U Display only the summary.

/V Show every matching line on a text search. FFIND's default behavior is to show only the first matching line, then to the next file. This option is only valid with **/E, /T** and **/X**.

/W Display the ***Take Command*** Find Files dialog. This option allows you to select the search options in a dialog instead of entering them on the command line. You cannot combine **/W** with any other FFIND option.

/X["xx.."] Specify hexadecimal display and an optional hexadecimal search string.

If **/X** is followed by one or more pairs of hexadecimal digits in quotes (*e.g.*, /x"44 63 65"), FFIND will search for that exact sequence of characters or data bytes without regard to the meaning of those bytes as text. If those bytes are found, the offset is displayed (in both decimal and hexadecimal). A search of this type will always be case-sensitive.

If **/X** is **not** followed by a hexadecimal search string it must be used in conjunction with **/E** or **/T**, and will change the output format to display offsets (in both decimal and

hexadecimal) rather than actual text lines when the search string is found. For example, this command uses **/T** to display the first line in each BTM file containing the word "hello":

```
ffind /t"hello" *.btm
c:\test.btm:
echo hello

1 line in 1 file
```

If you use the same command with **/X**, the offset is displayed instead of the text:

```
ffind /t"hello" /x *.btm
c:\test.btm:
Offset: 1A

1 line in 1 file
```

You can specify a search string with either **/T** or **/X**, but not both.

/Y Prompt to stop searching after each match. This option is most useful when you are using FFIND to search for one specific file, and don't want to display all files which include a particular search string.

/[+|-]n **"/+n"** causes FFIND to skip the first **n** matches. **"/-n"** causes FFIND to stop after **n** matches.

4.3.69 FILELOCK

Purpose: Show processes locking a file

Format: FILELOCK [/C /F] *filename*

/C(lose)
/F(orce close)

Usage:

FILELOCK returns a list of the processes with a lock on the specified file, and optionally closes them to free the file. If no process is locking the file, FILELOCK will return without displaying any output (including not showing any error messages).

Options:

/C Requests the process(es) close.

/F Like TASKEND /F, forces the process(es) to close.

4.3.70 FIREWIREMONITOR

Purpose: Monitor FireWire device connection and disconnection

Format: FIREWIREMONITOR [/C [*name*]]
FIREWIREMONITOR [/=] *name* CONNECTED | DISCONNECTED *n command*

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name	Device name
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

The FireWire device name can include wildcards. You can use either the device ID or the "friendly" name for the device.

The command line will be parsed and expanded before FIREWIREMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. FIREWIREMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, FIREWIREMONITOR will display the FireWire devices it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

FIREWIREMONITOR creates three environment variables when a device is connected or disconnected that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_firewiredeviceid	The device ID (this may have special characters like **&** in the name, so you may need to use double quotes around the variable name to prevent ***TCC*** from parsing the special characters)
_firewirename	The "friendly" name of the device
_firewirecount	The number of times the condition has been triggered

Options:

/=	Display the FIREWIREMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.
/C	If ***name*** is specified, remove the monitor for that FireWire device. Otherwise, remove all FireWire monitors.

4.3.71 FOLDERMONITOR

Purpose: Monitor folder and/or file creation, modification, and deletion

Format: FOLDERMONITOR [/C [*folder*]]
FOLDERMONITOR [/=] /Wn /S *folder* /I"*file*" /E"*file*" /U CREATED DELETED MODIFIED RENAMED *n command*

folder	Folder (directory) or file name

CREATED	Execute the command if the folder or file is created
DELETED	Execute the command if the folder or file is deleted
MODIFIED	Execute the command if the folder or file is modified
RENAMED	Execute the command if the folder or file is renamed
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)	/S(ubdirectories)
/E(xclude)	/U(nlocked file)
/I(include)	/W(ait)

File Completion Syntax:

The default filename completion syntax is: **[/s] dirs [/c] dirs [1*] ***

Usage:

If you don't enter any arguments, FOLDERMONITOR will display the folders and files it is currently monitoring, in the format:

folder (include/exclude) condition (n) command

The command line will be parsed and expanded before FOLDERMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

The ***MODIFIED*** condition is set if the file's size, attributes, or last access date and time are changed.

If you want to monitor multiple conditions for a file or folder, put them into a single FOLDERMONITOR command. FOLDERMONITOR creates a separate thread for each FOLDERMONITOR command, so if you have multiple commands you will be wasting CPU time, RAM, and risk having ***command*** executed simultaneously in different threads.

If the last argument on the line is a single **(,** it is interpreted as the beginning of a command group. FOLDERMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **).**

When the condition is triggered, the command will be executed immediately in the separate thread. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

FOLDERMONITOR creates several environment variables when a file or folder is created, deleted, modified, or renamed that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_folderaction The type of change to the file or folder. The possible values are:

CREATED
DELETED
MODIFIED
RENAMED

_foldercount The number of times the condition has been triggered

_foldername The name of the folder being monitored

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_folderfile1 The name of the file or folder that was created/deleted/modified/renamed. If the file was renamed, ***folderfile1*** is the old name.

_folderfile2 If a file was renamed, ***folderfile2*** is the new name

_foldertime System time when the change occurred.

Example:

To monitor your ***d:\results*** directory and copy any new or modified files to a web page:

```
foldermonitor d:\results created modified forever copy "%%_folderfile1"
"http://mycompany.com/results/"
```

Options:

/= Display the FOLDERMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that folder. Otherwise, remove all folder / file monitors. **/C** cannot be combined with any other options.

/E Filename to be excluded. If you want to exclude multiple files, use multiple **/E** options. If you want to exclude a file in a specific subdirectory, the filename should include the relative path from the folder ***name***. The name can include wildcards.

/I Filename to be included. If you want to include multiple files, use multiple **/I** options. If you want to include a file in a specific subdirectory, the filename should include the relative path from the folder ***name***. The name can include wildcards.

/S Include subdirectories.

/U Don't set the trigger until the file is unlocked. Not compatible with CREATED, because FOLDERMONITOR will always get the notification before the file is accessible.

/Wn Wait for *n* milliseconds before processing the file / directory change. This is useful if you have a lot of actions occurring in a short period and you only care about the last one. If you specify /Wn, it must be the first argument in the FOLDERMONITOR command.

4.3.72 FONT

Purpose: Change the console font

Format: FONT [/F*family* /N*name* /Wn /X*n* /Y*n*]

/F(ont family) /X (width)
/N (face name) /Y (height)
/W(eight)

Usage:

This command will only affect stand-alone TCC console windows. (You can change the font in Take Command tab windows using the TCFONT command or with the ***Take Command*** menu option **Configure Take Command / Tabs**.)

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Options:

/F The font family:
decorative
dontcare
modern
roman
script
swiss

/N The font face name.

/W The font weight (100 - 1000, on multiples of 100). The normal weight is 400; bold is 700.

/X The maximum width of a character, in logical units.

/Y The maximum height of a character, in logical units.

4.3.73 FOR

Purpose: Repeat a command for several values of a variable

Format: File and string mode
FOR [*range*...] [/I"text"] [/A:[[-|+]rhsadecijopt /D /F ["*options*"] /H /Nj /O:[-]acdeginorstuz /R [*path*] [/T"*delimiters*"] /W] %var IN ([@]*set*) DO *command* | (*command* ... [LEAVEFOR])

Counted mode
FOR /L %var IN (start, step, end) DO command | (command ... [LEAVEFOR])

options	Parsing options for a "file parsing" FOR.
range	One or more range specifications
path	The starting directory for a "recursive" FOR.
%var	The variable to be used in the command ("FOR variable").
set	A set of values for the variable.
start	The starting value for a "counted" FOR.
step	The increment value for a "counted" FOR.
end	The limit value for a "counted" FOR.
command	A command or group of commands to be executed for each value of the variable.

/A: (Attribute select)
/D(irectories only)
/F(ile parsing)
/H(ide dots)
/I description range
/L (counted loop)
/N (defaults)
/O:... (Order)
/R(ecursive)
/T (delimiter list)
/W(ildcards)

File Selection

Supports attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Ranges must appear immediately after the FOR keyword after alias expansions (if any), and only affect the selection of files specified using wildcards.

Use wildcards with caution on LFN volumes; see LFN File Searches for details.

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Usage:

FOR begins by creating a ***set***. It then executes a command for every member of ***set***. The command can be an internal command, an alias, an external command, or a batch file. The members of ***set*** can be a list of file names, text strings, a group of numeric values, or text read from a list of files.

When ***set*** is made up of text or several separate file names (not an include list), the elements must be separated by spaces, tabs, or commas.

FOR includes a large number of options, some of which duplicate functions available in other internal commands. It also supports additional conventions not found in our other commands, included for compatibility with CMD.

The first three sections below (Working with Files, Working with Text, and Retrieving Text from Files) describe the FOR command and the enhancements to it which are included in ***TCC***. The sections on Parsing Text from Files and Counted FOR Loops describe features added for compatibility with CMD. The sections Directory Recursion and Output Redirection warn of special considerations. The section entitled Other Notes contains information you may need if you use any aspect of the FOR command extensively.

FOR sets two internal variables:

%_for_files	The number of files processed
%_for_errors	The number of errors

If the Duplicate CMD Bugs configuration option is set, ***TCC*** will emulate undocumented CMD behavior when FOR ***set*** arguments are split across multiple lines. For example:

```
for %a in (
one
two
three
) do (
echo %a
)
```

Working with Files

Normally, ***set*** is a list of files specified with wildcards. For example, if you use this line in a batch file:

```
for %x in (*.txt) list %x
```

Then LIST will be executed once for each file in the current directory with the extension *.TXT*. The FOR variable %x is set equal to each of the file names in turn, then the LIST command is executed for each file. (You could do the same thing more easily with a simple LIST *.TXT. We used FOR here so you could get a feel for how it operates, using a simple example. Many of the examples in this section are constructed in the same way.)

Set can include multiple files and include lists, like this:

```
for %x in (d:\*.txt;*.doc;*.asc e:\test\*.txt;*.doc) type %x
```

FOR supports wildcards and extended wildcards, as well as extended parent directory names, *e.g.*, *...*.txt* to process all of the *.TXT* files that are contained in the directory 2 levels above the current directory.

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By default those members of ***set*** that include wildcards match only files, not directories.

When you use FOR on an LFN drive, you must quote any file names within set which contain white space or special characters. The same restriction may apply to names returned in the FOR variable, if you pass them to ***TCC*** internal commands, or other commands which require quoting filenames with white space. FOR does not quote returned names automatically, even if you included quotes in set.

If set includes filenames, the file list can be further refined by using date, time, size, description and file exclusion ranges. The range or ranges must be placed immediately after the word FOR. Ranges affect only those members of set which contain wildcards. For example, the FOR below will process all of the **.TXT* files that were created or updated on December 4, 2018, and of the file ABC.LST regardless of its timestamp:

```
for /[d12-4-2018,+0] %x in (*.txt abc.lst) ...
```

If ***command*** is an internal command that supports ranges, an independent range can also be used in ***command*** itself.

You can also refine the list by limiting it with the /A: option to select only files that have specific attributes.

When you use wildcards to specify ***set***, FOR scans the directory and finds each file which matches the wildcard name(s) you specified. If, during the processing of the FOR command, you create a new file that could be included in ***set***, it may or may not appear in a some later iteration of the same FOR command. Whether or not the new file appears depends on its physical location in the directory structure. For example, if you use FOR to execute a command for all *.TXT* files, and the command also creates one or more new *.TXT* files, those new files may or may not be processed during the current FOR command, depending on where they are placed in the physical structure of the directory. This is a Windows constraint over which ***TCC*** has no control. Therefore, in order to achieve consistent results you should construct FOR commands which do not create files that could become part of set for the current command.

Working with Text

Set can also be made up of text instead of file names. For example, to create three files named *file1*, *file2*, and *file3*, each containing a blank line:

```
for %suffix in (1 2 3) echo. > file%suffix
```

You can also use the names of environment variables as the text. This example displays the name and content of several variables from the environment (see the general discussion of the Environment for details on the use of square brackets when expanding environment variables):

```
for %var in (path prompt comspec) echo %var=%[%var]
```

Retrieving Text from Files

If the name of a file in ***set*** is prefixed with @ ("at" sign), it is considered as an @file list**.** FOR extracts each line from the file and places it in the FOR variable.

Warning*:* if the line contains characters which are syntactically significant for ***TCC***, for example, one of the characters <"[]|>, it may have undesirable effects. You may use the /X option of SETDOS to mitigate them.

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If you use **@CON** as the filename, FOR will read from standard input (typically a redirected input file) or from a pipe. If you use **@CLIP:** as the filename, FOR will read any text available from the Windows clipboard. See Redirection and Piping for more information on these features.

See @file list for additional details.

Parsing Text from Files

Another method of working with text from files is to have FOR parse each line of each file for you. To begin a file-parsing FOR, you must use the /F option and include one or more file names in set. When you use this form of FOR, the variable name must be a single letter, for example, **%a**.

This method of parsing, included for compatibility with CMD, can be cumbersome and inflexible. For a more powerful method, use FOR with @filename as the ***set*** to retrieve each line from the file, as described in the previous section, and use variable functions like @FIELD, @INSTR, @LEFT, @RIGHT, and @WORD to parse the line (see Variable Functions for information on variable functions).

By default, FOR will extract the first word or token from each line and return it in the variable. For example, to display the first word on each line in the file *FLIST.TXT*:

```
for /f %a in (flist.txt) echo %a
```

You can control the way FOR /F parses each line by specifying one or more parsing options in a quoted string immediately after the **/F**. The available options are:

skip=*n*: FOR /F will skip ***n*** lines at the beginning of each file before parsing the remainder of the file.

tokens=*n*, *m*, ...: By default, FOR /F returns just the first word or ***token*** from each parsed line in the variable you named. You can have it return more than one token in the variable, or return tokens in several variables, with this option.

This option is followed by a list of numbers separated by commas. The first number tells FOR /F which token to return in the first variable, the second number tells it which to return in the second variable, etc. The variables follow each other alphabetically starting with the variable you name on the FOR command line. This example returns the first word of each line in TEST.TXT in ***%d***, the second in ***%e***, and the third in ***%f***:

```
for /f "tokens=1,2,3" %d in (test.txt) ...
```

You can also indicate a range of tokens by separating the numbers with a hyphen **-**.

eol=*c*: If FOR /F finds the character ***c*** in the line, it will assume that the character and any text following it are part of a comment and ignore the rest of the line.

delims=*xxx*..: By default, FOR /F sees spaces, tabs and commas as word or token delimiters. This option replaces those delimiters with all of the characters following the equal sign to the end of the string. This option must therefore be the last one used in the quoted options string.

usebackq : Duplicates the awkward CMD syntax. A back quoted string is executed as a command; a single quoted string is a literal string; and double quotes quote filenames in the file set. We don't recommend **usebackq** for batch files written for ***TCC***, as ***TCC*** has much more elegant ways of doing the same things.

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You can also use FOR /F to parse a single string instead of each line of a file by using the string, in quotes, as ***set.*** For example, this command will assign variable ***A*** to the string ***this***, ***B*** to ***is***, etc., then display ***this***:

```
for /f "tokens=1,2,3,4" %a in ("this is a test") echo %a
```

"Counted" FOR Loop

The "counted FOR" loop is included for compatibility with CMD. In most cases, you will find the DO command more useful for performing counted loops.

In a counted FOR command, the ***set*** is made up of numeric values instead of text or file names. To begin a counted FOR command, you must use the /L option and then include three values, separated by commas, in ***set***. These are the ***start***, ***step***, and ***end*** values. During the first iteration of the FOR loop, the variable is set equal to the ***start*** value. Before each iteration, the variable is increased by the ***step*** value. The loop ends when the variable exceeds the ***end*** value. This example will print the numbers from 1 to 10:

```
for /l %val in (1,1,10) echo %val
```

This example will print the odd numbers from `1` to `10` (`1`, `3`, `5`, `7`, and `9`):

```
for /l %val in (1,2,10) echo %val
```

The ***step*** value can be negative. If it is, the loop will end when the variable is less than the ***end*** value.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

WARNING! You must not have white space between ***`start`*** and the subsequent comma, nor between ***`step`*** and its subsequent comma. White space after the comma is accepted.

Directory Recursion

By default, FOR works only with files in the current directory or a specified directory. Option switch /R specifies that the search should recursively process subdirectories. If you specify a directory name immediately after /R, FOR will start in that directory and then search each of its subdirectories. If no directory is specified after the /R, the search starts in the current default directory. If you do specify a directory, *and* its name includes any special characters, it must be enclosed in double quotes. For example, it must be quoted if it is specified with the aid of an environment variable, e.g., ***% windir\command***.

There are two differences in the invocation of ***command*** caused by directory recursion:

- The loop control variable contains the full name of the matching file
- ***command*** is executed with the default directory set to the directory in which the file was found

This example processes all *`.TXT`* files in the current directory and its subdirectories:

```
for /r %x in (*.txt) ...
```

This example works with all of the *`.BAK`* files on drive ***`D:`***

```
for /r d:\ %x in (*.bak) ...
```

Output Redirection

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The default output redirection (i.e., **for ... > filename**) creates a new output file in each iteration. If ***filename*** does not include an absolute file path, it will be created relative to the then current default directory. If you use directory recursion, this path will change for each directory processed. The simplest way to force a single target file is to enclose the whole command in parentheses, e.g.,:

```
(for %x in (set) command) > filename
```

Other Notes

- You can use either `%` or `%%` in front of the variable name (***var***) in the command. Either form will work, whether the FOR command is typed from the command line or is part of an alias or batch file. (CMD which requires a single `%` if FOR is used at the command line, but requires %% if FOR is used in a batch file.) Note that you must have at least one `%` sign present.
- The variable name can be up to 80 characters long.
- If the FOR command is an alias, e.g., **`alias for=*for /h`**, range specifications will be ignored.
- The word DO is unnecessary but accepted. Do not confuse it with the completely unrelated DO command.
- If the name of the FOR variable ***var*** is a single character, for compatibility with CMD, it is created in the environment in a special way that does not overwrite an existing environment variable with the same name. Wherever ***command*** contains the % sign immediately followed by the character which is the name of the FOR variable, it is replaced by its value, regardless of any characters following it. For example, the following command tries to add ***a:*** and ***b:*** to the end of PATH, but will not work as intended:

```
for %p in (a: b:) path %path;%p
path
b:ath;b:
```

The ***%p*** in ***%path*** was interpreted as the FOR variable ***%p*** followed by the text ***ath***, not what was intended. To get around this, use a different letter or a longer name for the FOR variable, or use square brackets around the variable name, as shown in the examples below, any one of which accomplishes the original goal:

```
for %p in (a: b:) path %[path];%p
for %x in (a: b:) path %path;%x
for %px in (a: b:) path %path;%px
```

- If the name of the FOR variable contains more than one character, it is created in the environment, and erased when FOR is completed, whether or not a variable by that name existed before the FOR. It cannot be modified with the SET, ESET, or UNSET commands. If you already had a variable with that name, it will no longer be accessible. For example, a command that begins

```
for %path in ...
```

will write over your current PATH setting, then erase the PATH variable completely when FOR is done.

- ***Command*** may also use the FOR variable with the special syntax of CMD described in Special syntax for CMD compatibility.

- The following example uses FOR with variable functions to delete the *.BAK* files for which a corresponding *.TXT* file exists in the current directory (this should be entered on one line):

```
for %file in (*.txt) del %@name[%file].bak
```

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The above command may not work properly on an LFN drive, because the returned *FILE* variable might contain white space. To correct this problem, you need two sets of quotes, one for DEL and one for %@NAME:

```
for %file in (*.txt) del "%@name["%file"].bak"
```

- You can use command grouping to execute multiple commands for each element in ***set***. For example, the following command copies each *.WKQ* file in the current directory to the *D:\WKSAVE* directory, then changes the extension of each file in the current directory to ***.SAV***:

  ```
  [for %file in (*.wkq) (copy %file d:\wksave\ & ren %file *.sav)
  ```

  or (in a batch file):

  ```
  for %file in (*.wkq) (
        copy %file d:\wksave\
        ren %file *.sav
  )
  ```

- In a batch file you can use GOSUB to execute a subroutine for every element in ***set***. Within the subroutine, the FOR variable can be used just like environment variable. This is a convenient way to execute a complex sequence of commands for every element in ***set*** without CALLing another batch file.

- One unusual use of FOR is to execute a collection of batch files or other commands with the same parameter. For example, you might want to have three batch files all operate on the same data file. The FOR command could look like this:

  ```
  for %cmd in (filetest fileform fileprnt) %cmd datafile
  ```

  This line will expand to three separate commands:

  ```
  filetest datafile
  fileform datafile
  fileprnt datafile
  ```

- FOR statements can be nested.

LEAVEFOR

The special keyword LEAVEFOR can be used inside a FOR command group. LEAVEFOR terminates the current FOR processing and continues with the line following the FOR command, in a manner similar to that of the LEAVE keyword in a DO command.

```
for %i in (*) (
  ...
  if "%i" == "xyz.abc" leavefor
  ...
)
```

Options:

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/A: Process only those files that have the specified attribute(s). **/A:** will be used only when processing wildcard file names in ***set***. It will be ignored for filenames without wildcards or other items in ***set***. See Attribute Switches for information on the attributes which can follow **/A:**.

For example, to process only those files with the archive attribute set:

```
for /a:a %f in (*) echo %f needs a backup!
```

Default: **/A:-D-H-S**, i.e. include only ***files*** without the ***hidden*** and ***system*** attributes.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/D Only return subdirectories, excluding "**.**" and "**..**" .

/F Return one or more words or tokens from each line of each file in ***set***. The **/F** option can be followed by one or more options in a quoted string which control how the parsing is performed. See Parsing Text From Files.

/H Suppresses the assignment of the "." and ".." directories to the FOR variable when directories are explicitly included using the /A: option.

/I"*text*" Select filenames by matching text in their descriptions. See Description Ranges.

/L Interpret the three values in ***set*** as the ***start***, ***step***, and ***end*** values of a counted loop. See Counted FOR Loops.

/Nj Don't recurse into symlinks or junctions (see /R).

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

The /O:... option saves all of the matching filenames and then performs the requested operation. This avoids the potential problem of processing files more than once.

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/R [*path*] Look in the current directory and all of its subdirectories for files in ***set***. If the **/R** is followed by a directory name, look for files in that directory and all of its subdirectories. **Warning:** if the directory name includes special characters, including "%" to indicate an environment variable, it must be enclosed in double quotes ("). /R supports Windows shell folder names; see CDD for details.

/T"*text*" Specify the delimiters to be used when parsing a string set.

/W The FOR set is to be processed as filenames, even if no wildcards are detected. (This is useful if you want to use regular expressions with FOR.)

4.3.74 FREE

Purpose: Display the total disk space, total bytes used, and total bytes free on the specified (or default) drive(s)

Format: FREE [*drive:* ...]

drive One or more drives to include in the report.

See also: MEMORY.

Usage:

A colon [**:**] is required after each drive letter.

If the volume serial number is available, it will appear after the drive label or name.

FREE supports OpenAFS names.

Example:

Display the drive status of drives C and D :

```
free c: d:
```

4.3.75 FTYPE

Purpose: Modify or display the command used to open a file of a type specified in the Windows registry

Format: FTYPE [/= /P /R[*filename*] | *filetype*[=[*command*]]

filename One or more input files to read file type definitions from.
filetype A file type stored in the Windows registry.
command The command to be executed when a file of the specified type is opened.

/P(ause) /U(ser)
/R(ead from file)

See also: ASSOC, ASSOCIATE, and Executable Extensions.

Usage

FTYPE allows you to display or update the command used to open a file of a specified type stored in the Windows registry.

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FTYPE modifies the behavior of Windows file associations stored under the registry handle HKEY_CLASSES_ROOT, and discussed in more detail under Windows File Associations. If you are not familiar with file associations be sure to read about them before using FTYPE.

The entry modified by FTYPE is the Shell\Open\Command entry for the specified file type, which defines the application to execute when a file of that type is opened. The open action is generally invoked by selecting **Open** on the popup menu for a file from the Windows Explorer. Note that opening a file and double-clicking its icon (or selecting the icon and pressing Enter) may not be the same thing. Double-clicking or pressing Enter invokes the default action for the file type, which may or may not be **Open**.

If you invoke FTYPE with no parameters, it will display the current file types and associated shell open commands. Use the **/P** switch to pause the display at the end of each page. If you include a ***filetype***, with no equal sign or ***command***, FTYPE will display the current command for that file type.

If you include the equal sign and ***command***, FTYPE will create or update the shell open command for the specified file type. The ***command*** generally includes an application name, including full path, plus parameters. The specific syntax required depends on the internal operation of both Windows and the application involved, and is beyond the scope of this help file. You can learn about typical syntax by reviewing appropriate Windows and application documentation, and / or by checking through the current contents of your registry. If the value contains the percent mark character `%`, the value stored will be type REG_EXPAND_SZ, otherwise it will be type REG_SZ.

To remove the shell open command for a file type, use a command like FTYPE **filetype=**, with no ***command*** parameter. This will not delete the shell open command entry from the registry; it simply sets the command to an empty string.

FTYPE should be used with caution, and only after backing up the registry. Improper changes to file associations can prevent applications and / or the operating system from working properly.

Options

/= Display the FTYPE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/P Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts.

/R This option loads a list of file types and associated shell open commands. If no filename is specified and the input is redirected, FTYPE will read from stdin. The format of the file is the same as that of the FTYPE display.

You can insert comments in the file by prefixing the line with a colon (**:**).

/U Display or set the association in HKCU\Software\Classes.

4.3.76 FUNCTION

Purpose: Create, modify or display user-defined variable functions

Format: Display mode:
FUNCTION [/GL /LL /P] [*wildname*]

Direct definition mode:
FUNCTION [/= /GL /LL] *name*[=]*definition*

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Definition file mode:
FUNCTION [/= /G /GL /L /LL /O /Z] /R [*file*...]

file	One or more input files to read function definitions from.
wildname	Name of function whose definition is to be displayed (may contain * and ? wildcards)
name	The name of the function you want to define.
definition	The value or definition of what the function should return.

/G(lobal) /P(ause)
/GL (global list) /R(ead file)
/L(ocal) /Z (overwrite list)
/LL (local list)

See also: UNFUNCTION and ESET.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1] functions [2*] ***

Usage:

- Overview
- Displaying Functions
- Defining Functions
- Deleting Functions
- Local and Global Functions
- Saving and Reloading Your Functions
- Warnings

Overview

FUNCTION allows you to create or display user-defined variable functions that can be used anywhere Variable Functions can be used. User-defined functions are powerful alternatives to subroutines.

Displaying Functions

If you invoke the FUNCTION command with no parameters, it will display the current function list (the local function list if you have set local functions in *TCMD.INI* or the TCC startup command line; otherwise the global function list):

```
function
```

If you include a ***wildname***, which may include wildcards (* or ?), with no equal sign and no ***definition***, FUNCTION will display the current values, if any, of all functions matching ***wildname***, .e.g.:

```
function *dx*
```

will display all functions which contain ***dx*** in their name.

You can use the /P option to control display scrolling when displaying functions.

Defining Functions

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If you include the equal sign and ***definition***, FUNCTION will create or update the function referred to by ***name***. Any previous ***definition*** associated with ***name*** is discarded. Instead of the = sign, you may use one or more spaces or tab characters to separate ***name*** and ***definition***.

Once a function is defined, the definition may be edited using ESET /F.

A function can optionally use references to parameters numbered from `%0` to `%511` which will be replaced with the matching parameter value when the function is called. `%0` refers to the function name, `%1` to the first parameter, etc. For example, the function

```
function leftmost=`%@left[1,%1]`
```

will return the leftmost character in its parameter, e.g. `%@leftmost[xyz]` will return `x`.

The parameter **%n$** has a special meaning. ***TCC*** interprets it to mean "all arguments, from parameter ***n*** to the end." If ***n*** is not specified, it has a default value of **1**, so **%$** means "all arguments passed to the function."

The parameter **%-n$** means "the arguments from parameter 1 to ***n*** - 1".

The special variable reference **%#** expands to the number of parameters passed to the function.

A function definition need not reference any parameters at all. For example:

```
function tomorrow=`%@makedate[%@inc[%@date[%_date]]]`
```

could be simply invoked as **%@tomorrow[]**.

To use the function ***name*** you invoke is as ***%@name[parameters]***,where you must specify enough parameters to assign a value to the highest numbered parameter ***referenced*** in the function definition. It may have more parameters, which will be silently ignored.

The Colors, Color Names and Codes topic shows a simple example of the use of a function in a batch file.

Deleting Functions

The normal method is to use the UNFUNCTION command. However, it is also possible to delete a function by redefining it without a ***definition***, e.g., the command

```
function fs=
```

deletes the function ***fs***.

Local and Global Functions

Functions can be stored in local and/or global lists.

With a local function list, any changes made to the functions will only affect the current copy of ***TCC***. They will not be visible in other shells or other sessions.

With a global function list, all copies of ***TCC*** will share the same function list, and any changes made to the functions in one copy will affect all other copies. This is the default in ***TCC***.

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You can control the type of function list to use with the /GL and /LL options in FUNCTION, Local Functions and Global Functions configuration options, with the **/L** and **/LF** options of the START command, and with the **/L** and **/LF** startup options.

If you don't specify /GL or /LL, ***TCC*** will first look for functions in the local list. If there is no local list or the function is not found, ***TCC*** will search the global list (if it exists).

There is no fixed rule for determining whether to use a local or global function list. Depending on your work style, you may find it most convenient to use one type, or a mixture of types in different sessions or shells. We recommend that you start with the default approach, then modify it if you find a situation where the default is not convenient.

Whenever you start a second copy of ***TCC*** which uses a local function list, it inherits a copy of the functions from the previous shell. However, any changes to the functions made in the second shell will affect only that shell. If you want changes made in the second shell to affect the previous shell, use a global function list in both shells.

Saving and Reloading Your Functions

You can save your functions to a file (e.g., *FUNCTIONS.LST*) this way:

```
function > function.lst
```

You can then reload all the function definitions in the file the next time you start up with the command:

```
function /r function.lst
```

This is much faster than defining each function individually in a batch file. If you keep your function definitions in a separate file which you load when ***TCC*** starts, you can edit them with a text editor, reload the edited file with FUNCTION /R, and know that the same function list will be loaded the next time you start ***TCC***.

When you define functions in a file that will be processed by the FUNCTION /R command, you do not need back quotes around definition, even if back quotes would normally be required when defining the same function at the command line or in a batch file.

Warnings

When you define a function in the command line (i.e., without using the /R option), variables and functions not protected by back quotes or doubled % signs are immediately evaluated, and the result becomes part of the function definition.

Syntax errors in a function definition are not detected until it is used.

Options:

/= Display the FUNCTION command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/G Switch from a local to a global function list. If you already have a global function list (for example, in another ***TCC*** instance or in SHRALIAS), FUNCTION will not do the conversion.

/GL Read from and write to the global function list. If you have both local and global function lists defined and do not specify /GL, FUNCTION will default to using the local list.

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/L Switch from a global to a local function list.

/LL Read from and write to the local function list.

/O Don't overwrite existing values (only valid in combination with /R).

/P Wait for a key to be pressed after each screen page before continuing the display.

/R This option loads a list of functions from a file. If no filename is specified and input is redirected, /R will read from stdin. The format of the file is the same as that of the FUNCTION display:

name=definition

where ***name*** is the name of the function and ***definition*** specifies how to determine its value. You may use the equal sign = or whitespace to separate ***name*** and ***definition***. Back-quotes are not required.

You can add comments to the file by starting each comment line with a colon `:`.

You can load multiple files with one FUNCTION /R command by placing the names on the command line, separated by spaces:

```
function /r func1.lst func2.lst
```

FUNCTION /R definitions can span multiple lines in the file if each line, except the last, is terminated with an Escape Character.

If there is no filename parameter and input is redirected, FUNCTION /R will read from stdin.

/Z Overwrite the existing function list with the contents of the specified file (must be used with /R). FUNCTION /R /Z is 20x faster than FUNCTION /R, because it doesn't have to check for existing functions and append new functions to the end of the list.

4.3.77 GLOBAL

Purpose: Execute a command in the current directory and its subdirectories

Format: GLOBAL [/= /H /I /J /N /P /Q /S[+]*n*] *command*

command The command to execute, including parameters and switches.

/H(idden directories)
/I(gnore exit codes)
/J (only junctions)
/N(o junctions)
/P(rompt)
/Q(uiet)
/S(ubdirectory depth)

Usage:

GLOBAL performs ***command*** first in the current directory. Then it makes every subdirectory under the current directory the current working directory in turn, and performs ***command*** in that directory. ***Command*** can be an internal command, an alias, an external command, or a batch file. When ***command*** is executed, it may be necessary to utilize one of the variable functions which convert a relative path to an absolute one, e.g., @truename[], @full[], etc to make sure that files of the same name in different directories are correctly handled.

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If you don't specify any arguments, GLOBAL will display its command dialog.

The example below copies the files in every directory on drive **A** to the directory *C:\TEMP*:

```
[a:\] global copy * c:\temp
```

If a specific filename is found in more than one directory on **A**:, assuming COPY is the default internal command, the one found last will be left in C:\TEMP. Which one of multiple, identically named files is found last is unpredictable!

If you use the /P option, GLOBAL will prompt for each subdirectory before performing ***command***. You can use this option if you want to perform ***command*** in most, but not all subdirectories of the current directory.

You can use command grouping to execute multiple ***commands*** in each subdirectory. For example, the following command copies each *.TXT* file in the current directory and all of its subdirectories to drive **D**. It then changes the extension of each of the copied files to *.SAV*:

```
global (copy *.txt d: & ren *.txt *.sav)
```

Output Redirection

The default output redirection (i.e., **global** ***command*** **>** ***filename***) creates a new output file named ***filename*** as each directory visited. If ***filename*** does not include an absolute file path, these files will be created relative to the currently visited directory. If ***filename*** does include an absolute file path, that file will be overwritten as each directory is visited, and only the data from the last visited directory will survive.

The simplest way to force a single target file is to enclose the whole command line in parentheses, e.g.,:

```
(global command) > filename
```

Options:

/= Display the GLOBAL command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/H Forces GLOBAL to look for hidden directories. If you don't use this switch, hidden directories and their subdirectories are ignored without error indication.

/I If this option is not specified, GLOBAL will terminate if ***command*** returns a non-zero exit code. Use **/I** if you want ***command*** to continue in additional subdirectories even if it returns an error in one subdirectory. GLOBAL will normally halt execution if ***TCC*** receives a **Ctrl-C** or **Ctrl-Break** even if you use **/I**.

Without this option, if GLOBAL is unable to change to a directory (for example, if user does not have access rights), GLOBAL will stop with an error message. With this option set, GLOBAL will ignore that directory, and all of its subdirectories, and continue in the next accessible directory.

/J Forces GLOBAL to only recurse through Junctions, not subdirectories.

/N Forces GLOBAL to ignore Junctions and only recurse through subdirectories.

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/P Forces GLOBAL to prompt with each directory name before it performs ***command*** in that directory. Your options at the prompt are explained in detail under Page and File Prompts.

/Q Do not display the directory names as each directory is processed.

/S GLOBAL will limit the subdirectory recursion to the number specified. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only go to the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, GLOBAL will not execute *command* until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not execute *command* in *\a* or *\a\b*.

4.3.78 GOSUB

Purpose: Execute a subroutine in the current batch file

Format: GOSUB ["*filename*"] *label* [*variables*]

filename	The file containing the subroutine
label	The batch file label at the beginning of the subroutine.
variables	Optional GOSUB variables.

See also: CALL, GOTO, and RETURN.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs btm cmd bat [2*] ***

Usage:

GOSUB can only be used in batch files.

TCC allows subroutines in batch files. A subroutine must start with a ***label*** (a colon [**:**] followed by a label name) which appears on a line by itself, and cannot be included a command group. Case differences are ignored when matching labels. The subroutine must end with a RETURN statement.

The subroutine is invoked with a GOSUB command from another part of the batch file. After the RETURN, processing will continue with the command following the GOSUB command. For example, the following batch file fragment calls a subroutine which displays the directory and returns:

```
echo Calling a subroutine
gosub subr1
echo Returned from the subroutine
quit
:subr1
dir /a/w
return
```

GOSUB begins its search for the ***label*** on the line of the batch file immediately after the GOSUB command. If the ***label*** is not found between the current position and the end of the file, GOSUB will restart the search at the beginning of the file. If the label still is not found, the batch file is terminated with the error message "Label not found".

You can define GOSUB variables by placing them after the label name on the GOSUB line. For example:

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```
Gosub Sub1 abc 15 "Hello World"
```

The variable names are defined on the label line. For example:

```
:Sub1 [str n world]
```

defines three variables - **%str** (set to "abc"), **%n** (set to 15), and **%world** (set to "Hello World"). Note that the square brackets are required on the label line. GOSUB variables are only defined for the duration of the subroutine. They are not inherited by nested GOSUBs, and are destroyed by the RETURN call.

If you append a * to the last variable name in the parameter list on the label line, it will be "greedy", and all remaining variables will be assigned to it. For example:

```
gosub sub1 one two three four five
...
:sub1 [arg1 arg2 arg3*]
```

arg3 will be assigned "three four five".

If you define GOSUB variables on the label but do not supply them on the GOSUB line, they will be set to an empty string.

GOSUB calls with variables are limited to a maximum of 22 levels deep. There is no limit on normal GOSUB calls.

GOSUB variables are placed in the environment in a special form for the duration of the subroutine, and will "mask" any environment variables of the same name that existed before the subroutine was called. GOSUB variables can be referenced like normal environment variables, but are not stored in the same way, cannot be modified with the SET, ESET, or UNSET commands, and cannot be used with the DEFINED test of IF, IFF, or @IF.

You cannot use SET within a subroutine to change the value of a GOSUB variable. If you attempt to do so, the SET command will set the standard environment variable of the same name, not the GOSUB variable, but this value will be "masked" by the GOSUB variable and will remain inaccessible until the subroutine ends.

You can call a subroutine in another file by specifying ***filename*** (the name must be enclosed in double quotes. This allows you to create libraries of subroutines, without having to duplicate them in each batch file. For example:

```
gosub "c:\library\batlib.btm" Evaluate [%1 %2 %3]
```

GOSUB saves the IFF and DO states, so IFF and DO statements inside a subroutine won't interfere with statements in the part of the batch file from which the subroutine was called. If the subroutine has executed a SETLOCAL without a matching ENDLOCAL, an ENDLOCAL will be executed before returning to the calling batch file.

You cannot RETURN from a GOSUB while inside a DO loop.

If ***TCC*** reaches the end of the batch file while inside a subroutine, it will automatically return to the command after the GOSUB, just as if an explicit RETURN command had been included as the last line of the file.

Subroutines can be nested.

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See also: user-defined functions.

4.3.79 GOTO

Purpose: Branch to a specified line inside the current batch file

Format: GOTO [/I] *label*

label The batch file label to branch to.

/I(FF and DO continue)

See also: GOSUB, CALL.

Usage:

GOTO can only be used in batch files.

After a GOTO command in a batch file, the next line to be executed will be the one immediately following the ***label***. The ***label*** must begin with a colon [**:**] and appear on a line by itself, and cannot be included in a command group. The colon is required on the line where the ***label*** is defined, but is not required in the GOTO command itself. Case differences are ignored when matching labels.

This batch file fragment checks for the existence of the file *CONFIG.SYS*. If the file exists, the batch file jumps to C_EXISTS and copies all the files from the current directory to the root directory on A:. Otherwise, it prints an error message and exits.

```
if exist config.sys goto C_EXISTS
echo CONFIG.SYS doesn't exist - quitting.
quit
:C_EXISTS
copy * a:\
```

GOTO begins its search for the ***label*** on the line of the batch file immediately after the GOTO command. If the ***label*** is not found between that position and the end of the file, GOTO will restart the search at the beginning of the file. If the label is still not found, the batch file is terminated with the error message "Label not found."

To avoid errors in the processing of nested statements and loops, GOTO cancels all active IFF statements and DO / ENDDO loops unless you use **/I**. This means that a normal GOTO (without **/I**) may not branch to any label that is between an IFF and the corresponding ENDIFF or between a DO and the corresponding ENDDO.

For compatibility with CMD, the command

```
GOTO :EOF
```

will end processing of the current batch file if the label :EOF does not exist. However, this is less efficient than using the QUIT or CANCEL command to end a batch file.

Option:

/I Prevents GOTO from canceling IFF statements and DO loops. Use this option only if you are absolutely certain that your GOTO command is branching entirely within any current IFF

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statement **and** any active DO / ENDDO block. Using **/I** under any other conditions will cause an error later in your batch file.

You cannot branch into another IFF statement, another DO loop, or a different IFF or DO nesting level, whether you use the **/I** option or not. If you do, you will eventually receive an "unknown command" error (or execution of the UNKNOWN_CMD alias or plugin) on a subsequent ENDDO, ELSE, ELSEIFF, or ENDIFF statement.

4.3.80 GZIP

Purpose: Create or update .gz (GZIP) archives

Format: GZIP [/= /A:[[-][+]rhsdaecjot] /A /En /Ln /M /O:[-]acdeginorstuz /Q /V] *gziparchive* [@*file*] *file*

gziparchive	The gzip file to work with
file	The files to be added to the gzip file

/A:... (attribute switch)
/A(dd)
/E (method)
/Ln (compression level)
M(ove)
/O:... (sort order)
/Q(uiet)
/V(iew)

See also UNGZIP.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs gz [2*] ***

File Selection

Supports attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Usage:

GZIP is compatible with the archives created by the Linux / UNIX gzip utility, and supports RFC 1952. GZIP is normally used for compressing a single file. If you need to compress multiple files, you should use the ZIP or TAR commands.

You can specify a pathname for g*ziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, GZIP adds ".gz". If you don't specify an operation, GZIP will default to Add.

Option:

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file to the archive. (This is the default.)

/En Set the compression method (0=deflate, 1=lzw). The default is 0.

/Ln Set the compression level (1 - 6, where 6=maximum compression). The default is 4.

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/M Delete the file from the disk after adding them to the gzip file.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/Q Don't display the file being compressed.

/V View the contents of the .gz file (date, time, and filename). If the file was compressed with lzw, it will not have a header, so it cannot be viewed.

/= Display the GZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.81 HASH

Purpose: Display a hash value for the specified file(s)

Format: HASH [/= /[*range*] //A:[[-][+]
rhsadecijopt] /E /L /S /CKSUM /CRC32 /MD5 /SHA1 /SHA256 /SHA384 /SHA512]
filename ...

File Selection

Supports extended wildcards, attribute switches, ranges, multiple file names, and include lists.

Usage:

The HASH command generates a file's hash value using the specified algorithm. The hash value is a unique value corresponding to the content of a file. If two files have the same hash value and they're using SHA256, SHA384, or SHA512, then they have the same content (regardless of their file names or locations).

HASH will default to SHA256.

If you don't enter any arguments, HASH will display its command dialog.

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Example:

Return a SHA256 hash (in lower case) for the file TCMD.EXE:

```
hash /sha256 /L tcmd.exe
```

Option:

/= Display the HASH command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details. You can specify **/A:=** to display a dialog to help you set individual attributes.

/E Ignore errors (i.e., file not found)

/L Display hash in lower case

/S Hash matching files in the current directory and subdirectories

/CKSUM A Linux cksum-compatible CRC32 10-digit decimal number. CKSUM is not considered secure or unique.

/CRC32 A CRC-32 hash value is an 8-digit hexadecimal number. CRC-32 is not considered secure or unique.

/MD5 An MD-5 hash value is a 32-digit hexadecimal number. MD-5 is not considered secure.

/SHA1 A SHA-1 hash value is a 40-digit hexadecimal number. SHA-1 is not considered secure.

/SHA256 A SHA-256 hash value is a 64-digit hexadecimal number

/SHA384 A SHA-384 hash value is a 96-digit hexadecimal number

/SHA512 A SHA-512 hash value is a 128-digit hexadecimal number

4.3.82 HEAD

Purpose: Display the beginning of the specified file(s)

Format: HEAD [/= /A:[[-][+]rhsadecijopt] /B /C*n* /I"text" /N[+]*n* /O:[-]acdeginorstuz /P /Q /V] [@*file*] *file*...

file The file or list of files that you want to display.
@file A text file containing the names of the files to display, one per line (see @file lists for details).

/A: (Attribute select)
/B(ell)
/C (number of bytes)
/I"text" (match description)
/O:... (Order)
/P(ause)
/Q(uiet)
/V(erbose)

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/N(umber of lines)

See also: LIST, TAIL, and TYPE.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Internet: Can be used with FTP/HTTP Servers, e.g.

```
head "https://jpsoft.com/notfound.htm"
```

Usage:

The HEAD command displays the first part of a file or files. It is normally only useful for displaying ASCII text files (i.e. alphanumeric characters arranged in lines separated by CR/LF). Executable files (*.EXE*) and many data files may be unreadable when displayed with HEAD because they include non-alphanumeric characters or unusual line separators.

You can press **Ctrl-S** to pause HEAD's display and then any key to continue.

The following example displays the first 15 lines of the files *MEMO1* and *MEMO2*:

```
head /n15 memo1 memo2
```

To display text from the clipboard use **CLIP:** as the file name. CLIP: will not return any data if the clipboard does not contain text. See Highlighting and Copying Text for additional information on CLIP:.

If you don't enter any arguments, HEAD will display its command dialog.

HEAD sets two internal variables:

%_head_files	The number of files displayed
%_head_errors	The number of errors

HEAD will recognize Unicode (UTF-16) files based on either a BOM or specific UTF-16 sequences at the beginning of the file. HEAD will recognize UTF-8 files based on either a BOM or UTF-8 extended characters within the first 2K of the file.

FTP Usage

HEAD can also display files on FTP/HTTP Servers. For example:

```
head ftp://ftp.microsoft.com/index
```

NTFS File Streams

HEAD supports file streams on NTFS drives. You can type an individual stream by specifying the stream name, for example:

```
head streamfile:s1
```

Options:

/= Display the HEAD command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Ignore bell (ASCII 7) characters.

/C: Display the specified number of bytes. **/C** accepts a **b**, **k**, or **m** modifiers at the end of the number. ***b*** is the number of 512-byte blocks, ***k*** is the number of kilobytes, and ***m*** the number of megabytes.

/I"text" Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/N+n Skip the first ***n*** lines.

/N n Display ***n*** lines. The default is 10.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/P Pause and prompt after displaying each page.

/Q Do not display a header for each file. This is the default behavior, but an explicit /Q may be needed to override an alias that forces /V.

/V Display a header for each file.

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4.3.83 HELP

Purpose: Display help for internal commands

Format: HELP [/I /S] [*topic*]

topic A help topic (internal command, variable or function).

/I (Index)
/S (Search)

See also: The Online Help System.

Usage:

Online help is available for all of ***TCC***'s internal commands, variables, and other features. You can either choose to use the local help (TakeCommand.ewriter) or the web help (https://jpsoft.com/help). To select web help as the default, go to "OPTION / Startup / Web Help"

If you type the command **HELP** by itself (or press F1 when the command line is empty), an introductory page (**Overview**) is displayed. If you type HELP plus a topic name, that topic is displayed. For example:

```
help copy
```

displays information about the COPY command and its options. All internal commands, internal variables, variable functions, and key mapping directives have their own topic.

You can also invoke help for the word immediately above (or immediately to the left of) the cursor by pressing Ctrl-F1 (this can be useful when you need the syntax for a variable function).

Options:

/I Show the Index instead of the topic

/S Show the Search window instead of the topic

4.3.84 HISTORY

Purpose: Display or modify the history list

Format: HISTORY [/= /A *command* /F["..."] /G /GL /L /LL /M /N /P /Rn *filename* /Tn /V]

command A command to be added to the history list.
filename The name of a file containing entries to be added to the history list.

/A(dd)
/F["..."] f(ree)
/G(lobal)
/GL (global list)
/L(ocal)
/LL (local list)
/M (number)
/N(o duplicates)
/P(ause)
/R(ead)
/T (display last n lines)
V (display in reverse order)

See also: DIRHISTORY, HistoryExclude and LOG.

Usage:

TCC keeps a list of the commands you have entered on the command line. See Command History and Recall for information on command recall, which allows you to use the history list to repeat or edit commands you have previously executed.

The HISTORY command lets you view and manipulate the command history list directly. If no parameters are entered, HISTORY will display the current command history list.

With the options explained below, you can clear the list, add new commands to the list without executing them, save the list in a file, or read a new list from a file.

The number of commands saved in the history list depends on the length of each command line. The history list size can be specified at startup from 4,000 to 500,000 characters (see the Command History Buffer Size configuration option). The default size is 20,000 characters.

Your history list can be stored locally (a separate history list for each copy of ***TCC***) and/or globally (all copies of ***TCC*** share the same list). For full details see local and global history. When displaying, creating or deleting history entries, you can specify which list you want HISTORY to search with the /GL and /LL options.

NOTE: TCC as of version 26 supports simultaneous local and global command history lists. This is for advanced users only; it is not generally recommended to have both types. If you have only a local command history list or only a global command history list, history recall will work the same as in previous versions. If you have both local and global command history lists, searching backwards through the history will first search the local list. If you reach the beginning of the local list, the next history entry returned will be from the end of the global list. If you search forwards through the global list, when you reach the end the next history entry returned will be the beginning of the local list. If you try to go beyond the beginning of the global list or the end of the local list ***TCC*** will beep. Note that history wrapping is not compatible with local + global lists.

When searching the history, ***TCC*** will look first in the local list (if it exists), and then in the global list (if it exists).

If you use the /G option to convert a local history list to a global history list, HISTORY will not do the conversion if a global history list already exists (for example, in another ***TCC*** session or in SHRALIAS).

You can use the HISTORY command as an aid in writing batch files by redirecting the HISTORY output to a file and then editing the file appropriately. However, it is easier to use the LOG /H command for this purpose.

You can disable the history list or specify a minimum command line length to save with the Minimum Length configuration option. You can prevent any command line from being saved in the history by beginning it with an "at" sign (**@**).

You can exclude specific commands from the History List with the HistoryExclude variable.

You can control whether duplicate entries will be saved in the history list with the Duplicates configuration option.

You can save the history list by redirecting the output of HISTORY to a file. This example saves the command history to a file called *HISTFILE* and reads it back again immediately. If you leave out the HISTORY /F command on the second line, the contents of the file will be appended to the current history list instead of replacing it:

```
history > histfile
```

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```
history /f
history /r histfile
```

If you need to save your command history at the end of each day's work, you might use the first of these commands in your *TCSTART.BTM* or other startup file, and the second in *TCEXIT.BTM*:

```
if exist c:\histfile history /r c:\histfile
history > c:\histfile
```

This restores the previous history list if it exists, and saves the history when ***TCC*** exits.

TCC can also load and save the history list automatically if you use the History File configuration option.

Options:

/= Display the HISTORY command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Add a command to the history list. This performs the same function as the **Ctrl-K** key at the command line.

/F["..."] Erase entries in the command history list. You can have multiple /F"..." arguments, and they can contain wildcards. If you don't include the optional quoted argument, /F will erase the entire list.

/G Switch from a local to a global history list. If you already have a global history list (for example, in another ***TCC*** instance or in SHRALIAS), HISTORY will not do the conversion.

/GL Read from and write to the global history list. If you have both local and global history lists defined and do not specify /GL, HISTORY will default to using the local list.

/L Switch from a global to a local history list.

/LL Read from and write to the local history list.

/M Number the lines when displaying the history list.

/N Removes duplicate entries (oldest first) from the history list.

/P Wait for a key after displaying each page of the list. Your options at the prompt are explained in detail under Prompts.

/Rn Read the command history from the specified file and append it to the history list currently held in memory.

If you are creating a HISTORY /R file by hand, and need to create an entry that spans multiple lines in the file, you can do so by terminating each line, except the last, with an escape character. However, you cannot use this method to exceed the command line length limit.

If you try to load a file that is larger than the history list size, HISTORY will only load the last part of the file that will fit.

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You can optionally specify whether HISTORY should ignore duplicates and HistoryExclude and always append the lines by specifying /R1. (This will be considerably faster for large history lists.)

/Tn Display the last *n* lines of the history. If *n* is negative, skip the first *-n* lines of the history.

/V Display the history in reverse order. This cannot be combined with **/T**.

4.3.85 IF

Purpose: Execute a single command if a condition is true

Format: IF [/I] *condition command*
IF [/I] *condition* (*command1*) ELSE (*command2*)

condition	A conditional expression
command	The command to execute if ***condition*** is TRUE.
command1	The command to execute if ***condition*** is TRUE.
command2	The command to execute if ***condition*** is FALSE.

/I(gnore case)

See also: Conditional expressions, IFF, @IF.

Usage:

IF is usually used only in aliases and batch files. It is always followed by a ***condition*** (see Conditional expressions), and then a ***command***. First *condition* is evaluated, and if it is TRUE, ***command*** is executed. Otherwise, ***command*** is ignored.

If the condition is FALSE, **IF** returns a non-zero result, so it can be evaluated by one of the conditional command operators (**||** or **&&**).

Do not use IF with multi-line ***TCC*** commands like DO (unless you use the single-line variant of DO).

The **IF ... ELSE ...** syntax of CMD is also supported:

```
IF [/I] condition (command1) ELSE (command2)
```

The commands to be executed must be enclosed in parentheses (as in a command group). If ***condition*** is TRUE, ***command1*** is executed, if FALSE, ***command2*** is executed. **Note:** this syntax is much less powerful than the IFF command, which is recommended.

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. IF will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

When an IF test fails, the remainder of the command is discarded. Whether ***TCC*** continues with the next command on the line, or discards the rest of the line and goes to the next line is dependent upon the Duplicate CMD Bugs configuration option. CMD will discard all remaining commands on the line when an IF test fails, including those after a command separator or pipe character. If you do not want to reproduce CMD.EXE's behavior of an IF affecting all commands on a line, set **DuplicateBugs** to **No** in the .INI file. The IF behavior is different when **DuplicateBugs** is **YES** in a command group in a batch file. If there are multiple command lines in the command group, a failed IF will only ignore the remainder of the commands on that line. The commands on the subsequent lines in the command group will still be executed.

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For example, if Duplicate CMD Bugs is enabled (the default), the following command will display nothing, because the second ECHO command is discarded along with the first when the condition fails. If Duplicate CMD Bugs is disabled, it will display "hello":

```
[c:\] if 1 == 2 echo Wrong! & echo hello
```

Option:

/I This option is included only for compatibility with CMD. It has no effect in ***TCC***, since all string comparisons are case-insensitive unless you specify a case-sensitive test (EQC).

4.3.86 IFF

Purpose: Perform one of several alternate sets of commands based on the values of conditional expressions

Format:

IFF *condition1* THEN
  commandset1
[ELSEIFF *condition2* THEN
  commandset2]
  ...
[ELSE
  commandset3]
ENDIFF

condition1,2,3	Conditional expressions
commandset1	One or more commands to execute if ***condition1*** is TRUE
commandset2	One or more commands to execute if ***condition1*** is FALSE, but ***condition2*** is TRUE.
commandset3	One or more commands to execute if both ***condition1*** and ***condition2*** are FALSE.

See also: IF and @IF.

Usage:

IFF is similar to IF, but it can perform one ***commandset*** when a conditional expression is true and a different ***commandset*** when it is false. Repeated use of the optional ELSEIFF clause permits IFF to sequentially evaluate multiple, independent conditional expressions, and execute the ***commandset*** associated with the first TRUE conditional expression, or, if none are true, the ***commandset*** associated with the optional ELSE clause. After execution of any one of the ***commandsets*** the command after the ENDIFF clause will be executed.

You must start a new line or include a command separator :

- after each **THEN**
- before each **ELSEIFF**
- both before and after the **ELSE**.

The individual commands in each ***commandset*** may be *separate lines* of a batch file, or they may be separated by command separators, in any combination. A ***commandset*** may also be empty, The individual commands in a ***commandset*** may include any internal command, alias, external command, or batch file.

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IFF statements can be **nested,** i.e., a ***commandset*** may include another IFF / ENDIFF group. You must make sure that each individual command / ***commandset*** is syntactically correct. If an "inner" IFF / ENDIFF group is in error, it may not be detected until after the "outer" ENDIFF has been executed.

If the last argument on the line is a single **(,** it is interpreted as the beginning of a command group. IFF will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **).**

Notes

Be sure to read the cautionary notes about GOTO and IFF under the GOTO command before using a GOTO inside an IFF statement.

If you pipe data to an IFF, the data will be passed to the command(s) following the IFF, not to IFF itself.

Example:

The alias in this example checks to see if the parameter is a subdirectory. If so, the alias deletes the subdirectory's files and removes it (enter this on one line):

```
alias prune `iff isdir %1 then & del /s /x /z %1 & else & echo %1 is not a
      directory! & endiff`
```

4.3.87 IFTP

Purpose: Open or close an FTP / FTPS / SFTP session

Format: IFTP [/= /S *command* /C /EP /IPv6 /K="*key*" /N /P*n* /PR="n" /Q /R /V /V=*hostname*] /Z[*n*]] ["ftp://[*user*[:*password*]@]*server*[/*path*][:*port*]"]

user	The user name to login to the FTP site
password	The password to login to the FTP site.
server	The FTP server name.
path	The default directory on the server for this session.
port	Port number.

/C(lose)	/Q(uiet)
/EP (extended passive)	/R(econnect)
/IPv6	/S(end)
/K (SSH public key)	/T(cp keep-alive)
/N(o paths)	/V(erbose)
/P(assive)	/V=hostname
/PR="n" (port range)	/Zn (zlib)

Usage:

Most file processing commands and functions in ***TCC*** can access files on FTP servers in the same manner as files on local hard drives and a local network. Normally, each time you use the FTP feature of one of these commands or functions, it repeatedly starts an FTP session, performs an individual operation, and closes the FTP session, until the command or function is finished.

IFTP starts an FTP session which remains open until you close it or it is closed by the remote server. There are several advantages to using IFTP: the FTP connection remains open so commands execute more quickly, the syntax for accessing files on the server is shorter, and you can specify a default directory on the server for file operations.

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For example, to open an FTP connection using IFTP:

```
iftp ftp://user:pwd@ftp.myserver.com/dir1
```

For an FTPS connection, use something like:

```
iftp ftps://user:pwd@ftp.myserver.com/dir1
```

This command tells IFTP to open an FTP/FTPS session with the server ***myserver.com,*** send ***user*** as the login username and ***password*** as the login password, and to establish the directory ***/dir1*** as the default directory for this session. The user name and password are optional; if they are not used, IFTP will attempt to log in anonymously. Double quotes are required if there are spaces or special characters in the filename. If you specify a password of *****, you will be prompted to enter the password (which will appear on the screen as asterisks).

Note that in the example above ***dir1*** is a subdirectory of the FTP "root" directory -- the home directory for the named FTP user. In most server configurations this is not the same as the FTP server's physical root directory.

Note: If you enter IFTP with no parameters while a connection is active, the current server name and directory will be displayed.

If you enter IFTP with only the /Q or /V switch, you change the amount of information displayed without disturbing the existing connection (if any).

Once you have established an FTP session with IFTP, you can refer to files on the server by using **ftp:** (or **ftps:**) but leaving out the user name, password, and URL of the server. On most servers, file and path names which begin **ftp:** are relative to the default directory, if any, that you specified when you opened the IFTP session; file and path names which begin **ftp:/** are relative to the root directory for the login name.

The difference can be seen in these four DIR commands, assuming the IFTP session started above:

```
1. dir "ftp:*.txt"
2. dir "ftp:dir2/*.txt"
3. dir "ftp:/*.txt"
4. dir "ftp:/dir2/*.txt"
```

The first command lists the *.TXT* files in the default session directory, ***dir1***. The second command lists the ***.TXT*** files in ***/dir1/dir2*** because it interprets the path ***dir2/*.txt*** to be relative to the default directory. The quotes could be omitted from example 1 because it contains no forward slash that could be mistaken as an option switch. The third and fourth commands above, because they include a **/** immediately following the **ftp:** designator, are relative to the root directory. Command 3 lists the ***.TXT*** files in the root directory and command 4 lists the files in the ***dir2*** subdirectory of the root directory.

Note: If an ftp file or path specification begins with a **~** (tilde), ***TCC*** will not attempt to build a full directory name but will instead pass the entire string to the remote server.

You can only have one IFTP connection open at a time within a ***TCC*** tab window. However, while you have an IFTP connection open, you can still use a complete FTP URL to perform an operation on a different server. For example, while the session above is open, you can use this command to display all files in the root directory of ***microsoft.com*****:**

```
dir "ftp://ftp.microsoft.com/*"
```

An IFTP session remains open until you explicitly close it with this command:

```
iftp /c
```

Most FTP servers "time out" after a period of inactivity. ***TCC*** will attempt to detect if the connection has been closed by the server, and reconnect if you reference the IFTP session again. You should not assume that an IFTP connection will continue to function if you leave it open but unused for a significant period of time. You can determine if the connection is still active with the _iftp, _iftps, and _isftp variables.

IFTP and the other FTP features of ***TCC*** rely on the server's compliance with Internet FTP standards. If your server is not fully compliant, or does not operate in the manner that ***TCC*** expects, commands may not work as you intend. We urge you to test each server you use with nondestructive commands like DIR before you try to copy or delete files, create or remove directories, etc.

IFTP will try to preserve timestamps when transferring files. The MDTM command is used when downloading, and the MFTM command is used when uploading. If the FTP server does not support these commands, the current date/time will be used for the timestamp.

Before you can use IFTP, you must establish the necessary connection to the Internet.

If you don't enter any arguments, IFTP will display its command dialog.

See FTP Servers for additional information on formatting and usage of FTP and FTPS references.

Options:

/= Display the IFTP command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Use this switch, with no URL, to close an IFTP session (see the example above).

/EP Use Extended Passive mode. (Works with FTP and FTPS, but not SFTP.)

/IPv6[=*0*|*1*|*2*] By default, IFTP expects an IPv4 address for the local and remote host, and will create an IPv4 socket. The /IPv6 option tells IFTP to use IPv6 instead. (Works with FTP, FTPS, and SFTP connections.) When set to 0, IFTP will use IPv4 exclusively. When set to 1, IFTP will use IPv6 exclusively. To instruct IFTP to prefer IPv6 addresses, but use IPv4 if IPv6 is not supported on the system, this setting should be set to 2. If you don't specify /IPV6, IFTP will set this value to 0. If you specify /IPV6 with no explicit value, IFTP will set the value to 1.

/K="..." The CA signed client public key used when authenticating (SSH only). When authenticating via public key authentication this setting may be set to the CA signed client's public key. This is useful when the server has been configured to trust client keys signed by a particular CA. For example:

```
/K="SignedSSHCert=ssh-rsa-cert-v01@openssh.com
AAAAB3NzaC1yc2EAAAADAQABAAAB..."
```

The algorithm such as ssh-rsa-cert-v01@openssh.com in the above string is used as part of the authentication process. To use a different algorithm simply change this value. For instance all of the following are acceptable with the same signed public key:

- ssh-rsa-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...
- rsa-sha2-256-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...

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- rsa-sha2-512-cert-v01@openssh.com AAAAB3NzaC1yc2EAAAADAQABAAAB...

/N Pass both source and target names to the server "as is" without any attempt at expanding the paths. This option should be used with caution and only for "non standard" servers for which the default processing fails to build a suitable name.

/P /P0 disables passive mode; /P1 enables it.

/PR="n" When using active mode, IFTP uses any available port to listen to incoming connections from the server. You can override this behavior by setting /PR (PortRange) to a value containing the range of ports the class will be listening to. The range is provided as *start-end*, for instance: "1024-" stands for anything higher than 1024, "1024-2048" stands for ports between 1024 and 2048 inclusive, "4000-4010, 50000-50010" stands for ports between 4000 and 4010 or between 50000 and 50010. (Works with FTP and FTPS, but not SFTP.)

/Q Turn off the display of the conversation with the FTP server.

/R Automatically reconnect if the FTP server times out.

/S Allows you to send commands directly to an FTP server. The connection must have already been opened by a previous IFTP command.

/T=*n* If this is set, the socket's keep-alive option is enabled, and TCP keep-alive packets will be sent periodically to maintain the connection. *n* is the inactivity time in seconds before a TCP keep-alive packet is sent.

/V Display the dialog with the FTP server while opening the connection. This can be useful for debugging connection problems.

/V=*hostname* Sends the HOST command to the server. The HOST command allows FTP processes to specify which virtual host to connect to for a server-FTP process that is handling requests for multiple virtual hosts on a single IP address. When this option is set, the HOST command is sent to the server prior to authenticating.

/Zn Use Zlib compression. You can optionally set the compression level (0-9; the default is 7). Zlib compression must be enabled on the server, and will only work with FTP and FTPS connections (not SFTP).

4.3.88 INKEY

Purpose: Get a single keystroke from the user and store it in an environment or array variable

Format: INKEY [/= /C /D /K"*keys*" /P /M /W*n* /X] [*prompt*] *%%varname*

prompt	Optional text that is displayed as a prompt.
varname	The variable that will hold the user's keystroke.
wait	Time to wait for a keystroke, in seconds

/C	Clear buffer	/P	Password
/D	Digits only	/W	Wait
/K	valid keystrokes	/X	no carriage return
/M	Mouse buttons		

See also: INPUT.

Usage:

INKEY optionally displays a prompt, then it waits for a specified time (or indefinitely) for a keystroke, and places the keystroke into an environment or array variable. It is normally used in batch files and aliases to get a menu choice or other single-key input. Along with the INPUT command, INKEY allows great flexibility in reading input from within a batch file or alias.

If ***prompt*** is included in an INKEY command, it is displayed while INKEY waits for input.

The following command prompts for a character and stores it in the variable ***NUM***:

```
inkey /D Enter a number from 1 to 9:  %%num
```

INKEY reads standard input for the keystroke, so it will accept keystrokes from a redirected file or from KEYSTACK. You can supply a list of valid keystrokes with the /K option.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

A standard keystroke is stored directly in the environment variable. An extended keystroke (for example, a function key or a and cursor key) is stored as a string, consisting of a leading `@`, followed by its scan code as a decimal number, e.g., the ***F1*** key is stored as **@59**. The **Enter** key is stored as an extended keystroke **@28.** See ASCII, Key Codes, and ANSI X3.64 Commands for scan codes.

When the /M option enables recognition of mouse buttons, (and /W is not specified), the variable is set to a single character with one of the codes below:

button	*code*
left	240
middle	498
right	497

You can get the screen position of the last mouse click with the _xmouse and _ymouse internal variables.

To test for a non-printing value returned by INKEY use the @ASCII function to get the numeric value of the key, or convert the expected value of the code to a code using @CHAR. For example, to test for **Esc**, which has an ASCII value of 27 or a left mouse button:

```
inkey Enter a key:  %%key
if "%@ascii[%key]" == "27" echo Esc pressed
if %key EQ %@char[240] echo Left mouse button clicked
```

If you press **Ctrl-C** or **Ctrl-Break** while INKEY is waiting for a key, execution of an alias will be terminated, and execution of a batch file will be suspended while you are asked whether to cancel the batch job. A batch file can handle **Ctrl-C** and **Ctrl-Break** with the ON BREAK command.

If you don't enter any arguments, INKEY will display its command dialog.

INKEY works within the command line window. If you prefer to use a dialog for user input, see the MSGBOX and QUERYBOX commands.

Options:

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/= Display the INKEY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Clears the keyboard buffer before INKEY accepts keystrokes. If you use this option, INKEY will ignore any keystrokes which you type, either accidentally or intentionally, before it is ready to accept input. You can use the /C option by itself if you want to clear the keyboard buffer without setting a variable.

/D Only accept numbers from **0** to **9**.

/K"*keys*" Specifies the permissible keystrokes. The list of valid keystrokes should be enclosed in double quotes. For alphabetic keys the validity test is not case sensitive. You can specify extended keys by enclosing their names in square brackets (within the quotes), for example:

```
inkey /k"ab[Ctrl-F9]" Enter A, B, Ctrl-F9 %%var
```

See Keys and Key Names for a complete listing of the key names you can use within the square brackets, and a description of the key name format.

If an invalid keystroke is entered, ***TCC*** will echo the keystroke if possible, beep, move the cursor back one character, and wait for another keystroke.

/M Accept mouse button clicks. This is enabled only if Windows' Quick Edit is disabled (alt-space -> Properties -> Options).

/P Prevents INKEY from echoing the character.

/W Time-out period, in seconds, to wait for a response. If no keystroke is entered by the end of the time-out period, INKEY returns with the variable unchanged. This allows you to continue the batch file if the user does not respond in a given period of time. You can specify /W0 to return immediately if there are no keys waiting in the keyboard buffer. If /W is specified, mouse buttons are ignored.

For example, the following batch file fragment waits up to 10 seconds for a character, then tests to see if a "**Y**" was entered:

```
set netmon=N
inkey /K"YN" /w10 Network monitor (Y/N)?  %%netmon
iff "%netmon" == "Y" then
  rem Commands to load the monitor program
endiff
```

/X Prevents INKEY from displaying a carriage return and line feed after the user's entry.

4.3.89 INPUT

Purpose: Get a string from the keyboard and save it in an environment or array variable

Format: INPUT [/= /C /D /E["*default*"] /K"*keys*" /L*max*[:*min*] /N /P /W*n* /X] [*prompt*] *%%varname*

prompt Optional text that is displayed as a prompt.
varname The variable that will hold the user's input.

/C(lear buffer) /N(o colors)
/D(igits only) /P(assword)

/E(dit) /W(ait)
/K(eys) /X (no carriage return)
/L(ength)

See also: SET, INKEY, KEYSTACK, MSGBOX, and QUERYBOX.

Usage:

INPUT optionally displays a prompt, then waits for your entry and stores it in an environment or array variable. INPUT is normally used in batch files and aliases to get multi-character input (for single keystroke input, see INKEY).

INPUT works within the command line window. If you prefer to us a dialog for user input, see the MSGBOX and QUERYBOX commands.

If ***prompt*** text is included in an INPUT command, it is displayed while INPUT waits for input. Standard command line editing keys may be used to edit the input string as it is entered. If you use the **/P** password option, INPUT will echo asterisks instead of the keys you type.

INPUT returns when you press carriage return. All characters entered up to, but not including, the carriage return are stored in the variable.

The following batch file fragment prompts for a string and stores it in the variable FNAME:

```
input Enter the file name:  %%fname
```

INPUT reads standard input, so it will accept text from a redirected file or from the KEYSTACK.

INPUT supports regular expressions for the mask (/K"xxx"). You must prefix the regular expression with **::** - for example:

```
input /k"::^[0-9]$" Enter a number: %%number
```

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

If you press Ctrl-C or Ctrl-Break while INPUT is waiting for input, execution of an alias will be terminated, and execution of a batch file will be suspended while you are asked whether to cancel the batch job. A batch file can handle Ctrl-C and Ctrl-Break itself with the ON BREAK command.

You can pipe text to INPUT, but it will set the variable in the "child" process used to handle the right hand side of the pipe. This variable will not be available in the original copy of ***TCC*** used to start the pipe.

If you don't enter any arguments, INPUT will display its command dialog.

Options:

/= Display the INPUT command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Discard any keystrokes pending in the keyboard buffer before INPUT begins accepting characters.

/D Only accept numbers from 0 to 9.

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/E Allows you to edit an existing value. If there is no existing value for ***varname***, INPUT proceeds as if **/E** had not been used, and allows you to enter a new value. If there is no existing value and you provide an optional *default* value, INPUT will display the default value for editing.

/K"*keys*" Specifies the permissible keystrokes. The list of valid keystrokes should be enclosed in double quotes. For alphabetic keys the validity test is not case sensitive.

For example:

```
input /k"[0-9]-()" Enter your phone number: %%var
```

You can specify extended keys by enclosing their names in square brackets (within the quotes), See Keys and Key Names for a complete listing of the key names you can use within the square brackets, and a description of the key name format.

If an invalid keystroke is entered, ***TCC*** will beep and wait for another keystroke.

/Lmax[:min] Sets the maximum number of characters which INPUT will accept to ***max***. If you attempt to enter more than this number of characters, INPUT will beep and prevent further input (you will still be able to edit the characters typed before the limit was reached). The optional ***min*** parameter will set the minimum number of characters that INPUT will accept.

/N Disables the use of input colors defined in the Colors configuration options, and forces INPUT to use the default display colors.

/P Tells INPUT to echo asterisks, instead of the characters you type.

/W Time-out period, in seconds, to wait for a response. If no keystroke is entered by the end of the time-out period, INPUT returns with the variable unchanged. This allows you to continue the batch file if the user does not respond in a given period of time. If you enter a key before the time-out period, INPUT will wait indefinitely for the remainder of the line. You can specify **/W0** to return immediately if there are no keys waiting in the keyboard buffer.

/X Prevents INPUT from adding a carriage return and line feed after the user's entry.

4.3.90 INSTALLED

Purpose: Display the apps installed on the system

Format: INSTALLED [/= /P[*n*] /A["*xxx*"] /D["*xxx*"] /I["*xxx*"] /U["*xxx*"] /V["*xxx*"] /X[86][64] *appname*]

appname

/A (date) /P(ause)
/D(irectory) /U (publisher)'
/I(con) /V(ersion)

Usage:

Appname can contain wildcards. If you don't specify *appname*, it will default to *. The optional arguments after /A, /D, /I, /U, and /V will filter the results (they all can contain wildcards).

Example:

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To show all of the installed x64 apps that have "1.0" somewhere in their version number:

```
installed /v"*1.0*" /x64
```

Option:

/= Display the INSTALLED command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Show the installed date (may be empty)

/D Show the installation directory

/I Show the icon file

/P[*n*] Pause after displaying each page. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/U Show the publisher

/V Show the version number

4.3.91 JABBER

Purpose: Send an IM via the JABBER network

Format: JABBER [/= /S"*server*" /U"*user*" / P"*password*" /IPv6 /Tn /V] /B *target*[@*server*] /F"*filename*" *message*

message The message to send

/B(uddy) /S(erver)
/F(ile) /Tn (port)
/IPv6 /U(sername)
/P(assword) /V(erbose)

Usage:

If /S, /U, and/or /P are not specified, JABBER will use the default values defined in the .INI file (JabberServer, JabberUser, and JabberPassword). If you don't specify any arguments, JABBER will display its command dialog.

JABBER is intended to send single short messages on an event (for example, when a large series of file transfers is completed), not as a general replacement for an interactive IM client.

Before using JABBER, you will need to create an account on a JABBER network server. See www.jabber.org for more information on the JABBER network and for open JABBER servers.

The JABBER command supports SSL, so it can talk with SSL XMPP servers (like talk.google.com).

Options:

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/= Display the JABBER command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/B Address where the message will be sent

/F Send a file to another user

/IPv6 Use IPv6 instead of IPv4

/P Logon password on the JABBER server

/S JABBER server to log onto

/T Server port (default 5222)

/U User logon name on the JABBER server

/V Display verbose (debugging) output

4.3.92 JAR

Purpose: Add, update, or delete files in a Java .JAR archive

Format: JAR [/= /A:[[-][+]rhsdaecjot] /A /C /D /F /L*n* /M /Ne /Nt /O:[-] acdeginorstuz /P /Q /R /TEST /U /V] *jararchive* [@*file*] *file*...

jararchive The jar file to work with
file The files(s) to be added to the jar file

/A:... (attribute switch)
/A(dd)
/C(ontents)
/D(elete)
/F(reshen)
/M(ove)
/O:... (sort order)
/P(rogress)
/R(ecurse)
/TEST
/U(pdate)
/V(iew)

See also UNJAR and JARPATH.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs jar [2*] ***

Usage:

After compression, the .JAR file may then be imported into Java code or executed by a JVM. The syntax is similar to the ZIP command:

Options:

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/= Display the JAR command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file(s) to the Jar file. (This is the default.)

/C Display (on standard output) the contents of a file in the Jar archive.

/D Delete a file in the Jar archive.

/F Update only those files that currently exist in the tar file, and which are older than the files on disk.

/L Set the compression level (0-6)..

/M Delete the files from the disk after adding them to the tar file.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/P Display the progress (0 - 100%) for each file as it is archived.

/Q Don't display the files being archived.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the tar archive.

/TEST Test the integrity of the TAR file (header and contents). Any errors will be displayed on STDERR.

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/U Update files which either don't exist in the tar, or which are older than the files on disk.

/V View the list of files in the tar file (date, time, size, and filename

4.3.93 JOBMONITOR

Purpose: Monitor Windows job activity

Format: JOBMONITOR [/C [*jobname*]]
JOBMONITOR [/=] *jobname* [* TIME PROCESS MEMORY] *n command*

jobname **-** The Windows job to monitor

* - Monitor all activity for the job

TIME - Monitor the end of job and process time notifications

PROCESS - Monitor the process notifications (process limit, new process, zero processes, end of process, abnormal process exit)

MEMORY - Monitor the job and process memory limit notifications

/C(lear)

See also JOBS.

Usage:

JOBMONITOR will set four environment variables when a condition is triggered:

_jobaction - The type of notification, which will be one of these values:

EndOfJobTime
EndOfProcessTime
ActiveProcessLimit
ActiveProcessZero
NewProcess
ExitProcess
AbnormalExitProcess
ProcessMemoryLimit
JobMemoryLimit

_jobpid - The process PID

_jobprocessname - The name of the process

_jobtime - The time (hh:mm:ss.ms) the notification was received

Option:

/= Display the JOBMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Delete the job monitor(s)

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4.3.94 JOBS

Purpose: Create Windows Jobs and optionally attach processes to a job

Format: JOBS
[/= /J=*jobname* /N=*jobname* /B /C /D /G /K /R /S /U /W /X /Y /JM=*mem* /PM=*mem* /P=n /JT=*ms* /PT=*ms*] [*pid* | *processname*]

pid - Process ID of a process to assign to the job

processname - Process name of a process to assign to the job

/B(reakaway)
/C(lose)
/D(esktops)
/G(lobal atoms)
/I(nfo)
/K (close on last handle)
/L (display settings)
/R(ead clipboard)
/S (SystemParametersInfo)
/U(ser handles)
/W(rite clipboard)
/X (no logout or shutdown)
/Y (allow breakaway)
/Z (die on unhandled exception)

See also JOBMONITOR and START.

Usage:

A *job* in Windows allows you to control of one or more processes as a group. A job's basic function is to allow groups of processes to be managed as a unit. You can limit the amount of memory or cpu time for a job, and put restrictions on what processes in that job are allowed to do. A process can be a member of only one job object, and once a process is associated with a job, the association cannot be broken. After a process is associated with a job, by default any child processes it creates are also associated with the job. (See the /B option below for the exception to this rule.)

You can start a new job attached to a specific job with the "START /job=jobname" option.

You cannot attach a process to a job if that process already belongs to a job.

Examples:

Start a program, create a job named "NoStop", prevent the program (and any programs it starts) from logging out, rebooting, or shutting down, and terminate all of the processes when the last job handle is closed:

```
start /pgm myapp.exe
jobs /N=NoStop /X /K %_startpid
```

Option:

/= Display the JOBS command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

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/J=*name* Set or display options for an existing job

/N=*name* Create a new job.

/JM=*n* Causes all processes associated with the job to limit the job-wide sum of their committed memory to *n* bytes. When a process attempts to commit memory that would exceed the job-wide limit, it fails.

/PM=*n* Limit the maximum committed memory for for all processes in the job to *n* bytes. When a process attempts to commit memory that would exceed the per-process limit, it fails.

/P=*n* Limit the total number of processes in the job to *n.*

/JT=*ms* Limit the maximum amount of per-job user-mode execution time to *ms* milliseconds.

/PT=*ms* Limit the maximum amount of user-mode execution for all processes associated with the job to *ms* milliseconds

/B If any process associated with the job creates a child process using the **CREATE_BREAKAWAY_FROM_JOB** flag while this limit is in effect, the child process is not associated with the job.

/C Close a job handle.

/D Prevent processes associated with the job from creating and/or switching to other desktops.

/G Prevent processes associated with the job from accessing global atoms.

/I Display limit info for the job.

/K All processes associated with the job will terminate when the last handle to the job is closed. If you START other processes, you should use the /job option if you want the START'd processes to exit when the original process exits.

/L Prevent processes associated with the job from calling the ChangeDisplaySettings API

/R Prevent processes associated with the job from reading from the Windows clipboard.

/S Prevent processes associated with the job from changing system parameters using the SystemParametersInfo API.

/U Prevent processes associated with the job from using USER handles owned by processes not associated with the same job.

/W Prevent processes associated with the job from writing to the Windows clipboard.

/X Prevent processes associated with the job from logging out of Windows, rebooting, or shutting down.

/Y Allow any process associated with the job to create child processes that are not associated with the job.

/Z Disables the critical error popup dialog for each process associated with the job. If an exception occurs, this will cause termination of the process with the exception code as the exit status.

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4.3.95 JOINDOMAIN

Purpose: Join a computer to a domain or workgroup

Format: JOINDOMAIN [/W] *computer**domain*[*organization*] *user* [*password*]

computer The DNS or NETBIOS name of the computer.

domain The name of the domain or workgroup to join.

organization (Optional) The RFC 1779 format name of the organizational unit (OU) for the account. If you specify this parameter, it must contain a full path. (For example, OU=testOU,DC=domain,DC=Domain,DC=com.)

user The account name to use when connecting to the domain controller. The name must be either a domain NetBIOS name and user account (for example, *jpsoft**rconn*) or the user principal name (UPN) of the user in the form of a login name (for example, "user@tcmd.com").

password The password to use when connecting to the domain controller. If the password is not entered (or is *), ***TCC*** will prompt for the password.

/W(orkgroup)

Usage:

Option:

/W Join a workgroup instead of a domain

4.3.96 JUMPLIST

Purpose: Create a custom taskbar task list for ***Take Command.***

Format: JUMPLIST [/C /D /S] "*title*" "*arguments*"

"title" Title to appear in jumplist
"arguments" Command and options to pass to ***Take Command***

/C(ommit) /S(eparator)
/D(elete)

Usage:

To create a custom task list, you need to call JUMPLIST for each command, and then a final time with the /C option.

The command will be prefaced with a /C before it is passed to Take Command, so it will be started in a new tab window.

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Options:

/C Commit the new task list.

/D Delete an existing task list.

/S Add a separator line to the task list

4.3.97 KEYBD

Purpose: Set the state of the keyboard toggles Caps Lock, Num Lock, and Scroll Lock, or enable/disable the keyboard.

Format: KEYBD [/Cn /K[0|1] /N*n* /S*n*]

n can be either **0** to toggle the key off or **1** to toggle the key on.

/C(aps lock) /N(um lock)
/K(eyboard lock) /S(croll lock)

Usage:

Most keyboards have 3 toggle keys, the Caps Lock, Num Lock, and Scroll Lock. KEYBD lets you turn any toggle key on or off. It is most useful in batch files and aliases if you want the keys set a particular way before collecting input from the user.

For example, to turn off the Num Lock and Caps Lock keys, you can use this command:

```
keybd /c0 /n0
```

If you use the KEYBD command with no switches, it will display the present state of the toggle keys.

The toggle key state is typically the same for all sessions, and changes made with KEYBD in one session will therefore affect all other sessions.

Options:

/C Turn the Caps Lock key on or off.

/K Disable (0) or enable (1) the keyboard. You can also reenable a disabled keyboard with Ctrl-Alt-End.

/N Turn the Num Lock key on or off.

/S Turn the Scroll Lock key on or off.

4.3.98 KEYS

Purpose: Enable, disable, or display the history list

Format: KEYS [ON | OFF | LIST]

See also: HISTORY.

Usage

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This command is provided for compatibility with KEYS command in CMD, which controls the history list in Windows. The same functions are available by setting the Command History Minimum Length configuration option, and by using the HISTORY command. (CMD's KEYS command no longer has an effect, because command line editing is always enabled.)

The history list collects the commands you type for later recall, editing, and viewing. You can view the contents of the list through the history list window or by typing any of the following commands:

```
history
history /p
keys list
```

The first command displays the entire history list. The second displays the entire list and pauses at the end of each full screen. The third command produces the same output as the first, except that each line is numbered.

You can disable the collection and storage of commands in the history list by typing:

```
keys off
```

You can turn the history back on with the command:

```
keys on
```

If you issue the KEYS command without any parameters, ***TCC*** will show you the current state of KEYS.

4.3.99 KEYSTACK

Purpose: Send keystrokes to a program or command automatically

Format: KEYSTACK [/I=*pid,ms* /I*"title",ms* /R *filename*] [/W*x*] ["*abc*"] [*keyname*[*n*]] ...

/Wx	Delay in clock ticks before next insertion into the keystack.
"abc"	Literal characters to be placed in the Keystack.
keyname	Name of a key whose code is to be placed in the Keystack or its ASCII.
n	Number of times to repeat the immediately preceding ***named*** key.

/I(nput idle) /W(ait)
/R(ead file)

Usage:

Operation

KEYSTACK takes a series of keystrokes and feeds them to a program or command as if they were typed at the keyboard. When the program has used all of the keystrokes in the keystack buffer, it will begin to read the keyboard for input, as it normally would.

KEYSTACK will send the keystrokes to the currently active window. If you want to send keystrokes to another program (rather than have them function with ***TCC*** itself), you must start the program or ACTIVATE its window so it can receive the keystrokes. You must do this before executing the KEYSTACK command.

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KEYSTACK is most often used for programs started from batch files. In order for KEYSTACK to work in a batch file, you must start the program with the START command, then use the KEYSTACK command. If you start the program directly (without using START) the batch file will wait for the application to complete before continuing and running the KEYSTACK command, and the keystrokes will not appear in the target program.

If you use KEYSTACK in an alias executed from the prompt, the considerations are essentially the same, but depend on whether or not the Wait for External Apps configuration option is set. If it is **not** set (the default), you can use KEYSTACK immediately after an application is started. However, if Wait for External Apps is set, ***TCC*** will not execute any other operation until the program has finished, including the KEYSTACK command, and instead of the target program, the keystrokes will be sent to whatever program is running in the active window when KEYSTACK is executed.

You may not be able to use KEYSTACK effectively if you have programs running in the background which change the active window (for example, by popping up a dialog box). If a window pops up in the midst of your KEYSTACK sequence, keystrokes stored in the KEYSTACK buffer may go to that window, and not to the application you intended.

Keystroke Interpretation

Characters entered within double quotes (for example, "***abc***") will be sent to the target program as is. The only items allowed outside the quotes are key names, the /W option, and a repeat count. If you want to enter a double quote, use two double quotes. Do not prefix or append the two double quotes to a string argument.) For example, to insert the string ***abc "def"***

```
keystack "abc " "" "def" ""
```

If ***keyname*** is a single letter, it is inserted in the keystack buffer as if it had been quoted, without any spaces. For example, you could enter the string ***abc*** as `a b c`, instead of the quoted string method described above.

If ***keyname*** is a number, it is interpreted as a virtual key code (0 - 255).

Repetition. To send ***keyname*** several times, follow it with a space, left bracket **[**, the repetition count, and a right bracket **]**. For example, the command below will send the **Enter** key 4 times:

```
keystack enter [4]
```

The repeat count works only with an individual ***keyname***. It cannot be used with quoted strings. You must have a blank space between the ***keyname*** and the repetition count.

See Keys and key names for a complete listing of key names and a description of the key name and numeric key code format.

Note

You may need to experiment with your programs and insert delays (see the /W option) to find the window activation and keystroke sequence that works for a particular program.

Example:

To start Word and open the last document you worked on, you could use the command:

```
start word & keystack /w54 alt-f "1"
```

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This starts ***Word***, delays about three seconds (54 clock ticks at 1/18 second each) for ***Word*** to get started, places the keystrokes for A**lt-F** (**File** menu), and 1 (open the most recently used file) into the buffer. ***Word*** receives these keystrokes and performs the appropriate actions. Notice that the two commands, START and KEYSTACK are issued on a single command line. This ensures that the keystrokes are sent to ***Word***'s window, not back to ***TCC***.

Option:

/I Wait for an input idle or the specified number of milliseconds.

/I=pid,milliseconds	Look for the specified process ID
/I"Title",milliseconds	Look for the specified window title

/R Read the KEYSTACK input from a file. (You can only read a single line.)

/W Delay the next keystroke in the KEYSTACK buffer by a specified number of **clock ticks**. A clock tick is approximately 1/18 second. The number of clock ticks to delay should be placed immediately after the **W**, and must be between **1** and **65535** (65,535 ticks is about 1 hour). Do not use the Thousands Separator in the number! You can use the **/W** option as many times as desired and at any point in the string of keystrokes except within double quotes. Some programs may need the delays provided by **/W** in order to receive keystrokes properly from KEYSTACK. The only way to determine what delay is needed is to experiment.

4.3.100 LIBRARY

Purpose: Create, modify, delete, or display library functions

Format: LIBRARY [/= /D func /F [func] /N /P[*n*] /Q /R file ... /U] [*command line*]

/D(elete)	/Q (no errors)
/F (display functions)	/R(ead functions)
/N(ames)	/U(pdate functions)
/P(ause)	

Usage:

LIBRARY will load / display / delete library functions, which are similar to batch files but which are loaded into RAM and can be called as if they are internal commands. Library functions are read from files, with the syntax:

```
functionname {
    command1
    command2
    ...
}
```

The opening brace **{** must be on the same line as the function name (separated by a space), and the closing brace **}** must be on a line by itself.

When ***TCC*** starts, it will automatically load any library function files in the LIBRARY subdirectory of the ***TCC*** installation directory. You can specify a different location by setting the LibraryDirectory INI directive. You can have any number of functions in a file.

You can prevent ***TCC*** from loading library function files at startup with the TCC /IL option.

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If you do not specify any switches, LIBRARY will display the library function names that match the command line argument(s). If you do not specify any arguments, LIBRARY will display all of the library function names.

The command line following the library function name is passed to the function, and the arguments can be referenced with the same %1 - %*n* syntax as used by batch files and aliases.

Library functions can call aliases, internal or external commands, batch files, or other library functions.

You can specify which library to use for a function name (allowing you to use the same function names in different libraries). To specify a particular library and function, use the syntax:

library$function

Where *library* is the library file name, and *function* the name of the function.

If you don't specify a library name, ***TCC*** will use the first matching function name it finds in the library list.

The ***TCC*** parser will look for a matching library function name before looking for plugins, internal commands, external commands, or batch files. The command line following the library function name is passed to the function, and the arguments can be referenced with the same %1 - %n syntax as used by batch files and aliases.

The ***TCC*** startup option **/IL** will prevent loading the default library functions (from the Library folder).

Options:

/= Display the LIBRARY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Delete a function (the function name can contain wildcards)

/F Display the loaded (matching) functions (the function name can contain wildcards)

/N LIBRARY with no arguments will display the function names in the library list. If you specify /N and no other arguments, LIBRARY will show the library name + function name in the *library$function* format.

/P[*n*] Pause after each page when displaying functions. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Q Don't display an error if deleting or updating functions that don't exist

/R Read function files. You can use multiple files with one LIBRARY /R command by placing the names on the command line, separated by spaces:

```
library /r function1.lst function2.lst
```

/U Update function (otherwise you will get an error when loading a function that already exists)

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4.3.101 LINKS

Purpose: Display the hardlinks for the specified file(s)

Format: LINKS [@*file*] *file*...

@file A text file containing the filenames, one per line (see @file lists for details).
file The file with the hardlinks

File Selection

Supports multiple file names.

Example:

```
[d:\temp] echo foo > foo

[d:\temp] links foo
D:\temp\foo

[d:\temp] md temp2

[d:\temp] mklink /h temp2\bar foo

[d:\temp] links foo
D:\temp\temp2\bar
D:\temp\foo
```

4.3.102 LIST

Purpose Display a text file, with forward and backward paging and scrolling

Format LIST [*range*...] [/= /8 /A:[[-|+]rhsadecijopt /B[-]*n* /C /Etext" /F /H /I /L[-]*n* /N /O:[-]acdeginorstuz /R /S /T"*text*" /U /W /X[s]] [@*file*] [*file*...]

file A file or list of files to display.
@file A text file containing the names of the files to view, one per line (see @file lists for details).
range A file selection range (date, description, exclusion, size, time)

/8 (UTF-8)
/A: (Attribute select)
/B(yte offset)
/C (separate console)
/E (regular expression)
/F (console screen buffer)
/H(igh bit off)
/I(gnore wildcards)
/L(ine offset)
/N (line numbers)
/O:... (Order)
/R(everse)
/S(tandard input)
/T (search for Text)
/U (Ruler)
/W(rap)
/X (heXadecimal display mode)

See also: VIEW, HEAD, TAIL, and TYPE.

File Selection

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Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Internet

Can be used with FTP/HTTP Servers.

Usage

See the VIEW command for an updated and enhanced LIST replacement.

LIST provides a fast and flexible way to view a file, without the overhead of loading and using a text editor.

For example, to display a file called *MEMO.DOC*:

```
list memo.doc
```

Note: LIST is primarily intended for displaying the contents of ASCII and Unicode text files (i.e. alphanumeric characters arranged in lines separated by CR/LF). It can be used for other files which contain non-alphabetic characters or unusual line separators, but you may need to use hexadecimal mode (see below) to display or search these files. Lines longer than 32,767 characters will be truncated unless you're in Wrap or Hex modes.

LIST displays files in the ***TCC*** window. If you resize the ***TCC*** window or the ***Take Command*** window when ***TCC*** is running in a tab window, LIST will automatically resize its display.

You can define all of the LIST keys using the OPTION / Keyboard dialog.

Directive	Default	Description
ListBack	B	Return to the previous file.
ListClipboard	Ctrl-B	Copy the current filename to the clipboard.
ListContinue	C	Continue with the next file.
ListDelete	Del	Delete the current file.
ListDown	Down	Scroll down one row.
ListEdit	E	Edit the file with the editor associated with that filetype. If there is no association, LIST will use the editor defined in the Editor configuration option. If no editor is defined, LIST will use Notepad. If LIST is displaying a pipe, the contents are saved to the clipboard and the editor is started. (You will need to manually paste the clipboard contents.)
ListEnd	End	Go to the end of the file.
ListExit	Esc	Exit the current file.
ListFind	F	Prompt and search for a string or a sequence of hexadecimal values.
ListFindPrevious	Ctrl-N	Find previous matching string in the file.
ListFindRegex	R	Prompt and search for a regular expression.
ListFindRegexReverse	Ctrl-R	Search backwards for a regular expression.
ListFindReverse	Ctrl-F	Prompt and search for a string, searching backward from the end of the file.
ListGoto	G	Display a dialog to jump to a specific line.
ListHelp	F1	Display help for LIST.
ListHex	X	Toggle the hex mode (/X) option.
ListHexSpace	S	Toggle display of nonprintable characters (space or .) when in hex mode.
ListHighBit	H	Toggle the "strip high bit" (/H) option.

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ListHome	Home	Go to the beginning of the file.
ListInfo	I	Displays information about the current file.
ListLeft	Left	Scroll left one column.
ListNext	N	Find next matching string.
ListNumber	L	Number the lines.
ListOpen	O	Display the "Open File" dialog.
ListPageLeft	Ctrl-Left	Scroll left 40 columns.
ListPageRight	Ctrl-Right	Scroll right 40 columns.
ListPgUp	PgUp	Scroll up one page.
ListPgDn	PgDn	Scroll down one page.
ListPrint	P	Print all or part of the file (displays the Windows "Print" dialog).
ListRefresh	F5	Refresh the display.
ListRight	Right	Scroll right one column.
ListSave	Ins	Save to a file.
ListTabSize	Tab	Display a dialog to set the tab size.
ListUnicode	U	Toggle the Unicode display mode.
ListUp	Up	Scroll up one row.
ListWrap	W	Toggle the "line wrap" (/W) option.

Text searches performed with **F**, **N**, **Ctrl-F**, and **Ctrl-N** are not case-sensitive unless you check the Match case box in the search dialog. LIST remembers the search strings you have used in the current session; to select a previous string, use the drop-down arrow to the right of the string entry field (the **N** key and the Next button search for the top item in this drop-down list).

When the search string is found LIST displays the line containing the string at the top of the window, and highlights the string it found. Any additional occurrences of the string on the same display page are also highlighted. Highlighting is intended for use with text files. In binary files, the search string will be found but may not be highlighted properly.

If the display is currently in hexadecimal mode and you press **F** or **Ctrl-F**, you will be prompted for whether you want to search in hexadecimal mode. If so, you should then enter the search string as a sequence of 2-digit hexadecimal numbers separated by spaces, for example ***41 63 65*** (ASCII values for the string "Ace"). Hexadecimal searches are case-sensitive, and search for exactly the string you enter.

LIST saves the search string used by **F**, **N, Ctrl-F**, and **Ctrl-N** so you can LIST multiple files and search for the same string simply by pressing **N** in each file, or repeat your search the next time you use LIST.

You can use extended wildcards in the search string. For example, you can search for the string ***to*day*** to find the next line which contains the word ***to*** followed by the word ***day*** later on the same line, or search for the numbers ***101*** or ***401*** with the search string **[14]01**. If you begin the search string with a back-quote `, or enclose it in back-quotes, wildcard characters in the string will be treated as normal text with no special wildcard meaning.

You can use the /T switch to specify search text for the first file. When you do so, LIST begins a search as soon as the file is loaded. Use /I to ignore wildcards in the initial search string, and /R to make the initial search go backwards from the end of the file. When you LIST multiple files with a single LIST command, these switches affect only the first file; they are ignored for the second and subsequent files.

You can also search using Regular Expressions using the **R** and **Ctrl-R** keys. See Regular Expression Syntax for supported expressions.

You can use the **G** key to go to a specific line number in the file (or to a specified hexadecimal offset in hex mode). LIST numbers lines beginning with **1**. A new line is counted for every **CR** or **LF** character (LIST determines automatically which character is used for line breaks in each file), or when line length reaches 32,767 characters, whichever comes first.

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LIST normally allows long lines in the file to extend past the right edge of the screen. You can use the horizontal scrolling keys (see above) to view text that extends beyond the screen width. If you use the W command or /W switch to wrap the display, each line is wrapped when it reaches the right edge of the screen, and the horizontal scrolling keys are disabled.

To view output from another command simply pipe the output of the command to LIST, for example:

```
dir | list
```

Normally LIST will detect input from a pipe automatically, but if it does not, use /S to explicitly specify piped input. Your ability to navigate backward through the displayed output (*e.g.* with **PgUp**) may be limited when viewing a very large amount of data through a pipe, due to the way Windows handles piped output.

To view text from the clipboard, use **CLIP:** as the file to be listed. **CLIP:** will not return any data unless the clipboard contains text. See Redirection for more information on **CLIP:**.

If you print the file which LIST is displaying, the print format will match the display format. If you have switched to hexadecimal or wrapped mode, that mode will be used for the printed output as well. If you print in wrapped mode, long lines will be wrapped at the width of the display. If you print in normal display mode without line wrap, long lines will be wrapped or truncated by the printer, not by LIST. Regardless of the display mode, LIST will bring up a standard Windows print dialog which allows you to print selected text, the current page, or the entire file.

- **FTP/HTTP Usage**

LIST can display files on FTP servers as well as the contents of HTTP/HTTPS URLs. For example:

```
list ftp://ftp.microsoft.com/index
list https://jpsoft.com/notfound.htm
```

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want. For more information, see Using FTP/HTTP Servers and IFTP.

- **NTFS File Streams**

LIST supports file streams on NTFS drives. You can list an individual stream by specifying the stream name, for example:

```
list streamfile:s1
```

If no stream name is specified the file's primary data is displayed.

See NTFS File Streams for additional details.

- **Advanced Features**

If you specify a directory name instead of a filename as a parameter, LIST will display each of the files in that directory.

If no filename is specified (and stdin is not redirected), LIST will open the common Windows "open file" dialog.

Most of the LIST keystrokes can be reassigned with key mapping directives.

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By default, LIST sets tab stops every 8 columns. You can change this behavior with the Tabs Width configuration option.

Options

/= Display the LIST command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/8 The file is interpreted as UTF-8.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use **/A:** with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B[-]n Start at byte ***n***. If ***n*** is preceded by a minus sign **-**, start ***n*** bytes from the end of the file. The /B option will only display the file from the offset to the end; you cannot go back to a point before the offset.

/C Display the file in a separate screen buffer and restore the original buffer upon exiting LIST. /C only works in stand-alone ***TCC*** windows, not in ***Take Command*** tab windows.

/E Search for a regular expression in the first ***file***. This option is the same as pressing **R**, but it allows you to specify the search text on the command line. The regular expression must be contained in double quotes if it contains spaces, punctuation, or wildcard characters. See also **/T**.

/F Display the contents of the console screen buffer.

/H Strip the high bit from each character before displaying. This is useful when displaying files created by some word processors that turn on the high bit for formatting purposes. You can toggle this option on and off from within LIST with the **H** key or the tool bar.

/I Only meaningful when used in conjunction with the /T "text" option. Directs LIST to interpret characters such as *, ?, [, and] as literal characters instead of wildcard characters. **/I** affects only the initial search started by /T, not subsequent searches started from within LIST.

/I"text" Select files by matching text in their descriptions. See Description Ranges for details.

/L[-]n Start at line ***n***. If ***n*** is preceded by a minus sign -, start ***-n*** lines from the end of the file. The **`/L`** option only affects the initial page display; it does not prevent you from subsequently scrolling back to the start of the file.

/N Display line numbers. You can toggle the line numbers with the **L** key.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **`n`** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **`-`** Reverse the sort order for the next sort key

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a Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
c Sort by compression ratio
d Sort by date and time (oldest first); also see **/T:acw**
e Sort by extension
g Group subdirectories first, then files
i Sort by description
o Sort by owner
r Reverse the sort order for all options
s Sort by size
t Same as **d**
u Unsorted
z Same as **s**

/R Only meaningful when used in conjunction with the /T "***text***" option. Directs LIST to search for text from the end of the file instead of from the beginning of the file. Using this switch can speed up searches for text that is normally near the end of the file, such as a signature. /R affects only the initial search started by /T, not subsequent searches started from within LIST.

/S Read from standard input rather than a file. This allows you to redirect command output and view it with LIST. Normally, LIST will detect input from a redirected command and adjust automatically. However, you may find circumstances when /S is required. For example, to use LIST to display the output of DIR you could use either of these commands:

```
dir | list
dir | list /s
```

/T Search for text in the first ***file***. This option is the same as pressing **F**, but it allows you to specify the search text on the command line. The text must be contained in double quotes if it contains spaces, punctuation, or wildcard characters. For example, to search for the string ***TC*** in the file ***README.DOC***, you can use this command:

```
list /t"Take Command" readme.doc
```

The search text may include wildcards and extended wildcards. For example, to search for the words ***Hello*** and ***John*** on the same line in the file ***LETTER.DAT***:

```
list /t"Hello*John" letter.dat
```

When you display multiple files with a single LIST command, /T only initiates a search in the first file. It is ignored for the second and subsequent files. See also: /I and /R.

/U Display a ruler on the second line.

/W Wrap the text at the right edge of the screen. This option is useful when displaying files that don't have a carriage return at the end of each line. The horizontal scrolling keys do not work when the display is wrapped. You can toggle this option on and off from within LIST with the **W** key or the **Wrap** button on the tool bar.

/X Display the file in hexadecimal (hex) mode. This option is useful when displaying executable files and other files that contain non-text characters. Each byte of the file is shown as a pair of hex characters. The corresponding text is displayed to the right of

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each line of hexadecimal data. You can toggle this mode on and off from within LIST with the **X** key or the **heX** button on the tool bar.

You can display spaces rather than periods for non-printable characters by specifying the /XS option. You can also toggle between spaces and periods with the **S** key while displaying a file in hex mode.

4.3.103 LOADBTM

Purpose: Switch a batch file to or from BTM mode

Format: LOADBTM [ON | OFF]

Usage:

TCC recognizes three kinds of batch files: *.CMD*, *.BAT*, and *.BTM*. Batch files with a *.BTM* extension will run faster than *.BAT* or *.CMD* files, as they are loaded into memory at startup and do not open and close the batch file for each line (as do *.BAT* and *.CMD* files).

The LOADBTM command turns BTM mode on and off. It can be used to switch modes in a batch file. If you use LOADBTM with no parameter, it will display the current batch mode: LOADBTM ON or LOADBTM OFF.

Using LOADBTM to repeatedly switch modes within a batch file is not efficient. In most cases the speed gained by running some parts of the file in BTM mode will be more than offset by the speed lost through repeated loading of the file each time BTM mode is invoked.

LOADBTM can only be used within a batch file. It is most often used to convert a *.BAT* or *.CMD* file to BTM mode without changing its extension.

There is no functional difference between *.BAT* and *.CMD* files.

4.3.104 LOADMEDIA

Purpose: Close the door of a removable media drive(s)

Format: LOADMEDIA *drive* ...

Usage:

LOADMEDIA will close the drive door (if the device allows it) of removable media, such as CD-ROMs, DVDs, etc.

See also EJECTMEDIA.

4.3.105 LOCAL

Purpose: Define variables that are local to a library function or to a batch file.

Format: LOCAL *var1, var2, ...*

Usage:

LOCAL will save the existing values of the specified environment variables (if any) and then delete the variable from the environment. You can then SET a new variable with that name; when the library function

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or batch file exits, the local variables are deleted from the environment and the previous values (if any) are restored.

LOCAL allows you to use variables in your library functions without worrying about whether they are also used in the master environment or other library functions.

See also SETLOCAL.

Example:

This library function defines three local variables, which are only valid inside the function:

```
testfunc2 {
   local test, computer, server
   set test=abc
   set computer=Asus
   set server=PrintServer
   command1
   command2
   ...
}
```

4.3.106 LOCKMONITOR

Purpose: Monitor when the Windows session is locked or unlocked.

Format: LOCKMONITOR [/C]
LOCKMONITOR [/=] [Locked | Unlocked] [*n* | FOREVER] *command*

n Number of repetitions (or **FOREVER**)
command Command to execute when condition is triggered

/C(lear)

Usage:

The command line will be parsed and expanded before LOCKMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. LOCKMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, LOCKMONITOR will display the services it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Options:

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/= Display the LOCKMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove the session lock monitor.

4.3.107 LOG

Purpose: Save a log of commands to a file

Format: LOG [/= /A /E /H /W *file*] [ON | OFF | *text*]

file	The name of the file to hold the log.
text	An optional message that will be added to the log.
ON	Turns on logging
OFF	Turns off logging

/A(ll) /H(istory log)
/E(rrors) /W(rite to)

See also: HISTORY.

Usage:

The LOG command provides independent controls for four different methods of logging ***TCC*** activity:

- Command Log
- Error Log
- History Log
- Output Log

If you don't specify a log type, LOG defaults to command logging. You can only specify one of the /A, /E, and /H options in a single LOG command.

You can have any combination of the four logging methods running simultaneously.

Command Log

Command logging creates a record of each internal and external command executed either from the command prompt or from a batch file in the format below:

```
[date time][id] command
```

where the ***date*** and ***time*** are formatted according to the country code set for your system, ***id*** is the process ID, and ***command*** is the actual command after any alias or variable expansion.

The default command log filename is ***TCCommandLog***. See also %_LOGFILE.

Error Log

Error logging saves all error messages to the ***error log***. The default filename is ***TCErrorLog***. See also: the Error Logging configuration option.

History Log

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History logging creates a record of each command executed from the command prompt exactly as it was entered, before aliases and variables are expanded, without any additional information. See also % _HLOGFILE.

Output Log

The Output log saves everything that TCC writes to the console window. It does not log output written by external applications.

Notes

The LOG /H output can be used as the basis for writing batch files. Start LOG /H, then execute the commands that you want the batch file to execute. When you are finished, turn LOG /H off. The resulting file can be turned into a batch file that performs the same commands with little or no editing.

Options:

/= Display the LOG command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A This option saves all output to the ***log all*** file. The default filename is ***TCLogAll***.

/E This option saves all error messages to the ***error log***. The default filename is ***TCErrorLog***. See also: the Error Logging configuration option.

/H This option saves the commands to the ***history log***. The default history log name is ***TCHistoryLog***. For example, to turn on history logging and write to the file *C:\LOG\HLOG*:

```
log /h /w c:\log\hlog
```

/W This switch specifies a different filename for the LOG output. It also automatically performs a LOG ON command. For example, to turn command logging on and write the log to *C:\LOG\LOGFILE*:

```
log /w c:\log\logfile
```

Once you select a new file name with the LOG /W or LOG /H /W command, LOG will use that file until you issue another LOG /W or LOG /H /W command, or until you terminate your ***TCC*** session. Turning LOG or LOG /H off or on does not change the file name.

4.3.108 LUA

Purpose: Invoke the internal Lua interpreter

Format: LUA [*options*] [*script* [*args*]]

-e *_stat_*	executes string stat;
-l *_mod_*	"requires" mod;
-i	enters interactive mode after running script;
-v	prints version information;
--	stops handling options;
-	executes stdin as a file and stops handling options.

Usage:

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The internal Lua is version 5.4.3.

After handling its options, lua runs the given script, passing to it the given args as string arguments. When called without arguments, lua behaves as lua -v -i when the standard input (stdin) is the console, and as lua - otherwise.

Before running any argument, the interpreter checks for an environment variable LUA_INIT. If its format is @_filename_, then lua executes the file. Otherwise, lua executes the string itself.

All options are handled in order, except -i. For instance, an invocation like

```
lua -e "a=1" -e print(a) script.lua
```

will first set **a** to 1, then print the value of **a**, and finally run the file script.lua with no arguments.

Before starting to run the script, lua collects all arguments in the command line in a global table called arg. The script name is stored at index 0, the first argument after the script name goes to index 1, and so on. Any arguments before the script name (that is, the interpreter name plus the options) go to negative indices. For instance, in the call

```
lua -la b.lua t1 t2
```

the interpreter first runs the file a.lua, then creates a table

```
arg = {
[-2] = "lua",
[-1] = "-la",
[0] = "b.lua",
[1] = "t1", [2] = "t2" }
```

and finally runs the file b.lua. The script is called with arg[1], arg[2], ... as arguments; it can also access these arguments with the vararg expression '=...='.

In interactive mode, if you write an incomplete statement, the interpreter waits for its completion by issuing a different prompt.

If the global variable _PROMPT contains a string, then its value is used as the prompt. Similarly, if the global variable _PROMPT2 contains a string, its value is used as the secondary prompt (issued during incomplete statements). Therefore, both prompts can be changed directly on the command line. For instance,

```
lua -e"_PROMPT='myprompt> '" -i
```

(the outer pair of quotes is for the shell, the inner pair is for Lua), or in any Lua programs by assigning to _PROMPT. Note the use of -i to enter interactive mode; otherwise, the program would just end silently right after the assignment to _PROMPT.

4.3.109 MD / MKDIR

Purpose: Create a subdirectory

Format: MD [/= /C /D /N[et] /S] *path*...
or
MKDIR [/= /C /D /N[et] /S] *path*...

path The name of one or more directories to create.

/C(ompressed) /N(o update)
/D (change directory) /S(ubdirectories)

See also: RD.

Internet: Can be used with FTP Servers.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

MD and MKDIR are synonyms. You can use either one. If you don't specify any arguments, MD will display its command dialog.

MD creates a subdirectory anywhere in the directory tree. To create a subdirectory from the root, start the ***path*** with a backslash [\]. For example, this command creates a subdirectory called *MYDIR* in the root directory:

```
md \mydir
```

If no path is given, the new subdirectory is created in the current directory. This example creates a subdirectory called *DIRTWO* in the current directory:

```
md dirtwo
```

To create a directory from the parent of the current directory (that is, to create a sibling of the current directory), start the pathname with two periods and a backslash [**..**].

Windows limits the maximum length of the subdirectory name. See Directories and Subdirectories for details.

When creating a directory on an LFN drive, you must quote any ***path*** which contains white space or special characters.

If MD creates one or more directories, they will be added automatically to the extended directory search database unless the **/N** option is specified.

You can create directories on FTP servers. For example:

```
md ftp://ftp.abc.com/data/index
```

MD sets two internal variables:

%_md_dirs	The number of directories created
%_md_errors	The number of errors

Options:

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/= Display the MD command dialog to help you set the directory and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Create a compressed subdirectory.

/D Change to the newly created subdirectory.

/N If **/N** has no additional options, do not update the CD / CDD extended directory search database, *JPSTREE.IDX*. This is useful when creating a temporary directory which you do not want to appear in the extended search database. **/N** takes two optional arguments:

- **e** Don't display non-fatal errors. (Note that a **/Ne** alone will still update the extended directory search database.)
- **t** Don't update the extended directory search database. (This is the same as **/N** with no options.)

/S Allows you to create more than one directory at a time. For example, if you need to create the directory *C:\ONE\TWO\THREE* and none of the named directories exist, you can use **/S** to have MD create all of the necessary subdirectories in a single command (without the **/S**, this command will fail because the parent directory *C:\ONE\TWO* does not exist):

```
md /s \one\two\three
```

For compatibility with CMD, **/S** becomes the default if you enable ***TCC*** extensions with the **/X** switch on the ***TCC***startup command line. See Command Line Options for details on **/X**.

4.3.110 MEMORY

Purpose: Display TCC and Windows memory status

Format: MEMORY

Usage:

MEMORY lists the percentage "memory load" as reported by Windows, the total and available physical RAM, the total and available page file size, the total and available virtual memory, the total and free alias space (local and/or global), the total and free function space (local and/or global), the total history space, the current and maximum working set for ***TCC***, and the private memory usage for ***TCC***. The memory load is a figure returned by the operating system which gives an overall sense of memory utilization. It is not a precise indicator of system load or memory usage. The total page file figure shows the total number of bytes that can be stored in the file, but may not reflect the actual size of the current file on disk.

4.3.111 MKLINK

Purpose: Create NTFS symbolic, hard, and soft links

Format: MKLINK [/= /A:[[-]rhsadecijopt /A /D /H /J /Q /X] *Link Target*

Link The new symbolic link name
Target The pathname (full or relative) that the new link refers to

/A Create a link with an absolute path.
/D Create a directory symbolic link. (The default is to create a file symbolic link.)
/H Create a hard link (like MKLNK).
/J Create a junction.

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/Q	Don't display results.
/X	Delete directory link.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, and include lists. Date, time, size, or file exclusion ranges anywhere on the line apply to all *source* files. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

If you don't specify a target or any options, MKLINK will display information on the link (including OpenAFS reparse points).

Due to Windows file system restrictions, creating symbolic links with MKLINK requires an NTFS volume.

The file/directory names in ***Link*** and ***Target*** can be fully or partially qualified. MKLINK will also copy an existing description to the link. If you don't specify any arguments, MKLINK will display its command dialog.

MKLINK sets two internal variables:

%_mklink_files	The number of links created
%_mklink_errors	The number of errors

See also MKLNK.

Example:

Create a symbolic file link "c:\mydir\myfile" that refers to the existing file "c:\data\somefile" :

```
mklink c:\mydir\myfile c:\data\somefile
```

Option:

/=	Display the MKLINK command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.
/A	Create a link with an absolute (full expanded) pathname. For CMD compatibility, MKLINK creates relative links if you don't specify a full pathname.
/D	Create a directory symbolic link. (The default is to create a file symbolic link.)
/H	Create a hard link instead of a symbolic link.
/J	Create a junction rather than a symbolic link.
/Q	Don't display the result.
/X	Delete a directory link.

4.3.112 MKLNK

Purpose: Create or delete an NTFS hard or soft link

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Format: Create or update a link:
MKLNK [/= /A:[[-]rhsadecijopt]] *parm1* [*parm2*]

Delete a link
MKLNK /D parm1

parm1 Name of an existing file (hard link) or directory (for soft link).
parm2 Name of the new directory entry (a file or directory reference) to be created.

/A: (Attribute select)
/D Delete a link

See also MKLINK.

File Selection

MKLNK supports the command dialog. For hard links, MKLNK supports attribute switches, extended wildcards, ranges, multiple file names, and include lists. Date, time, size, or file exclusion ranges anywhere on the line apply to all ***source*** files. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Usage:

MKLNK is obsolete; you should use MKLINK for new scripts.

Due to operating and file system restrictions, this command requires an NTFS volume.

The file/directory names in ***parm1*** and ***parm2*** can be fully or partially qualified, and may contain wildcards (hard links only). MKLINK will also copy an existing description to the link. If you don't specify any arguments, MKLNK will display its command dialog.

If a single argument is specified and it is a junction, MKLNK will display the directory name linked to the junction.

MKLNK sets two internal variables:

%_mklnk_files	The number of links created
%_mklnk_errors	The number of errors

Hard Links

If ***parm1*** is a file, and ***parm2*** does not exist, MKLNK will create a hard link. If ***parm2*** exists, MKLNK reports an error.

MKLNK (and the underlying Windows API) may fail if the current directory is on a **subst** or **net use** drive, or a **UNC** volume.

Soft Links

If ***parm1*** is a directory, and ***parm2*** does not exist, MKLNK will create a soft link, also known as a "directory junction" or "reparse point". If ***parm2*** exists, and it is a soft link, MKLNK updates it.

A soft link is an indirect or symbolic reference (***parm2***) to a directory that physically resides in another location (***parm1***). Note: deleting files from a soft link is equivalent to deleting the files from the original directory.

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Note: Other operating systems, such as Linux, may also support "hard links" and "soft links", but the Windows implementation of these concepts may not behave in the same manner even though the names might be similar.

Option:

/= Display the MKLNK command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set (hard links only). See Attribute Switches for information on the attributes which can follow **/A:**.

/D Remove an existing hard or soft link. For hard links, if no more links remain **/D** will not delete the file.

4.3.113 MONITOR

Purpose: Display or change monitor capabilities

Format: MONITOR [/= /AP:*x*:*y* /AS:*x*:*y* /B:n /C:n /D:*Color*:*n* /FC /FD /G:*Color*:*n* /N:*n* /S /T:n]

/AP:x:y (display position)
/AS:x:y (display area)
/B:n (brightness)
/C:n (contrast)
/D:color:n (drive value)
/G:color:n (gain value)
/FC (factory colors)
/FD (factory defaults)
/N:n (physical monitor)
/S (save settings)
/T:n (color temperature)

Usage:

MONITOR can display or change monitor capabilities, including:

Technology type
Color temperature
Contrast
Display area position
Display area size
RGB drive
RGB gain
Brightness
Reset factory color defaults
Reset factory defaults
Save to nonvolatile storage

Not all settings are supported by all monitors. If you don't enter any arguments, MONITOR will display the current configuration of all physical monitors. Depending on the options and the monitor hardware, MONITOR can take several hundred milliseconds to return.

The MONITOR command will fail if the monitor does not support DDC/CI.

Example:

Set the second monitor to a brightness of 90 and a contrast of 75:

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```
monitor /n:1 /b:90 /c:75
```

Options:

/= Display the MONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/AP:*x*:*y* Set the horizontal (x=0) or vertical (x=1) position of the monitor's display area. *y* is the new width or height. Increasing the horizontal position moves the display area to the right; decreasing it moves the display area to the left. Increasing the vertical position moves the display area up, decreasing it moves the display area down.

/AS:*x*:*y* Set the display area width (x=0) or height (x=1). *y* is the new width or height.

/B:***n*** Set the brightness.

/C:*n* Set the contrast.

/D:*Color*:*n* Sets a monitor's red, green, or blue drive value. Drive settings are used to adjust the monitor's white point (*drive* is also called *black level*). *Color* is either RED, GREEN, or BLUE; *n* is the drive value (usually 0-100). You can have multiple /Drive arguments in a single MONITOR command.

/G:*Color*:*n* Sets a monitor's red, green, or blue gain value. Gain settings are generally used to adjust the monitor's white point. *Color* is either RED, GREEN, or BLUE; *n* is the gain value (usually 0-100). Changing the gain settings can change the color temperature. You can have multiple /Gain arguments in a single MONITOR command.

/FC Restore the factory color settings.

/FD Restore the factory default settings

/N:*n* Change settings on physical monitor *n*. The default is 0.

/S Save settings to the display's nonvolatile storage.

/T:*n* Change the color temperature. *n* can be one of the following:

4000
5000
6500
7500
8200
9300
10000
11500

4.3.114 MOUNTISO

Purpose: Mount an ISO image

Format: MOUNTISO [*d:*\ | *d:**path*\] *image*

d: Optional drive letter.

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d:\path	Optional mount path
image	ISO file to mount

See also UNMOUNTISO.

Usage:

MOUNTISO is only supported in Windows 8 or later.

If you do not specify a drive letter or mount path, Windows will assign a drive letter.

You must be running an elevated session to mount an ISO image.

Example:

Mount the ISO image file "windows12.iso" as drive M:

```
mountiso m:\ windows12.iso
```

4.3.115 MOUNTVHD

Purpose: Mount a VHD or VHDX image

Format: MOUNTVHD [*d:* | *d:\path*] *image*

d:	Optional drive letter.
d:\path	Optional mount path
image	VHD or VHDX file to mount

See also UNMOUNTVHD.

Usage:

If you do not specify a drive letter or mount path, Windows will assign a drive letter.

You must be running an elevated session to mount a VHD or VHDX image.

Example:

Mount the VHD image file "windows12.vhd" as drive M:

```
mountiso m:\ windows12.vhd
```

4.3.116 MOVE

Purpose: Move files to a new directory (and optionally drive)

Format: MOVE [/= /A:[[-]
rhsadecijopt /B /C /CF /D /E /G /H /I"text" /J /K /L /LD /M /MD /MDA /N[dejnstz] /O /O:[-]
acdeginorstuz /P /Q /R /S[[+]*n*] /SX /T /U /UF /V /W /Y /Z] [@*file*] *source... destination*

source	A file or list of files to move.
destination	The new location for the files.

@file A text file containing the names of the source files to move, one per line (see @file lists for details).

/A: (Attribute select)
/B (Move after reboot)
/C(hanged)
/CF (changed 2s+ resolution)
/D(irectory)
/E (No error messages)
/G (display percent copied)
/H(idden and system)
/I"text" (match description)
/J (copy in restartable mode)
/K (delete to recycle bin)
/L (ASCII FTP transfer)
/LD (create link)
/M(odified files)
/MD (Create target directory)
/MDA (Copy directory attributes)
/N (Disable)
/O (don't move if target exists)
/O:... (Order)
/P(rompt)
/Q(uiet)
/R(eplace)
/S(ubdirectory tree)
/SX (single target directory)
/T(otal)
/U(pdate)
/UF (updated 2s+ resolution)
/V(erify)
/W(ipe)
/Y (force move of encrypted files)
/Z (overwrite)

See also COPY, DEL and RENAME.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, delayed variable expansion, and include lists. Date, time, size, or file exclusion ranges anywhere on the line apply to all *source* files. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Internet: Can be used with FTP/TFTP/HTTP/HTTPS Servers.

Usage:

The MOVE command moves one or more files from one directory to another, whether the directories are on the same drive or not. It has the same effect as copying the files to a new location and then deleting the originals. Like COPY and RENAME, MOVE works with single files, multiple files, and sets of files specified with an include list. If you don't specify any arguments, MOVE will display its command dialog.

The simplest MOVE command moves a single ***source*** file to a new location and, optionally, gives it a new name. These two examples both move one file from drive *C:* to the root directory on drive *A:*

```
[c:\] move myfile.dat a:\
[c:\] move myfile.dat a:\savefile.dat
```

In both cases, *MYFILE.DAT* is removed from drive *C:* after it has been copied to drive *A:*. If a file called *MYFILE.DAT* in the first example, or *SAVEFILE.DAT* in the second example, already existed on drive *A:*, it would be overwritten. (This demonstrates the difference between MOVE and RENAME. MOVE will move files between drives and will overwrite the destination file if it exists; RENAME will not.)

When you move a single file, the ***destination*** can be a directory name or a file name. If it is a directory name, and you add a backslash [\] to the end of the name, MOVE will display an error message if the name does not refer to an existing directory. You can use this feature to keep MOVE from treating a mistyped ***destination*** directory name as a file name, and attempting to move the ***source*** file to that name.

If you MOVE multiple files, the ***destination*** must be a directory name. MOVE will move each file into the ***destination*** directory with its original name. If the ***destination*** is not a directory, MOVE will display an

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error message and exit. For example, if *C:\FINANCE\MYFILES* is not a directory, this command will display an error; otherwise, the files will be moved to that directory:

```
move *.wks *.txt c:\finance\myfiles
```

The **/D** option can be used for single or multiple file moves; it checks to see whether the ***destination*** is a directory, and will prompt to see if you want to create the ***destination*** directory if it doesn't exist.

If MOVE creates one or more destination directories, they will be added automatically to the extended directory search database; see Extended Directory Searches for details.

Be careful when you use MOVE with the SELECT command. If you SELECT multiple files and the ***destination*** is not a directory (for example, because of a misspelling), MOVE will assume it is a file name. In this case each file will be moved in turn to the ***destination*** file, overwriting the previous file, and then the original will be erased before the next file is moved. At the end of the command, all of the original files will have been erased and only the last file will exist as the ***destination*** file.

You can avoid this problem by using square brackets with SELECT instead of parentheses (be sure that you don't allow the command line to get too long; watch the character count in the upper left corner while you're selecting files). MOVE will then receive one list of files to move instead of a series of individual filenames, and it will detect the error and halt. You can also add a backslash [\] to the end of the *destination* name to ensure that it is the name of a subdirectory (see above).

When you specify a single subdirectory source and a single subdirectory target, the source directory tree will be moved to a subdirectory of the target directory. If the source is a subdirectory and the target doesn't exist, the target subdirectory will be created and the source tree moved to it. (These are both for compatibility with CMD.)

If you specify the /C, /CF, /R, /U, or /UF options, MOVE will append a **!** to the move specifier if the target exists and is being overwritten. For example:

```
[d:\] move file1 file2
file1 ->! file2
```

MOVE sets three internal variables:

%_move_dirs	The number of directories created
%_move_files	The number of files moved
%_move_errors	The number of errors

- **FTP Usage:**

You can move files to and from Internet URLs (FTP, TFTP and HTTP). For example:

```
move ftp://ftp.abc.com/f1.txt c:\text\
```

Files moved to or from FTP servers are normally transferred in binary mode. To perform an ASCII transfer use the **/L** switch. File descriptions are not copied when moving files to an Internet URL.

Wildcard characters such as [*] and [**?**] will be treated as wildcards in FTP URLs, but will be treated as normal characters in HTTP URLs.

Note: The **/G** option (percent moved) may report erratic values during transfer of files larger than 4 Gb (an FTP limitation) and during http downloads.

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- **NTFS File Streams:**

MOVE supports file streams on NTFS drives. You can move an individual stream by specifying the stream name, for example:

```
move streamfile:s1 file2
```

If no stream name is specified the entire file is moved, including all streams. However, if you move a file to a drive or device which does not support streams, only the file's primary data is moved; any additional streams are not processed and their data will be lost.

See NTFS File Streams for additional details.

- **Advanced Features and Options**

If MOVE must physically copy the files and delete the originals (rather than renaming them), then some disk space may be freed on the ***source*** drive. The free space may be the result of moving the files to another drive, or of overwriting a larger ***destination*** file with a smaller ***source*** file. MOVE displays the amount of disk space recovered unless the **/Q** option is used (see below). It does so by comparing the amount of free disk space before and after the MOVE command is executed. However, this amount may be incorrect if you are using a deletion tracking system which retains deleted files for later recovery, or if another program performs a file operation while the MOVE command is executing.

Use caution with the **/A:** and **/H** switches (both of which can allow MOVE to process hidden files) when you are physically moving files, and both the ***source*** and ***destination*** directories contain file descriptions. If the ***source*** file specification matches the description file name (normally *DESCRIPT.ION*), and you tell MOVE to process hidden files, the *DESCRIPT.ION* file itself will be moved, overwriting any existing file descriptions in the ***destination*** directory. For example, if the *C:\DATA* directory contains file descriptions, this command would overwrite any existing descriptions in the *D:\SAVE* directory:

```
[c:\data] move /h d* d:\save\
```

(If you remove the hidden attribute from the *DESCRIPT.ION* file the same caution applies even if you do not use **/A:** or **/H**, as *DESCRIPT.ION* is then treated like any other file.)

Note: The wildcard expansion process will attempt to allow both CMD-style "extension" matching (only one extension, at the end of the word) and the advanced ***TCC*** *string* matching (allowing things like *.*.abc) when an asterisk is encountered in the ***destination*** of a MOVE command.

MOVE supports regular expression back references in the target name. If you are using back references, you must also use a regular expression in the source name. The syntax is:

```
move ::filename ::target
```

MOVE supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is copied, MOVE will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be moved to the target directory. You can disable connected web folders by setting the registry key:

HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\NoFileFolderConnection=0

You can override the default HTTP proxy server, proxy user, and proxy password (set in TCMD.INI) with the **/Proxy...** options.

/Proxy=*server*

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/ProxyUser=*username*
/ProxyPwd=*password*

Options:

/= Display the MOVE command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. See the cautionary note under **Advanced Features and Options** above before using **/A:** when both the ***source*** and ***destination*** directories contain file descriptions. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B If MOVE can't move the file (i.e., access denied), it will schedule it to be moved at the next reboot.

/C Move files only if the ***destination*** file exists and is older than the ***source*** (see also **/U**). This option is useful for updating the files in one directory from those in another without moving any newly-created files. Do not use /C with @file lists. See @file lists for details.

/CF Move files only if the ***destination*** file exists and is more than 2 seconds older than the ***source*** (see also /U and **/UF**). Do not use /CF with @file lists. See @file lists for details.

/D Requires that the ***destination*** be a directory. If the ***destination*** does not exist, MOVE will prompt to see if you want to create it. If the ***destination*** exists as a file, MOVE will fail with an "Access denied" error. Use this option to avoid having MOVE accidentally interpret your ***destination*** name as a file name when it's really a mistyped directory name.

/E Suppress all non-fatal error messages, such as "File Not Found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files and aliases.

/G Displays the percentage of the file moved, the transfer rate (in Kbytes/second), and the estimated time remaining. This is useful when copying large files across networks or via FTP to show whether the move is proceeding. /G will also display the % moved even if Windows is doing a rename (which may be a copy & delete internally).

/H Move all files, including hidden and system files. See the cautionary note under **Advanced Features and Options** above before using **/H** when both ***source*** and ***destination*** directories contain file descriptions.

/I"text" Select ***source*** files by matching text in their descriptions. The text can include wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/J Copy the file in restartable mode. The copy progress is tracked in the destination file in case the move fails. The copy can be restarted by specifying the same source and destination file names.

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/K If the MOVE is to a different drive, move the source file to the recycle bin instead of deleting it. When deleting to the recycle bin, MOVE checks the RECYCLEEXCLUDE environment variable. If the file matches, MOVE deletes the file instead of sending it to the recycle bin.

/L Perform FTP transfers in ASCII mode, instead of the default binary mode.

/LD When used with /S, if the source is a symbolic or hard link to a directory, MOVE will create the link in the target directory instead of moving the subdirectory tree.

/M Move only files that have the archive bit set. The archive bit will remain set after the MOVE. Do not use /M with @file lists. See @file lists for details.

/MD Create the target directory if it doesn't exist. (Note that you *must* either terminate the target directory name with a trailing \ or specify a filename component; otherwise MOVE cannot tell what you want for the directory and what you want for the filename!)

/MDA Copy the attributes from the source subdirectories to the target subdirectories. Only valid if moving to another drive; otherwise MOVE does a rename of the top-level directory, and all of the subdirectory attributes are retained.

/N Do everything except actually move the file(s). This option is most useful for testing what a complex MOVE command will do. **/N** displays how many files would be moved. **/N** does not prevent creation of ***destination*** subdirectories when it is used with **/S**.

A **/N** with one or more of the following arguments has an alternate meaning:

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors.
- **j** Skip junctions (when used with /S)
- **n** Don't update the file descriptions
- **s** Don't display the summary.
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.
- **z** Skip system directories (when used with /S)

/O Don't move the file(s) unless the target doesn't exist, i.e. do not overwrite an existing target..

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**

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u Unsorted
z Same as **s**

/P Prompt the user to confirm each move. Your options at the prompt are explained in detail under Prompts.

/Proxy=*server*

/ProxyUser=*username*

/ProxyPwd=*password*

/Q Don't display filenames, the total number of files moved, the percentage moved, or the amount of disk space recovered, if any. When used in combination with the **/P** option above, it will prompt for filenames but will not display the totals. This option is most often used in batch files. See also **/T**.

/R Prompt for a **Y** or **N** response before overwriting an existing ***destination*** file.

/S Move an entire subdirectory tree to another location. MOVE will attempt to create the ***destination*** directories if they don't exist, and will remove empty subdirectories after the move. When **/D** is used with **/S**, you will be prompted if the first ***destination*** directory does not exist, but subdirectories below that will be created automatically by MOVE. If MOVE /S creates one or more destination directories, they will be added automatically to the *JPSTREE.IDX* database. If you attempt to use **/S** to move a subdirectory tree into part of itself, MOVE will detect the resulting infinite loop, display an error message, and exit. You cannot combine multiple /S options (including /S, /Sn, /S+1, or /SX) in a single command, or use any /S option with @file lists. See @file lists for details.

If you specify a number after the /S, MOVE will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, MOVE will not move any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not move anything in *\a* or *\a\b*.

MOVE will display the empty source subdirectories it is removing (unless you use the /Q option).

/SX Move the subdirectory tree to a single target directory (implies /S). MOVE will remove empty subdirectories after the move. You cannot combine multiple /S options (including /S, /Sn, /S+1, or /SX) in a single command, or use any /S option with @file lists. For example, to move all of the .EXE files in ***c:\files*** and all of its subdirectories to the directory ***d:\exefiles***:

```
copy /sx c:\files\*.exe d:\exefiles\
```

/T Don't display filenames as they are moved, but display the total number of files moved.

/U Move each ***source*** file only if it is newer than a matching ***destination*** file or if a matching ***destination*** file does not exist (also see **/C**). This option is useful for moving new or changed files from one directory to another. Do not use /U with @file lists. See @file lists for details. When used with file systems that have different time resolutions (such as FAT and NTFS), **/U** will attempt to use the "coarsest" resolution of the two.

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/UF Move each ***source*** file only if it is more than 2 seconds newer than a matching ***destination*** file or if a matching ***destination*** file does not exist (also see **/C** and **/CF**). Do not use /UF with @file lists. See @file lists for details.

/V Verify each disk write by performing a true byte-by-byte comparison between the source and the newly-created target file. This option may significantly increase the time necessary to complete a MOVE command. /V will not work for FTP, TFTP, or HTTP moves.

/W If the MOVE is to a different drive, after the move overwrite the source file contents using the DoD 5220.22-M (E) standard for secure deletion. (This overwrites every byte in the file three times with different values). Use this option to completely obliterate a file's contents from your disk. Once you have used this option it is impossible to recover the file even if you are using an undelete utility, because the contents of the file are destroyed before it is deleted.

/WAIT=*n* Pause for *n* milliseconds between each block copied from the source to the target file. This is useful for users with slow networks and very large file copies; it prevents MOVE from monopolizing all of the network I/O. (Only valid if the source and target are on different drives.)

/Y Force copy of an encrypted file even when the target will be decrypted (for CMD compatibility).

/Z Overwrite read-only destination files. Without this option, MOVE will fail with an "Access denied" error if the destination file has its read-only attribute set. This option allows MOVE to overwrite read-only files without generating any errors.

4.3.117 MOVEDIR

Purpose: Move a directory tree

Format: MOVEDIR *source destination*

source The source directory tree
destination The target directory tree

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

Both *source* and *destination* must be directory names. If *destination* does not exist, MOVEDIR will create *destination* and move *source* to *destination*. If *destination* already exists, MOVEDIR will append the last subdirectory name in *source* to *destination,* create the new subdirectory, and move *source* to *destination*. (This allows you to rename the target directory.)

Examples

To move ***d:\test\mydir*** to ***x:\mydir:***

```
movedir d:\test\mydir x:\
```

To move ***d:\test\mydir*** to ***x:\myolddir:***

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```
movedir d:\test\testmydir x:\myolddir
```

4.3.118 MSGBOX

Purpose: Display a Windows message box

Format: MSGBOX
[/= /1["*text*"] /2["*text*"] /3["*text*"] /4["*text*"] /5["*text*"] /6["*text*"] /B*rgb* /D
n /H /I /L /M /N /O /P*x,y* /Pc /Q /R /S /T*n* /W /X] *buttontype* ["*title*"] *prompt*

buttontype	One of **OK**, **OKCANCEL**, **YESNO**, **YESNOCANCEL**, **RETRYCANCEL**, **ABORTRETRYIGNORE**, **CANCELTRYCONTINUE**, **CONTINUEABORT,** **SKIPSKIPALLCANCEL, or IGNOREIGNOREALLCANCEL**
title	Text for the title bar of the message box.
prompt	Text that will appear inside the message box.

/1 (st button)
/2 (nd button)
/3 (rd button)
/4 (th button)
/5 (th button)
/6 (th button)
/B (background color)
/F (foreground color)
/D(isable temporarily)
/H(elp button)
/I(nformation icon)
/L(imit width)
/M (system modal)
/N (no sound)
/O (topmost window)
/P (screen coordinates)
/Pc (center)
/Q(uestion icon)
/R(ight justify buttons)
/S(top icon)
/T(imeout)
/W(arning icon)
/X (not moveable)

See also: INKEY, INPUT, QUERYBOX, and TASKDIALOG.

Usage:

MSGBOX can display one of eight kinds of message boxes and wait for the user's response. You can use ***title*** and ***prompt*** to display any text you wish. ***TCC*** will automatically size and center the message box on the tab window (if ***TCC*** is running in a ***Take Command***), or centered on the screen (if ***TCC*** is running in a console window). The message box has up to three response buttons (plus an optional Help button), depending on its type, as shown below.

buttontype	***button 1***	***button 2***	***button 3***
OK	OK		
OKCANCEL	OK	Cancel	
YESNO	Yes	No	
YESNOCANCEL	Yes	No	Cancel
RETRYCANCEL	Retry	Cancel	
ABORTRETRYIGNORE	Abort	Retry	Ignore
CANCELTRYCONTINUE	Cancel	Try Again	Continue
CONTINUEABORT	Continue	Abort	
SKIPSKIPALLCANCEL	Skip	Skip All	Cancel
IGNOREIGNOREALLCANCEL	Ignore	Ignore All	Cancel

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There are two button type modifiers (only valid when used immediately following a YESNO or YESNOCANCEL):

YESTOALL - adds a "Yes to All" button (returns 30)
NOTOALL - adds a "No to All" button (returns 31)

If the standard message box types don't meet your needs, you can create a custom message box with up to four buttons (plus an optional Help button), specifying the text that appears on each button.

The button the user chooses is indicated using the internal variable %_?. Be sure to save the return value in another variable or test it immediately; because the value of %_? changes with every internal command. The following list shows the value returned for each selection:

response	%_?
Yes or OK	10
No	11
Cancel	12
Retry	13
Try Again	14
Continue	15
Ignore	16
Abort	17
Help	18
timeout	20
custom button 1	21
custom button 2	22
custom button 3	23
custom button 4	24
custom button 5	25
custom button 6	26

If you define custom buttons, the button type argument will be ignored.

There are three optional Checkbox types. (You can only choose one at a time.)

DONOTASKAGAIN - add checkbox "Do not ask me again".
DONOTTELLAGAIN - add checkbox "Do not tell me again"
DONOTSHOWAGAIN - add checkbox "Do not show again"

If the checkbox is selected, MSGBOX will set the internal variable %_msgbox_checkbox to 1.

If there is an error in the MSGBOX command itself, %_? will be set as described in its documentation (see _?).

For example, to display a Yes or No message box and take action depending on the result, you could use commands like this:

```
msgbox yesno "Copy" Copy all files to A:?
if %_? == 10 copy * a:
```

Since MSGBOX doesn't write to standard output, it disables redirection and piping to allow you to enter the redirection characters (<, >, and |) in your prompt text.

You can copy the text in a MSGBOX window to the clipboard by entering Ctrl-C when the MSGBOX window has the keyboard focus.

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MSGBOX creates a popup dialog box. If you prefer to retrieve input from the command line, see the INKEY and INPUT commands.

Options:

/= Display the MSGBOX command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/1 If there is a text string following the option, set the custom text for the first button. Otherwise, set the first button as the default.

/2 If there is a text string following the option, set the custom text for the second button. Otherwise, set the second button as the default.

/3 If there is a text string following the option, set the custom text for the third button. Otherwise, set the third button as the default.

/4 If there is a text string following the option, set the custom text for the fourth button. Otherwise, set the fourth button as the default.

/5 If there is a text string following the option, set the custom text for the fifth button. Otherwise, set the fifth button as the default.

/6 If there is a text string following the option, set the custom text for the sixth button. Otherwise, set the sixth button as the default.

/B*rgb* Background color, as a hex number where Blue is the most significant 2 bytes, Green the middle two, and Red the least significant. For example, /BAA8866 will set Blue to AA, Green to 88, and Red to 66.

/Dn Disable the message box buttons for ***n*** seconds at startup.

/F*rgb* Text color, as a hex number where Blue is the most significant 2 bytes, Green the middle two, and Red the least significant. For example, /FAA8866 will set Blue to AA, Green to 88, and Red to 66.

/H Display a help button.

/I Display an icon consisting of a lower case "i" in a circle in the message box.

/L Limit the maximum message box width to no more than 1/3 the screen width (unless the button text requires more).

/M The message box window will be displayed on top of all other windows.

/N Don't play the default sound.

/O The message box is created as a topmost window.

/Px,y The initial x,y screen coordinates. If you don't use this option, MSGBOX will center its window in the ***Take Command*** tab window or the ***TCC*** console window.

/Pc Center the MSGBOX window on the desktop.

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/Q Display a question mark icon in the message box.

/R The buttons will be right-justified.

/S Display a stop sign icon in the message box.

/T*n* MSGBOX will wait a maximum of ***n*** seconds for a response (and then close). If the time limit expires, **%_?** will be set to 20. The time remaining before the window closes will be displayed in the default button.

/W Display an exclamation point icon in the message box.

/X The message box cannot be moved.

4.3.119 NETMONITOR

Purpose: Monitor network connection and disconnection

Format: NETMONITOR [/C [*name*]]
NETMONITOR [/=] *name* CONNECTED | DISCONNECTED *n command*

name	Network name
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

The network name can be either **LAN** (for a local area network), **WAN** (dialup network), or the name of a wireless network. The network name can include wildcards.

The command line will be parsed and expanded before NETMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. NETMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, NETMONITOR will display the networks it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

NETMONITOR creates environment variables when a network is connected that can be queried by ***command***. The variable is deleted after ***command*** is executed.

_netname The name (SSID) of the network

_netcount The number of times the condition has been triggered

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Options:

/= Display the NETMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that network. Otherwise, remove all network monitors.

4.3.120 NOTIFY

Purpose: Send an activity notification request to ***Take Command***.

Format: NOTIFY [/=] *repeat* [*timeout*] [/A /S] [*command...*]

repeat - The number of repetitions. This can be an integer value from 1 - *n,* or the string FOREVER.

timeout - The number of seconds before triggering a notification. For /A, the number of seconds between the any display output before running the specified *command*. The default value is 15.

/A Activity
/S Silence

command - The command to execute on an activity / silence match

Usage:

NOTIFY can be useful to detect when a long-running process is waiting for input or has finished (/S) or when a process has started (/A). (This command is only useful when ***TCC*** is running in a ***Take Command*** tab window.)

The *command* will be executed by ***Take Command***, not ***TCC.*** So if you specify a *command* that writes to STDOUT or STDERR (not recommended!), you will see the output mixed with the output from ***TCC*** in that tab window. For example, you can call BEEP, MSGBOX, OSD, TOAST, etc., or any batch file or external command. The command will be started in a separate thread; it is your responsibility to ensure that the command will exit after performing the desired action (otherwise you will end up with a large number of useless threads).

You can also configure notifications by right clicking on the ***Take Command*** tab label, and selecting "Notifications...".

Examples:

This command fragment displays a messagebox if there is activity after more than 60 seconds since the last activity:

```
notify 60 /a MSGBOX OK "NOTIFY" Detected activity...
```

This command displays a messagebox if there is no activity for more than 60 seconds:

```
notify 15 /s MSGBOX OK "NOTIFY" Detected silence ...
```

Options:

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/= Display the NOTIFY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Activity notification. When ***Take Command*** updates the tab window, it checks to see if the time since the last update is >= to *timeout,* and if so it will execute the specified *command*. If no *command* is specified, /A will turn off activity notification.

/S Silence notification. *timeout is* the number of seconds without any display output before ***Take Command*** will execute the specified *command*. If no *command* is specified, /S will turn off silence notification.

4.3.121 ON

Purpose: Execute a command at the command prompt or in a batch file when a specific condition occurs

Format:

ON BREAK [*command*]
ON CLOSE [*command*]
ON CONDITION [*condition command*]
ON DBLCLICK [*command*]
ON ERROR [*command*]
ON ERRORLEVEL *n* [*command*]
ON ERRORMSG [*command*]
ON LOGOFF [*command*]
ON LBUTTON [*command*]
ON MBUTTON [*command*]
ON RBUTTON [*command*]
ON RESUME [*command*]
ON SHUTDOWN [*command*]
ON SUSPEND [*command*]

command command to execute when the event occurs
/G Set a global condition from a batch file

Usage:

ON sets a watch that remains in effect for the duration of the current session or batch file, or until replaced by another ON command of the same type. Whenever a ***break*** or ***error*** condition occurs after ON has been executed, the corresponding ***command*** is automatically executed. You can have multiple ON commands active at a time, as long as no two are the same type. (For example, you can have an ON BREAK and an ON CLOSE, but not two ON LBUTTON.)

If the last argument on the line is a single **(,** it is interpreted as the beginning of a command group. ON will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **).**

Global Conditions:

The following ON conditions can be run from the command prompt (a "global condition"); all others will only work in a batch file.

ON CLOSE
ON LOGOFF
ON SHUTDOWN

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ON SUSPEND
ON RESUME

If no command is specified, ***TCC*** will remove the existing command for the specified condition. Each time an ON statement is defined, it defines a new command to be executed for that event, and any prior command is discarded. If an ON condition is defined for the current batch file, it will override a global ON condition.

***Activation of* ON BREAK**

ON BREAK will execute ***command*** if the user presses **Ctrl-C** or **Ctrl-Break**.

***Activation of* ON CLOSE**

ON CLOSE will execute ***command*** when the ***TCC*** tab is closed.

***Activation of* ON CONDITION**

ON CONDITION will execute ***command*** when ***condition*** is true. ***condition*** can be any test that is valid in IF. The test will be done after each command is executed. If you are executing a loop (DO or FOR), the test will be done each time through the loop.

***Activation of* ON DBLCLICK**

ON DBLCLICK will execute ***command*** when the left mouse button is double clicked when ***TCC*** is the active window. (Note that if you also have an ON LBUTTON command, it will be executed on the first click.)

***Activation of* ON ERROR *and* ON ERRORMSG**

ON ERROR or ON ERRORMSG will execute ***command*** after any critical error, operating system error (such as a disk write error) or internal command error (such as a COPY command that fails to copy any files, or the use of an invalid command option).

ON ERROR executes ***command*** immediately after the error occurs, without displaying any ***TCC*** error message (Windows errors may still be displayed). ON ERROR will also set the %_SYSERR internal variable.

ON ERRORMSG first displays the appropriate error message, then executes ***command***.

If both are specified, ON ERROR will take precedence, and ON ERRORMSG will be ignored.

Activation of ON ERRORLEVEL

ON ERRORLEVEL n will execute ***command*** when the internal ERRORLEVEL variable is equal to the integer specified by ***n.*** You can also use the IF ERRORLEVEL tests; for example:

```
ON ERRORLEVEL EQ 37 ...
```

***Activation of* ON LBUTTON**

ON LBUTTON will execute ***command*** when the left mouse button is clicked.

***Activation of* ON LOGOFF**

ON LOGOFF will execute ***command*** when the user logs off.

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***Activation of* ON MBUTTON**

ON MBUTTON will execute ***command*** when the middle mouse button is clicked when ***TCC*** is the active window.

***Activation of* ON RBUTTON**

ON RBUTTON will execute ***command*** when the right mouse button is clicked when ***TCC*** is the active window.

***Activation of* ON RESUME**

ON RESUME will execute ***command*** when the system resumes after sleeping or hibernating.

***Activation of* ON SHUTDOWN**

ON SHUTDOWN will execute ***command*** when the system is being shut down.

***Activation of* ON SUSPEND**

ON SUSPEND will execute ***command*** when the system is going to sleep or hibernation. Windows will continue suspending after a maximum of 2 seconds.

Scope

Each time an ON statement is defined, it defines a new command to be executed for that event, and any prior command is discarded.

If you do not specify a command, ***TCC*** restores the default handler.

An ON statement only affects the current batch file. When the batch file containing ON is exited for any reason, whether temporarily (e.g., by a CALL to another batch file) or permanently, the ***TCC*** default **break** and **error** handlers become effective. A CALLed batch file may then use ON to define its own handlers. When control returns to the calling batch file, its **break** and **error** handlers that had been in effect at the CALL are reactivated.

Limitations

The ON ERROR[MSG] command will not be invoked if an error occurs while reading or writing redirected input, output, or a pipe.

Caution: If a break or error occurs while the command specified in ON BREAK, ON ERROR, ON ERRORLEVEL, or ON ERRORMSG is executing, the command will be restarted. This means you must use caution either to avoid or to handle any possible errors in the commands invoked by ON, since such errors can cause an infinite loop.

Examples:

The command can be any command that can be used on a batch file line by itself. Frequently, it is a GOTO or GOSUB command. For example, the following fragment traps any user attempt to end the batch file by pressing **Ctrl-C** or **Ctrl-Break**. It scolds the user for trying to end the batch file and then continues:

```
on break gosub gotabreak
do i = 1 to 1000
```

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```
   echo %i
enddo
quit
:gotabreak
echo Hey! Stop that!!
return
```

You can use a command group as the command if you want to execute multiple commands, for example:

```
on break (echo Oops, got a break! & quit)
```

ON assumes that you want to continue executing the batch file. After the command is executed, control automatically returns to the command in the batch file immediately after the one that was interrupted by the event. To avoid continuing the batch file after the event at the next command perform one of the following in ***command***:

- transfer control with GOTO,
- end the batch file with QUIT or CANCEL
- chain to another batch file (without using CALL).

When handling an error condition with ON ERROR[MSG], you may find it useful to use internal variables, particularly %_? and %_SYSERR, to help determine the cause of the error.

To force ***TCC*** to ignore break or error, use the REM command as your command.

Options:

/G Set a global condition (one that will be executed whether ***TCC*** is in a batch file or at the command prompt). This is useful when you want to set global conditions from a batch file. For example:

```
ON /G LOGOFF command
```

4.3.122 OPTION

Purpose: Modify or display ***TCC*** configuration

Formats: Invoking the OPTION dialog:
OPTION

Check for updates:
OPTION /U

Temporarily changing an option:
OPTION *//directive=value* ...

Temporarily changing a list of options:
OPTION *@filename*

Displaying the current value of an option:
OPTION *directive*

directive	Name of a directive to set, modify, or display.
value	A new value for that directive.
filename	A file containing directives to be immediately activated.

See also: .INI file, SETDOS

Usage:

Invoking the OPTION Dialog

OPTION without parameters displays a property sheet which allows you to modify most of the configuration options stored in the INI file.

When you exit from the property sheet, you can select **Save** to save your changes in the .INI file for use in the current session and all future sessions, or select **Cancel** to discard the changes. See Configuration Dialogs for more information.

In some cases, changes you make in the **Startup** section of the OPTION dialogs will only take effect when you restart ***TCC***. Other changes take effect as soon as you exit the dialogs with **Apply** or **OK**. However, not all option changes will appear immediately, even if they have taken effect. For example, some color changes will only appear after a CLS command.

OPTION handles most standard directives, including key mapping. The Advanced Directives cannot be modified with the OPTION dialogs. These settings must be manually edited in the .INI file.

OPTION does not preserve inline comments when saving modified settings in the .INI file. To be sure .INI file comments are preserved, put them on separate lines in the file.

Check for Updates

The /U option will invoke the updater to check https://jpsoft.com for updates to ***Take Command / TCC***.

Setting Individual Options Temporarily

If you follow the OPTION command with one or more sequences of a double slash mark `//`, each followed by a new ***directive=value,*** the new settings will take effect immediately, and will be in effect for the current session only. This example turns off batch file echo and changes the input colors to bright cyan on black:

```
option //BatchEcho=No //InputColors=bri cya on bla
```

Option values may contain white space. However, you cannot enter an option value that contains the `//` string. If you do not specify a value, OPTION will reset the value for that directive to the default.

This feature is most useful for testing settings quickly, and in aliases or batch files that depend on certain options being in effect.

Changes made with `//` are temporary. They will not be saved in the .INI file.

Setting Many Options Temporarily

The command OPTION ***@filename*** allows you to temporarily modify multiple directive settings. The file specified by ***filename*** must be in the same format as an .INI file. Changes made with ***@filename*** are temporary. They will not be saved in the .INI file.

Displaying an option value

Specifying an option name alone will display the value of that option; e.g.:

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```
option localHistory
localHistory=Yes
```

See also: the @OPTION function.

4.3.123 OSD

Purpose: Write floating text to the display

Format: OSD
[/= /ID=
n /C[=
n] /Font=
n /ID=
n /N /POS=*top,left* /RGB=*r,g,b* /TIME=
n /TOP /BOTTOM /LEFT /RIGHT /HCENTER /VCENTER /V] *text*

/ID=n	Open the OSD window *n* (0-9). /ID is optional; it will default to 0. If /ID is specified, it must be the first argument.
/C=n	Close the specified OSD display. /C=n must be the only argument. /C will default to OSD window 0.
/Font=n	The font height (default 18)
/N	Don't wait for timeout before returning to the prompt
/POS=*top,left*	Screen coordinates for the top left corner of the text (default 10,10)
/RGB=*r,g,b*	Text color in RGB format (default 0,255,0)
/TIME=*n*	Time in seconds to display the text (default 10)
/TOP	Position the text at the top of the display
/BOTTOM	Position the text at the bottom of the display
/LEFT	Position the text at the left of the display
/RIGHT	Position the text at the right of the display
/HCENTER	Center the text horizontally
/VCENTER	Center the text vertically
/V	Display the text vertically
text	The text to display

Usage:

OSD displays text on the desktop without a surrounding window, like TV or monitor prompts.

If you want to display multiple lines, insert the LF escape sequence (^N) in your text. For example:

```
osd /pos=40,50 This is text with^Nmultiple lines.
```

If you specify the /V (vertical display) option, you cannot also display multiple lines of text.

You can combine the window positioning options. For example:

```
osd /hcenter /vcenter /n Your text here
```

OSD will strip leading whitespace in ***text***.

You can control up to 10 simultaneous OSD windows with the /ID=n and /C=n options. If you don't specify /ID, OSD will default to window 0.

If you don't enter any arguments, OSD will display its command dialog.

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Options:

/= Display the OSD command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.124 PATH

Purpose: Display or alter the list of directories that ***TCC*** will search for executable files, batch files, and files with executable extensions that are not in the current directory

Format: PATH [/= /D *directory* /M /N /V] [*directory* [;*directory*...]]

directory The full name of a directory to include in the path setting.

/D(elete) /N(ew line)
/M(aster environment) /V(erify directories)

See also: ESET and SET (the PATH command is syntactically equivalent to SET PATH).

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

When ***TCC*** is asked to execute an external command (an *.EXE*, *.BTM*, *.BAT*, or *.CMD* file, or an executable extension), it first looks for the file in the current directory. If it fails to find an executable file in the current directory, it will search each of the directories specified in the PATH setting.

TCC first searches the current directory before any directories listed in your search path. For example, after the following PATH command, ***TCC*** will search for an executable file in four directories: the current directory, the root directory on drive C, then the *BIN* subdirectory on C, and then the *UTIL* subdirectory on C:

```
path c:\;c:\bin;c:\util
```

The list of ***directories*** to search is stored as an environment string, and can also be set or viewed with SET, and edited with ESET.

The PATHEXT environment variable, and the related PathExt configuration option, can be used to select the extensions to look for when searching the PATH for an executable file.

If you enter PATH with no parameters, the current path is displayed:

```
[c:\] path
PATH=C:\;C:\BIN;C:\UTIL
```

Entering PATH and a semicolon clears the search path so that only the current directory is searched for executable files. Some applications also use the PATH to search for their files.

If you include an explicit file extension on a command name (for example, WP.EXE), the search will find files with that name and extension in the current directory and every directory in the path. It will not locate other executable files with the same base name (i.e., WP.CMD).

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If you have an entry in the path which consists of a single period [**.**], the current directory will not be searched first, but instead will be searched when ***TCC*** reaches the "**.**" in the path. This allows you to delay the search of the current directory for executable files and files with executable extensions. In rare cases, this feature may not be compatible with applications which use the path to find their files; if you experience a problem, you will have to remove the "." from the path while using any such application.

If you specify an invalid directory in the path, it will be skipped and the search will continue with the next directory in the path.

Options:

/= Display the PATH command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Remove the specified directory from the PATH variable.

/M Reset the PATH variable to the original value when ***TCC*** was started.

/N Display each PATH directory on its own line.

/V Checks all of the directories in %PATH, and displays an error message for any that don't exist.

4.3.125 PAUSE

Purpose: Suspend batch file or alias execution

Format: PAUSE [/W*n* /C /T] [*text*]

/W*n*	Wait
/C	Clear the prompt
/T	Countdown timer
text	The message to be displayed as a user prompt.

Usage:

A PAUSE command will suspend execution of a batch file or alias, giving you the opportunity to change disks, turn on the printer, etc.

PAUSE waits for any key to be pressed and then continues execution. You can specify the ***text*** that PAUSE displays while it waits for a keystroke, or let it use the default message:

```
Press any key when ready...
```

For example, the following batch file fragment prompts the user before erasing files:

```
pause Press Ctrl-C to abort, any other key to erase all .LST files
erase *.lst
```

If you press **Ctrl-C** or **Ctrl-Break** while PAUSE is waiting for a key, execution of an alias will be terminated, and execution of a batch file will be suspended while you are asked whether to cancel the batch job. In a batch file, you can handle **Ctrl-C** and **Ctrl-Break** yourself with the ON BREAK command.

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PAUSE will remove any spaces before the prompt text. If you want to indent the message, you can use back quotes to preserve spaces:

```
pause `    `Press Ctrl-C to abort ...
```

Options:

/C After you press a key, erase the prompt and do not print a CR/LF.

/T Displays a countdown timer. Must be used with /W*n*, which must be the first argument on the command line.

/W Wait for a maximum of *n* seconds and then continue with the next command. If you combine /W and /C, /W must be the first argument on the command line.

4.3.126 PDIR

Purpose: Display information about files and subdirectories in user-definable fields. It is a "programmable DIR" command.

Format: PDIR [*ranges*] [/\ /A:[*attrlist*] /B CD:*text* /D /H /HL /I"*text*" /K /M /N[defhjlsvz] /O:[*order*] /P[*n*] /Q /S[[+]*n*] /T:t /(...)] [*file*...]

attrlist	Selection attributes (see attribute switches for details)
order	Hierarchical list of sort keys
ranges	One or more date, description, exclusion, size, time ranges
file	One or more files to list
t	Timestamp type selection code

/A:	Attribute select	/M	show footer
/B	Bare filenames	/N	Disable options
/CD:...	COLORDIR string	/O	Order
/D	colorize	/P	Page pause
/H	do not Hide . and ..	/Q	Owner name
/HL	Hard links	/S	Subdirectories
/I"text"	description range	/T[:t]	Timestamp type
/K	show header	/(...)	output fields and format

See also: DIR, ATTRIB, DESCRIBE, and SELECT.

File Selection

Supports attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Internet

Can be used with FTP/HTTP Servers.

Usage

PDIR is an extremely flexible command allowing you to display information about files and directories from one or more local or remote volume or directories in a wide array of user-defined formats. For a simpler version, see the DIR command.

PDIR and DIR are related, but they do not have identical switches and they are not intended to produce identical output. PDIR is primarily intended to produce output that will be subsequently parsed by another

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program (or batch file), or (more rarely) for a special-purpose directory display. Its options and output are geared towards those applications.

The various PDIR displays are controlled through options or switches. The best way to learn how to use the many options available with the PDIR command is to experiment. You will soon know which options you want to use regularly. You can then select those options permanently by using the ALIAS command.

The /(...) option specifies which fields you want to display and how to format them. (You can have multiple /(...) options on a line.) The syntax is:

a Attributes

c Compression: Display the compression percentage on NTFS drives with compression enabled.

d[...] Date (you must specify at least one subfield, otherwise the field remains blank)
- **d** day (2 digits, leading zero)
- **m** month (2 digits, leading zero)
- **y** year (4 digits)

f[...] File or Directory name (case sensitive)
- **P** SFN path
- **p** LFN path
- **N** SFN filename
- **n** LFN filename (default)
- **q** Enclose the filename in double quotes if it contains whitespace or special characters

i Description

k CKSUM hash value (see the @CKSUM function)

m MD5 hash value (see the @MD5 function)

q File or directory owner (NTFS only)

r CRC32 hash value (see the @CRC32 function)

s stream names (NTFS only)

sp path and stream names as pathname+filename+streamname (NTFS only)

t[...] Time (you must specify at least one subfield, otherwise the field remains blank)
- **h** hours (2 digits, leading zero)
- **m** minutes (2 digits, leading zero)
- **s** seconds (2 digits, leading zero)
- **d** milliseconds (decimal separator and 3 digits)

z[...] Size
- **a** Allocated size (this will usually be more than the physical size unless the file is compressed.) Note that you cannot get the allocated size on FTP servers or network sharenames.
- **c** The size will be formatted using the thousands separator (default is a comma)
- **k|K|m|M|g|G|t|T** (case sensitive) format as kilobytes, megabytes, gigabytes, or terabytes, as used in variable functions (see Memory Size / Disk

Space / File Size Units and Report Format). Note that the size will be truncated, not rounded.

@function[*]
call the specified variable function (internal or user-defined). To specify the current filename, use * as the parameter. For example, `pdir /(f @md5[*])` displays the filename and the MD5 hash. Note that the % prefix of the function name is NOT used with the symbolic * parameter. If the parameter of the function is not the symbolic * or it is an "inner" function the % prefix must be doubled, e.g., ***@function1[%%@function2[*]]***

`"..."` Literal string (in quotes). Characters are displayed as is, except that escape characters are converted.

You can also specify a format, independently for each field, by prefixing the field character with its format specification:

```
[-]i.a
```

where

- specifies left justification instead of the default, right justification;
i specifies the minimum field width, and
a specifies the maximum field width.

If the first digit of ***i*** is **0**, the field will be padded with zeros instead of spaces. Some fields cannot be reduced below a minimum width (for example, the **z** (size) field is a minimum of 15 digits).

If a PDIR line is empty (for example, if you have an embedded @IF), it will not be displayed.

If you want to append fields with no intervening whitespace, or with a custom delimiter character, you can use double quotes to specify arguments. For example, to display the date and time with no space between them:

```
pdir /(dymd""thms) *
```

Or to display the date and time separated by a +:

```
pdir /(dymd"+"thms) *
```

PDIR sets three internal variables:

%_pdir_dirs	The number of directories created
%_pdir_files	The number of files moved
%_pdir_errors	The number of errors

Example

To display the CRC, the full LFN and the owner of each file:

```
pdir /(r fpn q) *
```

Options:

Options on the command line apply only to the filenames which follow the option, and options at the end of the line apply to the preceding filename only. This allows you to specify different options for different

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groups of files, yet retains compatibility with the traditional DIR command when a single filename is specified.

Most options are used to select the desired files/directories. (This is in contrast to the DIR command.) The special option /(...) is used to specify which characteristics of the selected files or directories should be displayed in which sequence and format.

/ Display directory names with a trailing \.

/A:. . . Display only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:.**

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Suppress the header and summary lines, and display file or subdirectory names only, in a single column. This option is most useful when you want to redirect a list of names to a file or another program. If you use **/B** with **/S**, PDIR will show the full path of each file instead of simply its name and extension. If you use **/B** with **/X** on an LFN drive, PDIR will display the short name of each file instead of the long name. **/B** also sets **/H.**

/B1 will display relative paths when used with /S. (Normally, /B shows the full pathname for the file.)

/CD: Define a custom directory colorization string to use instead of the COLORDIR environment variable, or the ColorDir option in TCMD.INI.

/D Don't colorize the directory listing. See DIR for more information on directory colorization.

/H Show the "**.**" and "**..**" directory names (normally suppressed).

/HL Show hard links.

/I"*text*" Select filenames by matching text in their descriptions. See Description Ranges for details.

/K Show the header (disk and directory name) display.

/M Show the footer (file and byte count totals) display.

/N Turn off the specified options.

d	Skip hidden directories (when used with /S)
e	Don't display errors
f	Suppress bytes free in the footer
h	Suppress the header
j	Skip junctions (when used with /S)
l	Don't display link name for symbolic links
m:n	Display a maximum of ***n*** directory entries
s	Suppress the footer
v	Suppress the volume label in the header
z	Skip system directories (when used with /S)

/O... The sorting order is applied to the listings of each subdirectory separately. Any combination of the sorting options may be used. If multiple options are specified, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on.

n	Sort by filename and extension (default). If **e** is also specified, sort by name only.

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- **-** Reverse the sort order for the next option
- **a** Sort names and extensions in standard ASCII order, rather than sorting numerically when digits are included in the name or extension.
- **c** Sort by compression ratio (the least compressed file in the list will be displayed first).
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by file description (ignored if **/C** or **/O:c** is also used).
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **x** When combined with /S, sorts the results from all directories together and displays them in a single listing. Note that /O:x will turn off headers and footers.

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Q Show the owner of the file.

/S Display file information from the current directory and all of its accessible subdirectories.

If you specify a number after the /S, PDIR will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, PDIR will not display any filenames until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not display the contents of *\a* or *\a\b*.

/T:*type* Specifies which single one of the date and time fields below, available on a drive which supports long filenames, should be displayed and used for sorting:

- **a** Last access date and time (NTFS volumes).
- **c** Creation date and time.
- **w** Last write date and time (default).

If /T is not specified, the default is /T:w.

If you append a ***u*** after the field, DIR will display the file time in UTC.

Note: If more than one time type is specified, the first one specified is used, and all subsequent ones ignored.

/(...) Use this option to define the various fields and display formats you wish to use for each selected entry. The fields may be in any order, and may be repeated. If this option is not used, the output format is identical to that of the DIR command. If you specify multiple **/(...)** options, PDIR will insert a space in the output between each one.

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4.3.127 PEE

Purpose: Copy standard output to multiple secondary commands via pipes

Format: **PEE** [/= /A /D /F"*format*" /R /T] "*app*" ...

app One or more applications that will receive the standard output.

/A(ppend) /R (STDERR)
/D(ate) /T(ime)
/F"..." (format)

See also: Y, piping and redirection.

Usage:

PEE is similar to TEE, but instead of redirecting STDOUT to multiple files, it redirects it to multiple secondary commands via pipes. You must enclose each command (and any arguments) in double quotes.

If you are typing at the keyboard to produce the input for P**EE**, you must enter a **Ctrl-Z** to terminate the input.

If you don't enter any arguments, P**EE** will display its command dialog.

See Piping for more information on pipes.

Options:

/= Display the PEE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Append to the file(s) rather than overwriting them.

/D Prefix each line with the current date (in yyyy-mm-dd format).

/F"..." The *format* string. See @DATEFMT for details on *format* arguments.

/R Redirect to STDERR instead of STDOUT.

/T Prefix each line with the current time (in hh:mm:ss.ms format).

4.3.128 PIPEVIEW

Purpose: View realtime activity in a pipe

Format: PIPEVIEW [/D /E /GB /R /T /VH /X]

/D(ate) /T(ime)
/E(nd) /VH (text+hex)
/GB (greenbar) /X (hex)
/R (STDERR)

Usage:

PIPEVIEW will read from STDIN, and display it in a VIEW window while also forwarding it on to STDOUT to be read by the next app. For example:

```
dir /s | pipeview | sort
```

Options:

/= Display the PIPEVIEW command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Prefix each line with the current date

/E Always show the end of the pipe (most recent activity). Otherwise PIPEVIEW will default to showing the beginning of the pipe buffer.

/GB (GreenBar) Display alternate shaded lines to make reading the output easier with long lines

/R Write to STDERR instead of STDOUT

/T Prefix each line with the current time

/VH The pipe contents are displayed with each line of text followed by two lines containing the hex codes of each character.

/X Display the pipe contents in hex

4.3.129 PLAYAVI

Purpose: Play Windows .AVI (video clip) files

Format: PLAYAVI [/= /A /C /S /*Vn*] *file...*

file The file(s) to play

/A(synchronous) /S(ynchronous)
/C(enter) /V(olume)

File Selection

Supports extended wildcards, multiple file names, @file lists, and include lists.

File Completion Syntax:

The default filename completion syntax is: **avi ***

Usage:

PLAYAVI "plays" an *.AVI* or Windows video clip file.

Note: This command relies on the capabilities of your Windows configurations, including access to the proper codec. See your Windows documentation for details.

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By default, PLAYAVI operates in synchronous mode, which means ***TCC*** waits for the .AVI file to complete and its window to close before continuing with the next command in a batch file or alias, or prompting you for a new command. You can change this default behavior with the **/A** option.

Options:

/= Display the PLAYAVI command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Plays the .AVI file in asynchronous mode. Control returns to the ***TCC*** prompt immediately for a new command or to execute the next command in the current batch file or alias.

/C Displays the AVI viewer in the middle of the screen. Without this option, the viewer appears in the upper-left corner of the screen.

/S Plays the .AVI file in synchronous mode (this is the default). ***TCC*** pauses until the file has finished playing and its window closes.

/V Sets the volume level. The range is 0 (silent) to 100.

4.3.130 PLAYSOUND

Purpose: Play MP3, .WAV, Midi, and other sound files

Format: PLAYSOUND [/= /A /M /S /U /V*n*] *filename*

filename The file to play

/A(synchronous) /U(n mute)
/M(ute) /V(volume)
/S(ynchronous)

File Selection

Supports extended wildcards, multiple file names, @file lists, and include lists.

Usage:

PLAYSOUND "plays" MP3, *.WAV*, Midi and other types of sound files for which Windows has an appropriate codec installed. It determines the file type automatically from its contents, not its file extension, so it can play sound files which have an unknown file extension. If you don't specify any arguments, PLAYSOUND will display its command dialog.

By default, PLAYSOUND operates in synchronous mode, which means ***TCC*** waits for the sound file to complete and its window to close before continuing with the next command in a batch file or alias, or prompting you for a new command. You can change this default behavior with the /A switch, described below.

You can cancel the playing of a synchronous sound file by pressing Ctrl-Break while it is playing.

Options:

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/= Display the PLAYSOUND command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Plays the sound file in asynchronous mode. Control returns to the ***TCC*** prompt immediately for a new command or to execute the next command in the current batch file or alias.

/M Mute the volume.

/S Plays the sound file in synchronous mode (this is the default). ***TCC*** pauses until the file has finished playing and its window closes.

/U Unmute (restore the previous volume level).

/V Sets the volume level. The range is 0 (silent) to 100.

4.3.131 PLUGIN

Purpose: Load, unload, or display information about plugins

Format: PLUGIN [/= /B /C /F /I /K /L /P[*n*] /U /V] *plugin* ...

/B (full pathname)
/C(ommands)
/F(unctions)
/I(nfo)
/K(eystrokes)
/L(oad)
/P(ause)
/U(nload)
/V(ariables)

File Completion Syntax:

The default filename completion syntax is: **dirs dll**

Usage:

Plugins allow you to write your own internal variables, variable functions, and internal commands, put them in a DLL, and have ***TCC*** load them at startup. Plugin names will override existing internal names, so you can extend and/or replace internal variables and commands. When ***TCC*** starts, it will automatically load any plugins in the default directory (the subdirectory PLUGINS\ in the ***TCC*** installation directory). The plugins will be loaded before the startup file (TCSTART) are executed.

You can also write keystroke plugins that will be called for every keystroke entered at the command line. A keystroke plugin can perform actions when a specific key is entered, or even change the key before passing it back to the command processor.

If no options are specified, PLUGIN will display the currently loaded plugins and their internal variables, variable functions, and commands.

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. For example:

```
echo %_myplugin$variable
echo %@myplugin$func[abc]
myplugin$mycommand
```

See the Plugin SDK for more information on developing plugins.

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Options:

/= Display the PLUGIN command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/B Display the full pathnames of the plugins.

/C Only display internal commands in the plugins.

/F Only display variable functions in the plugins.

/I Display information about the specified plugin, including the name, author, author's email and web addresses, description, function list, version and build numbers. The **/I** option supports wildcards.

/K Only display keystroke plugins.

/L Loads the specified plugins. If the filename is *****, load all plugins from the default directory (the subdirectory PLUGINS\ in the ***TCC*** installation directory).

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/U Unloads the specified plugin. If the filename is *****, unloads all plugins.

/V Only display internal variables in the plugins.

4.3.132 POPD

Purpose: Restore the disk drive and directory at the top of the directory stack

Format: POPD [/X * *n*] [*name*]

n The number of directories to pop
name Directory name to match

/X (exclude)

See also: DIRS, PUSHD, @DIRSTACK and Directory Navigation.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

Each time you use the PUSHD command, it saves the current disk drive and directory on the internal directory stack. POPD restores the most recently saved drive and directory and removes that entry from the stack. You can use these commands together to change directories, perform some work, and return to the starting drive and directory.

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Directory changes made with POPD are recorded in the directory history list and can be displayed in the directory history window. Read the section on Directory Navigation for complete details on this and other directory navigation features.

This example saves and changes the current disk drive and directory with PUSHD, and then restores it. The current directory is shown in the prompt:

```
[c:\] pushd d:\database\test
[d:\database\test] pushd c:\wordp\memos
[c:\wordp\memos] pushd a:\123
[a:\123] popd
[c:\wordp\memos] popd
[d:\database\test] popd
[c:\]
```

You can use the DIRS command to see the complete list of saved drives and directories (the directory stack).

The POPD command followed by an asterisk [*] clears the directory stack without changing the current drive and directory.

If the directory on the top of the stack is not on the current drive, POPD will switch to the drive and directory on the top of the stack without changing the default directory on the current drive.

You can optionally restore only the most recent directory in the stack which matches a name. For example:

POPD c:	Pop the most recent directory on C:
POPD \\server\share	Pop the most recent directory on the UNC share

The name to match can include wildcards.

Note that this means you can optionally choose to POPD to any directory in the directory stack, not just the most recent one.

Options:

/X Don't save the current directory to the Directory History list.

4.3.133 POSTMSG

Purpose: Post a message to a window

Format: POSTMSG "*title*" *msg wparam lparam*

title	The window title
msg	The message to send
wParam	wParam integer
lParam	lParam integer value

Usage:

POSTMSG allows you to send a Windows message to any window with a caption.

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The ***title*** may contain wildcards, and POSTMSG will send the message to the first window with a matching title.

If ***title*** begins with a **=**, it is assumed to be a process ID instead of a title. (Note that this is less reliable than providing a title, as a process can have multiple top-level windows.)

See the Windows SDK documentation for a list of possible messages and their parameters.

4.3.134 POWERMONITOR

Purpose: Monitor system power changes

Format: POWERMONITOR [/C]
POWERMONITOR]/=] [Battery | AC | DC | Scheme | Display | Resume | Suspend] [*n* | FOREVER] *command*

name	Full pathname of the process to monitor
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

POWERMONITOR monitors power scheme change, battery power, AC / DC switch, system suspend, and system resume. Note that Windows will send an immediate notification for the current scheme, AC/DC, and battery.

The command line will be parsed and expanded before POWERMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. POWERMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, POWERMONITOR will display the processes it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

POWERMONITOR creates four environment variables on a power change that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_powerbattery - returns the battery % (0-100).
_powersource - returns the power source (AC or DC).
_powerdisplay - returns 0 if the primary monitor is powered off or 1 if it is on.
_powerscheme - returns the power scheme in use:
0 - Power Saver
1 - Maximum Performance
2 - Balanced
3 - Unknown

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Example:

If you want to be alerted whenever the system switches to DC power:

```
powermonitor DC forever echo just switched to battery power!
```

Options:

/= Display the POWERMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that power action. Otherwise, remove all active power monitors.

4.3.135 PRINT

Purpose: Print the specified file(s) using the application associated with each file's extension

Format: PRINT [/A *printer* /D *printer* /S *printer*] *filename* ...

/A(dd) printer /S(et) default printer
/D(elete) printer

Usage:

Except for plain text files, Windows files cannot be printed without sending them to an associated application for interpretation and formatting. Using the extension for each file you want to print, PRINT determines if a Print action has been defined for that file type. If so, it executes the Print action and sends the file to the application for processing.

For example, if you use the command

```
print myletter.doc
```

PRINT looks up the Print command for *.DOC* files in the registry and, on most computers, will find that it is associated either with WordPad or Word. It will execute the associated program and send it the file along with the necessary command to print the file and then quit.

If PRINT cannot find a Print command for a file, it displays an error message. If there are additional files in the list you gave it to print, it will go on to the next file in the list.

PRINT accepts piped & redirected input to send to the printer. If there is no *filename*, PRINT will read from STDIN, create a temporary file, and send it to the printer.

PRINT depends on proper Windows File Associations settings in the registry and proper behavior of the program associated with each file type in order to print the file. If the registry entries or the application associated with a particular file type are not configured correctly, PRINT may not work as expected.

Options:

/A Add a connection for the specified printer.

/D Remove the connection to the specified printer.

/S Set the default printer.

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4.3.136 PRIORITY

Purpose: Display or set process priority, or suspend or resume a process

Format: PRIORITY [/= /D /E /P[*n*] /Q /R /S *PID* | "*title*" ABOVE | BELOW | NORMAL | HIGH | IDLE | REALTIME]

ABOVE	Above normal priority
BELOW	Below normal priority
NORMAL	Normal (default) priority
HIGH	High priority
IDLE	Idle priority (only executes when no higher priority task is scheduled)
REALTIME	Realtime priority

/D(isable)	/Q(uiet)
/E(nable)	/R(esume)
/P(ause)	/S(uspend)

Usage:

You can specify the process either by the PID or by the window title. If you don't specify either a PID or title, PRIORITY will adjust the priority of the current ***TCC*** process.

If you only provide a PID or window title, PRIORITY will display the current priority.

If you do not enter any arguments, PRIORITY displays all of the active processes, their current priority, the module names, and the window titles (if any).

Example:

Set the process with the window title beginning with TC28 to high priority:

```
priority "TC28*" HIGH
```

Options:

/= Display the PRIORITY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Disable the ability of Windows to temporarily boost the priority of threads in the process.

/E Enable the ability of Windows to temporarily boost the process of threads in the process.

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/Q Don't display any suspend / resume messages.

/R Resume the process.

/S Suspend the process.

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4.3.137 PROCESSMONITOR

Purpose: Monitor process start or end

Format: PROCESSMONITOR [/C [*name*]]
PROCESSMONITOR [/=] *name* STARTED | ENDED | HUNG *n command*

name	Full pathname of the process to monitor
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

The process name can include wildcards. If you do not include a path for ***name***, PROCESSMONITOR will only compare the filename part of the process names.

The command line will be parsed and expanded before PROCESSMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. PROCESSMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

HUNG will test the process's main window to see if it is still responding to messages. If the process doesn't respond or call GetMessage within 5 seconds, the condition will be triggered. (This is normally only useful for GUI apps.)

If you don't enter any arguments, PROCESSMONITOR will display the processes it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

PROCESSMONITOR creates three environment variables when a process is STARTED that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_processname	The name of the process that was started
_processpid	The PID of the process
_processcount	The number of times the command has been triggered

Example:

If you want to be alerted whenever "myapp" exits:

```
processmonitor myapp ended forever sendmail bob@abc.com Myapp Myapp just
shut down!
```

Options:

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/= Display the PROCESSMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that process name. Otherwise, remove all active process monitors.

4.3.138 PROMPT

Purpose: Change the command line prompt

Format: PROMPT [*text*]

text Text to be used as the new command line prompt.

See also: ESET and SET (the PROMPT command is syntactically equivalent to SET PROMPT).

Usage:

You can change and customize the command line prompt at any time. The prompt can include normal text and system information such as the current drive and directory, the time and date, and the amount of memory available. You can create an informal "Hello, Bob!" prompt or a complex prompt full of impressive information.

The prompt ***text*** can contain special commands in the form **$?**, where **?** is one of the characters listed below. Unless otherwise specified, those meta characters are case-independent.

a The ampersand character[**&**].
b The vertical bar character [**|**].
c The open parenthesis [**(**].
d Current date, in the format: **Fri 01-01-20** (the month, day, and year are formatted according to your current country settings)
D Current date, in the format: **Fri Aug 19, 2018**
e The ASCII ESC character (decimal 27), necessary for ANSI commands.
f The close parenthesis [**)**].
g The **>** character.
h Backspace over the previous character.
j Current date in ISO 8601 format (yyyy-mm-dd).
l The **<** character.
m Time in hours and minutes using 24-hour format.
M Time in hours and minutes using the default country format.
n Current drive letter.
p Current drive and directory (lower case).
P Current drive and directory (upper case on drives which do not support long filenames; directory names shown in mixed case as stored on the disk on LFN drives).
q The **=** character.
r The numeric exit code of the last external command.
s The space character.
t Current 24-hour time, in the format hh:mm:ss.
T Current 12-hour time, in the format hh:mm:ss[a|p).
u The current user.
v Windows version number, in the format **6.0**.
w Current directory, in a shortened format. If the current directory is the root or a first-level subdirectory, it is displayed as-is. If it is second level or deeper, the path is truncated (i.e., "c:\... \config"). (This does not work with UNC names.) $W and $w behave like $P and $p for displaying upper/lower case.

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xd: Current directory on drive ***d:*** in lower case, including the drive letter (uses the actual case of the directory name as stored on the disk for LFN drives.)
Xd: Current directory on drive ***d:*** in upper case, including the drive letter.
z Current shell nesting level.
+ Display one **+** character for each directory on the PUSHD directory stack.
$** The **$ character.
$: Display the prompt timer (in *hh:mm:ss* format).
_ CR/LF (go to beginning of a new line).
~ (Substitute for **P**). If the environment variable HOME (or HOMEDRIVE + HOMEPATH) exists, TCC will compare the variable to the beginning of the current path. If they match, TCC will substitute **~** for the variable part. (If they don't match, ~ is treated like a P.)
= The elapsed time (in milliseconds) since the previous command was started.
"..." Display the current date / time in a custom format. The formatting characters enclosed in double quotes are the same as those used by the @DATEFMT function.

For example, to set the prompt to the current date and time, with a ">" at the end:

```
[c:\] prompt $d $t $g
Mon  Feb 24, 2020 10:29:19 >
```

To use the ~ (home) metacharacter:

[c:\] set home=c:\users\myself
[c:\] set prompt=[$~]
[c:\] cd \users\myself\downloads
[~\downloads]

The ***TCC*** prompt can be set in TCSTART or in any batch file that runs when ***TCC*** starts.

If you enter PROMPT with no parameters, the prompt will be reset to its default value.

You can include literal text and special characters as well as the value of any environment variable, internal variable, or variable function in a prompt. For example, if you want to include the size of the largest free memory block in the command prompt, plus the current drive and directory, you could use this command:

```
[c:\] prompt [(%%@dosmem[K]K) $p]
[(31043K) c:\data]
```

Notice that the @DOSMEM function is shown with two leading percent signs [**%**]. If you used only one percent sign, the @DOSMEM function would be expanded at once when the PROMPT command was executed, instead of every time the prompt is displayed. As a result, the amount of memory would never change from the value it had when you entered the PROMPT command. You can also use *back quotes* to delay expanding the variable function until the prompt is displayed:

```
prompt `[(%@dosmem[K]K) $p]`
```

You can use this feature along with the @EXEC variable function to create a complex prompt which not only displays information but executes commands. For example, to execute an alias which checks battery status each time the prompt is displayed (enter the alias on one line):

```
alias cbatt `if %_apmlife lt 30 beep 440 4 880 4 440 4 880 4`
prompt `%@exec[@cbatt]$p$g`
```

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You can include ANSI escape sequences in the PROMPT by using the built-in ANSI X3.64 support in ***TCC***. This example uses ANSI X3.64 sequences to set a prompt that displays the shell level, date, time and path in color on the top line of the screen (enter the command as one line):

```
prompt $e[s$e[1;1f$e[41;1;37m$e[K[$z] $d
Time: $t$h$h$h  Path: $p$e[u$e[0;32m$n$g
```

4.3.139 PSHELL

Purpose: Execute a PowerShell script or string

Format: PSHELL [/C /S *script* ...]

/C(lose)
/S(tring)

See also @PSHELL.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs ps1 [2*] ***

Usage:

Note that you may need to enable PowerShell scripting on your system; on recent versions of Windows it is disabled by default (for security).

PSHELL supports multiple string or filename arguments. If a string or filename has embedded whitespace, you must enclose it with double quotes. For example:

```
pshell /s "type $Profile"
```

Without the double quotes PSHELL would interpret this as two commands.

Option:

/C Close the persistent PowerShell interpreter

/S Execute a string (like @PSHELL)

4.3.140 PSUBST

Purpose: Associate a path with a drive letter

Format: PSUBST [*drive1*: [*path*]]
PSUBST /D *drive1*:
PSUBST [/=] /P *drive1*: [*path*]

/=	Display the PSUBST command dialog.
drive1:	Specifies a virtual drive to which you want to assign a path.
path	Specifies a path you want to assign to a virtual drive (no trailing backslash).

/D(elete)

/P(ersist)

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

PSUBST works like the Windows SUBST command, but the drive substitution is persistent (i.e., when the machine is restarted).

PSUBST with no parameters will display a list of the current virtual drives. If a drive is persistent, it will be prefixed with a *.

Because PSUBST needs to write to the HKLM registry hive, PSUBST must be run in an elevated ***TCC*** session.

Options:

/= Display the PSUBST command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Deletes a substituted (virtual) drive.

/P Make a new or existing virtual drive persistent.

4.3.141 PUSHD

Purpose: Save the current disk drive and directory, optionally changing to a new drive and directory

Format: PUSHD [/R /X *path* | *:folder*]

path The name of the new default drive and directory.
folder A Windows Shell folder name

/R(eparse point)
/X (exclude)

See also: DIRS, POPD, @DIRSTACK and Directory Navigation.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

PUSHD saves the current drive and directory to a "last in, first out" directory stack. The POPD command returns to the last drive and directory that was saved by PUSHD. You can use these commands together to change directories, perform some work, and return to the starting drive and directory. The DIRS command displays the contents of the directory stack.

To save the current drive and directory, without changing directories, use the PUSHD command by itself, with no ***path***.

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If a ***path*** is specified as part of the PUSHD command, the current drive and directory are saved and PUSHD changes to the specified drive and directory. If the ***path*** includes a drive letter, PUSHD changes to the specified directory on the new drive without changing the current directory on the original drive.

PUSHD supports Windows shell folder names; see CDD for details.

When you use PUSHD to change to a directory on an LFN drive, you must quote the ***path*** name if it contains white space or special characters.

PUSHD can also change to a network drive and directory specified with a UNC name (see File Systems for details).

If PUSHD cannot change to the directory you have specified it will attempt to search the CDPATH and the extended directory search database. You can also use wildcards in the ***path*** to force an extended directory search. Read the section on Directory Navigation for complete details on these and other directory navigation features.

Directory changes made with PUSHD are also recorded in the directory history list and can be displayed in the directory history window.

The directory stack can hold up to 16383 characters, or about 500+ typical entries (depending on the length of the names). If you exceed this limit, the oldest entry is removed before adding a new entry.

Example:

Save the current directory and change to C:\WORDP\MEMOS, then return to the original directory:

```
[c:\] pushd \wordp\memos
[c:\wordp\memos] popd
[c:\]
```

Options:

/R Change to the target of the reparse point (hard link or symbolic link).

/X Don't save the current directory to the Directory History list.

4.3.142 QUERYBOX

Purpose: Pops up a dialog box to get an input string from the user and save it in an environment variable

Format: QUERYBOX [/= /CUE="*text*" /D /E /L*n* /P /POS=*top,left* /T*n*] ["title"] *prompt %%varname*

title	Text for the title bar of the dialog box.
prompt	Text that will appear inside the dialog box.
varname	Variable name where the input will be saved.
/CUE	Cue text to display in the input box

/D(igits only)
/E(dit existing value)
/L (maximum Length)
/P(assword)
/POS (ition)
/T(imeout)

See also: INKEY, INPUT, and MSGBOX.

Usage:

QUERYBOX displays a dialog box with a prompt, an optional title, and a string input field. Then it waits for your entry, and places any characters you type into an environment variable. QUERYBOX is normally used in batch files and aliases to get text input.

QUERYBOX is similar to INPUT, except it appears as a popup dialog box. If you prefer to work within the command line window, see the INKEY and INPUT commands.

The /CUE option displays the cue text in light gray in the input box (it disappears as soon as you enter a character).

Standard command line editing keys may be used to edit the input string as it is entered. All characters entered up to, but not including, the carriage return are stored in the variable.

If you press **Ctrl-C** or **Ctrl-Break** while QUERYBOX is waiting for input, execution of an alias will be terminated, and execution of a batch file will be suspended while you are asked whether to cancel the batch job. A batch file can handle **Ctrl-C** and **Ctrl-Break** itself with ON BREAK.

QUERYBOX returns a value of zero in the internal variable %_? after a successful operation, and a non-zero value otherwise (a timeout returns 20, a cancel returns 2). Be sure to save the return value in another variable or test it immediately; because the value of **%_?** changes with every internal command.

If you don't enter any arguments, QUERYBOX will display its command dialog.

Example:

To prompt for a string and store it in the variable NAME:

```
querybox "File Name" Enter a name:  %%name
```

Options:

/= Display the QUERYBOX command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Only accepts numeric values.

/E Allows you to edit an existing value. If there is no existing value for ***varname***, QUERYBOX allows you to enter a new value.

/Ln Sets the maximum number of characters which QUERYBOX will accept to ***n***.

/P Tells QUERYBOX to echo asterisks, instead of the characters you type.

/POS Sets the dialog position. (If you don't specify a position, QUERYBOX will center the dialog in the ***TCC*** window.

/Tn Wait for a maximum of ***n*** seconds for a response.

4.3.143 QUIT

Purpose: Terminate the current batch file

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Format: QUIT [*value*]

value The numeric exit code to return to ***TCC*** or to the previous batch file.

See also: CANCEL and EXIT.

Usage:

QUIT provides a simple way to exit a batch file before reaching the end of the file. If you QUIT a batch file called from another batch file, you will be returned to the previous file at the line following the original CALL.

QUIT only ends the current batch file. To end all batch file processing, use the CANCEL command.

If you specify a *value*, QUIT will set the ERRORLEVEL or exit code to that value. For information on exit codes see the IF command, and the %? variable. Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

You can also use QUIT to terminate an alias. If you QUIT an alias while inside a batch file, QUIT will end both the alias and the batch file and return you to the command prompt or to the calling batch file.

Example:

This batch file fragment checks to see if the user entered "quit" and exits the batch file if true.

```
input  Enter your choice :  %%option
if  "%option" == "quit"  quit
```

4.3.144 RD / RMDIR

Purpose: Remove one or more subdirectories

Format: RD [/= /I"*text*" /K /N[et] /Q /R /S] [@*file*] *path*...
or
RMDIR [/= /I"*text*" /K /N[et] /Q /R /S] [@*file*] *path*...

path The name of one or more subdirectories to remove.
@file A text file containing the names of the directories to remove, one per line (see @file lists for details).

/I (match descriptions)
/K (no Recycle Bin)
/N (disable options)
/Q(uiet)
/R(ecycle bin)
/S(ubdirectories)

See also: MD.

File Selection

Supports command dialog, extended wildcards, ranges, multiple file names, and include lists. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Internet: Can be used with FTP Servers.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

RD and RMDIR are synonyms. You can use either one. If you don't specify any arguments, RD will display its command dialog.

RD removes directories from the directory tree. For example, to remove the subdirectory MEMOS from the subdirectory *WP*:

```
rd \wp\memos
```

Before using RD, you must delete all files and subdirectories (and their files) in the ***path*** you want to remove. Remember to remove hidden and read-only files as well as normal files (you can use DEL /Z to delete hidden and read-only files).

You can use wildcards in the ***path***.

When removing a directory on an LFN drive, you must quote any ***path*** which contains white space or special characters.

If RD deletes one or more directories, they will be deleted from the extended directory search database. If ***TCC*** is in a ***Take Command*** tab window, it will notify ***Take Command*** of the directory removal so ***Take Command*** can update its File Explorer window.

You cannot remove the root directory, the current directory (**.**), any directory above the current directory in the directory tree, or any directory in use by another process. RD will delete hidden directories, for compatibility with CMD.

You can remove directories on FTP servers. For example:

```
rd ftp://ftp.abc.com/data
```

RD sets two internal variables:

%_rd_dirs	The number of directories deleted
%_rd_errors	The number of errors

(Note that if you do an RD /S, the actual deletions are done by DEL, so check the DEL variables.)

Options:

/= Display the RD command dialog to help you set the directory and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/I"text" Select directories by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/K When used with the **/S** option, this will physically delete files instead of sending them to the Windows Recycle Bin, even if you have the Delete to Recycle Bin configuration option set.

/N This option takes two possible arguments:

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e Don't display errors.
t Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.

/Q When used with the /S option, this will suppress the prompt before deleting the directories.

/R When used with the **/S** option, this will send the deleted files to the Windows Recycle Bin.

/S This option is included only for compatibility with CMD, and should be used with **EXTREME CARE!**! It deletes all files (including hidden and system files) in the named directory and all of its subdirectories, then removes all subdirectories. **It can potentially erase all files on a drive with a single command.** You cannot use wildcards with the /S option.

Note: Do not use /S with @file lists.

4.3.145 REBOOT

Purpose: Reboot the computer, log off Windows, or shut down

Format: REBOOT [/= /B *text*]/H /K /L /M[0|1] /P /R /S /V /W]

/B(lock)	/P(ower off)
/H(ibernate	/R(eboot)
/K (lock)	/S(hutdown)
/L(ogoff)	/V(erify)
/M(onitor)	/W (standby)

Usage:

REBOOT will log off or shut down the operating system, or completely restart your computer. It normally performs a warm reboot, or a shutdown and restart under Windows.

REBOOT defaults to performing a warm boot, with no prompting. The following example prompts you to verify the reboot, then does a warm boot:

```
reboot /v
```

TCC issues the standard commands to shut down other applications and the Windows before rebooting. Windows may prompt you for additional actions, or even ignore the request altogether depending on which processes are running.

Options:

/= Display the REBOOT command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/B text Block shutdown / reboot. The system will display *text* in the popup explaining the reason for blocking the shutdown.

/H Save everything in memory to your hard disk, and shutdown to save power. The desktop is restored to its original state when the computer is restarted.

/K Lock the workstation. To unlock, the user must log in.

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/L Log off Windows, but do not reboot. This option is equivalent to selecting Shutdown from the Start menu, then selecting "Close all programs and log on as a different user" in the shutdown dialog.

/M Switch the display to low power (M0) or shut off the display (M1 -- will not work on all systems). This option will not reboot the computer unless you also include /R.

/P Log off Windows and turn off the computer.

/R Reboots the system. This is the default, but is required if you specify /M0 or /M1 and also want to reboot.

/S Shut down the system, but do not reboot. This is equivalent to selecting Shutdown from the Start menu, then selecting "Shut down the computer" in the shutdown dialog.

/V Prompt for confirmation (**Y** or **N**) before acting.

/W Save power by turning off the monitor and hard disks. When the computer comes out of standby, the desktop is restored to its original state.

4.3.146 RECORDER

Purpose: Record and play back mouse & keyboard input

Format: RECORDER [/C /K /L:n /M /P /R filename /S filename /W]

/C(lear)
/K(eyboard only)
/L:n (loop)
/M (record)
/P(lay macro)
/R(ead macro from file)
/S(ave macro to file)
/W(ait)
/X (stop)

Usage:

RECORDER is a command-line interface to the ***Take Command*** macro recorder. The macro recorder will record and play back keystrokes and mouse actions; you can control the macro recorder several ways:

1. Win-F11 - Start / stop macro recording
2. Win-F12 - Start / stop macro playback
3. Record & Playback buttons on the Quick Access toolbar
4. Record & Playback buttons on the ***Take Command*** Tools menu
5. The RECORDER command

When the macro recorder is running, the buttons on the Quick Access toolbar and the ***Take Command*** Tools menu will be highlighted. ***Take Command*** will also display **macro recording** or **macro playback** in an OSD window on the bottom right corner of the display.

If you don't enter any arguments, RECORDER will display its command dialog.

RECORDER will only work in a ***Take Command*** tab window. It will not work in a detached ***TCC*** window or a stand-alone ***TCC*** session.

Options:

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/= Display the RECORDER command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Clear the macro queue

/K Keyboard events only (ignore mouse events)

/L:n Play back the current macro *n* times

/M Start recording a macro

/P Play back the current macro

/R *name* Load a macro file (previously saved with /S)

/S *name* Save the current macro recording to a file

/W Wait for the macro playback to finish

/X Stop recording or playing

4.3.147 RECYCLE

Purpose: Delete files in the recycle bin or display the recycle bin status

Format: RECYCLE [/D /E /Q /P] [*drives* ...]

drives Local fixed and removable (non CD-ROM / DVD) drives

/D(elete) /P(rompt)
/E (no error messages) /Q(uiet)

Usage:

If you don't specify any drives, RECYCLE will display the recycle bin status, or if /D is specified delete everything in the recycle bin for all local drives.

RECYCLE will empty the recycle bin for an entire drive; there is no way to specify individual files.

Options:

/D Empty the recycle bin for the specified drive(s).

/E Suppress all non-fatal error messages, such as "File Not Found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files.

/P Prompt the user to confirm each delete operation (at least one drive must be specified).

/Q Don't display the name of the recycle bin(s). This option is most often used in batch files.

4.3.148 REGDIR

Purpose: Display the specified Windows Registry tree

Format: REGDIR [/= /D /F /Nb /P[*n*] /S*n* /T /TS /V /X] *keyname*

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keyname The Windows Registry key to enumerate

/D(ata)
/F(full name)
/Nb (no REG_BINARY)
/P(ause)
/Sn (nesting depth)
/T(ime stamp)
/TS (include seconds)
/V(alues)
/X (hex)

Usage:

REGDIR will display the Windows Registry like TREE or DIR does with the file system. The Windows Registry is **very** large, so trying to display something like:

```
regdir /v /d hkcu\software
```

will typically display tens of thousands of lines.

The key must begin with either the full root key or the short name:

Full root key	Short
HKEY_CLASSES_ROOT	HKCR
HKEY_CURRENT_USER	HKCU
HKEY_LOCAL_MACHINE	HKLM
HKEY_USERS	HKU
HKEY_CURRENT_CONFIG	HKCC
HKEY_PERFORMANCE_DATA	HKPD

If you don't enter any arguments, REGDIR will display its command dialog.

Option:

/= Display the REGDIR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Display the data for all values (only valid when used with /V)

/F Display the full name for each key. (The default is to display only the indented name of the current key, similar to TREE's output.)

/Nb Do not display the contents of REG_BINARY values.

/P[*n*] Pause after displaying each page. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/S REGDIR will limit the nesting recursion to that number. REGDIR defaults to unlimited key recursion.

/T Prefix the key names with the time stamp of their last change in hh:mm format.

/TS Prefix the key names with the time stamp of their last change in hh:mm:ss format.

/V Display the values for each key.

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/X Display the REG_DWORD, REG_DWORD_BIG_ENDIAN, and REG_QWORD values in hex. Only valid when used with /V and /D.

4.3.149 REGMONITOR

Purpose: Monitor Windows Registry keys

Format: REGMONITOR [/C [*key*]]
REGMONITOR [/=] *key* NAME ATTRIBUTES VALUE SECURITY *n command*

key	Key name
NAME	Subkey added or deleted
ATTRIBUTES	Changes to the key attributes (such as the security descriptor information)
VALUE	Changes to the value of a key
SECURITY	Changes to the security descriptor
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

The command line will be parsed and expanded before REGMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. REGMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, REGMONITOR will display the registry keys it is currently monitoring.

The key must begin with either the full root key or the short name:

Full root key	Short
HKEY_CLASSES_ROOT	HKCR
HKEY_CURRENT_USER	HKCU
HKEY_LOCAL_MACHINE	HKLM
HKEY_USERS	HKU
HKEY_CURRENT_CONFIG	HKCC

If you append a ***** to the key, REGMONITOR will monitor the specified key and all of its subkeys.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Example:

```
regmonitor "HKCU\Software\JP Software\Take Command 28\*" name value forever
echo Windows Registry updated!
```

Options:

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/= Display the REGMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that registry key. Otherwise, remove all registry monitors.

4.3.150 REM

Purpose: Put a comment in a batch file

Format: REM [*comment*]

comment The text to include in the batch file.

See also: COMMENT.

Usage:

The REM command lets you place a remark or comment in a batch file. Batch file comments are useful for documenting the purpose of a batch file and the procedures you have used. For example:

```
rem This batch file provides a
rem menu-based system for accessing
rem word processing utilities.
rem
rem Clear the screen and get selection
cls
```

REM must be followed by a space or tab character, then the comment. ***TCC*** will ignore everything on the line following the REM, including quotes, redirection symbols, and other commands (see below for the exception to this rule).

If ECHO is ON, the comment is displayed. Otherwise, it is ignored. If ECHO is ON and you don't want to display the line, preface the REM command with an at sign [**@**].

You can also place a comment in a batch file by starting the comment line with two colons [**::**]. In essence this creates a batch file "label" without a valid label name.

You can use REM to create a zero-byte file if you use a redirection symbol immediately after the REM command. For example, to create the zero-byte file *C:\xyz*:

```
rem>xyz
```

(This capability is included for compatibility with CMD. A simpler method for creating a zero-byte file with ***TCC*** is to use **>filename** as a command, with no actual command before the [**>**] redirection character.)

4.3.151 REN / RENAME

Purpose: Rename files or subdirectories

Format: REN [/= /A:[[-][+]rhsadecijopt] /B /E /I"text" /N[enst] /O:[-]acdeginorstuz /P /Q /S /T] [@*file*] *old_name... new_name*
or

RENAME [/= /A:[[-][+]rhsadecijopt] /E /I"text" /N[enst] /O:[-]acdeginorstuz /P /Q /S /T] [@*file*] *old_name... new_name*

old_name	Original name of the file(s) or subdirectory.
new_name	New name to use, or new path on the same drive.
@file	A text file containing the names of the source files to rename, one per line (see @file lists for details).

/A: (Attribute select)
/B (Rename on reboot)
/E (No error messages)
/I"text" (match description)
/MD (Create target directory)
/N (Disable)
/O:... (Order)
/P(rompt)
/Q(uiet)
/S(ubdirectory)
/T(otal)

See also: COPY and MOVE.

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, delayed variable expansion, and include lists. Use wildcards with caution on LFN volumes; see LFN File Searches for details.

Internet: Can be used with FTP/HTTP Servers and HTTP/HTTPS servers.

Usage:

REN and RENAME are synonyms. You may use either one. If you don't specify any arguments, REN will display its command dialog.

REN lets you change the name of a file or a subdirectory, or move one or more files to a new subdirectory on the same drive. New files may be on different file systems or drives; new directories must be on the same drive.

In its simplest form, you give REN the ***old_name*** of an existing file or subdirectory and then a ***new_name***. The ***new_name*** must not already exist; you can't give two files the same name (unless they are in different directories). The first example renames the file *MEMO.TXT* to *MEM.TXT*. The second example changes the name of the *\WORD* directory to *\WP*:

```
rename memo.txt mem.txt
rename /s \word \wp
```

When you rename files or directories on an LFN drive, you must quote any names which contain white space or special characters.

You can also use REN to rename a group of files that you specify with wildcards, as multiple files, or in an include list. When you do, the ***new_name*** must use one or more wildcards to show what part of each filename to change. Both of the next two examples change the extensions of multiple files to *.SAV*:

```
ren config.nt autoexec.nt tcstart.btm *.sav
ren *.txt *.sav
```

REN can move files to a different subdirectory on the same drive. When it is used for this purpose, REN requires one or more filenames for the ***old_name*** and a directory name for the ***new_name***:

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```
ren memo.txt \wp\memos\
ren oct.dat nov.dat \data\save\
```

The final backslash in the last two examples is optional. If you use it, you force REN to recognize the last parameter as the name of a directory, not a file. The advantage of this approach is that if you accidentally mistype the directory name, REN will report an error instead of renaming your files in a way that you didn't intend.

REN can also move files to a new directory and change their name at the same time if you specify both a path and file name for *new_name*. In this example, the files are renamed with an extension of *.SAV* as they are moved to a new directory:

```
ren *.dat \data\save\*.sav
```

If you use REN to rename a directory, the ***new_name*** must normally be specified explicitly, and cannot contain wildcards. You can override this restriction with **/S**. When you rename a directory the extended directory search database will be automatically updated to reflect the change.

You can also rename a subdirectory to a new location in the directory tree on the same physical drive (sometimes called "prune and graft"). You must specify the new name explicitly, not just give the path. For example, if the ***D:\TCMD*** directory contains a subdirectory *TEST*, you can rename TEST to be a subdirectory of the root directory like this:

```
[d:\tcmd] ren TEST \TEST\
```

REN does not change a file's attributes, except to set attribute **A**. The ***new_name*** file(s) will have the same attributes as ***old_name***.

If you have appropriate permissions, you can rename files on FTP, HTTP, and HTTPS servers. For example:

```
ren ftp://ftp.abc.com/file1.txt file2.txt
```

Wildcard characters like [*****] and [**?**] will be treated as wildcards in FTP URLs, but will be treated as normal characters in HTTP URLs.

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want. For more information, see Using FTP/HTTP Servers and IFTP.

REN supports regular expression back references in the target name. If you are using back references, you must also use a regular expression in the source name. The syntax is:

```
ren ::filename ::target
```

REN sets three internal variables:

%_ren_dirs	The number of directories renamed
%_ren_files	The number of files renamed
%_ren_errors	The number of errors

Note: The wildcard expansion process will attempt to allow both CMD-style "extension" matching (assumes only one extension, at the end of the word) and the advanced ***TCC*** string matching (allowing things like *.*.abc) when an asterisk is encountered in the destination of a REN command.

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Options:

/= Display the REN command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Rename only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B If REN can't rename the file (i.e., access denied), it will schedule it to be renamed at the next reboot.

/E Suppress all non-fatal error messages, such as "File Not Found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files.

/I"*text*" Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/MD Create the target directory if it doesn't exist. Note that you *must* either terminate the target directory name with a trailing \ or specify a filename component; otherwise REN cannot tell what you want for the directory and what you want for the filename.

/N Do everything except actually rename the file(s). **/N** displays how many files would be renamed. This option is useful for testing what a REN command will actually do.

A **/N** with one or more of the following arguments has an alternate meaning:

- **e** Don't display errors.
- **n** Don't update the file descriptions
- **s** Don't display the summary
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options

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s Sort by size
t Same as **d**
u Unsorted
z Same as **s**

The /O:... option saves all of the matching filenames and then performs the rename. This avoids the potential problem of renaming files more than once.

/P Prompt the user to confirm each rename operation. Your options at the prompt are explained in detail under Page and File Prompts.

/Q Don't display filenames or the number of files renamed. When used in combination with the **/P** option above, it will prompt for filenames but will not display the totals. This option is most often used in batch files. See also **/T**.

/S Normally, you can rename a subdirectory only if you do not use any wildcards in the ***new_name***. This prevents subdirectories from being renamed inadvertently when a group of files is being renamed with wildcards. **/S** will let you rename a subdirectory even when you use wildcards. **/S** does not cause REN to process files in the current directory and all subdirectories as it does in some other file processing commands. To rename files throughout a directory tree, use GLOBAL REN.

/T Don't display filenames as they are renamed, but report the number of files renamed. See also **/Q**.

4.3.152 RESOLUTION

Purpose: Change the resolution of the specified display

Format: RESOLUTION [*displayname*] *width height* [*depth* [*frequency*]]

displayname	The name of the monitor to update
width	The new display width in pixels
height	The new height in pixels
depth	The new color depth
frequency	The new refresh frequency

Usage:

If you don't specify any arguments, RESOLUTION will display the display devices and monitors.

4.3.153 RESTOREPOINT

Purpose: Create, remove, or list Windows system restore points.

Format: RESTOREPOINT [/C /D=*description* /R *n*]

/C(reate)
/D(escription)
/R(emove)

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Usage:

TCC must be running in an elevated session to create or remove restore points. RESTOREPOINT is not supported in Server versions of Windows.

If you don't specify any arguments, RESTOREPOINT will display the existing restore points. If there are no restore points, RESTOREPOINT will not display anything (including an error).

If you have disabled restore points, RESTOREPOINT will return a (Windows) error.

Example:

Create a restore point named "July-2021":

```
restorepoint /c /d=July-2021
```

Options:

/C Create a restore point

/D= The description shown when displaying restore points

/R Remove the restore point whose sequence is *n*.

4.3.154 RETURN

Purpose: Return from a GOSUB (subroutine) in a batch file

Format: RETURN [*value*]

value The numeric exit code to return to ***TCC***

See also: GOSUB.

Usage:

TCC allows subroutines in batch files.

A subroutine begins with a label (a colon followed by one or more words) and ends with a RETURN command.

The subroutine is invoked with a GOSUB command from another part of the batch file. When a RETURN command is encountered the subroutine terminates, and execution of the batch file continues on the line following the original GOSUB. If RETURN is encountered without a GOSUB, ***TCC*** will display a "Missing GOSUB" error message.

You cannot execute a RETURN from inside a DO loop.

If you specify a ***value***, RETURN will set the internal exit code to that value. That exit code should be tested immediately upon return from the subroutine and before it is reset by another command. For information on exit codes from internal commands, see the _? variable.

Example:

The following batch file fragment calls a subroutine which displays the files in the current directory:

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```
echo Calling a subroutine
gosub subr1
echo Returned from the subroutine
quit
:subr1
dir /a/w
return
```

4.3.155 REXEC

Purpose: Remotely execute commands

Format: REXEC [/= /H *host* /U *name* /P *password* /IPv6 /Rn /Tn] *host* [/L *userid*] *command* ...

command The command to execute

/H(ost name) /R(emote port)
/IPv6 /T (firewall type)
/L (user ID) /U(sername)
/P(assword)

Usage:

REXEC allows remote execution of commands on any system with the rexec service installed. Press Ctrl-C to disconnect from the other system.

If you don't specify a username, REXEC will use the current username. You can provide a password on the command line by appending it to the username (i.e., "User:Password"). If you don't provide a password, REXEC will prompt for it.

If you want to do redirection on the remote system, enclose the argument list in double quotes. For example:

```
REXEC /H host /U user /P password "command | command2"
```

The double quotes will be removed before passing the commands to the remote system.

If you don't enter any arguments, REXEC will display its command dialog.

Note: Windows does not include the rexec service, so you will need to get one from a third-party and install it on the remote system before executing REXEC.

Options:

/= Display the REXEC command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/H Firewall host name

/IPv6 Use IPv6 instead of IPv4

/L User name (ID)

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/P Firewall user password

/R Remote port number

/T Firewall type, where ***n*** is:

0 No firewall (default setting)
1 Connect through a tunneling proxy
2 Connect through a SOCKS4 Proxy
3 Connect through a SOCKS5 Proxy

/U Firewall user name

4.3.156 RSHELL

Purpose: Remotely execute commands

Format: RSHELL [/= /H *host* /U *name* /P *password* /IPv6 /Rn /T*n*] host [/L *userid*] *command* ...

command The command to execute

/H(ost name) /R(emote port)
/IPv6 /T (firewall type)
/L (user ID) /U(sername)
/P(assword)

Usage:

RSHELL allows remote execution of commands on any system with the rshell service installed. Press Ctrl-C to disconnect from the other system.

If you don't specify a username, RSHELL will use the current username.

If you want to do redirection on the remote system, enclose the argument list in double quotes. For example:

```
RSHELL /H host /U user /P password "command | command2"
```

The double quotes will be removed before passing the commands to the remote system.

If you don't enter any arguments, RSHELL will display its command dialog.

Note: Windows does not include the rshell service, so you will need to get one from a third-party and install it on the remote system before executing RSHELL.

Options:

/= Display the RSHELL command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/H Firewall host name

/IPv6 Use IPv6 instead of IPv4

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/L User name

/P Firewall user password

/R Remote port number

/T Firewall type, where ***n*** is:

0 No firewall (default setting)
1 Connect through a tunneling proxy
2 Connect through a SOCKS4 Proxy
3 Connect through a SOCKS5 Proxy

/U Firewall user name

4.3.157 SAVECONSOLE

Purpose: Save the console screen buffer to a file

Format: SAVECONSOLE [/H /T /W] *filename* ...

/H(tml)
/T (header)
/W(hitespace)

Usage:

SAVECONSOLE can save the screen buffer either in plain text format or as an HTML file, including colors.

Example:

Save the console buffer as an HTML file named "tcc_console.html", with a header:

```
saveconsole /H /T tcc_console.html
```

Option:

/H Save the console as an HTML file

/T Include a header with the console title + date + time

/W Don't strip trailing white space on each line (this will result in a much bigger file)

4.3.158 SCREEN

Purpose: Position the cursor on the screen and optionally display a message

Format: SCREEN *row column* [*text*]

row The new row location for the cursor
column The new column location for the cursor
text Optional text to display at the new cursor location

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See also: ECHO and ECHOERR, ECHOS and ECHOSERR, SCRPUT, TEXT, and VSCRPUT.

Usage:

SCREEN allows you to create attractive screen displays in batch files. SCRPUT allows you to specify where a message will appear on the screen. You can use SCREEN to create menus and other similar displays. For example, the following batch file fragment displays a menu:

```
@echo off
cls
screen 3 10 Select a number from 1 to 4:
screen 6 20  1 - Word Processing
screen 7 20  2 - Spreadsheet
screen 8 20  3 - Telecommunications
screen 9 20  4 - Quit
```

SCREEN does not change the screen colors. To display text in specific colors, use SCRPUT or VSCRPUT. SCREEN always leaves the cursor at the end of the displayed text.

The ***row*** and ***column*** values are zero-based, so on a 25 line by 80 column display, valid ***rows*** are 0 - 24 and valid ***columns*** are 0 - 79. SCREEN checks for a valid ***row*** and ***column***, and displays a "Usage" error message if either value is out of range.

In ***TCC***, the maximum ***row*** value is determined by the current height of the ***TCC*** tab window, and the maximum ***column*** value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

You can also specify the ***row*** and ***column*** as offsets from the current cursor position. Begin the value with a plus sign [**+**] to move the cursor down or to the right, or with a minus sign [**-**] to move the cursor up or to the left. This example prints a string 3 lines above the current position, in absolute column 10:

```
screen -3 10 Hello, World!
```

you specify 999 for the ***row***, SCREEN will center the text vertically on the display. If you specify 999 for the ***column***, SCREEN will center the text horizontally. This example prints a message at the center of the ***TCC*** tab window:

```
screen 999 999 Hello, World
```

4.3.159 SCREENMONITOR

Purpose: Monitor the Windows screen saver

Format: SCREENMONITOR [/C]
SCREENMONITOR [/=] *n command*

n	Number of repetitions (or **FOREVER**)
command	Command to execute when the Windows screen saver is activated

/C(lear)

Usage:

SCREENMONITOR will set its trigger when the Windows screen saver is activated.

If you don't enter any arguments, if SCREENMONITOR is active it will display the repeat count and the command.

The command line will be parsed and expanded before SCREENMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. SCREENMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

Options:

/= Display the SCREENMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Remove the screen saver monitor.

4.3.160 SCRIPT

Purpose: Run a script using an Active Scripting engine

Format: SCRIPT [/E *engine*] [*filename* ...]

/E(ngine)

engine The name of the scripting engine

Usage:

If you don't specify any arguments, SCRIPT will display the installed engines.

You can call internal ***TCC*** commands from any Active Scripting language using the tcommand() interface created by SCRIPT. For example, create a JavaScript file named *testjs.js*:

```
var d1 = "First Message";
var d2 = "echo Second Message";
var d3 = "dir /w";
TakeCommand.msgbox(d1);
TakeCommand.tcommand(d2);
TakeCommand.tcommand(d3);
```

You can then pass *testjs.js* to SCRIPT:

```
script testjs.js
```

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See also the @SCRIPT variable function.

Options:

/E If the script doesn't have a recognized extension (i.e., **.vbs**, **.pls**, etc.) you will need to specify the engine SCRIPT should use to execute the script.

4.3.161 SCRPUT

Purpose: Position text on the screen and display it in color

Format: SCRPUT [/C /U] *row col* [BRIght] *fg* ON [BRIght] *bg text*

row	Starting row
col	Starting column
fg	Foreground character color
bg	Background character color
text	The text to display

/C (move cursor)
/U (move to end of string)

See also: ECHO and ECHOERR, ECHOS and ECHOSERR, SCREEN, TEXT, and VSCRPUT.

Usage:

SCRPUT allows you to create attractive screen displays in batch files. SCRPUT allows you to specify where a message will appear on the screen and what colors will be used to display the message text. You can use SCRPUT to create menu displays, logos, etc.

SCRPUT works like SCREEN, but requires you to specify the display colors. See Colors and Color Names for details.

The ***row*** and ***column*** values are zero-based, so on a 25 line by 80 column display, valid ***rows*** are 0 - 24 and valid ***columns*** are 0 - 79. The maximum ***row*** value is determined by the current height of the ***TCC*** tab window. The maximum ***column*** value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

SCRPUT checks for a valid ***row*** and ***column***, and displays a "Usage" error message if either value is out of range.

You can also specify the ***row*** and ***column*** as offsets from the current cursor position. Begin the value with a plus sign [**+**] to move down the specified number of rows or to the right the specified number of columns, or with a minus sign [**-**] to move up or to the left.

If you specify 999 for the ***row***, SCRPUT will center the text vertically in the ***TCC*** tab window. If you specify 999 for the ***column***, SCRPUT will center the text horizontally.

SCRPUT does not move the cursor when it displays the ***text***.

Example:

The following batch file fragment displays part of a menu, in color:

```
cls white on blue
scrput 3 10 bri whi on blu Select an option:
```

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```
scrput 6 20 bri red on blu 1 - Word Processing
scrput 7 20 bri yel on blu 2 - Spreadsheet
scrput 8 20 bri gre on blu 3 - Communications
scrput 9 20 bri mag on blu 4 - Quit
```

Options:

/C Move the cursor to the specified position after writing the string. If you specify /C, it must be the first argument.

/U Move the cursor to the end of the string. If you specify /U, it must be the first argument.

4.3.162 SELECT

Purpose: Interactively select files for a command

Format: SELECT [/= /1 /A[[:][-][+]rhsadecijopt] /C /D /E /H /I"*text*" /J /L /O:[-]acdeginorstuz /Q /T:acw /X /Z] [*command*] ... (*files*...)...

command The command to execute with the selected files.
files The files from which to select. File names may be enclosed in either parentheses or square brackets. The difference is explained below.

/1 One selection only
/A(ttribute select)
/C(ompression)
/D(isable color coding)
/E (use upper case)
/H(ide dots)
/I"text" (match descriptions)
/J(ustify names)
/L(ower case)
/O(rder)
/Q (owner)
/T(ime)
/X (display short names)
/Z (FAT format)

File Selection

Supports command dialog, extended wildcards, ranges, multiple file names, and include lists. Ranges **must** appear immediately after the SELECT keyword.

Internet: Can be used with FTP servers. See Using FTP/HTTP Servers.

Usage:

SELECT allows you to select files for internal and external commands by using a "point and shoot" display. You can have SELECT execute a command once for each file you select, or have it create a list of files for a command to work with. The ***command*** can be an internal command, an alias, an external command, or a batch file. If you don't specify any arguments, SELECT will display its command dialog.

If you use parentheses around the ***files***, SELECT executes the ***command*** once for each file you have selected. During each execution, one of the selected files is passed to the ***command*** as a parameter. If you use square brackets around *files*, the SELECTed files are combined into a single list, separated by spaces. The command is then executed once with the entire list presented as part of its command line parameters.

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. SELECT will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

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SELECT can also select files on FTP servers. For example:

```
select del (ftp://ftp.domain.com/)
```

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want. For more information, see Using FTP/HTTP Servers and IFTP.

SELECT will colorize the directory listing. See DIR for more information on directory colorization.

Using the SELECT File List

When you execute the SELECT command, the file list is displayed in a full-window format which includes a top-line status bar and shows the command to be executed, the number of files marked, and the number of Kbytes in those files.

SELECT supports the mouse for selecting and scrolling the list. You can also use the cursor up, cursor down, PgUp, and PgDn keys to scroll through the file list. You can also use character matching to find specific files, just as you can in any popup window. While the file list is displayed you can enter any of the following keys to select or unselect files, display files, execute the command, or exit:

space	Select a file, or unselect a marked file
+	Select a file (all products), or unselect a marked file
-	Unselect a marked file
*****	Reverse all of the current marks (except those on subdirectories). If no files have been marked you can use ***** to mark all of the files
/	Unselect all files
Ctrl-L	View the current highlighted file with LIST. When you exit from LIST, the SELECT screen will be restored
Enter	Execute the command with the marked files, or with the currently highlighted file if no files have been marked
Esc	Skip the files in the current display and go on to the next file specification inside the parentheses or brackets (if any)
Ctrl-C or **Ctrl-Break**	Cancel the current SELECT command entirely

On FAT drives the file list is shown in standard FAT directory format, with names at the left and descriptions at the right. On LFN drives the format is similar but more space is allowed for the name, and the description is not shown. In this format long names are truncated if they do not fit in the allowable space. For a short-name format (including descriptions) on long filename drives, use the **/X** and / or **/Z** switches.

When displaying descriptions in the short filename format, SELECT adds a right arrow at the end of the line if the description is too long to fit on the screen. This symbol will alert you to the existence of additional description text. You can use the left and right arrow keys to scroll the description area of the screen horizontally and view the additional text.

Creating SELECT Commands

In the simplest form of SELECT, you merely specify the command and then the list of files from which you will make your selection(s). For example:

```
select copy (*.cmd *.exe) q:\
```

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will let you select from among the *.CMD* files in the current directory, and will then invoke the COPY command to copy each file you select to the root of drive Q:. After the *.CMD* files are done, the operations will be repeated for the *.EXE* files.

If you want to select from a list of all the *.CMD* and *.EXE* files mixed together, create an include list inside the parentheses by inserting a semicolon:

```
select copy (*.cmd;*.exe) a:\
```

Finally, if you want the SELECT command to send a single list of files to COPY, instead of invoking COPY once for each file you select, put the file names in square brackets instead of parentheses:

```
select copy [*.cmd;*.exe] a:\
```

If you use brackets, you have to be sure that the resulting command (the word COPY, the list of files, and the destination drive in this example) does not exceed the command line length limit. The current line length is displayed by SELECT while you are marking files to help you to stay within that limit.

The parentheses or brackets enclosing the file name(s) can appear anywhere within the command; SELECT assumes that the first set of parentheses or brackets it finds is the one containing the list of files from which you wish to make your selection.

When you use SELECT on an LFN drive, you must quote any file names inside the parentheses which contain white space or special characters. For example, to copy selected files from the **Program Files**″ directory to the **E:\SAVE** directory:

```
select copy ("Program Files\*") e:\save\
```

File names passed to the ***command*** will be quoted automatically if they contain white space or special characters.

The list of files from which you wish to select can be further refined by using date, time, size and file exclusion ranges. The range(s) must be placed immediately after the word SELECT. If the ***command*** is an internal command that supports ranges, an independent range can also be used in the ***command*** itself.

You cannot use command grouping to make SELECT execute several commands, because SELECT will assume that the parentheses are marking the list of files from which to select, and will display an error message or give incorrect results if you try to use parentheses for command grouping instead. (You can use a SELECT command inside command grouping parentheses, you just can't use command grouping to specify a group of commands for SELECT to execute.)

Advanced Topics

If you don't specify a command, the selected filename(s) will become the command. For example, this command defines an alias called UTILS that selects from the executable files in the directory **C:\UTIL**, and then executes them in the order marked:

```
alias utils select (c:\util\*.cmd;*.exe;*.btm;*.bat)
```

If you want to use filename completion to enter the filenames inside the parentheses, type a space after the opening parenthesis. Otherwise the command line editor will treat the open parenthesis as the first character of the filename.

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With the **/I** option, you can select files based on their descriptions. SELECT will display files if their description matches the text after the **/I** switch. The search is not case sensitive. You can use wildcards and extended wild cards as part of the text.

When sorting file names and extensions for the SELECT display, ***TCC*** normally assumes that sequences of digits should be sorted numerically (for example, the file DRAW2 would come before DRAW03 because 2 is numerically smaller than 03), rather than strictly alphabetically (where DRAW2 would come second because "2" comes after "0"). You can defeat this behavior and force a strict alphabetic sort with the **/O:a** option.

Options:

/= Display the SELECT command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/1 Only allow one selection.

/A[:] Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Display per-file and total compression ratios on compressed drives. The compression ratio is displayed instead of the file description. The ratio is left blank for directories and files with a length of 0 bytes, and for files on non-compressed drives. The compression ratios will not be visible on LFN drives unless you use **/Z** to switch to the short filename format. Only compressed NTFS drives are supported. See DIR /C for more details on how compression ratios are calculated.

/D Temporarily turn off directory colorization.

/E Display filenames in upper case.

/H Suppress the display of the "." and ".." directory names.

/I"text" Display filenames by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**.

/J Justify (align) filename extensions and display them in the FAT format.

/L Display file and directory names in lower case.

/O Set the sort order for the files. The order can be any combination of the following options:

- **n** Sort by filename (this is the default)
- \- Reverse the sort order for the next option.
- **a** Sort names and extensions in standard ASCII order, rather than sorting numerically when digits are included in the name or extension.
- **c** Sort by compression ratio (the least compressed file in the list will be displayed first). For information on supported compression systems see **/C** above.
- **d** Sort by date and time (oldest first).
- **e** Sort by extension.
- **g** Group subdirectories together.

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i Sort by the file description (ignored if **/C** or **/O:c** is also used).
o Sort by owner
r Reverse the sort order for all options.
s Sort by size.
u Unsorted.

/Q Display the file owner (requires > 80 column display).

/T:acw Specify which of the date and time fields on an LFN drive should be displayed and used for sorting:

a Last access date and time (access time is not saved on VFAT and FAT32 volumes).
c Creation date and time.
w Last write date and time (default).

/X (Obsolete) Display short filenames in FAT format (like **/Z**), on LFN drives. If you are passing the SFNs to a file-handling command (like COPY, DEL, REN, etc.) you will need to have the "Search for SFNs" directive set (see OPTION / Startup). That option is not set by default, and without it TCC will not find SFNs in normal directory searches on LFN / NTFS drives.

/Z (Obsolete) Display a directory on an LFN drive in the old-style format, with the filename at the left and the description at the right. Long names will be truncated to 12 characters; if the name is longer than 12 characters, it will be followed by a right arrow.

4.3.163 SENDHTML

Purpose: Send an HTML-formatted email message

Format: SENDHTML [/= /A *file1* [/A *file2* ...] /D /E*address* /H"*header: value*" /I*n* */IPv6* /M /P*n* /R /SMTP=*server* /S*n* /SSL[=*n*] /USER=*address* /V /X] "*address*[,*address*...] [cc:*address*[,*address*] bcc:*address*[,*address*...]]" *subject* [*text* | @*msgfile*]

file1...	The attachment files
address	The destination email address
subject	The subject line
text	The message to send
msgfile	The file containing the message body
/SSL=n	SSL negotiation type
/SMTP=*server*	Override the default SMTP server
/USER=*address*	Override the default sending email account

/A file	Attachment	/M	CRAM-MD5 authentication
/D	Delivery Confirmation	/Pn	Priority
/E	Reply-to address	/R	Send read receipt
/H	Send custom header	/Sn	Sensitivity
/In	Importance	/V	Verbose
/IPv6	Use IPv6 instead of IPv4	/X	EHLO

See also: SNPP and SMPP.

Usage:

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SENDHTML sends an HTML email message from ***TCC*** via SMTP. The text of the message can be entered either on the command line or read from a text file. SENDHTML also supports SMTP over SSL. If you don't specify any arguments, SENDHTML will display its command dialog.

Before you can use SENDHTML, you must either set the SMTP configuration options, or have a default account in the registry. Depending on your system configuration, you may also need to start an Internet connection before you use SENDHTML.

A SENDHTML message has three required parts: an address, a subject, and message. Optionally it may also have attachments.

1. The ***address*** field contains one or more standard Internet email addresses:

```
sendhtml abc@xyz.com ...
```

If ***address*** contains white space, the entire address field must be surrounded by quotes. You can specify multiple destinations by separating the addresses with **commas** and enclosing the entire string in quotes (all addresses will appear in the "*To:*" header sent to all recipients). You can add CC (***copy***) addresses by prefacing the desired target(s) with **cc:**; and **BCC** (***blind copy***) addresses by prefacing the desired target(s) with **bcc:**. For example:

```
sendhtml "bob@bob.com bcc:joe@joe.com" Test Hello!
```

will send the text ***Hello!*** with subject ***Test*** to ***bob@bob.com*** with a blind copy to ***joe@joe.com***.

2. The ***subject*** will appear as the subject line in the message. If it contains white space, it must be surrounded by quotes.

3. The ***message*** may either be entered on the command line, or it may be placed in a text file. To tell SENDHTML to send the contents of a file as the message text, use `@` sign, followed by the filename.

You can use the same approach to send the text content of the clipboard (**@CLIP:**) or the console (**@CON:**):

```
sendhtml abc@xyz.com Party @c:\messages\invitation.txt
sendhtml abc@xyz.com Party @clip:
type myfile.txt | sendmail abc@xyz.com Party @con:
```

Options:

/= Display the SENDHTML command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A ***file*** Attach ***file*** to the email message. The **/A** switch and the name of the file to attach must appear *before* ***address***. Any file name that contains spaces or special characters must be quoted. You can send multiple files by repeating the **/A** switch for each additional file to send. For example:

```
sendhtml /a file1 /a "d:\path\My file2" abc@xyz.com ...
```

/D Request Delivery Notification.

/E Set the "reply to" address in the message header.

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/H Set a custom header. The header will be appended to the message headers created from "to", "from", "subject", etc. The headers must of the format "header: value" as specified in RFC 822. You can specify multiple headers with multiple **/H** arguments.

/In Set the Importance where ***n*** is:

1 High
2 Normal (default)
3 Low

/IPv6 Use IPv6 instead of IPv4.

/M Use CRAM-MD5 authentication.

/Pn Set the Priority where ***n*** is:

0 Unspecified (default)
1 Normal
2 Urgent
3 Non Urgent

/R (Read receipt) : Send a read receipt.

/Sn Set the message sensitivity. The values are:

1 Personal
2 Private
3 CompanyConfidential

/SMTP Overrides the default SMTP server (as set in the registry) to use when sending mail.

/SSL=n Type of SSL negotiation. The values are:

0 Automatic (default if no ***n*** value is specified). If the remote port is set to the standard plaintext port, SENDHTML will use Explicit mode. In all other cases, SSL negotiation will be implicit.
1 Implicit - SSL negotiation will start immediately after the connection is established.
2 Explicit - SENDMAIL will first connect in plaintext, and then explicitly start SSL negotiation.
3 No SSL negotiation or security. (This is the default if /SSL is not specified.)

/USER Overrides the default email account (as set in the registry) to use when sending mail.

/V Show all the interaction with the server, except the message header and message body text.

/X Send EHLO instead of HELO.

4.3.164 SENDMAIL

Purpose: Send an email message

Format: SENDMAIL [/= /A *file1* [/A *file2* ...] /D /E*address* /H"*header*: *value*" /I*n* /IPv6 /M /P*n* /R /S*n* /SMTP=*server* /SSL[=*n*] /USER=*address* /V /X] "*address*[,*address*...] [cc:*address*[,*address*] bcc:*address*[,*address*...]]" *subject* [*text* | *@msgfile*]

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file1...	The attachment files
address	The destination email address
subject	The subject line
text	The message to send
msgfile	The file containing the message body
/SSL=n	SSL negotiation type
/SMTP=server	Override the default SMTP server
/USER=address	Override the default sending email account

/A file	Attachment	/M	CRAM-MD5 authentication
/D	Delivery Confirmation	/Pn	Priority
/E	Reply-to address	/R	Send read receipt
/H	Send custom header	/Sn	Sensitivity
/In	Importance	/V	Verbose
/IPv6	Use IPv6 instead of IPv4	/X	Send EHLO

See also: SNPP and SMPP.

Usage:

SENDMAIL sends an email message from ***TCC*** via SMTP. The text of the message can be entered either on the command line or read from a text file. SENDMAIL also supports SMTP over SSL. If you don't specify any arguments, SENDMAIL will display its command dialog.

Before you can use SENDMAIL, you must either set the SMTP configuration options, or have a default account in the registry. Depending on your system configuration, you may also need to start an Internet connection before you use SENDMAIL.

A SENDMAIL message has three required parts: an address, a subject, and message. Optionally it may also have attachments.

1. The ***address*** field contains one or more standard Internet email addresses:

```
sendmail abc@xyz.com ...
```

If ***address*** contains white space, the entire address field must be surrounded by quotes. You can specify multiple destinations by separating the addresses with **commas** and enclosing the entire string in quotes (all addresses will appear in the "*To:*" header sent to all recipients). You can add CC (***copy***) addresses by prefacing the desired target(s) with **cc:**; and **BCC** (***blind copy***) addresses by prefacing the desired target(s) with **bcc:**. For example:

```
sendmail "bob@bob.com bcc:joe@joe.com" Test Hello!
```

will send the text ***Hello!*** with subject ***Test*** to ***bob@bob.com*** with a blind copy to ***joe@joe.com***.

2. The ***subject*** will appear as the subject line in the message. If it contains white space, it must be surrounded by quotes.

3. The ***message*** may either be entered on the command line, or it may be placed in a text file. To tell SENDMAIL to send the contents of a file as the message text, use `@` sign, followed by the filename. You can use the same approach to send the text content of the clipboard (**@CLIP:**) or the console (**@CON:**):

```
sendmail abc@xyz.com Party @c:\messages\invitation.txt
```

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```
sendmail abc@xyz.com Party @clip:
type myfile.txt | sendmail abc@xyz.com Party @con:
```

Options:

/= Display the SENDMAIL command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A ***file*** Attach ***file*** to the email message. The **/A** switch and the name of the file to attach must appear *before* ***address***. Any file name that contains spaces or special characters must be quoted. You can send multiple files by repeating the **/A** switch for each additional file to send. For example:

```
sendmail /a file1 /a "d:\path\My file2" abc@xyz.com ...
```

/D Request Delivery Notification.

/E Set the "reply to" address in the message header.

/H Set a custom header. The header will be appended to the message headers created from "to", "from", "subject", etc. The headers must of the format "header: value" as specified in RFC 822. You can specify multiple headers with multiple **/H** arguments. For example, to send HTML mail:

```
sendmail /h"Content-Type: text/html" ...
```

/In Set the Importance where ***n*** is:

1 High
2 Normal (default)
3 Low

/IPv6 Use IPv6 instead of IPv4.

/M Use CRAM-MD5 authentication.

/Pn Set the Priority where ***n*** is:

0 Unspecified (default)
1 Normal
2 Urgent
3 Non Urgent

/R (Read receipt) : Send a read receipt.

/Sn Set the message sensitivity. The values are:

1 Personal
2 Private
3 CompanyConfidential

/SMTP Overrides the default SMTP server (as set in the registry) to use when sending mail.

/SSL=n Type of SSL negotiation. The values are:

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0 Automatic (default if no ***n*** value is specified). If the remote port is set to the standard plaintext port, SENDMAIL will use Explicit mode. In all other cases, SSL negotiation will be implicit.
1 Implicit - SSL negotiation will start immediately after the connection is established.
2 Explicit - SENDMAIL will first connect in plaintext, and then explicitly start SSL negotiation.
3 No SSL negotiation or security. (This is the default if /SSL is not specified.)

/USER Overrides the default email account (as set in the registry) to use when sending mail.

/V Show all the interaction with the server, except the message header and message body text.

/X Send EHLO instead of HELO.

4.3.165 SERVICEMONITOR

Purpose: Monitor service start, pause, and / or stop

Format: SERVICEMONITOR [/C [*name*]]
SERVICEMONITOR [/=] *name* STARTED | PAUSED | STOPPED *n command*

name Device name
n Number of repetitions (or **FOREVER**)
command Command to execute when condition is triggered

/C(lear)

Usage:

The service name can include wildcards.

The command line will be parsed and expanded before SERVICEMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. SERVICEMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, SERVICEMONITOR will display the services it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

SERVICEMONITOR creates several environment variables when a service is started, paused, or stopped that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_servicedisplay Display name used by service control programs to identify the service

_servicename The name of the service in the service control manager database

_servicecount The number of times the command has been triggered

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_servicestate The current state of the service. The possible values are:

1 The service is stopped
2 The service is starting
3 The service is stopping
4 The service is running
5 The service continue is pending
6 The service pause is pending
7 The service is paused

Example:

Send an email if the service "mytestservice" stops:

```
SERVICEMONITOR mytestservice STOPPED sendmail bob@bob.com "Service Stopped"
The Windows service "mytestservice" stopped!
```

Options:

/= Display the SERVICEMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C If ***name*** is specified, remove the monitor for that service. Otherwise, remove all service monitors.

4.3.166 SERVICES

Purpose: Display, stop, or start system services

Format: SERVICES [/= /I /P /R /S /T*n*] [*name* ...]

/I (PID) /S(top service)
/P(ause) /Tn (type)
/R(un)

Usage:

The ***name*** is the service name, not the display name. ***name*** can contain wildcards.

You must be an admin user to run or stop a service.

Options:

/= Display the SERVICES command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/I Display the PID's for services. Note that stopped services will return 0 for the PID, as will Windows services.

/P Pause after displaying each page.

/R Run the specified service(s).

/S Stop the specified service(s).

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/Tn The type of services to enumerate. This can be a combination (OR'd) of the following values:

1	Kernel drivers
2	File system drivers
16	Services that run in their own process
32	Services that share a process with one or more other services

4.3.167 SET

Purpose: Display, create, modify, or delete environment variables

Format: Display mode:
SET [/= /D /E /P /S /U /V /X] [*wildname*]

Definition mode:
SET [/= /A /B /D /M /O /S /U /V /E /RO /R [*file*...] /T:*type* | *name*=*value* | *prompt*]

Deletion mode:
SET [/= /D /M /S /U /V /E] *name*=

file	One or more input files from which to read variable definitions.
name	The name of the environment variable.
value	The new value for the variable, separated from name by space[s].
prompt	Optional input prompt for the **/P *name*=** option.
wildname	Name of variable[s] to be displayed. May contain * wildcard unless displaying registry variables.

/A	Arithmetic	/R	Read from file(s)
/B	Batch variable	/RO	Readonly variable
/D	Default	/S	System
/E	Environment, too	/T:type	Set variable type
/M	Master environment	/U	User
/P	Pause or Prompt	/V	Volatile
/O	Don't overwrite	/X	Override VariableExclude
/Q	Don't echo /A result		

See also: ESET and UNSET.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1] variables [2*] ***

Usage:

Every program and command inherits an environment, which is a list of pairs of variable ***names*** and ***values***. Each ***value*** is a non-empty character string (i.e., there must be at least one character in it). Many programs use entries in the environment to modify their own actions. ***TCC*** itself uses several environment variables.

If you simply type the SET command with no options or parameters, it will display all the names and values of all currently defined variables in the environment. Typically, you will see an entry called **PATH**, an entry called **CMDLINE**, and whatever other environment variables you and your programs have established:

```
[c:\] set
```

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```
PATH=C:\;C:\UTIL
CMDLINE=C:\TCMD\TCSTART.CMD
```

If you enter only ***name***, and there is no variable with that name, SET will display all environment variables whose names begin with ***name***. For example, if there is no variable ***pa***, the command below will display all variables whose names start with ***pa***:

```
set pa
```

The above command is equivalent to the command

```
set pa*
```

If there is only a single parameter and it contains one or more wildcards (sorry, only * available), SET will display all matching environment variables. You cannot use wildcards to display the registry variables (/D, /S, /U, and /V).

You can specify variables to exclude from the SET display with the VariableExclude variable. For example, to suppress the display of the processor and user variables:

```
set VariableExclude=proc*;user*
```

(Note that this option doesn't affect the existence of the variables, just whether they're displayed by a SET with no arguments.)

To add a variable to the environment, type SET, a space, the variable name, an equal sign, and the desired value:

```
set mine=c:\finance\myfiles
```

The variable name and the text after the equal sign will be left just as you entered it. However, case is ignored when looking for a variable; for example **MyVar**, **myvar**, and **MYVAR** all refer to the same variable. If the variable already exists, its value will be replaced with the new text that you entered.

Normally you should not put a space on either side of the equal sign. A space before the equal sign will become part of the ***name*** ; a space after the equal sign will become part of the ***value***.

Trailing whitespace in the SET command is ignored. To create a variable with trailing whitespace, use a pair of back quotes after the whitespace:

```
set mine=%@repeat[ ,20]``
```

makes **mine** 20 characters of spaces.

If you use SET to create a variable with the same name as one of the ***TCC*** internal variables, you will disable the internal variable. If you later execute a batch file or alias that depends on that internal variable, it may not operate correctly. Once you delete your variable, the internal variable becomes accessible again.

To display the contents of a variable, type SET plus the variable name:

```
set mine
```

You can edit environment variables with the ESET command. To remove variables from the environment, use UNSET, or type SET, followed by the variable name and an equal sign:

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```
set mine=
```

The variable's ***name*** is limited to a maximum of 1024 characters.

Note: You cannot use SET to modify GOSUB variables.

The size of the environment is set automatically, and increased as necessary as you add variables.

Registry Variables

Windows stores some of its own variables in the registry. This includes Default, System, User, and Volatile variables. Those variables can be manipulated with the SET command's /D, /S, /U and /V options respectively. For example, to display the contents of volatile variable ***clientname***, use:

```
set /v clientname
```

Note that setting a registry variable using one of the options /D, /S, /U or /V **will not set** the variable in the local environment unless you also use the /E option.

User variables are user-specific, and volatile variables are only valid for the current Windows session. Use caution when directly modifying registry variables as they may be essential to various Windows processes and applications.

If the Update Environment on System Change configuration option is set, ***TCC*** will monitor the WM_SETTINGCHANGE message and update the environment from the User, Volatile, and System registry entries. The update is done whenever ***TCC*** displays the prompt (to prevent the environment from changing in the middle of a command).

Array Variables

In addition to environment variables, SET is also used to set values for array variables. For example, to define a 5-row by 10-column array, you would first use SETARRAY:

```
setarray array1[5,10]
```

To set the array values (0-based), the syntax is:

```
set array1[a[,b[,c[,d]]]
```

For example:

```
set array1[0,0]=Bob
set array1[0,1]=Bob's Job
```

To expand the array variable:

```
echo Name is %array[0,0] and job is %array1[0,1]
```

Options:

/= Display the SET command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

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/A Evaluate the arithmetic expression on the right of the equal sign, place the result in the environment, and display it. For example, this command adds 2 and 2, and places the result in the environment variable **VAR**:

```
set /a var=2+2
```

/A interprets non numeric strings in ***value*** as environment variable names whether or not preceded by a percent sign %, and replaces them with their respective ***values***. For example, this sequence will set **Y** to **4**:

```
set x=2
set /a y=x+2
```

You can use @EVAL to perform the same task; SET /A is included for compatibility with CMD. Unlike @EVAL, use of the >> or << shift operators in SET /A requires disabling their interpretation as redirection symbols by using SETDOS /X-6.

/B Set a batch variable (%1 - %n). Only valid when ***TCC*** is executing a batch file. The batch variable %n must already exist.

/D Create/modify/delete a **default** variable in the registry (HKU\.DEFAULT\Environment).

/E When used together with one of /D, /S, /U, or /V, set both the registry variable and the local environment variable.

/M If a variable name is specified, change it to the original value when ***TCC*** started. If no name is specified, revert the entire environment to the original environment when ***TCC*** started.

/O Don't overwrite existing values (only valid in combination with /R).

/P When used without a variable name, wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts.

When used with a variable name and an optional prompt string, e.g. set /p ***myvar***=Enter value, emulates the CMD behavior of allowing entry of a value for the variable. This is provided for compatibility reasons only. For more flexibility, use the ***TCC*** ESET or INPUT commands.

/Q Don't echo the result of /A when at the command line.

/R Read environment variables from a file. This is much faster than loading variables from a batch file with multiple SET commands. Each entry in the file must fit within the command line length limit for ***TCC***. The file is in the same format as the SET display (*i.e.*, ***name=value***), so SET /R can accept as input a file generated by redirecting SET output. For example, the following commands will save the environment variables to a file, and then reload them from that file:

```
set > varlist
set /r varlist
```

You can load variables from multiple files by listing the filenames individually after the /R.

If you are creating a SET /R file by hand, and need to create an entry that spans multiple lines in the file, you can do so by terminating each line (except the last) with an escape

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character. However, you cannot use this method to exceed the command line length limit. You can also add comment lines to the file by starting each with a colon `:`. You can also use other special characters, e.g., trailing whitespace, redirection and pipe symbols (**<>|**), without the need for escaping the characters. If you reference the value of another variable in ***value*** (e.g., **x=%path;c:\jpsoft**), evaluating that variable (**path** in the example) is postponed until at some future time a command line evaluates the current variable (**x** in the example), so that the command **echo %x** will display the **path** in effect when **echo** is executed, regardless of what **path** may have been when the original SET defined **x**.

If you do not specify a filename and input is redirected, **SET /R** will read from stdin.

/RO Create a read-only variable. Once you have set the variable, you cannot change it or UNSET it. Only environment variables can be read-only, not registry variables or array variables. A read-only variable will automatically be exported from an ENDLOCAL.

/S Create/modify/delete a **system** variable in the registry (`HKLM\System\CurrentControlSet\Control\Session Manager\Environment`).

/T:type[:"regex"] Set a variable type. If you try to set the variable to an incompatible type, SET will return an error. The supported types are:

int (or 1)	The variable can only contain 0-9
dec (or 2)	The variable can only contain 0-9, the decimal character, and the thousands separator
hex (or 3)	The variable can only contain 0-9 and A-F
bool (or 4)	The variable can only contain 0 or 1
alpha (or 5)	The variable can only contain A-Z and a-z
alnum (or 6)	The variable can only contain A-Z, a-z, and 0-9
regex (or 7)	The variable must match the specified regular expression

/U Create/modify/delete a **user** variable in the registry (`HKCU\Environment`).

/V Create/modify/delete a **volatile** variable in the registry (`HKCU\Volatile Environment`).

/X Override the **VariableExclude** variable and display all matching variables.

4.3.168 SETARRAY

Purpose: Define array variables

Format: SETARRAY [/= /F /T:*type* /R *filename* [/Z] *arrayname*] *name*[a[,b[,c[,d]]]] [...]

a,b,c,d Array dimensions

/F(orce overwrite) /T(ype)
/R(ead) /Z (resize)

Usage:

You can define up to 4-dimensional arrays. For example, to define a 5-row by 10-column array:

```
setarray array1[5,10]
```

The array elements are addressed in base 0, so to reference this array you would use 0-4 for the rows and 0-9 for the columns.

You can initialize arrays by appending [*value*] to the definition. For example, to initialize all of the array elements to 0:

```
setarray myarray[100] [0]
```

To set the variable elements, use the SET command.

If you don't enter any arguments, SETARRAY will display the currently defined arrays. If you don't enter any dimensions, SETARRAY will display the definition for that array. You can use wildcards in the array name.

See also @ARRAYINFO.

Options:

/= Display the SETARRAY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/F Force overwrite of existing arrays (if any).

/R Read a file into a 1-dimensional array. SETARRAY will automatically determine the required size of the array. You cannot combine /R with any other options.

/T:type[:"regexpression"] Set a variable type. If you try to set the variable to an incompatible type, SET will return an error. The supported types are:

int (or 1)	The variable can only contain 0-9
dec (or 2)	The variable can only contain 0-9, the decimal character, and the thousands separator
hex (or 3)	The variable can only contain 0-9 and A-F
bool (or 4)	The variable can only contain 0 or 1
alpha (or 5)	The variable can only contain A-Z and a-z
alnum (or 6)	The variable can only contain A-Z, a-z, and 0-9
regex (or 7)	The variable must match the specified regular expression

/Z Resize an existing array. For example:

```
setarray myarray[5,2]
...
setarray /z myarray[8,3]
```

You cannot change the number of dimensions in an array.

4.3.169 SETERROR

Purpose: Set the ERRORLEVEL value

Format: SETERROR errorlevel

errorlevel New value for ERRORLEVEL

Usage:

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SETERROR sets the value of the ERRORLEVEL internal variable and the last-error code in Windows to the specified value.

See also IF.

4.3.170 SETDOS

Purpose: Display or set the ***TCC*** configuration

Format: SETDOS [/A? /C? /D? /E? /Fn.n /G?? /I[+|-] *command* /M? /N? /P? /S?:? /V? /X[+|-]n]

/A(NSI)
/C(ompound)
/D(escriptions)
/E(scape character)
/F(ormat for @EVAL)
/G (numeric separators)
/I(nternal)
/M(ode for editing)
/N(o clobber)
/P(arameter character)
/S(hape of cursor)
/V(erbose)
/X (expansion, special characters)

See also: OPTION.

Usage:

SETDOS allows you to customize certain aspects of ***TCC*** to suit your personal tastes or the configuration of your system.

You can display the value of all SETDOS options by entering the SETDOS command with no parameters.

Most of the SETDOS options can also be changed in the configuration dialogs. The name of the corresponding configuration option is listed with each SETDOS option below; if none is listed, that option cannot be set from the configuration dialogs. You can also define the SETDOS options in your **TCSTART** or other startup file (see Automatic Batch Files), in aliases, or at the command line.

Note: The functionality of the "/Y" option ("debug", no longer supported) of previous versions has been moved to the BDEBUGGER command.

Inheritance

When a new instance of the command is started, it inherits the SETDOS characteristics set by the most recently started instance of ***TCC***.

Options:

/A [ANSI] This option determines whether ANSI X3.64 support is enabled. **/A1** enables ANSI X3.64 string processing. The default of **/A0** disables ANSI X3.64 strings. See the ANSI X3.64 Commands Reference for a list of the ANSI X3.64 sequences supported by ***TCC***. See also: the ANSI Colors configuration option and the _ANSI internal variable.

/C [Command Separator] This option sets the character used for separating multiple commands on the same line. The default value is the ampersand [**&**]. You cannot use any of the redirection characters (**| > <**), or a space, tab, comma, or equal sign as the command separator. The command separator is saved by SETLOCAL and restored by ENDLOCAL. The following example changes the separator character to a tilde [**~**]:

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```
setdos /c~
```

/D [Descriptions and Description Name] This option controls whether file processing commands like COPY, DEL, MOVE, and REN process file descriptions along with the files they belong to. **/D1** turns description processing on, which is the default. **/D0** turns description processing off. See also: the Enable Descriptions configuration option.

You can also use **/D** to set the name of the hidden file in each directory that contains file descriptions. To do so, follow **/D** with the filename in quotes:

```
setdos /d"files.bbs"
```

Use this option with caution, because changing the name of the description file will make it difficult to transfer file descriptions to another system.

/E [Escape Character] This option sets the character used to suppress the normal meaning of the following character. Any character following the escape character will be passed unmodified to the command. The default escape character is a caret [**^**]. You cannot use any of the redirection characters (**| > <**) or a space, tab, comma, or equal sign as the escape character. The escape character is saved by SETLOCAL and restored by ENDLOCAL. Certain characters (**b**, **c**, **e**, **f**, **k**, **n**, **q**, **r**, **s**, and **t**) have special meanings when immediately preceded by the escape character.

/F [@EVAL maximum and minimum] This option lets you set the default decimal display precision for the @EVAL variable function. The maximum precision is 20,000 digits to the left of the decimal point and 10,000 digits to the right of the decimal point. (You can specify up to 10,000 digits in an @EVAL calculation by using the **=x,y** option.)

The format for this option is **/Fx.y**, where the x value sets the minimum number of digits to the right of the decimal point and the y value sets the maximum number of digits. You can use **=x,y** instead of **=x.y** if the comma is your decimal separator. Both values can range from 0 to 10. You can specify either or both values: **/F2.5**, **/F2**, and **/F.5** are all valid entries. If **x** is greater than **y**, it is ignored; if only **x** is specified, **y** is set to the same value (*e.g.* **/F2** is equivalent to **/F2.2**). See the @EVAL Precision configuration option to set the precision when ***TCC*** starts; see the @EVAL function if you want to set the display precision for a single computation.

/G [Decimal and thousands separator characters] This option sets the Decimal and Thousands separator characters. The format is **/Gxy** where "x" is the new decimal separator and "y" is the new thousands separator. Both characters must be included. The only valid settings are **/G.,** (period is the decimal separator, comma is the thousands separator); **/G,.** (the reverse); or **/G0** to remove any custom setting and use the default separators associated with your current country code (this is the default).

The decimal separator is used for @EVAL, numeric IF and IFF tests, version numbers, and other similar uses. The thousands separator is used for numeric output, and is skipped when performing calculations in @EVAL.

/I This option allows you to disable or enable internal commands. To disable a command, precede the command name with a minus [**-**]. To re-enable a command, precede it with a plus [**+**]. For example, to disable the internal LIST command to force ***TCC*** to use an external command:

```
setdos /i-list
```

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To re-enable all disabled commands use **/I***.

/M [Edit Mode] This option controls the initial line editing mode. To start in overstrike mode at the beginning of each command line, use **/M0** (the default). To start in insert mode, use **/M1**). See also: the Edit Mode configuration option.

/N [NoClobber] This option controls output redirection. **/N0** means existing files will be overwritten by output redirection (with **>**) and that appending (with **>>**) does not require the file to exist already. This is the default. **/N1** means existing files may not be overwritten by output redirection, and that when appending the output file must exist. A **/N1** setting can be overridden with the [**!**] character. See also: the Protect Redirected Output File configuration option.

/P [Parameter Character] This option sets the character used after a percent sign to specify all or all remaining command line parameters in a batch file or alias. The default value is the dollar sign [**$**]. The parameter character is saved by SETLOCAL and restored by ENDLOCAL.

/S [Insert and Overstrike Cursor] The cursor size is entered as a percentage of the total character height. The default values are 10:100 (a 10% underscore cursor for overstrike mode, and a 100% block cursor for insert mode). Because of the way video drivers remap the cursor shape, you may not get a smooth progression in the cursor size from 1% - 100%. (You can disable the cursor by specifying a size of 0:0.)

If either value is -1, ***TCC*** will not attempt to modify the cursor shape at all. You can retrieve the current cursor shape values with the **%_CI** and **%_CO** internal variables. See also the Overstrike Cursor and Insert Cursor configuration options.

/V [Batch Echo] This option controls the default for command echoing in batch files.

/V0 disables echoing of batch file commands unless ECHO is explicitly set ON.

/V1, the default setting, enables echoing of batch file commands unless ECHO is explicitly set OFF. See also: the Batch Echo configuration option.

/X[+|-]n (expansion and special characters) This option enables and disables alias and environment variable expansion, and controls whether special characters have their usual meaning or are treated as text. It is most often used in batch files to process text strings which may contain special characters. You can get the current expansion mode with the % expansion internal variable.

The features enabled or disabled by **/X** are numbered (in hex). All features are enabled when ***TCC*** starts, and you can re-enable all features at any time by using **/X0**. To disable a particular feature, use **/X-n**, where **n** is the feature number from the list below. To re-enable the feature, use **/X+n**. To enable or disable multiple individual features, list their numbers in sequence after the **+** or **-** (*e.g.* **/X-345** to disable features 3, 4, and 5).

The features are:

1 All alias expansion
2 *Nested* alias expansion only
3 All variable expansion (includes environment variables, batch file parameters, variable function evaluation, and alias parameters)
4 *Nested* variable expansion only
5 Multiple commands, conditional commands, and piping (affects the command separator, **||**, **&&**, **|**, and **|&**)

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6 Redirection (affects **<** , **>**, **>&**, **>&>**, etc.)
7 Quoting (affects back-quotes [`] and double quotes ["]) and square brackets)
8 Escape character
9 Include lists
A User-defined functions

If nested alias expansion is disabled (/X-2), the first alias of a command is expanded but any aliases it invokes are not expanded. If nested variable expansion is disabled (X-4), each variable is expanded once, but variables containing the names of other variables are not expanded further.

For example, to disable all features except alias expansion while you are processing a text file containing special characters:

```
setdos /x-35678
  ... [perform text processing here]
setdos /x0
```

A SETLOCAL command will save the current SETDOS /X values for ENDLOCAL to restore.

4.3.171 SETLOCAL

Purpose: Save a copy of the current disk drive, directory, environment, alias and function lists, and special characters

Format: SETLOCAL [GLOBALLISTS]

GLOBALLISTS Global aliases / user variable functions

See also: ENDLOCAL.

Usage:

SETLOCAL can be used on the command line, in aliases, in library functions, and in batch files.

SETLOCAL will save :

- the default disk drive and directory
- the environment,
- the alias list
- the user-defined function list
- The directory stack (PUSHD)
- the special character set (command separator, escape character, parameter character, decimal separator, and thousands separator)
- the SETDOS /X setting
- the SETDOS /F setting

After using SETLOCAL, you can change the values of any or all of the above, and later restore the original values with an ENDLOCAL command, or just by exiting the batch file.

SETLOCAL does not save the command history or array variables.

If you have global aliases and/or functions, SETLOCAL will now copy them to a local list for the duration of the SETLOCAL. The matching ENDLOCAL will reset them to the global list. If you have both local and

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global aliases or functions defined, SETLOCAL will only save the local list (which will be restored by ENDLOCAL).

SETLOCAL supports the EnableExtensions, DisableExtensions, EnableDelayedExpansion, and DisableDelayedExpansion arguments from CMD. (Though they're not necessary, since ***TCC*** either sets those by default or through the OPTION command.)

For example, this batch file fragment saves everything, removes all aliases so that aliases will not affect batch file commands, changes the disk and directory, changes the command separator, runs a program, and then restores the original values:

```
setlocal
unalias *
cdd d:\test
setdos /c~
program ~ echo Done!
endlocal
```

SETLOCAL and ENDLOCAL may be nested up to 32 levels deep in each batch file. You can also have multiple SETLOCAL / ENDLOCAL pairs within a batch file, and nested batch files can each have their own SETLOCAL / ENDLOCAL pairs.

SETLOCAL does not override the Local Aliases configuration option. Consequently changing aliases inside a SETLOCAL / ENDLOCAL pair affects the definition of aliases of other concurrently executing sessions of ***TCC***.

You can also use SETLOCAL and ENDLOCAL in an alias or at the command line. The maximum nesting level from a command line or alias is 32 levels. Unlike batch files, you are responsible for matching the SETLOCAL / ENDLOCAL calls from an alias or command line; ***TCC*** will not perform an automatic ENDLOCAL.

An ENDLOCAL is performed automatically at the end of a batch file, or when returning from a "GOSUB filename". If you invoke one batch file from another without using CALL, the first batch file is terminated, and an automatic ENDLOCAL is performed; the second batch file inherits the settings as they were prior to any SETLOCAL.

You can "export" modified variables from inside a SETLOCAL / ENDLOCAL block. See ENDLOCAL for details.

Options:

GLOBALLISTS	Prevent SETLOCAL from switching to local alias and user-defined variable function lists during the SETLOCAL duration.

4.3.172 SETP

Purpose: Create, modify, or display an environment variable in another process

Format: SETP *pid* [/= /P /R *filename*] var[=value]

pid	Process ID, or the window title, or the task name
var	The variable name to set. If you are displaying matching variables, the name can contain wildcards.
value	The value of the variable

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/P Pause after displaying each page
/R Read variables and values from a file

See also UNSETP.

Usage:

SETP works by injecting a dll into the specified process and executing a command in that dll to set the environment variable. Depending on your Windows configuration, you may need to be running an elevated session for SETP to work.

If you don't enter any arguments, SETP will display its command dialog.

Example:

Set a variable in the process whose window title begins with "ABC":

```
setp "ABC*" testvar=abcdefg
```

Options:

/= Display the SETP command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.173 SHIFT

Purpose: Allows the use of more than 10 parameters in a batch file, or iterating through its parameters

Format: SHIFT [[-]*n* | /n]

n Number of positions to shift (an unsigned number), or the position of the parameter to be deleted.

Usage:

SHIFT is provided for compatibility with batch files written for CMD, where it was used to access more than the CMD limit of 10 parameters. ***TCC*** supports 8191 parameters (%0 to %8190), so you do not need to use SHIFT for batch files running exclusively under ***TCC***.

SHIFT *n* moves each of the batch file parameters ***n*** positions to the left. The default value for ***n*** is **1**. For example, SHIFT (with no parameters) makes the parameter **%1** become to **%0**, the parameter **%2** becomes **%1**, etc.

SHIFT *-n* moves parameters to the right, but it is limited to moving them back to their position on entry to the batch file.

This form of SHIFT also affects the special parameters **%n$**, **%$** and **%#** (number of command parameters). However, for compatibility with CMD, this form of the SHIFT command does not alter the contents or order of the parameters returned by `%*`. See Batch File Parameters for details.

Examples:

Create a batch file called TEST.BAT:

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```
echo %1 %2 %3 %4
shift
echo %1 %2 %3 %4
shift 2
echo %1 %2 %3 %4
shift -1
echo %1 %2 %3 %4
```

Executing the command below produces the following results:

```
[c:\] test one two three four five six seven
one two three four
two three four five
four five six seven
three four five six
```

SHIFT /***n*** This form of the command irreversibly deletes parameter ***%n*** from the command tail, and shifts all parameters originally to its right **1** position to the left. For example,

```
shift /2
```

leaves parameters **%0** and **%1** unchanged, and moves the value of **%3** to position **%2**, ***%4*** to **%3**, etc.

This form of SHIFT also affects the special parameters **%n$**, **%$** and **%#** (number of batch file parameters). See Batch File Parameters for details.

4.3.174 SHORTCUT

Purpose: Create or display a shortcut

Format: Creation mode
SHORTCUT [/=] *command args dir desc link mode* [*iconfile* [*iconoffset* [*hotkey*]]]

Display mode
SHORTCUT *link*

command	Command the shortcut executes
args	Command line parameters for command
dir	Starting directory
desc	Description
link	Filename of the .LNK file.
mode	Initial window mode: 1=normal, 2=minimized, 3=maximized
iconfile	File containing the icon to use
iconoffset	Icon offset within iconfile
hotkey	Hotkey to invoke the shortcut

Usage:

Creation Mode

SHORTCUT creates a Windows shortcut file and places it in the specified directory. You can run any Windows shortcut from ***TCC*** by entering the name of the *.LNK* file on the command line.

SHORTCUT requires a minimum of 6 parameters. To leave a parameter blank, enter an empty string (2 double quotes "" in its place. Any parameter must be enclosed in double quotes if it includes white space or other special characters. SHORTCUT will not try to fully qualify the command name, startup directory, or link file name if they contain **%** characters. This allows you to embed variables that will be expanded by Windows.

Command is the full path of the executable file to start, or the data file or folder to open. If it is a data file, its extension must be associated with an executable command (see ASSOC) for the shortcut to work.

The ***args*** parameter lists any command line parameters which you want to include when ***command*** is executed. For example, if ***command*** points to a batch file, you might want to include **/c** in ***args*** so that ***TCC*** exits immediately when the batch file is completed.

The ***dir*** parameter is the path of the directory to which you want Windows to switch when the command starts. If you don't care which directory is used, you can omit this parameter by entering "" in its place.

Desc provides a description that is stored internally in the shortcut. It is displayed when the cursor is moved to the shortcut. If you omit the description, enter **""** in its place.

The ***link*** parameter is the drive, path, name and extension of the shortcut file you want to create. The drive and path portion is interpreted according to the usual rules - missing elements default to the current defaults, path is relative to the current default unless it starts with \. The file extension must be **.LNK.**

> **Note:** If you want the shortcut to appear on the Windows desktop, you should include the full path to one of the desktop directory in the command. In most Windows configurations, that directory can be referenced symbolically as **%userprofile\Desktop**. Some Windows versions also include an **All Users\Desktop** directory.

The ***mode*** parameter determines how Windows will display the application or folder when you run the shortcut. It must be **1** for a normal window, **2** for a minimized window (normally placed on the taskbar), or **3** for a maximized window.

The two (optional) parameters, ***iconfile*** and ***iconoffset*** allow you to specify the icon for the shortcut to use. (By default, SHORTCUT will use the default icon in the executable file.)

The final (optional) parameter ***hotkey*** specifies the keystroke which will call the shortcut. The keystroke should be entered in the same format as used in KEYSTACK; for example, **Ctrl-Alt-B**.

Display mode

If you provide a single parameter (a link file name), SHORTCUT will display the values for that link.

If you don't enter any arguments, SHORTCUT will display its command dialog.

Example:

Create a shortcut for TCC that starts in D:\TakeCommand28 in a normal window:

```
shortcut "C:\Program Files\JPSoft\TCMD28\tcc.exe" "" d:\TakeCommand28 "TCC
command processor" tcc.lnk 1 "C:\Program Files\JPSoft\TCMD28\tcc.exe"
```

Options:

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/= Display the SHORTCUT command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.175 SHRALIAS

Purpose: Retains global command history, directory history, alias and user function lists in memory when ***TCC*** is not running

Format: SHRALIAS [/U]

/U(nload)

Usage:

When you close all ***TCC*** sessions, the memory for the global command history, global directory history, global alias and global function lists is released. If you want the lists to be retained in memory even when ***TCC*** is not running, you need to execute SHRALIAS.

The SHRALIAS command starts and initializes SHRALIAS.EXE, a small program which remains active and retains global lists when ***TCC*** is not running. SHRALIAS.EXE must be stored in the same directory as ***TCC*** or in a directory on your PATH. You cannot run SHRALIAS.EXE directly, it must be invoked internally by the SHRALIAS command.

Once SHRALIAS has been executed, the global lists will be retained in memory until you use SHRALIAS /U to unload the lists, or until you shut down your operating system.

If you have an environment variable named SHRALIAS_SAVE_PATH, SHRALIAS will save the alias, history, dirhistory, and function lists to the path specified by SHRALIAS_SAVE_PATH when SHRALIAS exits. The files will be saved in Unicode format as alias.sav, history.sav, dirhistory.sav, and function.sav.

SHRALIAS will not work unless you have at least one copy of ***TCC*** running with global alias, global function, global command history, or global directory history enabled. If no global list is found, SHRALIAS will display an error.

If you start SHRALIAS from a temporary ***TCC*** session which exits after starting SHRALIAS, the ***TCC*** session may terminate and discard the shared lists before SHRALIAS can attach to them. In this case SHRALIAS.EXE will not be loaded. If you experience this problem, add a short delay with the DELAY command after SHRALIAS is loaded and before your session exits.

SHRALIAS will not work in detached sessions (i.e., those started with DETACH, or with the AT utility), due to security issues within Windows. Therefore the SHRALIAS command is ignored for detached sessions.

For more information about global histories, function and alias lists, see Local and Global History Lists, Local and Global Functions, Local and Global Aliases.

Option:

/U Shuts down SHRALIAS.EXE. All global command history, directory history, function and alias lists will be released from memory when the last copy of ***TCC*** exits unless SHRALIAS is loaded again before that time.

4.3.176 SMPP

Purpose: Send simple text (**SMS**) messages, typically to text-enabled cellular phones and similar devices

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Format: SMPP [/IPv6] *server username password recipient message*

server	SMS server name
username	User name for the SMS server
password	Password for the SMS server
recipient	Phone number or dotted IP of an SMS-enabled device
message	The message to send
/IPv6	Use IPv6 instead of IPv4.

See also: SENDMAIL, SNPP.

Usage:

SMPP sends ***message*** through standard Internet Paging Gateways. Depending on your system configuration, you may need to start an Internet connection before using SMPP. See your service provider for specific requirements.

4.3.177 SNPP

Purpose: Send messages to alphanumeric pagers

Format SNPP [/IPv6] *server pagerid message*

server	The SNPP server name
pagerid	The ID of the pager to receive the message
message	The message to send
/IPv6	Use IPv6 instead of IPv4.

See also: SENDMAIL, SMPP.

Usage:

SNPP sends ***message*** to alphanumeric pagers through standard Internet Paging Gateways. Depending on your system configuration, you may need to start an Internet connection before using SNPP.

4.3.178 SNMP

Purpose: Send SNMP traps

Format: SNMP *remotehost trapOID* "*value*" [*username password*]

remotehost	Host name receiving the trap
trapOID	OID of the trap
value	Description
username	User name for SNMP v3 trap
password	Password for SNMP v3 trap

Usage:

SNMP normally sends an SNMPv2 trap. If you specify a user name and password it will send an SNMPv3 trap.

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The following symbolic names are recognized and translated:

Trap Name	OID
coldStart	1.3.6.1.6.3.1.1.5.1
warmStart	1.3.6.1.6.3.1.1.5.2
linkDown	1.3.6.1.6.3.1.1.5.3
linkUp	1.3.6.1.6.3.1.1.5.4
authenticationFailure	1.3.6.1.6.3.1.1.5.5
egpNeighborLoss	1.3.6.1.6.3.1.1.5.6
enterpriseSpecific	1.3.6.1.6.3.1.1.5.7

4.3.179 SPONGE

Purpose: Read standard input and write it to a file.

Format: SPONGE [/A] *outputfilename*

/A(ppend)

Usage:

Unlike output redirection, SPONGE reads all its input before opening the output file. This allows constructing pipes that read from and write to the same file. SPONGE reads standard input into a memory buffer, so piping extremely large amounts of data (i.e., multiple gigabyte) is not recommended.

Options:

/A **A**ppend output to *outputfilename*. The default is to overwrite *outputfilename*.

4.3.180 SSHEXEC

Purpose: Connect to server using SSH and start default shell

Format: SSHEXEC [/A /F *filename* /Gn /H *fwhost* /IPV6 /R *port* /S /T *type* /U *user* /P *password*] *host* /L *name*[:*password*] "*command* ..."

/A (firewall autodetect)
/F (file for stdin)
/G (log level)
/H (firewall host)
/IPv6
/L (user:password)
/P (firewall password)
/R(emote port)
/S(tatus messages)
/T (firewall type)
/U (Firewall user name)

host - Host name
command - Command to pass to the host's default shell

Usage:

The SSHEXEC command establishes a Secure Shell (SSH) connection to a server and starts up the user's default shell. Press Ctrl-C to disconnect from the other system.

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If you don't specify a user name, SSHEXEC will use the current user name. You can provide a password on the command line by appending it to the user name (i.e., "User:Password"). If you don't provide a password, SSHEXEC will prompt for it.

If you want to do redirection on the remote system, enclose the command argument list in double quotes. The double quotes will be removed before passing the commands to the remote system.

SSHEXEC will display the host name & user name and prompt for a line of input, then send it to the host shell and return to the prompt to wait for the next line. SSHEXEC will display any output sent by the host to STDOUT and STDERR. When you type "exit" at the prompt, or the host disconnects SSHEXEC will exit.

Options:

/A Automatically detect and use firewall system settings, if available

/F Send the contents of a file as the stdin input to the SSH server.

/G*n* The level of detail that is logged (for debugging connection issues). The possible values are:

0 No messages are logged
1 Informational events such as SSH handshake messages are logged
2 Detailed data such as individual packet information is logged
3 Debug data including all relevant sent and received bytes are logged

/H Firewall host name

/IPV6 Use IPv6 instead of IPv4

/L User name (ID).

/P Firewall user password

/R Remote port number

/S Display SSH status messages (for debugging connection issues)

/T*n* Firewall type, where ***n*** is:

1 Connect through a tunneling proxy. The firewall port is set to 80.
2 Connect through a SOCKS4 proxy. The firewall port is set to 1080.
3 Connect through a SOCKS5 proxy. The firewall port is set to 1080.
10 Connect through a SOCKS4A proxy. The firewall port is set to 1080.

/U Firewall user name

4.3.181 START

Purpose: Start a program in another session or window

Format: START ["*title*"]
[/= /AFFINITY=
n /ABOVENORMAL /BELOWNORMAL /BREAKAWAY /COLOR=*BF* /DESKTOP=*name*
/ELEVATED /FEEDBACK=off|
on /HIGH /LOW /JOB=*jobname* /NOPINNING /NORMAL /PARENTAFFINITY /REALTI
ME /VDESKTOP=*id* /B /C /K /D*path* /I /INV /MAX /MIN /NODE

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n /POS=*x,y,width,height* /L /LA /LD /LF /LH /MONITOR=n /RUNAS *user password* /SIZE=rows,cols /TAB /TABNA /WAIT /WIN /PGM] "*progname*" [*command*]

title	Title to appear on title bar
path	Startup directory
progname	Program name (not the session name)
command	Command to be executed by ***progname***

/ABOVENORMAL	Priority	/LF	Local functions
/AFFINITY	Multiple CPUs	/LH	Local history list
/B	No new console	/LOW	Priority
/BELOWNORMAL	Priority	/MAX	Maximized window
/BREAKAWAY	Break away from job	/MIN	Minimized window
/C	Close when done	/MONITOR	Monitor to use
/COLOR	Default console colors	/NODE	NUMA node
/D	Startup directory	/NOPINNING	Don't pin to taskbar
/DESKTOP	Start desktop	/NORMAL	Priority
/ELEVATED	Start as admin	/PARENTAFFINITY	Inherit parent's affinity
/FEEDBACK	Cursor feedback mode	/PGM	Program name
/HIGH	Priority	/POS	Position of window
/I	Inherit environment	/REALTIME	Priority
/INV	Invisible window	/RUNAS	Run as other user
/JOB	Start process in job	/SIZE	Screen buffer size
/K	Keep when done	/TAB	Start in ***Take Command*** tab window
/L	Local lists	/TABNA	Start in inactive ***Take Command*** tab
/LA	Local aliases	/VDESKTOP	Start on the specified virtual desktop
/LD	Local directory history	/WAIT	For session to finish
		/WIN	Windowed session

See also: DETACH.

Usage:

START is used to begin a new session, and optionally run a program in that session. If you use START with no parameters, it will begin a new ***TCC*** session. If you add a ***command***, START will begin a new session or window and execute that command.

START will return to the ***TCC*** prompt immediately (or continue a batch file), without waiting for the program to complete, unless you use /WAIT.

If ***title*** is included, it will appear on the task list and **Alt-Tab** displays instead of the program name. ***Title*** must be enclosed in double quotes, and cannot exceed 127 characters. ***Title*** will be ignored if you also specify /ELEVATED.

START always assumes that the first quoted string on the command line is the ***title***. If there is a second quoted string it is assumed to be the ***command***. As a result, if the name of the program you are starting contains white space (and must therefore be quoted), and you don't specify a ***title,*** START will interpret the first quoted string as the ***title***, not the ***command***. To address this, use the /PGM switch to indicate explicitly that the quoted string is the program name, or include a title before the program name. For

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example, to start the program *C:\Program Files\Proc.Exe* you could use either of the first two commands below, but the third command would not work:

Valid

```
start /PGM "C:\Program Files\Proc.Exe"
start "test" "C:\Program Files\Proc.Exe"
```

Invalid

```
start "C:\Program Files\Proc.Exe"
```

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

START offers a large number of switches to control the session you start. In most cases you need only a few switches to accomplish what you want. The list below summarizes the most commonly used START options, and how you can use them to control the way a session is started.

Window controls: /MAX, /MIN, and /POS allow you to start a character-mode windowed session in a maximized window, a minimized window, or a window with a specified position and size, respectively. /INV starts an invisible window. /B starts the program in the current console window. The default is /WIN, which permits Windows to choose the position and size of the non-maximized window. If you start a graphics mode program, only /MAX and /POS are effective, and the position and size information associated with /POS is ignored. Windows will use the size, but not the position of the same program when last used in **RESTORE** mode. If you want to control the window size and placement of a graphics mode program, use the ACTIVATE command after the window has been opened.

Session priority: The options /ABOVENORMAL, /BELOWNORMAL, /HIGH, /LOW, /NORMAL and /REALTIME allow you to select the new session's priority.

Program controls.

If ***progname*** is in the "App Paths" registry (either HKCU or HKLM), its associated "Path" value (if it exists) is inserted into the beginning of the PATH in the environment inherited by the program.

If ***progname*** is the name of a directory instead of an executable program, ***TCC*** will start your default Windows shell (usually Windows Explorer) in the specified directory.

Progname inherits the environment as it exists when START is executed, unless /I is used to select the default environment.

If ***progname*** specifies **TCC.EXE**, the options /L, /LA, /LD, /LF and/LH provide control over the use of local or global lists. See details below.

The initial directory for ***progname*** is the current default directory, unless otherwise specified using the /D option.

When ***command*** is finished, /C closes the session (the default for Windows sessions), while /K keeps it and displays the prompt (the default for character mode sessions).

The Process ID of the detached session or program is returned in the _STARTPID internal variable.

Options:

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/= Display the START command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/ABOVENORMAL Set the priority above normal.

/AFFINITY=n On multiple processor machines, set the processor affinity for this process. /AFFINITY takes a hex argument for the processor mask -- i.e., to set the affinity for cpu's 1 and 3, set /AFFINITY=5. If you also specify a NUMA node (see /NODE), the process is restricted to running on those processors in common between the specified affinity mask and the NUMA node. If no processors are in common, the process is restricted to running on the specified NUMA node.

/B The program is started without creating a new window or console, i.e. in the TCC window. Normally, the application is started in its own window. For compatibility with CMD, /B also disables Ctrl-C processing for the program.

/BELOWNORMAL Set the priority below normal.

/BREAKAWAY The child process is not associated with the TCC job (see JOBS). This requires that ***TCC*** is running in a job with the breakaway option enabled..

/C Start the program in a new TCC window and close the TCC window when the application ends.

/COLOR=*BF* Set the default color for the new console window. ***B*** is the background color (hex 0-F) and ***F*** is the foreground color (hex 0-F).

/D Specifies the startup directory. Include the directory name immediately after the /D, with no intervening spaces or punctuation.

/DESKTOP Specify the window station and desktop where the app should be started. If you don't enter a backslash (\), the argument is assumed to be the desktop on ***WINSTA0*** where you want the app to start.

/ELEVATED Start the program elevated, with full admin privileges. /ELEVATED cannot be used in combination with /RUNAS. If you specify /ELEVATED, any ***title*** on the command line will be ignored (this is a Windows limitation).

/FEEDBACK=*on*|*off* **ON -** The cursor is in feedback mode for two seconds after the process is started, and the "Working in Background" cursor is displayed. If during those two seconds the process makes the first GUI call, the system gives five more seconds to the process. If during those five seconds the process shows a window, the system gives five more seconds to the process to finish drawing the window. The system turns the feedback

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	cursor off after the first call to GetMessage, regardless of whether the process is drawing. **OFF** - The feedback cursor is forced off while the process is starting (the normal select cursor is displayed).
/HIGH	Start the window at high priority.
/I	Inherit the default (startup) environment, rather than the current environment.
/INV	Start the session or window as invisible. No icon will appear and the session will only be accessible through the Task Manager or Window List.
/JOB=*jobname*	Start the new process in the specified job (see JOBS). Cannot be used with /RUNAS.
/K	Start the program in a new TCC window and keep the TCC window open when the program ends. (Use the EXIT command to close the TCC window.)
/L	Start TCC with local alias, function, history and directory history lists. This option is equivalent to specifying all of /LA, /LD, /LF, and /LH (below).
/LA	Start TCC with a local alias list. See ALIAS for information on local and global alias lists.
/LD	Start TCCwith a local directory history list. See Local and Global History Lists for information on local and global directory history lists.
/LF	Start TCC with a local function list. See FUNCTION for information on local and global function lists.
/LH	Start TCC with a local history list. See Local and Global History Lists for information on local and global history lists.
/LOW	Start the window at low priority.
/MAX	Start the session or window maximized.
/MIN	Start the session or window minimized.
/MONITOR=n	Start the program on the specified monitor (1 to n). This will only work with apps that do not try to position their window at startup, and you cannot combine this switch with /POS.
/NODE n	Start the program using the specified NUMA node (***n*** is a decimal integer). See also /AFFINITY.
/NOPINNING	Any windows created by the new process cannot be pinned on the taskbar.
/NORMAL	Start the window at normal priority.

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/PARENTAFFINITY The process inherits its parent's affinity.

/PGM The quoted string following this option is the program name. Any additional text beyond the quoted string is passed to the program as its parameters, so to use other START switches you must place them before /PGM which must be the last option for START. You can use /PGM to allow START to differentiate between a quoted long filename and a quoted title for the session.

/POS=left,top,width,height Start the window at the specified screen position. The top left corner of the screen is 0,0.

/REALTIME Start the window at realtime priority.

/RUNAS Run a command in the context of the specified user. The syntax is:

```
/RUNAS user@domain password .
```

If "domain" is not specified, the local database is checked for the username. If you specify * for the password, START will prompt you to enter the password. (Useful when you don't want to put the password in a batch file.) /RUNAS cannot be used in combination with /ELEVATED.

If the user name begins with **".\"** (without the quotes) , ***TCC*** will substitute the computer name for the **"."**.

/SIZE=rows,columns Specifies the screen buffer size. Rows is the number of text rows and columns is the number of text columns. (This is not the size of the session's window.)

/TAB Start the command in a new TCC tab window, and activate the new window. The command will usually be a Windows console mode application, but ***Take Command*** can also run many simple GUI applications in a tab window (provided the application does not have multiple parent windows).

/TABNA Start the command in a new TCC tab window, but don't activate the new window.

/VDESKTOP=*id* Start the app on another virtual desktop. *id* can be either a desktop number (1-n), the GUID for that desktop, or the desktop name. See VDESKTOP for more details. Note that Windows doesn't have an API to actually start on another desktop, so ***TCC*** starts it on the local desktop and them immediately moves it -- you'll see a flash when the window starts and then disappears.

/WAIT Wait for the new session or window to finish before continuing.

/WIN Start the new console session as a window (this is the default.) See also /B.

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4.3.182 STATUSBAR

Purpose: Display a message on the ***Take Command*** status bar

Format: STATUSBAR *message*

message Text to display.

Usage:

STATUSBAR parses and expands ***message***, and displays it on the ***Take Command*** status bar. ***TCC*** must be running in a ***Take Command*** tab window.

4.3.183 SWITCH

Purpose: Select commands to execute in a batch file based on a value

Format:
SWITCH *expression*
CASE *value1* [.OR. *value2* [.OR. *value3* ...]]
[commands]
CASE *value4*
[*commands*]
CASEALL
[*commands*]
[DEFAULT
commands]
ENDSWITCH

expression	An environment variable, internal variable, variable function, text string, or a combination of these elements, that is used to select a group of commands.
value1, value2	A value to test or multiple values connected with **.OR.**
commands	One or more commands to execute if the expression matches the value. If you use multiple commands, they must be separated by command separators or placed on separate lines of a batch file.

See also: IF and IFF.

Usage:

SWITCH can only be used in batch files. It allows you to select a command or group of commands to execute based on the possible values of a variable or a combination of variables and text.

The SWITCH command is always followed by an ***expression*** created from environment variables, internal variables, variable functions, and text strings, and then by a sequence of CASE statements matching the possible ***values*** of ***expression***, an optional DEFAULT statement, and terminated by an ENDSWITCH statement. Each CASE statement and the DEFAULT statement may be followed by one or more ***commands***.

TCC evaluates ***expression***, and sequentially compares it with the list of ***values*** in the CASE statements, starting with the first one. Comparison rules are the same ones used for the **EQ** relational operator; see Numerical and String Comparisons for details. If a match is found, the ***commands*** following the matched CASE statement are executed, and the batch file continues with the commands that follow ENDSWITCH. If there are any matches in subsequent CASE statements, they are ignored. The ***value*** in a CASE

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statement can be literals, or variables or functions (which will be expanded prior to the comparison with the SWITCH expression).

CASE statements can include wildcards and regular expressions.

The optional CASEALL statement should follow all of the CASE statements but precede DEFAULT. If any preceding CASE block was executed, CASEALL will also be executed; otherwise it is ignored.

If during the search for a match the DEFAULT statement is encountered, the ***commands***, if any, following it are executed, and the batch file continues with the commands that follow ENDSWITCH. Any CASE statements after the DEFAULT statement are ignored.

SWITCH commands can be nested.

You can exit from all SWITCH / ENDSWITCH processing by using GOTO to a line past the last ENDSWITCH.

Restrictions

Each SWITCH, CASE, DEFAULT and ENDSWITCH statement must be on a separate line, and may not be followed by a command separator. (This is the reason SWITCH cannot be used in aliases.) There is no restriction on grouping and command separator use in the ***commands*** for a CASE or DEFAULT.

You can link a list of values in a single CASE statement with .OR., but not with .AND. or .XOR..

Examples:

The batch file fragment below displays one message if the user presses **A**, another if the user presses **B** or **C**, and a third one if the user presses any other key:

```
inkey Enter a keystroke: %%key
switch %key
case A
   echo It's an A
case B .or. C
   echo It's either B or C
default
   echo It's none of A, B, or C
endswitch
```

In the example above, the value of a single environment variable was used for ***expression***. However, you can use other kinds of expressions if necessary. The first SWITCH statement below selects a command to execute based on the length of a variable, and the second bases the action on a quoted text string stored in an environment variable:

```
switch %@len[%var1]
case 0
   echo Missing var1
case 1
   echo Single character
...
endswitch
```

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```
switch "%string1"
case "This is a test"
   echo Test string
case "The quick brown fox"
   echo It's the fox
...
endswitch
```

4.3.184 SYNC

Purpose: Synchronize two directories

Format: SYNC [/= /A:... /C /D /E /F /G /J /K /L /M /N[enrst] /O /O:[-]acdeginorstuz /P /Q /R /S[[+]n] /T /V /W /X /Y /Z] *dir1 dir2*

dir1 First directory (and source for a /W)
dir2 Second directory (and target for a /W)

/A:...	Attribute switch	/O	Only if no target file
/C.	Changed source files	/O:...	Sort order
/D	Copy encrypted files	/P	Prompt
/E	No error messages	/Q	Quiet
/F	No empty subdirectories	/R	Replace
/G	Display percentage completed	/S	Subdirectories included
/H	H(idden included)	/T	Totals
/I"text"	Match description	/V	Verify
/J	Restartable copy	/W	Delete non-matching target
/K	Keep RDONLY attribute	/Wait	Wait between block copy
/L	ASCII-mode FTP transfer	/X	Clear archive bit
/M	Modified files (not Archived)	/Y	Suppress prompt
/N	Disable	/Z	Overwrite read-only

See also: COPY and MOVE.

File Selection

Supports command dialog, extended wildcards and ranges.

Internet: Can be used with FTP servers.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

SYNC will synchronize two directories, copying the updated files from each directory to the other. If you don't specify any arguments, SYNC will display its command dialog.

SYNC sets three internal variables:

%_sync_dirs	The number of directories created
%_sync_files	The number of files copied
%_sync_errors	The number of errors

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Example:

Synchronize the directories C:\MyData and D:\MyData, including subdirectories (but not empty subdirectories), and delete any files in D:\MyData that don't exist in C:\MyData:

```
sync /S /F /W C:\MyData D:\MyData
```

Options:

/= Display the SYNC command dialog to help you set the directory and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. See the cautionary note under **Advanced Features** above before using **/A:** when both ***dir1*** and ***dir2*** contain file descriptions. Hidden or system files selected by this option overwrite hidden or system files in the target directory.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Copy files only if the destination file exists and is older than the source file. This option is useful for updating the files in one directory from those in another without copying any files not already in the target directory.

/D Force copy of an encrypted file even when the target will be decrypted.

/E Suppress all non-fatal error messages, such as **File not found** or **Can't copy file to itself**. Fatal error messages, such as **Drive not ready**, will still be displayed. This option is most useful in batch files and aliases.

/F When used with **/S**, SYNC will not create any empty subdirectories.

/G Displays the percentage copied, the transfer rate (in Kbytes/second), and the estimated time remaining. Useful when copying large files across a network or via FTP to ensure the copy is proceeding. When /V is also used, reports percentage verified.

/H Copy all matching files including those with the hidden and/or system attribute set. See the cautionary note under **Advanced Features** above before using /H when both ***dir1*** and ***dir2*** contain file descriptions.

/I"*text*" Select source files by matching text in their descriptions. See Description Ranges for details.

/J Copy the files in restartable mode. The copy progress is tracked in the destination file in case the copy fails. The copy can be restarted by specifying the same source and destination file names.

/K (Keep read-only attribute) SYNC normally maintains the hidden and system attributes, sets the archive attribute, and removes the read-only attribute on the target file. **/K** tells SYNC to also maintain the read-only attribute on the ***destination*** file.

/L Perform FTP transfers in ASCII mode, instead of the default binary mode.

/M Copy only those files with the archive attribute set, *i.e.*, those which have been modified since the last backup. The archive attribute of the source file will not be cleared after copying; to clear it use the /X switch, or use ATTRIB.

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/N Do everything except actually perform the copy. This option is useful for testing the result of a complex SYNC command. /N displays how many files would be copied. /N does not prevent creation of destination subdirectories when it is used with /S.

A **/N** with one or more of the following arguments has an alternate meaning:

- **d** Skip hidden directories (when used with /S)
- **e** Don't display errors
- **j** Skip junctions (when used with /S)
- **n** Don't update the file descriptions
- **r** A SYNC /W will delete to the recycle bin (unless the file matches the RECYCLEEXCLUDE environment variable).
- **s** Don't display the summary
- **t** Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*

/O Only if no target file.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/P Ask the user to confirm each copy and delete. Your options at the prompt are explained in detail under Page and File Prompts. See also: the /Q option below.

/Q Don't display filenames, percentage copied, total number of files copied, etc... When used in combination with the /P option above, it will prompt for filenames but will not display the totals. This option is most often used in batch files. See also /T.

/R Prompt the user before overwriting an existing file. Your options at the prompt are explained in detail under Page and File Prompts.

/S Copy the subdirectory tree starting with the files in the source directory plus each subdirectory below that. If the destination subdirectories don't exist, SYNC will attempt to create them. If SYNC /S creates one or more destination directories, they will be added automatically to the extended directory search database.

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If you attempt to use SYNC /S to copy a subdirectory tree into part of itself, SYNC will detect the resulting infinite loop, display an error message and exit.

If you specify a number after the /S, SYNC will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, SYNC will not sync any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not sync anything in *\a* or *\a\b*.

/T Turns off the display of filenames, like /Q, but does display the total number of files copied.

/V Verify each disk write by performing a true byte-by-byte comparison between the source and the newly-created target file. This option will significantly increase the time necessary to complete a SYNC command.

/W Delete files in ***dir2*** that do not exist in ***dir1***.

/Wait=*n* Pause for *n* milliseconds between each block copied from the source to the target file. This is useful for slow networks and very large file copies; it prevents SYNC from monopolizing all of the network I/O.

/X Clear the archive attribute from the source file after a successful copy.

/Y If you have the COPY Prompt on Overwrite option set, you can suppress the prompt with /Y.

/Z Overwrite ***destination*** files regardless of their attributes. Without this option, SYNC will fail with an "Access denied error" if the ***destination*** file has its read-only attribute set, or (depending on other options) its hidden or system attribute set. Required to overwrite read-only targets regardless of other options. Required to overwrite hidden or system targets unless the source also has the attribute, and either /H or /A: is used to select it.

4.3.185 TABCOMPLETE

Purpose: Customize TCC filename ("tab") completion

Format: TABCOMPLETE [/= /L *script* /P /S /U *script*]

/L (script) /S (active scripts)
/P(ause) /U(nload)

Usage:

TABCOMPLETE allows you to create scripts to customize TCC's filename ("tab") completion, using any scripting language supported by TCC (i.e., BTM, Lua, Python, REXX, etc.).

You can create a maximum of 256 tab completion scripts, each of which can process any number of command names, variables, functions, etc. When TCC starts, it will automatically load any scripts in the "Complete" subdirectory in the TCC installation directory.

A tab completion script is passed four arguments:

Command - the name of the command at the beginning of the command line

Argument - the current argument being evaluated (double quoted)

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Index - the offset in the command line of the beginning of Argument

CommandLine - the entire command line (double quoted)

When the script finishes, it should return 0 if it processed the completion, and save the result(s) in the TABCOMPLETIONRESULT environment variable. If the script has multiple completion results, they should be added to TABCOMPLETIONRESULT, separated by a space (and double quoted if they contain any whitespace).

TCC will examine the contents of TABCOMPLETIONRESULT; if it contains a single value TCC will insert it at the completion point on the command line. If there are multiple return values, TCC will display a popup window for selection (like the F7 completion window).

Options:

/= Display the TABCOMPLETE command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/L Load a tab completion script

/P Pause after displaying a page of script names (only used with /S)

/S Display the names of all active tab completion scripts

/U Unload a tab completion script.

4.3.186 TAIL

Purpose: Display the end of the specified file(s)

Format: TAIL [*range* ... [/I"*text*"]] [/= /A:[attrlist] /B /C*nn* /F /N+x /N[ ]n /O:[-]acdeginorstuz /P /Q /V] {@*file* | *file*} ...

file The file or list of files that you want to display
@file A text file containing the name of a file to display in each line (see @file lists for details)

/A: (Attribute select)
/B(ell)
/C (number of bytes)
/F(ollow)
/I"text" (description range)
/N+x (skip x lines before display)
/N(umber of lines)
/O:... (Order)
/P(ause)
/Q(uiet)
/V(erbose)

See also: HEAD, LIST, and TYPE.

File Selection

Supports command dialog, extended wildcards, ranges, multiple file names, and include lists.

Internet: Can be used with FTP servers, including HTTP/HTTPS files, e.g.

```
tail "https://jpsoft.com/notfound.htm"
```

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Usage:

The TAIL command displays the last part of a file or files. It is normally only useful for displaying ASCII text files (i.e. alphanumeric characters arranged in lines separated by CR/LF). Executable files (*.EXE*) and many data files may be unreadable when displayed with TAIL because they include non-alphanumeric characters or unusual line separators.

You can press **Ctrl-S** to pause TAIL's display and then any key to continue.

The following example displays the last 15 lines of the files *MEMO1* and *MEMO2*:

```
tail /n15 memo1 memo2
```

To display text from the clipboard use **CLIP:** as the file name. **CLIP:** will not return any data if the clipboard does not contain text. See Highlighting and Copying Text for additional information on **CLIP:**.

If you don't enter any arguments, TAIL will display its command dialog.

TAIL sets two internal variables:

%_tail_files	The number of files displayed
%_tail_errors	The number of errors

TAIL will recognize Unicode (UTF-16) files based on either a BOM or specific UTF-16 sequences at the beginning of the file. TAIL will recognize UTF-8 files based on either a BOM or UTF-8 extended characters within the first 2K of the file.

- ***FTP Usage***

TAIL can also display files on FTP servers. For example:

```
tail "ftp://ftp.microsoft.com/index"
```

You can also use the IFTP command to start an FTP session on a server, and then use an abbreviated syntax to specify the files and directories you want.

- ***NTFS File Streams***

TAIL supports file streams on NTFS drives. You can type an individual stream by specifying the stream name, for example:

```
tail streamfile:s1
```

- ***Pipes***

TAIL can optionally be used with an input pipe. For example:

```
dir | tail /n2
```

This is not ordinarily feasible in Windows because pipes can't be "rewound", and therefore the pipe has to be written to a temporary memory buffer and the TAIL taken from there. Consequently, this limits the amount you can actually display in TAIL to less than a million bytes when the input is piped.

Examples:

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`tail /n 5 xxx`	displays the last 5 lines of file *xxx*
`tail /n+20 /n 999999 xxx`	skip 20 lines, then display 999999 lines of *xxx*
`tail /n+1001 /n 1 xxx`	skip 1001 lines, then display 1 line of *xxx*
`set x=%@execstr[tail /n+1001 /n 1 xxx]`	sets **x** to the contents of line 1002 of *xxx*
`set x=%@execstr[tail /n 2 xxx]`	sets **x** to the contents of the penultimate line of *xxx*

Options:

/= Display the TAIL command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:*[attributelist]*
Select only those files that match the specified attribute(s).See Attribute Switches for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Ignore bell (ASCII 7) characters.

/Cnn*[b|k|m]*
Display ***nn*** bytes, 512-byte ***b***locks, ***k***ilobytes, or ***m***egabytes.

/F Continuously monitor the file and display new lines until the command is interrupted, e.g, using ***Ctrl-C*** or Ctrl-***Break***..

/I"*text*"
Select files by a descriptor range. See the link for details.

/N *n* Display ***n*** lines. The default is **10**. Space between the option switch /N and the number ***n*** is optional. If /N is specified without ***n***, it is equivalent to specifying 0 lines to be displayed, and the command will not generate output, unless /V is also specified.

/N+x Skip ***x*** lines from the beginning of the file, then start displaying lines. If the **/N+** option is specified without specifying ***x***, the option is ignored. This option does not affect the number of lines displayed (unless the start line is too close to the end of file)

Example: `TAIL /N+5 file` will display 10 lines (the default) after skipping 5 lines.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**

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e	Sort by extension
g	Group subdirectories first, then files
i	Sort by description
o	Sort by owner
r	Reverse the sort order for all options
s	Sort by size
t	Same as **d**
u	Unsorted
z	Same as **s**

/P Pause and prompt after displaying each page.

/Q Do not display a header for each file. This is the default behavior, but an explicit /Q may be needed to override an alias that forces /V.

/V Display a header for each file.

4.3.187 TAR

Purpose: Add, update, or delete files in a .tar archive

Format: TAR [/= /A:[[-][+]rhsdaecjot] /A /C /D /F /G /M /O:[-]acdeginorstuz /Q /R /TEST /U /V] *tararchive* [@*file*] *file*...

tararchive	The tar file to work with
file	The files(s) to be added to the tar archive

/A:... (attribute switch)
/A(dd)
/C(ontents)
/D(elete)
/F(reshen)
/G(zip)
/M(ove)
/O:... (sort order)
/P(rogress)
/R(ecurse)
/TEST
/U(pdate)
/V(iew)

See also UNTAR.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is:: **[1] dirs tar [2*] ***

Usage:

TAR is compatible with archives created by the Linux / UNIX tar utility. Unless you use the /G option, the tar file will be uncompressed. If you don't specify any arguments, TAR will display its command dialog.

You can specify a pathname for tar*archive*. If you don't provide an extension, and the filename as entered doesn't exist, TAR adds ".tar". If you don't specify an operation, TAR will default to Add.

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TAR supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is compressed, TAR will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be be added the TAR archive.

TAR sets two internal variables:

%_tar_files	The number of files archived
%_tar_errors	The number of errors

Option:

/= Display the TAR command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file(s) to the tar file. (This is the default.)

/C Display (on standard output) the contents of a file in the tar archive.

/D Delete the specified file(s) from the tar file.

/F Update only those files that currently exist in the tar file, and which are older than the files on disk.

/G When all the files have been added to the archive, compress the entire archive using gzip compression and create a .tar.gz archive.

/M Delete the files from the disk after adding them to the tar file.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted

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z Same as **s**

/P Display the progress (0 - 100%) for each file as it is archived.

/Q Don't display the files being archived.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the tar archive.

/TEST Test the integrity of the TAR file (header and contents). Any errors will be displayed on STDERR.

/U Update files which either don't exist in the tar, or which are older than the files on disk.

/V View the list of files in the tar file (date, time, size, and filename).

4.3.188 TASKBAR

Purpose: Call Windows Taskbar functions

Format: TASKBAR [/=] *command*

Usage:

TASKBAR calls the Windows Taskbar to display dialogs or to manipulate the top level windows.

If you don't enter any arguments, TASKBAR will display its command dialog. The command dialog allows you to select the desired dialog from a list.

Options:

/= Display the TASKBAR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

Cascade Cascade all top level windows.

Computers Display the Find Computers dialog (requires Active Directory Domain Services)

Control Display the Control panel.

Customize Display the Customize Taskbar dialog.

Date Display the Date and Time dialog.

Desktop Show the Windows desktop.

Help Display the Help and Support Center dialog.

HTile Horizontally tile all top level windows.

Lock Toggle the taskbar lock.

Logoff Display the Logoff dialog.

Min Minimize all windows.

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Max	Maximize all windows.
Printers	Display the Printers and Faxes dialog.
Properties	Display the Taskbar Properties dialog.
Run	Display the Run dialog.
Search	Display the Search dialog.
Shutdown	Display the Shut Down Computer dialog.
Start	Display the Start Menu.
Task	Display the Windows Task Manager dialog.
VTile	Vertically tile all top level windows.

4.3.189 TASKDIALOG

Purpose: Display a Windows Task Dialog

Format: TASKDIALOG [/A[F]
[X]"*Details*" /AC"*text*" /AE"*text*" /B"text" /C /DB:n /DR:n /E /F[EISW]"text" /H /I /L /N /P=*x, y* /R"*text*" /S /T:n /V"*text*" /W /X] *buttontype* "*title*" "*instruction*" [*text*]

buttontype	One or more of **OK**, **YES, NO**, **RETRY, CANCEL**, and/or **CLOSE**
title	Text for the task dialog title
instruction	Text for the main instruction
text	Optional additional text that appears below the main instruction, in a smaller font

/A (details)
/B(utton text)
/C(heckbox)
/DB (default button)
/DR (default radio button)
/E (shield)
/F(ooter)
/H(yperlinks)
/I(nformation icon)
/L(inks)
/N (links)
/P(osition)
/R(adio buttons)
/S(top icon)
/T(imeout)
/V(erification)
/W(arning icon)
/X (closable)

See also: INKEY, INPUT, MSGBOX and QUERYBOX.

Usage:

The button the user chooses is indicated using the internal variable %_?. Be sure to save the return value in another variable or test it immediately; because the value of %_? changes with every internal command. The following list shows the value returned for each button:

response	%_?
Yes or OK	10
No	11
Cancel or Close	12
Retry	13

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If there is an error in the TASKDIALOG command itself, %_? will be set to 2.

Since TASKDIALOG doesn't write to standard output, it disables redirection allow you to enter the redirection characters (< and >) in your prompt text. If you want to use pipe characters or command separators, you will need to escape or quote them.

TASKDIALOG creates a popup dialog box. If you prefer to retrieve input from the command line, see the INKEY and INPUT commands.

You can copy the text in a TASKDIALOG window to the clipboard by entering Ctrl-C when the TASKDIALOG window has the keyboard focus.

TASKDIALOG can set three internal variables:

_taskdialog_button - the button pressed to exit TASKDIALOG
_taskdialog_radio - the selected radio button (if any) in TASKDIALOG
_taskdialog_verify - returns 1 if the verify button was checked

Example:

Display a Yes / No message box and take action depending on the result:

```
taskdialog yes no "Copy" "Copy all files to A:?"
if %_? == 10 copy * a:
```

Options:

/A"*details*" TASKDIALOG will show a button that you can click to expand the dialog and view the text specified in "*Details*".

/AC"*text*" The button text for collapsing the expandable information.

/AE"*text*" The button text for expanding the expandable information.

/AF"*details*" Like /A, but TASKDIALOG will show the details at the bottom of the dialog's footer area instead of immediately after the contents.

/AX"*details*" Like /A, but TASKDIALOG will show the expanded details by default.

/B"*text*" Text to use for custom buttons. If you specify one or more /B arguments, TASKDIALOG will not display any of the default buttons. TASKDIALOG will return the button ID of the button pushed in the command variable %_taskdialog_button. TASKDIALOG will number the custom button ID's beginning at 1000. The maximum number of custom buttons is 10.

/C Check the verification checkbox at TASKDIALOG startup. (The checkbox defaults to unchecked.)

/DB:*xx* Default button. This can either be a number (1000-n for custom buttons, or a defined button type:

OK
Yes
No

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Cancel
Retry
Close

/DR:*n* The default radio button (2000 - n, only valid when used with /R).

/E Display the Windows security shield icon.

/F"*text*" Display footer text with an optional icon:

E security shield
I information
S error
W warning

/H Enable hyperlinks embedded in the additional info (/A) text, the footer (/F) text, and the main instruction text. Hyperlinks are created with an <a> HTML tab. For example:

/A"This is a hyperlink: Full details about Take Command 28"

/I Display an icon consisting of a lower case "i" in a circle in the message box.

/L Convert the buttons defined by /B into command links. A command link is a bigger button that has an icon and optionally a second smaller line of text. (To display a second line, append a ^n to the /B argument, followed by the text for the second line.)

/N Custom buttons (see /B and /R) are to be displayed as command links instead of push or radio buttons.

/P Display the task dialog at the specified screen coordinates. If /P is not specified, ***TCC*** will center the dialog.

/R"*text*" Display radio buttons. The selected button will be returned in the command variable %_taskdialog_radio. TASKDIALOG will number the custom radio button ID's beginning at 2000. The maximum number of radio buttons is 10.

/S Display a stop sign icon in the message box.

/T:*n* Timeout after *n* seconds. If TASKDIALOG times out, it will return the Cancel / Close button value (12).

/V"*text*" Display a verification checkbox. If the box is checked, the command variable %_taskdialog_verify will be set when TASKDIALOG exits.

/W Display an exclamation point icon in the message box.

/X The task dialog can be closed using Alt-F4, Escape, and the title bar's close button even if no cancel button is specified.

4.3.190 TASKEND

Purpose: End the specified process

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Format: TASKEND [/F /Ne /R] *pid* | *name* | "*title*"

pid The process ID
name The process name
title Window title

/F(orce) /R(emove process tree)
/Ne (no errors)

See also: TASKLIST, _PID, _DETACHPID, _WINTITLE

Usage:

Windows applications (and Windows itself) run as one or more processes or tasks. You can use the TASKLIST command to display a list of currently-running tasks. TASKEND can be used to end a task.

When you use TASKEND, you must specify the task you want to end by process ID number (either decimal or hex with a leading 0x), by name (usually the name of the executable file that started the task) or by window title. If you use the Window title to specify the task, you must enclose it in double quotes. You can use wild cards and extended wildcards in the window title.

If you use TASKEND without the **/F** option, the effect is much the same as closing a window by clicking the close button. The application is notified of the request to end the task and has an opportunity to save data, prompt whether you mean to shut down, and perform other normal "close" operations.

If you use the **/F** option with TASKEND, the application is shut down abruptly and has no chance to save data. Use of the **/F** option is only recommended for unusual circumstance and advanced users because of the possibility of data loss.

Using this command may require the Windows DEBUG privilege, so (depending on the Windows version and the process you are trying to end) it may not work in a limited user account.

Example:

Force the process whose window title is "BadApp" to exit:

```
taskend /F "BadApp"
```

Option:

/F Forces the task or application to end immediately, with no opportunity to save data, prompt the user, etc. Use this option with caution; it can possibly lead to system instability and data loss or corruption.

/Ne Don't display errors.

/R Delete the process tree (the specified process and all of its child processes).

4.3.191 TASKLIST

Purpose: Display a list of active processes

Format: TASKLIST [/= /C /D /H /I /L /M /N /O /P[*n*] /R /T /U /U"*owner*" /X /Z] [*name*]

name Process name or window title

/C (Priority)
/D (show modules)
/H (threads)
/I(ntegrity)
/L (Startup command)
/M(emory)
/N (class names)
/O(rder by PID)
/P(ause)
/R (process tree)
/T(ime)
/U(ser names)
/U"owner"
/X (hex)
/Z (parent PIDs)

See also: TASKEND.

Usage:

Windows programs run as one or more processes or tasks. You can use the TASKLIST command to display a list of currently-running tasks. TASKLIST displays the process ID number for each running task, the name of the executable program that started the task, and, when available, the window title. You can also optionally display the process priority, the modules (dll's) loaded by that process, the startup command line, the memory usage, the class name of the main window of the process, and the cpu usage.

TASKLIST displays a footer with the total number of processes, and optionally the total number of threads (if you specified /H).

If ***name*** begins with a **=**, it is assumed to be a process ID instead of a process name or window title. The Process ID can either be decimal or hex (with a leading 0x).

TASKLIST will display a * after the process ID of the current process.

You can limit the output of TASKLIST by specifying the task name that you wish to see. The name can contain wildcards and extended wildcards.

Options:

/= Display the TASKLIST command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/C Display the current priority class for each process. The priority values are (in hex):

8000	Above normal
4000	Below normal
100	Realtime
80	High
40	Idle
20	Normal

/D Display the loaded modules for each process.

/H Display the threads for each process (thread ID and priority). If /X is also specified, the TID and priority will be displayed in hexadecimal format.

/I Display the integrity (low, medium, high, system) for the code integrity and the resource integrity.

/L Display the startup command line for each process.

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/M	Display the memory usage for each process.
/N	Display the class name for the main window of each process.
/O	Sort the output by Process ID (PID).
/P[*n*]	Wait for a key to be pressed after each screen page before continuing the display. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.
/R	Display the process tree (the specified process and all of its child processes).
/T	Display the system and user cpu usage for each process.
/U	Display the user name for each process (system processes return an empty string).
/U"owner"	Display only the processes for the specified user.
/X	Display the PIDs in hex.
/Z	Display the parent PIDs in the second column.

4.3.192 TCDIALOG

Purpose: Display the command dialogs

Format: TCDIALOG *command*

command The dialog for the command to execute

See also: Command Dialogs.

Usage:

Most of the file commands (i.e., COPY, DEL, DIR, MOVE, REN, etc.) have an associated dialog that will interactively build the command line for you, without requiring you to memorize switches and the order of options. You can invoke those dialogs with TCDIALOG, with the **/=** command line option, or with Alt-F2 at the command line.

If ***command*** does not have an associated dialog, TCDIALOG returns a usage error.

For example, to display the dialog for COPY:

```
tcdialog copy
```

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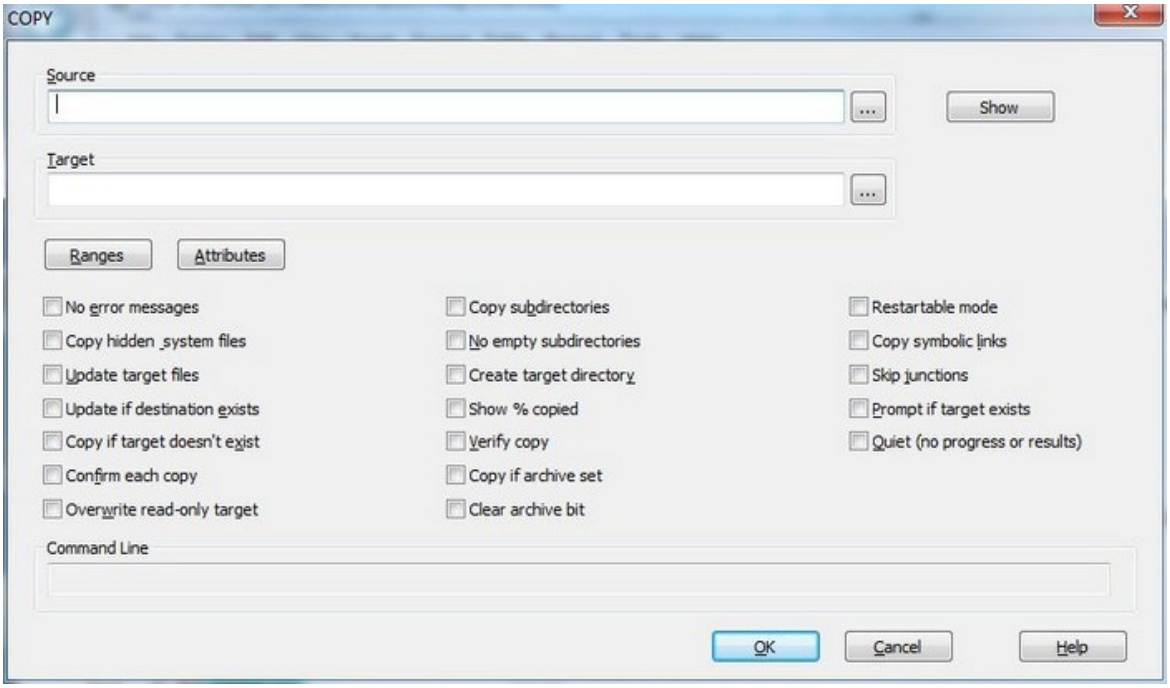

The "Show" button in a command dialog will show all of the files that match the file specification in the edit field to the left. This may include subdirectories if you've selected that option (for example, in COPY or DIR), so it may take a few seconds to populate the list before displaying it.

The "Ranges" button displays another dialog that allows you to select ranges; the Attributes button allows you to select file attributes.

The internal commands that have a command dialog are:

ACTIVATE
ALIAS
ASSOC
ASSOCIATE
ATTRIB
BTMONITOR
BZIP2
CD
CDD
CLIPMONITOR
COPY
DATEMONITOR
DEBUGMONITOR
DEDUPE
DEL
DELAY
DESCRIBE
DIFFER
DIR
DIRHISTORY
DISKMONITOR
ENUMSHARES

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ESET
EVENTLOG
EVENTMONITOR
EVERYTHING
FIREWIREMONITOR
FOLDERMONITOR
FUNCTION
FTYPE
GLOBAL
GZIP
HASH
HEAD
HISTORY
IFTP
INKEY
INPUT
INSTALLED
JABBER
JAR
JOBMONITOR
JOBS
LIBRARY
LIST
LOCKMONITOR
LOG
MD
MKLINK
MKLNK
MONITOR
MOVE
MSGBOX
NETMONITOR
NOTIFY
OSD
PATH
PEE
PIPEVIEW
PLAYAVI
PLAYSOUND
PLUGIN
POWERMONITOR
PRIORITY
PROCESSMONITOR
PSUBST
QUERYBOX
RD
REBOOT
RECORDER
REGDIR
REGMONITOR
REN
REXEC
RSHELL
SCREENMONITOR
SELECT
SENDHTML

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SENDMAIL
SERVICEMONITOR
SERVICES
SET
SETP
SETARRAY
SHORTCUT
START
SYNC
TABCOMPLETE
TAIL
TAR
TASKBAR
TASKLIST
TEE
TOAST
TOUCH
TREE
TYPE
UNBZIP2
UNGZIP
UNJAR
UNQLITE
UNSET
UNSETP
UNTAR
UNZIP
USBMONITOR
UUID
VBEEP
VIEW
WEBFORM
WEBUPLOAD
WINDOW
WMIQUERY
WSETTINGS
WSHELL
WSHORTCUT
ZIP
ZIPSFX
7UNZIP
7ZIP

4.3.193 TCEDIT

Purpose: Calls the ***Take Command*** Editor

Format: TCEDIT [*range* .../C /EXIT /GOTOLINE:*n* /INI /PRINT /START /O:[-]acdeginorstuz] *file*...

file File(s) to edit

/C(reate new file)
/EXIT (edit TCEXIT.BTM)
/GOTOLINE:n
/INI (edit TCMD.INI)
/O:... (Order)
/Print
/START (edit TCSTART.BTM)

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File Selection

Supports extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs btm bat cmd [2*] ***

Usage:

- TCEdit Menus
- TCEdit Toolbar
- TCEdit Status Bar
- TCEdit Windows
- TCEdit Editing Commands

TCEDIT opens a tabbed environment in which INI, script, FTP and HTTP files can be edited. TCEDIT supports syntax colorization for many scripting languages, including .BAT, .BTM, and .CMD batch files, Perl, Python, Ruby, and Tcl. Each argument on the command line is assumed to be a filename to be opened in a separate tab window.

When loading a file, TCEDIIT will first check for the file type (UTF-16, UTF-8 with BOM, or ANSI). If the file doesn't have a UTF-16 or UTF-8 BOM, it is read as an ANSI file with the current console code page, and converted to UTF-8 before editing. It will be converted back to an ANSI file with the current code page when it is saved. This allows TCEDIIT to properly display high-bit ASCII characters in the editor.

If you specify a file that doesn't exist when starting TCEDIIT (and you didn't specify /C), TCEDIIT will display a messagebox asking if you want to create the file.

Yes - Creates a new empty file and opens it in the active tab window
No - Opens an untitled empty tab window (you will need to name the file before saving)
Cancel - Exits TCEDIIT

TCEDIT will select the syntax lexer (colorization) based on the file extension:

.bat	TCMD (or CMD)
.btm	TCMD
.cmd	TCMD (or CMD)
.css	CSS
.htm	HTML
.html	HTML
.lua	Lua
.php	PHP
.pl	Perl
.ps1	PowerShell
.py	Python
.rb	Ruby
.sh	Bash shell
.sql	SQL
.tcl	Tcl/Tk
.vbs	VBScript
.xml	XML

TCEDIT also supports reading from the clipboared (CLIP:), FTP, and HTTP sites.

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The TCEDIT window includes a slider control on the lower right corner of the status bar to control the transparency level. You can also change the transparency with Ctrl-Shift-Mousewheel.

If you are editing a ***TCC*** batch file, use the (default) **TCC Syntax** in the Options menu. If you are editing a batch file to run under CMD.EXE, select **CMD Syntax**. If you select **CMD Syntax, TCEDIT** will reconfigure the batch file parser for maximum **CMD.EXE** compatibility, including disabling ***TCC-***only internal commands, aliases, variables, functions, and plugins.

TCEdit will monitor the filesystem for any changes to the file(s) being edited. If another application modifies a file, the IDE will display a message notifying you of the change and asking if you want to reload the updated file.

Toolbar

The edit window toolbar (which is configurable by clicking on the rightmost down arrow), has a number of icons to control debugging. Each has a tooltip for quick reference:

New	Create a new batch file in a new tab window.
Open	Open an existing batch file in a new tab window.
Save	Save the current batch file.
Print	Print the current batch file.
Cut	Copy the highlighted selection to the clipboard and delete it from the file.
Copy	Copy the highlighted selection to the clipboard.
Paste	Copy the contents of the clipboard to the current cursor location.
Delete	Delete the highlighted selection.
Undo	Undo the last edit.
Redo	Restore the last Undo.
Find	Search for text.
File Properties	Displays information on the current file.
Command Prompt	Start another copy of ***TCC*** (this is useful if you need to perform some tasks while debugging a file.)
Help	Display the online help.

You can get help for the currently selected (highlighted) command / variable / function by pressing Ctrl-F1, or right-clicking the mouse and selecting **Help** from the context menu.

Open will load the file and any associated bookmark file (filename.ext.bmark).

Save will save the file and any associated bookmark file (filename.ext.bmark) and the watched variables file.

Piping Input to TCEdit

TCEdit supports piped input. For example, "dir | TCEdit" will load the contents of the directory into the first tab window.

TCEdit supports piped output with the "File / Write to STDOUT" menu option. This allows you to edit the pipe input before sending it on to be processed by another app. For example:

```
dir /b | tcedit | someapp
```

Options:

/C If the specified file doesn't exist, create it without prompting.

/GOTOLINE:*n* Go to the specified line in the file after opening the tab window. For example:

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tcedit mytest.cmd /gotoline:24 *[yourtest.cmd /gotoline:12 ...]*

/O:... Sort the files before editing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/PRINT Display the Print dialog, print the file and then exit TCEdit. For example:

```
tcedit filename /print
```

4.3.193.1 TCEdit Menus

- File
- Edit
- Options
- View
- Windows
- Tools
- Help

4.3.193.1.1 File

The **File** menu allows you to create new or open existing batch files, save or print the edit windows, or exit TCEdit.

New

Opens a new (empty) edit window.

Open...

Open the specified file in a new edit window.

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Reload from Disk

Reloads the file in the current tab from the disk.

Close

Close the current edit window. If the file has been modified, you will be prompted to save it.

Close All

Close all edit windows. If the files have been modified, you will be prompted to save them.

Save

Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save As...

Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save Copy As...

Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save to STDOUT

Save the contents of the current edit window to STDOUT. This allows you to edit piped input before sending it on to be processed by another app.

Save All

Saves the contents of the current edit window to a file. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Encoding

Files are always treated as UTF-8 inside the editor. This option allows you to specify how the file will be written when it is saved to disk.

Default Codepage	When the file is saved it will be written using the current codepage
UTF16 Little Endian	When the file is saved it will be written as UTF-16
UTF8	When the file is saved it will be written as UTF-8
UTF8 with BOM	When the file is saved it will be written as UTF-8 with a leading BOM

Move to Recycle Bin

Delete the file in the current tab by sending it to the Recycle Bin.

Print...

Sends the contents of the current edit window to the printer. A Print dialog box appears in which you can choose the portion of the screen buffer you wish to print.

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Print Preview

Show a Print Preview window for the current edit window.

Setup Printer...

Displays a standard printer setup dialog box. The options available in the dialog box depend on the printer driver(s) you are using.

File Properties...

Display the Windows properties dialog for the file in the current edit window.

Load Session...

Open a session file previously saved with the **"Save Session"** option (see below), which loads the specified files into tab windows.

Save Session...

Create a file with the names of the files in the current tab windows.

Exit

Ends the current IDE session.

4.3.193.1.2 Edit

To use the Cut, Copy, or Delete commands, you must first select a block of text with the mouse, the keyboard, or with the Select All command, below.

Undo

Undo the last action in the active editor window.

Redo

Redo the last action in the active editor window.

Cut

Copies selected text to the clipboard and deletes it from the editor.

Copy

Copies selected text to the clipboard.

Copy+Append

Append the current selection to the existing clipboard content.

Paste

Copies text from the clipboard to the command line. If the text you insert contains a line feed or carriage return, the command line will be executed just as if you had pressed Enter. If you insert

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multiple lines, each line will be treated like a command typed at the prompt. Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste.

Delete

Deletes the selected text from the editor.

Select All

Marks the entire contents of the active editor window as selected text.

Tabs...

Displays a dialog to set the tab width, indentation width, and whether to insert tabs as spaces and to reformat indentation.

Move Line Up

Move the selected (highlighted) line up one row.

Move Line Down

Move the selected (highlighted) line down one row.

End of Line Characters

CR + LF	Lines end in a Carriage Return + Linefeed (Windows default)
CR	Lines end in a Carriage Return (OSX default)
LF	Lines end in a Linefeed (Linux default)

Insert Directory

Displays the Windows folder selection dialog and puts the selected directory name at the current position in the editor.

Insert Filename...

Displays the Windows file selection dialog and puts the selected filename at the current position in the editor.

Find...

Search the contents of the editor window using regular expressions.

Replace...

Search and replace text in the editor window.

Goto...

Move the cursor to the specified line number.

Advanced

Toggle Comment

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Inserts or removes a **rem** statement at the beginning of the current command line.

Remove Blank Lines

Remove blank lines from the file in the active edit window.

Compress Spaces

Remove extra spaces from the file in the active edit window.

Tabify Selection

Replace spaces with tabs in the selected text in the active edit window.

Untabify Selection

Replace tabs with spaces in the selected text in the active edit window.

Make Selection Upper Case

Convert the selected text to upper case.

Make Selection Lower Case

Convert the selected text to lower case.

View Whitespace

Shows a dot for space & tab characters.

View EOL

Show the CR & LF characters.

Toggle Current Fold

Toggles code folding for the current line.

Toggle All Folds

Toggles code folding for the file in the active edit window. When using **CMD syntax**, this only affects command groups. When using **TCC syntax**, this also affects IF, DO, and SELECT.

Bookmarks

Toggle Bookmark

Create or remove a bookmark on the current line in the active edit window.

Next Bookmark

Go to the next bookmark in the active edit window.

Previous Bookmark

Go to the previous bookmark in the active edit window.

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Clear All Bookmarks

Removes all bookmarks from the active edit window.

The debugger will automatically save bookmarks (the current batch file name + ".bmark"), and reload them the next time the batch file is loaded in the debugger.

Read Only

Change the current edit window to read-only, disabling all modify / write operations.

4.3.193.1.3 Options

TCC Syntax

If enabled, TCEdit will use the TCC syntax colorizer, and enable the extended ***TCC*** commands, variables, and functions. This is the default for .BTM files.

CMD Syntax

If enabled, TCEdit will use the CMD syntax colorizer, and disable the extended ***TCC*** commands, variables, and functions. This is the default for .BAT and .CMD files.

Syntax Colors...

Select the colors used in the syntax colorization from a 16 million color palette. When you click on one of the foreground or background color buttons, TCEdit will display a color picker dialog to let you choose colors.

Font...

Displays a font selection dialog. The font will be used in the edit windows.

Caret Color...

Set the caret color for the tab edit windows.

Display Line Numbers

Display line numbers in the left margin.

Display Folding Margin

Toggles the code folding margin (the + indicator) on and off. Code folding supports command groups and (***TCC*** only) DO, IFF, SWITCH, and TEXT.

Indentation Guides

Toggles the vertical lines at the current indent columns (this is useful for lining up code).

Always on Top

If enabled, forces the TCEdit window to be the top-most (i.e., always on top of other windows).

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Themes

Select a predefined Visual Studio-style theme for TCEdit. This will change the color and appearance of the TCEdit windows and borders.

VS 2005
VS 2008
VS 2010
VS 2012
VS 2012 Dark
VS 2015
VS 2015 Dark
VS 2015 Blue

Window Tabs...

Select the window tab location (top, bottom, left, or right).

4.3.193.1.4 View

Toggle current fold

Toggles folding the current line on & off.

Toggle all folds

Toggles every fold in the file.

Toolbar

Show or hide the IDE toolbar.

Status Bar

Show or hide the status bar.

Command Prompt

Start a new command prompt window.

4.3.193.1.5 Windows

Zoom In

Increase the tab window font size by one point.

Zoom Out

Decrease the tab window font size by one point.

Reset Zoom

Revert to the original editor window font size.

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4.3.193.1.6 Tools

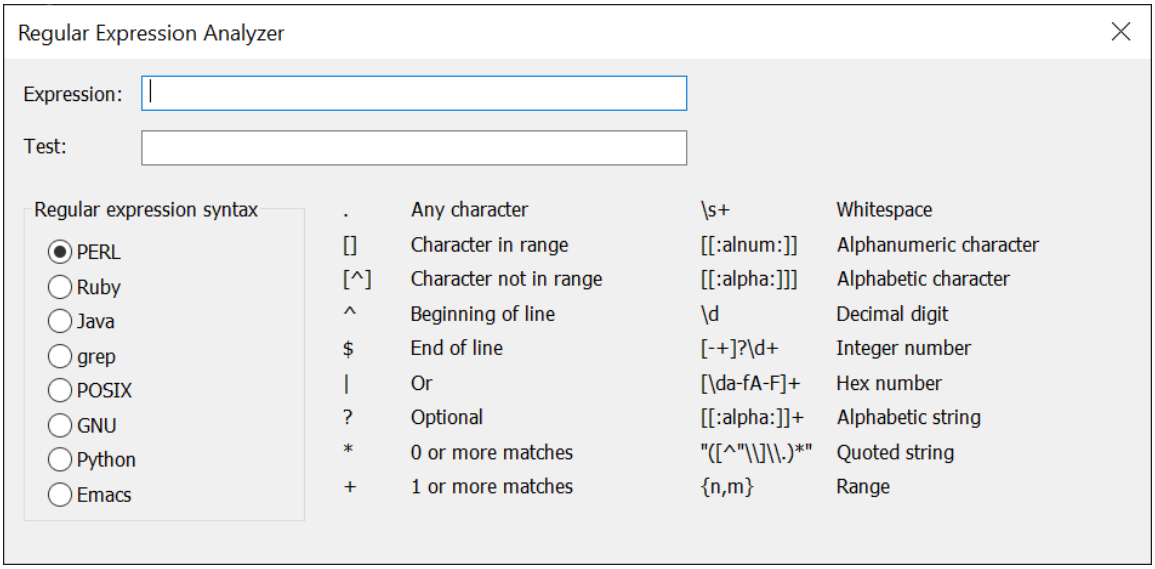
Regular Expressions...

TCEDIT includes a regular expression analyzer dialog. There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.

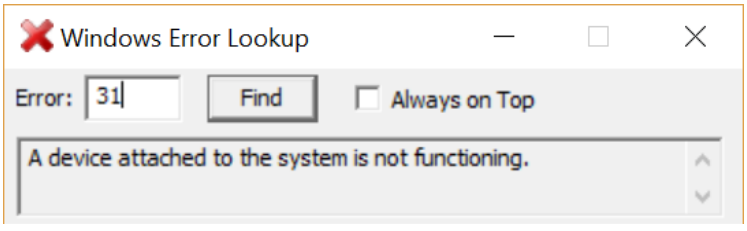
You can also choose the regular expression syntax you want to use (Perl, Ruby, Java, etc.). The analyzer will default to the current default for ***Take Command***.

The analyzer has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.



Lookup Windows Errors...

Opens a small dialog that lets you look up Windows and network error messages based on the integer value. You can enter hex input with a leading **x** or **0x**.



Character Map...

Opens the Windows Character Mapping dialog that lets you look up and copy characters for any font.

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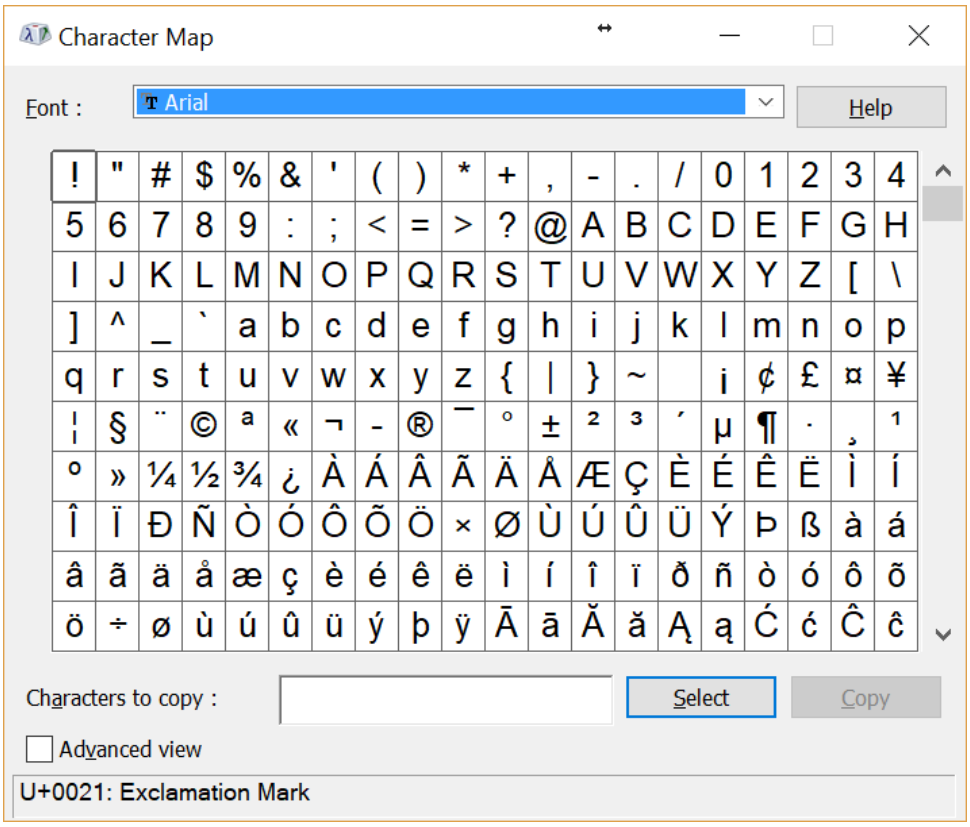

Command Prompt

Start a new command prompt window.

4.3.193.1.7 Help

Help

Display the ***Take Command*** help for TCEdit, from which you can directly navigate to any topic.

Dynamic Help

(***TCC syntax only***) Display help for the command or variable at the current cursor position.

Search Topics

Displays the **Search** window of the ***Take Command*** help file.

Index

Displays the **Index** window of the ***Take Command*** help file.

https://psoft.com

A hyperlink to the JP Software web site. Clicking it will attempt to display the JP Software home page in your default browser.

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JP Software Forums

A hyperlink to the JP Software support forums.

Feedback

Leave a suggestion in the JP Software Suggestions forum.

Check for Updates

Query the JP Software web server to see if there is an updated version of ***Take Command*** available. If there is, the new version information will be displayed and you can choose to download and automatically update your existing version.

Order from JP Software

A hyperlink to our secure online store. Clicking it will attempt to display the store's first page in your default browser. Depending on your configuration, you may need to first establish an Internet connection.

About

Displays the TCEDIT version, copyright, and license information.

4.3.193.2 TCEdit Toolbar

The TCEdit toolbar has a number of icons to control editing and debugging. Each has a tooltip for quick reference:

New	Create a new file in a new tab window.
Open	Open an existing file in a new tab window.
Save	Save the current file.
Print	Print the current file.
Cut	Copy the highlighted selection to the clipboard and delete it from the file.
Copy	Copy the highlighted selection to the clipboard.
Paste	Copy the contents of the clipboard to the current cursor location.
Delete	Delete the highlighted selection.
Undo	Undo the last edit.
Redo	Restore the last Undo.
Find	Search for text.
File Properties	Displays information on the current file.
Start New Shell	Start another copy of ***TCC.***
Help	Display the online help.

The TCEdit toolbar is customizable. To customize the toolbar click on the down arrow on the right side of the toolbar**.**

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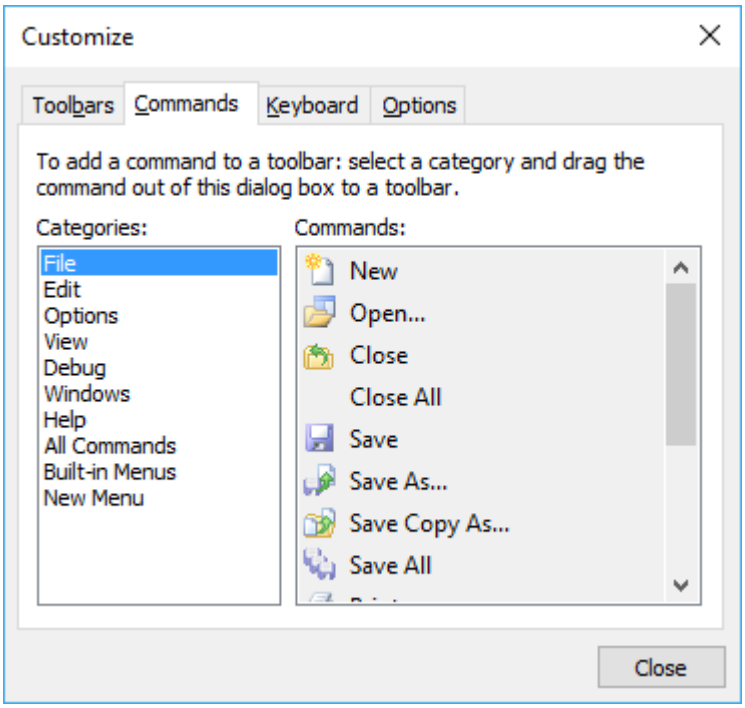
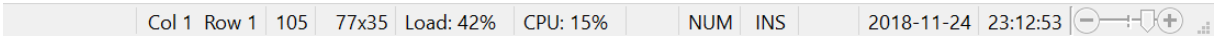


4.3.193.3 TCEdit Status Bar

The TCEDIT window has a Status Bar that displays tooltips when you move the cursor over menu entries.



The status bar also displays the following information:

- The current cursor position (column and row)
- The Unicode value of the character at the current cursor location
- The edit window size (columns x rows)
- The CPU usage (0 - 100%)
- The memory load (0 - 100%)
- The state of the Caps Lock key
- The state of the Num Lock key
- The state of the Insert key
- The state of the Scroll Lock key
- The current date
- The current time

You can hide the status bar fields by right clicking on the status bar and unchecking the fields you don't want to see.

There is a slider in the right corner that allows you to change the transparency level of the TCEdit window. The tooltip for the slider will display the current transparency level (20-255; higher values are more opaque). You can also change the transparency with Ctrl-Shift-Mousewheel.

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4.3.193.4 TCEdit Windows

The TCEdit edit windows allow you to edit and debug Windows text files (INI files, batch files, etc.).

If a file in a tab edit window has been modified but not yet saved, the tab title will be prefixed with a *****. When the file is saved, the ***** is removed.

TCEdit will monitor the filesystem for any changes to the file(s) being edited. If another application modifies a file, TCEdit will display a message notifying you of the change and asking if you want to reload the updated file.

If you are using **TCC syntax**, you can get help for the currently selected (highlighted) command / variable / function by pressing Ctrl-F1, or right-clicking the mouse and selecting **Help** from the context menu. You can also hover the mouse over a ***TCC*** variable name, and TCEdit will pop up a tooltip with the current value. If you hover the mouse over a ***TCC*** internal command name, the TCEdit will pop up a tooltip with the command syntax.

TCEdit defaults to line selection. You can block select in the edit window by holding down the Alt key while selecting text with the left mouse button.

The edit window supports multiple selections at one time. You can select additional text by holding down the Ctrl key while dragging with the mouse. Multiple selections are added to the clipboard in order with no delimiting characters. For block selections, the line end is added after each line of text. Block selections are always copied from top to bottom, not in the order of selection.

Margins

There are two possible margins on the left of the edit window:

- The line number (selectable by the "Options / Display Line Numbers" menu option).
- The Fold margin (selectable by the "Options / Display Fold Margin" menu option), which will display a - for blocks that can be collapsed to a single line (DO, IFF, and SWITCH commands, and command groups). When a block is collapsed, the Fold margin will display a **+**. Left clicking in the Fold margin will toggle the fold state.

Syntax Coloring

TCEDIT will select the syntax lexer (colorization) based on the file extension:

.bat	CMD (or optionally TCC)
.btm	TCC
.cmd	CMD (or optionally TCC)
.css	CSS
.htm	HTML
.html	HTML
.lua	Lua
.php	PHP
.pl	Perl
.ps1	PowerShell
.py	Python
.rb	Ruby
.sh	Bash shell
.sql	SQL
.tcl	Tcl/Tk
.vbs	VBScript
.xml	XML

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The edit window toolbar (which is configurable by clicking on the rightmost down arrow), has a number of icons to control debugging. Each has a tooltip for quick reference:

New	Create a new file in a new tab window.
Open	Open an existing file in a new tab window.
Save	Save the current file.
Print	Print the current file.
Cut	Copy the highlighted selection to the clipboard and delete it from the file.
Copy	Copy the highlighted selection to the clipboard.
Paste	Copy the contents of the clipboard to the current cursor location.
Delete	Delete the highlighted selection.
Undo	Undo the last edit.
Redo	Restore the last Undo.
Find	Search for text.
File Properties	Displays information on the current file.
Start New Shell	Start another copy of ***TCC*** (this is useful if you need to perform some tasks while editing a file.)
Help	Display the online help.

4.3.193.5 TCEdit Editing Commands

Edit Windows

You can block select in the edit window by holding down the Alt key while selecting text with the left mouse button.

The edit window supports multiple selections. Select additional text by holding down the Ctrl key while dragging with the mouse. Multiple selections are added to the clipboard in order with no delimiting characters. For block selections, the line end is added after each line of text. Block selections are always copied from top to bottom, not in the order of selection.

The text processing commands available in the TCEdit edit windows are listed below. The text commands can be classified into general categories:

- Caret commands
- Edit commands
- Mark / Clipboard commands
- Search commands
- File commands
- Bookmark commands

- **Caret commands**

Right	This command will move the caret one character to the right. When the caret is on the last position of the current line it is moved to the first position of the next line.
Shift-Right	In addition to the caret movement this command will also extend the current selection to the new caret position.
Left	This command will move the caret one character to the left. When the caret is on the first position of the current line it is moved to the last position of the previous line.
Shift-Left	In addition to the caret movement, this will also extend the current selection to the new position.
Up	This command will move the caret one line up. The caret column position will be set as close to its previous column position as possible.

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Shift-Up	In addition to the caret movement this command will also extend the current selection to the new position.
Down	This command will move the caret one line down. The caret column position will be set as close to it's previous column position as possible. When the caret is on the last line but not on the last column it will be moved to the last column.
Shift-Down	In addition to the caret movement this command will also extend the current selection to the new position.
End	This command will move the caret to the end of the line it is currently on. If the caret is already at the end nothing happens.
Shift-End	In addition to the caret movement this command will also extend the current selection to the new position.
Home	This command will move the caret to the start of the line it is currently on. If the caret is already at the start nothing happens.
Shift-Home	In addition to the caret movement this command will also extend the current selection to the new position.
Ctrl-Right	This command will move in one of the following ways: • When the caret is located on a delimiter character the caret is moved right until the first non-delimiter is found. • When the caret is located on a non-delimiter character the caret is moved to the next delimiter character. • When the caret is located on the last word or delimiter of the current line the caret is moved to the first word or delimiter of the next line.
Ctrl-Shift-Right	In addition to the caret movement this command will also extend the current selection to the new caret position.
Ctrl-Left	This command will move in one of the following ways: • When the caret is located on a delimiter character the caret is moved to the start of the previous word. • When the caret is located on a non-delimiter character and not on a white-space character the caret is moved to the start of the current word. • When the caret is located on the start of the first word, delimiters or white-space of the current line the caret is moved to the start of the last word or delimiters of the previous line.
Ctrl-Shift-Left	In addition to the caret movement this command will also extend the current selection to the new position.
Ctrl-Home	This command will move the caret to the beginning of the text. When the caret is already at this location nothing happens.
Ctrl-Shift-Home	In addition to the caret movement this command will also extend the current selection to the new position.
Ctrl-End	This command will move the caret to the end of the text. When the caret is already at this location nothing happens.
Ctrl-Shift-End	In addition to the caret movement this command will also extend the current selection to the new position.
PgUp	This command will move the caret one view up when it is located on the top line currently in the view. When the caret is not located on the top line of the view, it will be moved there.
Shift-PgUp	In addition to the caret movement this command will also extend the current selection to the new position.
PgDn	This command will move the caret one view down when it is located on the bottom line currently in the view. When the caret is not located on the bottom line of the view, it will be moved there.
Shift-PgDn	In addition to the caret movement, this command will also extend the current selection to the new position.

- **Edit commands**

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Ctrl-Z	This command will undo the last change made to the edit control contents. You can undo any number of changes made to the control contents up to the maximum number of undo/redo hops.
Ctrl-Y	This command will redo the last change you have undone. You can re-do any number of changes up to the number of changes undone.
Backspace	This command will remove the character to the left of the caret. When the caret is located at the start of the line, the characters right of the caret are appended to the previous line and the caret is moved to be positioned between the old line contents and the appended characters.
Delete	This command removes the character to the right of the caret. When there are no characters to the right of the caret, the contents of the next line is appended to the current line.
Return	This command will split the current line and create a new line of the characters, if any, right of the caret. The caret is moved to the start of the newly created line.
Ctrl-Delete	When the caret is located on a word, this command will delete all characters in the word right of the caret position.
Ctrl-Backspace	When the caret is located on a word, this command will delete all characters in the word left of the caret position.
Tab	This command does one of the two following things: • When there is a valid text selection, this command will indent the lines covered by the selection right by one tab-stop. • When there is no text selection, a tab is inserted at the current caret position.
Shift-Tab	When there is a valid text selection, this command will indent the lines covered by the selection left by one tab-stop.
Shift-Ctrl-U	When there is a valid selection, this command will convert all lower-case characters in the selection to upper-case characters. If there is no valid selection, nothing happens.
Ctrl-U	When there is a valid selection, this command will convert all upper-case characters in the selection to lower-case characters. If there is no valid selection, nothing happens.
Ins	This command will toggle the current editing mode between overwrite and insert.

- **Mark / Clipboard commands**

Ctrl-A	This command will select all the text.
Ctrl-V	This command will, when there is text present in the clipboard, paste the clipboard contents at the current position.
Ctrl-C	This command will, when there is a selection, copy the selected text to the clipboard.
Ctrl-Shift-C	This command will, when there is a selection, append the selected text to the clipboard.
Ctrl-X	This command will, when there is a selection, copy the selected text to the clipboard and remove the selection from the text.

- **Search commands**

Ctrl-F3	This command will find the next occurrence of the word under the caret. When the next occurrence is found, it is selected.
F3	This command will find the next occurrence of the current search pattern. When the search pattern is found, it is selected.
Shift-F3	This command will find the previous occurrence of the current search pattern. When the search pattern is found, it is selected.
Ctrl-G	This command will show the *goto* dialog.
Ctrl-F	This command will show the *find* dialog.
Ctrl-H	This command will show the *replace* dialog.

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- **File commands**

Ctrl-N	Open a new file in a new tab window.
Ctrl-O	Open an existing file in a new tab window.
Ctrl-W	Close all files.
Ctrl-S	This command will save the current file.
Ctrl-Shift-S	Save all files.
Ctrl-P	This command will open the print dialog.
Ctrl-I	Display the properties for the current file.
Alt-F4	Exit the debugger.

- **Bookmark commands**

Ctrl-F2	This command will clear the bookmark on the current line if it is set, or set the bookmark if it is cleared.
Shift-Ctrl-F2	This command will clear all bookmarks.
F2	This command will place the caret on the next line which has a bookmark set. When there is no next line with a bookmark, the text is searched starting at the first line.
Shift-F2	This command will place the caret on the previous line which has a bookmark set. When there is no previous line with a bookmark, the text is searched from the last line up again.

4.3.194 TCFILTER

Purpose: Display or change the Take Command File Explorer filter

Format: TCFILTER [/C] *filter*

filter A wildcard string or regular expression

/C(lear)

See also: _TCFILTER

Usage:

TCFILTER allows you to set the filter used by the ***Take Command*** File Explorer window to determine what file and folder names to display. For example, to only display files with a .DOC extension in File Explorer:

```
tcfilter *.doc
```

Option:

/C Clear the current filter

4.3.195 TCFONT

Purpose: Set the ***Take Command*** font from a ***TCC*** session.

Format: TCFONT *fontname [height] [weight]*

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fontname	Font name (for example, "consolas" or "lucida console")
height	Font height (defaults to 10)
weight	Font weight (defaults to 400)

Usage:

The font weight can be from 100 to 900:

100 Thin
200 Extra light
300 Light
400 Normal
500 Medium
600 Semibold
700 Bold
800 Extra bold
900 Heavy

4.3.196 TCTOOLBAR

Purpose: Change the Take Command tool bar buttons

Format: TCTOOLBAR [/C /I /R *filename* /U /W *filename*] *tab button, flags, icon, label, title, directory*, [*tooltip*,] *command*

tab	The label of the toolbar tab
button	The button number (1 - 50)
flags	0=Start new tab, 1=Send to current tab, 2=Change Folders directory
icon	Icon to display on button
label	The button label
title	The tab title (when starting new tabs)
directory	The startup or Folders directory
tooltip	The tooltip to display when hovering the mouse over the button
command	The command to execute or keystrokes to send

/C(lear) /U(pdate)
/I (reset toolbar) /W (save to file)
/R(ead file)

Usage:

TCTOOLBAR lets you configure the ***Take Command*** tab tool bar buttons (you can also use the Configure Tool Bar dialog available from the Options menu). The changes you make can be temporary or, with the **/U** option, written to the **TCMD.INI** file so that they will be loaded the next time ***Take Command*** starts.

There are a maximum of 50 buttons on the tab tool bar. The ***button*** parameter must be a number from 1 to 50 to select the button you want to work with. If you enter a command like

```
tctoolbar 1
```

the button with that number will be removed from the tool bar. If you want to add or modify a button, you must include the ***flags***, ***icon*** and/or ***label***, and ***command*** parameters.

The ***flags*** parameter specifies what happens when you click the button. If ***flags*** is 256, ***Take Command*** will use ***command*** to start a new tab (or a new window if ***command*** is a GUI app). If ***flags*** is 257, the ***command*** text (in KEYSTACK format) is sent to the current tab. If ***flags*** is 258, the button will change the

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default directory in the **Folders** view. You can optionally add 4 to the value of ***flags*** to insert a separator before the button.

If you specify the optional ***tooltip***, then ***flags*** will be 512, 513, and 514, respectively.

The ***icon*** parameter allows you to specify the name of an icon file (or an executable file if you want to use its default icon). The icon will be displayed to the left of the button label. If you have entered a ***label***, the ***icon*** parameter is optional.

The ***label*** parameter specifies the text that appears on the button. If the text contains white space or other special characters, it must be enclosed in double quotes. If you have entered an ***icon*** file, ***label*** is optional.

The optional ***title*** parameter specifies the new tab title (if ***flags***=0).

If you're starting a new window, the ***directory*** parameter will set the startup directory for the command. If you are changing the **Folders** directory, the ***directory*** parameter specifies the new directory.

The ***command*** parameter contains the command to start a new tab (if ***flags=0***), or the keystrokes to be sent to the current tab in KEYSTACK format (if ***flags=1***) when the button is clicked.

Option:

/C Clear all entries from the toolbar.

/I Reset the toolbar to the definition in TCMD.INI.

/R Load the toolbar button definitions from the specified file. **/R** will **not** clear an existing toolbar; you must use **/C** for that. The file should be in the same format as the **[Toolbar*n*]** section in TCMD.INI:

```
[Toolbar1]
Title=MyTabs
Bn=flags,icon,label,title,directory,[tooltip,]command
```

n - the button number (1 - 50)
flags - 256=start new tab (or new window if a GUI app), 257=send keystrokes to current tab, 258=Change Folders directory. (Add 256 if setting ***tooltip***.)
icon - the icon to display on the label (leave empty for no icon)
label - the label to display on the button
title - the tab title (if starting a new tab)
directory - startup directory or Folders directory
tooltip - the optional tooltip (if ***flags*** >= 512) to display when hovering the mouse over the button
command - the command to execute

The ***command*** and ***directory*** parameters can include environment variables, internal variables, and variable functions. Note that the variable expansion occurs in ***Take Command***, not ***TCC***, so internal variables like %_cwd will not probably work as expected.

/U Write the changed button definition to the **TCMD.INI** file so that it will be included the next time ***Take Command*** starts.

/W Save the current toolbar to the specified file.

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4.3.197 TEE

Purpose: Copy standard input to both standard output and a file

Format: TEE [/= /A /Dn /F"*format*" /R /T] *file*...

file One or more files that will receive the "tee-d" output.

/A(ppend) /R (STDERR)
/D(ate) /T(ime)
/F"..." (format)

See also: Y, piping and redirection.

Usage:

TEE is normally used to "split" the output of a program so that you can see it on the display and also save it in a file. It can also be used to capture intermediate output before the data is altered by another program or command.

TEE gets its input from standard input (usually the piped output of another command or program), and sends out two copies: one to standard output, the other to the ***file(s)*** that you specify. TEE is not likely to be useful with programs which do not use standard output, because these programs cannot send output through a pipe.

If you are typing at the keyboard to produce the input for TEE, you must enter a **Ctrl-Z** to terminate the input.

If you don't enter any arguments, TEE will display its command dialog.

See Piping for more information on pipes.

Example:

Search the file *DOC* for any lines containing the string ***Take Command***, make a copy of the matching lines in *TC.DAT*, sort the lines, and write them to the output file *TCS.DAT*:

```
ffind /t"Take Command" doc | tee tc.dat | sort > tcs.dat
```

Options:

/= Display the TEE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Append to the file(s) rather than overwriting them.

/D Prefix each line with the current date (in yyyy-mm-dd format).

/F"..." The *format* string. See @DATEFMT for details on *format* arguments.

/R Redirect to STDERR instead of STDOUT.

/T Prefix each line with the current time (in hh:mm:ss.ms format).

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4.3.198 TEXT

Purpose: Display a block of text in a batch file

Format:

```
TEXT
  .
  .
  .
ENDTEXT
```

See also: ECHO, ECHOS, SCREEN, SCRPUT, and VSCRPUT.

Usage:

TEXT can only be used in batch files. Both TEXT and ENDTEXT must be entered as the only commands on their respective lines, and cannot be included in a command group.

The TEXT command is useful for displaying menus, tables, special characters, or multiline messages. TEXT will display all lines in the batch file between itself and the terminating ENDTEXT. The display starts at the current display position, which allows you to start its display with other text, e.g., from the ECHOS command.

The lines between TEXT and ENDTEXT are not parsed. As a consequence, no environment variable expansion or other processing is performed, and all lines are displayed exactly as they are stored in the batch file, subject only to the choice of font and codepage differences, if any, between the program which created the file and that in effect during its execution. This makes it easy to include special characters, e.g., < | > in the text. However, if the ANSI X3.64 interpretation option is enabled, you can change screen colors by inserting ANSI X3.64 escape sequences anywhere in the text block. The ENDTEXT command itself will not be displayed.

You can also use the CLS or the COLOR command to set the default screen colors before executing TEXT.

Redirecting TEXT output

To redirect or pipe the entire block of text, use redirection or piping on the TEXT command itself as shown in the examples below. As with any other command, this redirection is not affected by redirection of all output of the batch file by the command which started the batch file. Attempting to redirect or pipe the actual text lines is ignored. Attempting to redirect or pipe the ENDTEXT line is invalid.

Warning: If the TEXT command is redirected or piped. and the redirection/piping fails, the lines of the batch file following the TEXT command are executed as if they were commands, causing potential harm. The simplest way to avoid trouble this may cause is to use the ON ERROR command before TEXT. See the second example below.

Examples:

The following batch file fragment displays a simple menu:

```
@echo off & cls
screen 2 0
text
Enter one of the following:
   1 - Spreadsheet
   2 - Word Processing
```

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```
   3 - Utilities
   4 - Exit
endtext
inkey /k"1234" Enter your selection:  %%key
```

The example below uses TEXT to display or append to a file (specified as the optional parameter of the batch file):

```
@echo off
setlocal
setdos /x-6
set dest=%@if[%# GT 0,>> %1,]
setdos /x+6
set repeat=0
on error (unset dest & goto PROBLEM)
:PROBLEM
iff %repeat GT 1 then
  echo Repeated problems - quitting
  quit
endiff
set repeat=%@inc[%repeat]
text %dest
+----------------+
| Logical Drives |
+----------------+
endtext
subst %dest
echo. %dest
if %_transient eq 1 .and. %# EQ 0 pause
endlocal
```

4.3.199 THREAD

Purpose: Execute a command in a separate thread.

Format: THREAD *command [args]*

Usage:

It is the user's responsibility to ensure that there are no I/O or file system conflicts when running multiple THREAD commands and/or running THREAD simultaneously with commands in the primary TCC thread.

THREAD will set the internal variable _thread_result to the return value of *command*.

4.3.200 TIME

Purpose: Display or set the system time

Format: TIME [/S [*server*] /T /U *"format"*] [*hh*[*:mm:ss*]]] [AM | PM]

hh	The hour (0 - 23)
mm	The minute (0 - 59)
ss	The second (0 - 59)

"..." Date display format

/S(erver time) /U (UTC time)
/T (Display only)

See also: DATE.

Usage:

If you don't enter any parameters, TIME will display the current system time and prompt you for a new time. Press Enter if you don't wish to change the time; otherwise, enter the new time:

```
[c:\] time
Wed  Mar 17, 2019  9:30:06
Enter new time (hh:mm:ss):
```

TIME defaults to 24-hour format, but you can optionally enter the time in 12-hour format by appending **a**, **am**, **p**, or **pm** to the time you enter. For example, to enter the time as 9:30 am:

```
time 9:30 am
```

The day of week and the month are translated into your local language (English, French, German, Italian, Russian, and Spanish).

Options:

"..." Custom date / time format to use when displaying the current time. The formatting characters are the same as used by the @DATEFMT function.

/S *server* Sets the date and time from the specified internet time server. If no server is specified, TIME uses the server defined in the Time Server configuration option (the default is `clock.psu.edu`). Changing the time requires ***TCC*** to be running in an elevated session.

/T Displays the current time but does not prompt you for a new time. You cannot specify a new time on the command line with **/T**. If you do, the new time will be ignored.

/U Display or enter the UTC time.

4.3.201 TIMER

Purpose: TIMER is a system stopwatch

Format: TIMER [/1 /2 /3 /4 /5 /6 /7 /8 /9 /10 /C /L /M /N /Q /S] [ON | OFF] [*command*]

ON	Force the stopwatch to reset and start
OFF	Force the stopwatch to stop
command	Time the specified command

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/1	stopwatch #1 (default)	/C	clear on ^C
/2	stopwatch #2	/L	milliseconds
/3	stopwatch #3	/M	microseconds
/4	stopwatch #4	/N	nanoseconds
/5	stopwatch #5	/Q	quiet
/6	stopwatch #6	/S	split
/7	stopwatch #7		
/8	stopwatch #8		
/9	stopwatch #9		
/10	stopwatch #10		

Usage:

The TIMER command accepts its parameters in any order, and acts on the specified one of ten possible timers (system stopwatches) by turning it on or off, or by displaying its current elapsed time. The TIMER command with neither of the keywords **ON** and **OFF** nor the **/S** option toggles the state of the timer.

TIMER uses the Windows performance counters for greater accuracy. The default TIMER resolution is in milliseconds (.001 seconds).

The switch arguments (/1 - /10, /Q, and /S) must appear before any other arguments on the TIMER command line.

If you execute TIMER or TIMER /S when the timer is off, or execute TIMER ON at any time, the current time of day is displayed, and the stopwatch starts from :

```
[c:\] timer
Timer 1 on:  12:21:46
```

If you execute TIMER /S when the timer is on, the elapsed time is displayed:

```
[c:\] timer /s
Timer 1  Elapsed time: 0:00:12.06
```

If you execute TIMER when it is on, or execute TIMER OFF, the stopwatch stops, the current time and the elapsed time are displayed, and the elapsed time is reset:

```
[c:\] timer
Timer 1 off:  12:21:58
Elapsed time: 0:00:12.06
```

There are ten stopwatches available (1 - 10) so you can time multiple overlapping events. By default, TIMER uses stopwatch #1.

TIMER is particularly useful for timing events in batch files. For example, to time both an entire batch file, and an intermediate section of the same file, you could use commands like this:

```
rem Turn on timer 1
timer
rem Do some work here
rem Turn timer 2 on to time the next section
timer /2
rem Do some more work
echo Intermediate section completed
```

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```
rem Display time taken in intermediate section
timer /2
rem Do some more work
rem Now display the total time
timer
```

You can optionally specify a command for TIMER to run. This is the equivalent of "timer on & command & timer off". For example:

```
timer dir c:\ /s
```

The smallest interval TIMER can measure depends on the operating system you are using, your hardware, and the interaction between the two. However, it should never be more than 60 ms.

You can also retrieve the elapsed time of a timer using the @TIMER[] function.

Options:

/1 Use timer #1 (the default).

/2 Use timer #2.

/3 Use timer #3.

/4 Use timer #4.

/5 Use timer #5.

/6 Use timer #6.

/7 Use timer #7.

/8 Use timer #8.

/9 Use timer #9.

/10 Use timer #10.

/C Turn off the timer when a ^C is detected.

/L When used with /S (split time) or TIMER OFF, display the result in the number of milliseconds.

/M When used with /S (split time) or TIMER OFF, display the result in the number of microseconds.

/N When used with /S (split time) or TIMER OFF, display the result in the number of nanoseconds.

/Q Don't display any messages.

/S Display a split time without stopping the timer. To display the current elapsed time but leave the timer running:

```
[c:\] timer /s
Timer 1 elapsed: 0:06:40.63
```

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ON Start the timer regardless of its previous state (on or off). Otherwise the TIMER command toggles the timer state (unless **/S** is used).

OFF Stops the timer.

4.3.202 TITLE

Purpose: Change the window title

Format: TITLE [/P] *title*

/P(rompt characters)

title The new window title.

See also: the TITLEPROMPT variable and the ACTIVATE and WINDOW commands.

Usage:

TITLE changes the text that appears in the caption bar at the top of the ***TCC*** window. You can also change the window title with the WINDOW command or the ACTIVATE command.

The title text should not be enclosed in quotes unless you want the quotes to appear as part of the actual title.

If you do not specify a new title, TITLE will display the existing console title.

Example:

To change the title of the current window to "Title Test":

```
title Title Test
```

Options:

/P Support the special characters in PROMPT.

4.3.203 TOAST

Purpose: Displays Windows Toast notifications

Format: TOAST /template=*n* /text1="*text*" [*options*]

See Options below for details

Usage:

Display Windows Toast notifications, a popup window that appears on the lower right corner of the display. Unlike message boxes, Toast popups are not modal and will disappear after a few seconds. Windows will not display Toast notifications if the user has disabled notifications, either for ***TCC*** or everywhere.

TOAST sets two internal command variables:

_toast

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0 - no toast active or no user response yet
1 - user clicked on the toast
2 - user dismissed the toast
3 - toast timed out
4 - application hid the toast
5 - toast was not activated
6 - toast failed
7 - system does not support toasts
8 - unhandled option
9 - multiple texts were provided
10 - toast notification manager initialization failure
11 - toast could not be launched

_toast_action
0 - user has not clicked on a button
1 - user clicked on first button
2 - user clicked on second button
3 - user clicked on third button

The TOAST command exits after calling Windows to display the Toast notification. Windows will call back to TOAST with the Toast results and actions, so the _toast and _toast_action variables will not be set until the user either clicks on the Toast or it times out.

Example:

```
toast /image="console2.png" /expire=15 /action=Yes /action=No /text1="Do you
want to try to take over the world?"
```

Options:

/action="*text*" - You can have one or more actions. Each action creates a button on the Toast window; clicking on that button will set the _toast_action internal variable.

/attribute="*text*" - Attribution text displayed on the bottom of the Toast window.

/audio=*n* - Windows system sound to play when the notification is displayed.
0 - DefaultSound
1 - IM
2 - Mail
3 - Reminder
4 - SMS
5 - Alarm
6 - Alarm2
7 - Alarm3
8 - Alarm4
9 - Alarm5
10 - Alarm6
11 - Alarm7
12 - Alarm8
13 - Alarm9
14 - Alarm10
15 - Call
16 - Call1
17 - Call2
18 - Call3
19 - Call4
20 - Call5

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21 - Call6
22 - Call7
23 - Call8
24 - Call9
25 - Call10

/audiostate=*n* - Specifies whether you want to display the sound (see /audio above) once, looping, or not at all.
0 - Default
1 - Silent
2 - Loop

/duration=*n* - The time to display the Toast notification
0 - Default
1 - Short
2 - Long

/expire=*n* - Number of seconds before the notification expires.

/image="*pathname*" - The image file you want to display (for template types 0 - 3)

/template=*n* - The type of Windows Toast you want to display:
0 - An image on the left, and a string that occupies a maximum of three lines
1 - An image on the left, a bold string on the first line and a second string wrapped across the second and third lines.
2 - An image on the left, a bold string on the first and second lines, and a second string on the third line.
3 - An image on the left, a bold string on the first line, a second string on the second line, and a third string on the third line.
4 - A string that occupies a maximum of three lines
5 - A bold string on the first line and a second string wrapped across the second and third lines.
6 - A bold string on the first and second lines, and a second string on the third line.
7 - A bold string on the first line, a second string on the second line, and a third string on the third line.

/S - Create the shortcut to *TCC* required for Toast notifications. (Not valid with any other options.) This is normally done by the installer, so you shouldn't need to run TOAST /S unless the shortcut was removed.

/text1="*text*" - Text to display in the first line (template types 0 - 7).

/text2="*text*" - Text to display in the second line (for template types 1, 2, 3, 5, 6, and 7)

/text3="*text*" - Text to display in the third line (for template types 3, and 7)

4.3.204 TOUCH

Purpose: Change a file's time stamps, and optionally create a file

Format: TOUCH [/= /A:[[-][+]rhsdaecjot] /C /CD [/D[acw][date] /E /F /I""*text*"" /N /O:[-]acdeginorstuz /Q /R[:acw] *file* /S[[+]n] /T[acw[u]][hh:mm[:ss[.dd]]] *file*...

file One or more files whose date and/or time stamps are to be changed.

/A: Attribute select

/N No action

/C	Create file	/O:	Order
/CD	Create directory	/Q	Quiet
/D	Date	/R	Reference file
/E	No error messages	/S	Subdirectories
/F	Force read-only files	/T	Time
/I	Match descriptions		

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, subdirectories, catalog files, and include lists.

Usage:

TOUCH is used to change the date and / or time of a file. You can use it to be sure that particular files are included or excluded from an internal command, backup program, compiler MAKE utility, or other program that selects files based on their time and date stamps, or to set a group of files to the same date and time for consistency. If you don't specify any arguments, TOUCH will display its command dialog.

TOUCH should be used with caution, and in most cases should only be used on files you create. Many programs depend on file dates and times to perform their work properly. In addition, many software manufacturers use file dates and times to signify version numbers. Indiscriminate changes to date and time stamps can lead to confusion or incorrect behavior of other software.

By default, TOUCH affects only files. You must utilize the /A: option to include directories. /A:D will select directories only.

If you don't enter any arguments, TOUCH will display its command dialog.

TOUCH sets three internal variables:

%_touch_dirs	The number of directories touched
%_touch_files	The number of files touched
%_touch_errors	The number of errors

Examples:

Change the last write date/time on the file *testfile.txt* to the current date/time:

```
touch testfile.txt
```

Change the creation date/time on the file *testfile.txt* to January 1, 2022 at 12:01am:

```
touch /dc2022-01-01 /tc00:01 testfile.txt
```

Options:

/= Display the TOUCH command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:.

You can specify **/A:=** to display a dialog to help you set individual attributes.

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/C Create ***file*** (as a zero-byte file) if it does not already exist. You cannot use wildcards with /C, but you can create multiple ***files*** by listing them individually on the command line.

/CD Create the specified directory if it does not already exist.

/D If neither /R nor /D are specified, the current date is used. If the /D option is specified without date, TOUCH will not modify the date even if /R is also specified. If the /D option is followed by date, and /R is not specified, date is used. The date must not be quoted. If both /R and /D with date are specified, the one specified later in the command takes effect.

On an LFN drive, you can specify which of the date fields should be set by appending **a, c**, or **w** to the **/D** option:

- **a** Last access date
- **c** Creation date
- **w** Last modification (write) date

If you do not specify a date field, TOUCH defaults to ***w*** (last modification). If you append a **u** to the date field, TOUCH will set the UTC date rather than the local date.

/E Suppress all non-fatal error messages, such as "File not found." Fatal error messages, such as "Drive not ready," will still be displayed. This option is most useful in batch files.

/F The file systems normally do not permit changing timestamps of read only files. The /F option forces date and time change of read-only files by temporarily removing the read only attribute.

/I"*text*" Select files by matching text in their descriptions. See Description Ranges for details.

/N Display what would occur without actually doing it.

/O:... Sort the files before processing. You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/Q Do not display normal messages.

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/R The /R option permits duplication of the time stamp of ***ref_file*** (which must immediately follow the /R, and can be a file or subdirectory). For example, if you recompile an old program (e.g., to obtain an intermediate file that has long been deleted) you may want to use the timestamp of the source file that was last changed as the time stamp of the newly built duplicate of the original object file to prevent a "make" from attempting to rebuild everything else in the project as shown in the example:

```
touch /r project.c project.obj
```

Another use could be to synchronize files without rendering the current version inaccessible during the synchronization:

```
touch /c /r c:\jpsoft\tcmd.pdf %temp\tcmd.pdf
copy /u ftp://ftp.jpsoft.com/help/tcmd.pdf %temp\tcmd.pdf
```

In the above example TOUCH creates an empty file with the time stamp of your already existing help file; COPY updates the empty file if a newer version is available (beware of time stamp synchronization across the Internet!).

On an LFN drive, you can specify which of the date/time fields should be used by appending **a, c**, or **w** to the **/R** option:

- **a** Last access date and time (on VFAT volumes access time is always midnight).
- **c** Creation date and time
- **w** Last modification (write) date and time

/S TOUCH all matching files in the specified directory and its subdirectories. Do not use /S with @file lists. See @file lists for details.

If you specify a number after the /S, TOUCH will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, TOUCH will not modify any time stamps until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not modify anything in *\a* or *\a\b*.

/T If neither /R nor /T are specified, the current time is used. If the /T option is specified without time, TOUCH will not modify the time even if /R is also specified. If the /T option is followed by time, and /R is not specified, time is used. (Time must not be quoted). If both /R and /T with time are specified, the one specified later in the command takes effect.

On an LFN drive, you can specify which of the time fields should be set by appending **a, c**, or **w** to the **/T** option:

- **a** Last access time (on VFAT volumes access time is always midnight).
- **c** Creation time
- **w** Last modification (write) time

If you do not specify a date field, TOUCH defaults to ***w*** (last modification). If you append a **u** to the time field, TOUCH will set the UTC time rather than the local time.

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4.3.205 TPIPE

Purpose: Text filtering, search, substitution, conversion, and sorting

Format: See Options below.

Usage:

TPIPE does text filtering, substitution, conversion, and sorting on text files. If you don't specify an input filename, TPIPE will read from standard input if it has been redirected. If you don't specify an output filename, TPIPE will write to standard output. This is substantially slower than reading from and writing to files, but allows you to use TPIPE with pipes.

You can specify multiple filters, which will be processed in the order they appear on the command line. Do not insert any unquoted whitespace or switch characters in the arguments to an option. If you do need to pass whitespace, switch characters, or double quotes in an argument, you can quote the entire option in single back quotes.

Row and column positions start at 1.

TPIPE defaults to UTF8 encoding when loading or saving files.

If you need to process a Windows Unicode UTF-16 file, unless the filter supports Unicode directly (for example, **/simple**) you'll need to convert it to UTF-8 first (see **/unicode=...**).

Options:

/input=filename[,subfolders[,action]]

filename - Filename or folder to read. This can be either a disk file, file list (@filename), or CLIP:. If it is not specified, TPIPE will read from standard input.
subfolders - How many subfolders to include (default 0):
0 - no subfolders
1 to 255 - subfolder(s)
255 - all subfolders
action - the action to take (default 1):
1 - include the files
2 - exclude the files
3 - ignore the files

You can specify multiple **/input** statements.

/output=filename

Filename to write. This can be either a disk file or CLIP:. If it is not specified, TPIPE will write to standard output.

/outputfolder=directory

Set the output filter directory.

/inputbinary=n[,size]

Determines how binary files are processed. The options are:

0 - Binary files are processed (default)
1 - Binary files are skipped

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2 - Binary files are confirmed before processing
size - The sample size in bytes to use for identifying binary files (default 255)

/inputclipboardunicode=n

In clipboard mode, determines whether the input is ASCII (0) or Unicode (1). The default is 0.

/inputdelete=n

If 1, the input files will be deleted after processing. USE WITH CAUTION!

/inputprompt=n

If 1, TPIPE will prompt before processing each input files.

/inputpromptRO=n

If 1, TPIPE will prompt before processing read-only input files.

/inputstring=...

Process the string as if it were a file and return the result. This option will write the return value to STDOUT; you cannot specify an */output* argument.

/outputappend=n

If **n** is 1, append to the output file.

/outputchanged=n

Sets the output changed mode. The options are:

0 - Always output
1 - Only output modified files
2 - Delete original if modified

/outputmode=n

If ***n***=1, TPIPE will open each output file in its associated program upon completion. If there is no association for a file, it will be opened in the default editor.

0 - Output to clipboard (all files are merged)
1 - Output to files
2 - Output to a single merged file

/outputopen=n

If 1, TPIPE will open each output file in its associated program upon completion.

/outputretaindate=n

If n is 1, retain the existing file date for the output file.

/clipboard

Runs the current filter with input from and output to the clipboard.

/filter=filename

Name of filter file to load (see /save=filename)

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/save=filename

Saves the filter settings defined on the command line to the specified filename, and returns without executing any filters.

/startsubfilters

The following filters are created as sub filters, until the closing /ENDSUBFILTERS. Sub filters allow a restricted part of the entire text to be operated on by a group of filters without effecting the entire text. For example, a "Restrict to delimited fields" (CSV, Tab, Pipe, etc.) filter can pick out a range of CSV fields, and then a search/replace filter can operate JUST on the text restricted.

/endsubfilters

End the sub filters defined by the preceding /STARTSUBFILTERS.

/buffersize=n

Sets the buffer size for the preceding search/replace filter. (The default is 4096.)

/editdistance=n

Sets the edit distance threshhold for the preceding search/replace filter. (The default is 2.)

/comment=text

Add a comment to a filter file.

Text - Comment to add

/database=Mode,GenerateHeader,Timeout,Connection,InsertTable,FieldDelimiter,Qualifier

Adds a database-type filter. Database filters will change the output extension to match the format.

Mode
0 Delimited output
1 Fixed width
2 XML
3 Insert script
4 JSON output

GenerateHeader - Generates header information when True.

Timeout - SQL command timeout in seconds.

ConnectionStr - The database connection string.

InsertTable - The name of the insert table.

FieldDelimiter - The string to use between columns.

Qualifier - The string to use around string column values.

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/dup=Type,MatchCase,StartColumn,Length,IncludeOne,Format

Remove or show duplicate lines. The arguments are:

Type:
0 - Remove duplicate lines
1 - Show duplicate lines

MatchCase - If 1, do case-sensitive comparisons.

StartColumn - The starting column for comparisons (the first column is 1).

Length - The Length of the comparison.

IncludeOne - If 1, include lines with a count of 1 (only for Type 1).

Format - how the output should be formatted for Type=1. Format strings are composed of plain text and format specifiers. Plain text characters are copied as-is to the resulting string.
Format specifiers have the following form:
%[index ":"][-][width][.precision]type
An optional argument index specifier
An optional left justification indicator, ["-"]
An optional width specifier, [width] (an integer). If the width of the number is less than the width specifier, it will be padded with spaces.
An optional precision specifier [precision] (an integer). If the width of the number is less than the precision, it will be left padded with 0's.
The conversion type character:
d - decimal
s - string
Percent signs in the format string should be doubled (unless you back quote the /dup=`...` argument), and the count argument must appear before the string (unless you use the index specifier). For example, "%%d %%s" shows the count followed by the string. Or, with the index specifier, "string %%1:s count %%0:d".

/eol=input,output,length,LFString,Remove

Add an EOL (end of line) conversion filter. The arguments are:

input:
0 - Unix (LF)
1 - Mac (CR)
2 - Windows (CR/LF)
3 - Auto
If you are unsure of the source, select Auto. The Auto option can detect and modify text files containing a variety of line endings.
4 - Fixed (use the length parameter to specify the length)
If you are converting a mainframe file that contains fixed length records, select "Fixed length" and enter the record length. The maximum record length is 2,147,483,647 characters. Note: If you are converting 132 column mainframe reports, you should set the fixed length to 133, because each line has a prefix character.

output:
0 - Unix
1 - Mac

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2 - Windows
3 - None

length - The line length to use if input=4

LFString (optional) - The new line feed string on output when option 4 is chosen for input

Remove (optional) - Whether to remove bad EOLs (default 1)

/file=type,MatchCase,filename

Add a file-type filter. The arguments are:

type:
0 - Add left margin
1 - Add header
2 - Add footer
3 - Add right margin
4 - Remove lines that match exactly
5 - Retain lines that match exactly
6 - Remove lines matching the Perl pattern
7 - Retain lines matching the Perl pattern
8 - Add text side by side
9 - Add repeating text side by side
10 - Not Used
11 - Not Used
12 - XSLT transform
13 - Restrict to lines from list
14 - Restrict to lines NOT in list
15 - Restrict to lines matching the Perl pattern
16 - Restrict to lines NOT matching the Perl pattern
17 - Restrict to filenames patching the Perl pattern
18 - Restrict to filenames NOT matching the Perl pattern

MatchCase - If 1, do a case sensitive match (where appropriate)

filename - the filename to use

/grep=Type,IncludeLineNumbers,IncludeFilename,MatchCase,CountMatches,PatternType ,UTF8,IgnoreEmpty,Pattern

Adds a Grep type line based filter. The arguments are:

Type:
0 Restrict lines matching (for subfilters)
1 Restrict lines NOT matching (for subfilters)
2 Extract matches
3 Extract matching lines (grep)
4 Extract non-matching lines (inverse grep)
5 Remove matching lines
6 Remove non-matching lines

IncludeLineNumbers - 1 to include the line number where the pattern was found

IncludeFilename - 1 to include the filename where the pattern was found

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MatchCase - 1 to do a case-sensitive comparison when matching the pattern

CountMatches - 1 to output a count of the number of matches

PatternType
0 Perl pattern
1 Egrep pattern
2 Brief pattern
3 MS Word pattern

UTF8 - 1 to allow matching Unicode UTF8 characters

IgnoreEmpty - 1 to ignore empty matches

Pattern - the (regular expression) pattern to match

/head=Exclude,LinesOrBytes,Count

Add a head type filter (includes or excludes text at the beginning of the file). The arguments are:

Exclude:
0 - Include the text
1 - Exclude the text

LinesOrBytes:
0 - Measure in lines
1 - Measure in bytes

Count - the number of lines or bytes to include or exclude

/insert=type,position,string

Add an insert type filter. The arguments are:

type:
0 - Insert column
Inserts a new column of text. The position the text is inserted is determined by a column count. The leftmost column is column 1 – inserting in this column displaces all other text to the right. If the insert column given is 0, the text is inserted at the end of the line. If the insert column is negative, the text is inserted at the given position relative to the end of the line. If the insert column given is before the start of the line, or beyond the end of the line, then the text is prepended or appended to the line respectively. Note - this filter is designed for ANSI or Unicode UTF-8 data - it will not handle UTF-16 data. If you need to process UTF-16 files, convert them to UTF-8 first and then convert back to UTF-8 after doing the insertion.
1 - Insert bytes
Insert bytes at the given offset (from 0 to the size of the file).

position - the position to insert the string

string - the string to insert

/line=StartNumber,Increment,SkipBlank,DontNumberBlank,NumberFormat[,DontReset[,ResetNewFile]]

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Adds a Line Number filter. The arguments are:

StartNumber - the starting line number

Increment - the amount to add for each new line number

SkipBlankIncrement - don't increase the line number for blank lines

DontNumberBlank - don't put a line number on blank lines

NumberFormat - The format to use for the line number. The format syntax is:
[-][width][.precision]d
An optional left justification indicator, ["-"]
An optional width specifier, [width] (an integer). If the width of the number is less than the width specifier, it will be padded with spaces.
An optional precision specifier [precision] (an integer). If the width of the number is less than the precision, it will be left padded with 0's.
The conversion type character:
d - decimal

DontReset - if 1, do not reset the line count at the end of the file. The default is 0.

ResetNewFile - if 1, reset the count at the start of a new file. The default is 0.

/log=Filename

Log the TPIPE actions.

Filename - Name of log file

/logappend=n

If n is 1, append to the log file.

/maths=operation,operand

Adds a maths type filter.

operation - the operation to perform

0	+
1	-
2	*
3	div (the remainder is ignored)
4	mod (the remainder after division)
5	xor
6	and
7	or
8	not
9	shift left (0 inserted)
10	shift right (0 inserted)
11	rotate left
12	rotate right

operand - the operand to use

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/merge=type,filename

Adds a merge type filter (merge into single output filename). The arguments are:

type:
0 Merge into filename
1 Retain lines found in filename
2 Remove lines found in filename
3 Link filter filename

filename - the filename to use

/number=type,value

Add a number-type filter. The arguments are:

type:
0 Convert Tabs to Spaces
1 Convert Spaces to Tabs
2 Word wrap (value column width)
3 Pad to width of value
4 Center in width of value
5 Right justify in width of value
6 Restrict CSV field to value
7 Restrict tab-delimited field to value
8 Truncate to width value
9 Force to width value
10 Repeat file value times
11 Restrict to blocks of length
12 Expand packed decimal (with implied decimals)
13 Expand zoned decimal (with implied decimals)
14 Expand unsigned (even-length) packed decimal
15 Expand unsigned (odd-length) packed decimal

Value - the numeric value to use

/perl=BufferSize,Greedy,AllowComments,DotMatchesNewLines

Sets the Perl matching options for the immediately preceding search/replace filter.

BufferSize - The maximum buffer size to use for matches. Any match must fit into this buffer, so if you want to match larger pieces of text, increase the size of this buffer to suit. Default is 4096.

Greedy - If the pattern finds the longest match (greedy) or the shortest match. Default is false.

AllowComments - Allow comments in the Perl pattern. Default is false.

DotMatchesNewLines - Allow the '.' operator to match all characters, including new lines. Default is true.

/replace=Type,MatchCase,WholeWord,CaseReplace,PromptOnReplace,Extract,FirstOnly, SkipPromptIdentical,Action,SearchStr,ReplaceStr

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Adds a search and replace (find and replace) filter. Search / Replace lists discard blank search terms and terms where the replacement is identical to the search. Search / Replace lists can generate log entries (useful for debugging). Logs can optionally be output only for where replacements occurred.

The arguments are:

Type:
0 Replace
1 Pattern (old style)
2 Sounds like
3 Edit distance
4 Perl pattern
5 Brief pattern
6 Word pattern

MatchCase - Matches case when set to 1, ignores case when set to 0

WholeWord - Matches whole words only when set to 1

CaseReplace - Replaces with matching case when set to 1

PromptOnReplace - Prompts before replacing when set to 1

Extract - If 1, all non-matching text is discarded

FirstOnly - If 1, only replace the first occurrence

SkipPromptIdentical - If 1, don't bother prompting if the replacement text is identical to the original.

Action - the action to perform when found:
0 replace
1 remove
2 send to subfilter
3 send non-matching to subfilter
4 send subpattern 1 to subfilter etc

SearchStr - the string to search for

ReplaceStr - the string to replace it with

/replacelist=Type,MatchCase,WholeWord,CaseReplace,PromptOnReplace,FirstOnly,SkipPromptIdentical,Simultaneous,LongestFirst,Filename

Add a search and replace list, using search and replace pairs from the specified file.

Type:
0 Replace
1 Pattern (old style)
2 Sounds like
3 Edit distance
4 Perl pattern
5 Brief pattern
6 Word pattern

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MatchCase - Matches case when set to 1, ignores case when set to 0

WholeWord - Matches whole words only when set to 1

CaseReplace - Replaces with matching case when set to 1

PromptOnReplace - Prompts before replacing when set to 1

FirstOnly - If 1, only replace the first occurrence

SkipPromptIdentical - If 1, don't bother prompting if the replacement text is identical to the original.

Simultaneous - If 1, all search strings are scanned for simultaneously instead of consecutively. (This is useful if the search strings and results strings overlap.)

LongestFirst - If 1, searches for long phrases (most specific) before short phrases (least specific) - this is generally used for translations.

Filename - The file to load search/replace pairs from. If the file extension is .XLS or .XLSX, the file is assumed to be Excel format, if the extension is .TAB the file is assumed to have tab-delimited values, and any other extension (including .CSV) is assumed to have Comma-Separated Values. The filename can contain environment variables enclosed in % signs e.g. %TEMP%\myfile.txt. TPIPE corrects any doubled backslashes.

/run=InputFileName,OutputFileName,"CommandLine"

Adds a Run External Program filter. The arguments are:

InputFilename - the filename that TextPipe should read from after the External Program writes to it.
OutputFilename - the filename that TextPipe should write to for the External Program to read in.
CommandLine - the command line of the program to run. Should include double quotes around the entire command line.

/script=language,timeout,code

Adds an ActiveX script filter.

language: The language of the script

timeout: The command timeout in seconds

script: The code

/selection=Type,Locate,Param1,Param2,MoveTo,Delimiter,CustomDelimiter,HasHeader[,ProcessIndividually[,ExcludeDelimiter[,ExcludeQuotes]]]

Type - The type of filter to add:
0 – Remove column:
This filter is used to remove columns of text, given a column specification that describes the position of the column relative to the start or end of the line, and the width of the column. There are several ways to specify the columns (Locate,Param1,Param2) to remove:

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0 - Start column, End column. This removes all text including and between the specified columns. Useful for removing column in fixed width data files.
1 - Start column, width. Removes Width characters starting from (and including) column Start.
2 - End column, width. Removes Width characters backwards starting from (and including) column End.
3 - Start column to end of line. Removes all characters from the Start column to the very end of the line. Useful for making a file a uniform width.
4 - Width to end of line. Removes Width characters backwards starting from (and including) the last column.

Note - if you are removing more than one column range, it is easiest to remove ranges from right-to-left so that the position of the columns doesn't change.

1 - Restrict lines (restriction filters require sub filters to have any effect)
2 - Restrict columns (restriction filters require sub filters to have any effect)
3 - Restrict to bytes (restriction filters require sub filters to have any effect)
4 - Restrict to delimited fields (CSV, Tab, Pipe, etc.)
6 – Remove lines:

This filter removes a range of lines. There are several ways to specify the lines (Locate,Param1,Param2) to remove:

0 - Start line, End line. This removes all lines including and between the specified lines.
1 - Start line, width. Removes Width lines starting from (and including) line Start.
2 - End line, width. Removes Width lines backwards starting from (and including) line End.
3 - Start line to end of line. Removes all lines from the Start line to the very end of the line.
4 - Width to end of line. Removes Width lines backwards starting from (and including) the last line.

7 – Remove delimited fields (CSV, Tab, Pipe, etc.):

This filter is used to remove fields delimited by a given character. You can choose a predefined delimiter character (Delimiter), or select your own (CustomDelimiter). The trailing delimiter (if any) is also removed. When Comma (.csv) is chosen, TPIPE automatically handles single and double quoted strings, with embedded line feeds.

First Row Contains Field Names

If the first line of the file contains Field Names, set HasHeader to 1 so that TPIPE can count how many fields are expected. It can then determine if a field has embedded CR/LF characters and spans multiple lines. TPIPE can also determine this without a header if the fields are properly double-quoted - TPIPE will notice the missing double quote and continue reading the record from the following line.

Remove Fields

There are several ways to specify the fields (Locate,Param1,Param2) to remove:

0 - Start field, end field. This removes all text including and between the specified fields.
1 - Start field, width. Removes Width fields starting from (and including) field Start.
2 - End field, width. Removes Width fields backwards starting from (and including) field End.
3 - Start field to end of line. Removes all fields from the Start field to the very end of the line.
4 - Width to end of line. Removes Width fields backwards starting from (and including) the last field.

Note - if you are removing more than one field range, it is easiest to remove ranges from right-to-left so that the position of the fields doesn't change.

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9 – Move columns:
TPIPE will move columns to a new position on the line. The new position (MoveTo) is specified assuming that the moved columns have been removed from the line.

10 – Move delimited fields (CSV, Tab, Pipe, etc.):
TPIPE will move CSV-delimited fields to a new position on the line. The new position (MoveTo) is specified assuming that the moved fields have been removed from the line. TPIPE ensures that all the delimiters on the line are correctly maintained, both at the end of the line and where the moved fields are inserted. Note - this filter is designed for ANSI or Unicode UTF-8 data - it will not handle UTF-16 data. You will need to convert UTF-16 files to UTF-8 first, do the selection, and then convert back to UTF-16.

12 – Copy columns:
TPIPE will copy columns to a new position (MoveTo) on the line. Note - this filter is designed for ANSI or Unicode UTF-8 data - it will not handle UTF-16 data. You will need to convert UTF-16 files to UTF-8 first, do the selection, and then convert back to UTF-16.

13 – Copy delimited fields (CSV, Tab, Pipe, etc.):
TPIPE will copy CSV-delimited fields to a new position (MoveTo) on the line. TPIPE ensures that all the delimiters on the line are correctly maintained, both at the end of the line and where the copied fields are inserted. Note - this filter is designed for ANSI or Unicode UTF-8 data - it will not handle UTF-16 data. You will need to convert UTF-16 files to UTF-8 first, do the selection, and then convert back to UTF-16.

17 – Remove byte range:
This filter is used to remove a range of bytes. There are several different ways to specify the bytes (Locate,Param1,Param2) to remove:

0 - Start byte, end byte. This removes all text including and between the specified byte.

1 - Start byte, width. Removes Width byte starting from (and including) the start byte.

2 - End byte, width. Removes Width fields backwards starting from (and including) byte End.

3 - Start byte to end of file. Removes all fields from the Start byte to the very end of the file.

4 - Width to end of file. Removes Width fields backwards starting from (and including) the last byte.

Note - if you are removing more than one byte range, it is easiest to remove ranges from right-to-left so that the position of the bytes doesn't change.

Locate - How to determine which areas to affect:

0 - Restrict %d .. %d
1 - Restrict %1:d starting at %0:d
2 - Restrict %1:d starting at END - %0:d
3 - Restrict %d .. END - %d
4 - Restrict END - %d .. END - %d

Param1, **Param2** - The integer values for the Locate method.

MoveTo - The integer value where to move or copy the columns or fields to (first columns or field is 1).

Delimiter - The index of the standard delimiter to use:

0 - Comma
1 - Tab
2 - Semicolon
3 - Pipe (|)

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4 - Space
5 - Custom

CustomDelimiter - The custom delimiter to use (if Delimiter == 5). This should be a quoted string; if you are not using a custom delimiter then set this field to **""**.

HasHeader - 1 if the file's first row is a header row, 0 if not.

ProcessIndividually - Whether to apply sub filters to each CSV or Tab field individually (1), or to the fields as one string value (0). The default is 0.

ExcludeDelimiter - Whether or not to include the comma or Tab field delimiter when passing the field to the sub filter. Defaults to 0.

ExcludeQuotes - Whether or not to include the CSV quotes that may surround the field when passing the field to the subfilter. Defaults to 1.

/selection2=type, columnSpec,moveTo,processIndividually,excludeDelimiter,excludeQuotes,delimiter[,customDelimiter,hasHeader]

Type - the type of filter to add

0 - Delete column
1 - Restrict lines
2 - Restrict columns
3 - Restrict to bytes
4 - Restrict to delimited fields (CSV, Tab, Pipe etc)
5 - unused
6 - Remove lines
7 - Remove delimited fields (CSV, Tab, Pipe etc)
9 - Move columns
10 - Move delimited fields (CSV, Tab, Pipe etc)
12 - Copy columns
13 - Copy delimited fields (CSV, Tab, Pipe etc)
17 - Remove Byte Range
18 - Extract fields

columnSpec - the double-quoted list of items to remove e.g. "1..10, 16, 20"

moveTo - (integer) where to move or copy the columns or fields to.

processIndividually - whether or not to apply sub filters to each CSV or Tab field individually, or to the fields as one string value.

excludeDelimiter - whether or not to include the comma or Tab field delimiter when passing the field to the sub filter.

excludeQuotes - whether or not to include the CSV quotes that may surround the field when passing the field to the sub filter.

delimiter - (optional) the index of the standard delimiter to use, default 0 for CSV

0 - Comma
1 - Tab
2 - Semicolon
3 - Pipe (|)
4 - Space

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5 - Custom

customDelimiter - (optional) the double quoted custom delimiter to use; the default is blank.

hasHeader - (optional) 1 if the file's first row is a header row, default 0.

/simple=n[u]

Adds a simple filter type. n is the type of filter to add, and for those filters that support it, u indicates that the filter will be dealing with Unicode data.

1 – Convert ASCII to EBCDIC
EBCDIC is the character collating sequence commonly used on mainframes. Some characters cannot be converted because they exist in one character set but not the other.
2 – Convert EBCDIC to ASCII
3 – Convert ANSI to OEM
Converts from ANSI to ASCII/OEM. ANSI is an 8-bit character set used by Windows, and it includes all accentuated Roman characters used by non-English languages like French, German and Spanish. (Windows uses UTF-16LE for all of its internal APIs, and converts to ANSI if the user is using raster fonts or ANSI files.) ASCII/OEM is an extension of the original IBM character set where various non-essential characters are replaced by language-specific accentuated characters. Different ASCII/OEM character sets are not compatible. They must be converted to ANSI and then back to the correct ASCII/OEM character set to be readable.
4 – Convert OEM to ANSI
5 – Convert to UPPERCASE
Forces all text to UPPERCASE. To make the conversion, the function uses the current language selected by the user in the system Control Panel. If no language has been selected, TPIPE uses the Windows internal default mapping.
6 – Convert to lowercase
Forces all text to lowercase. To make the conversion, the function uses the current language selected by the user in the system Control Panel. If no language has been selected, TPIPE uses the Windows internal default mapping.
7 – Convert to Title Case
Converts all text to Title Case -- i.e., the first letter of every word is capitalized, and all other letters are forced to lower case. This routine calculates a table of upper and lower case letters on TPIPE startup, and this determination is based on the semantics of the language selected in Control Panel.
8 – Convert to Sentence Case
Converts all text to Sentence case ie the first word in every sentence is capitalized, all other letters are left as is. Sentences start after periods, exclamation marks, colons, question marks, quotes, parentheses and angle brackets (.!:?'"<().
9 – Convert to tOGGLE cASE
tOGGLES tHE cASE of all text -- i.ee, all UPPERCASE characters are converted to lowercase and vice-versa.
10 – Remove blank lines
Removes blank lines. Note, lines with spaces or tabs are not removed. Use the Remove Blanks From Start Of Line filters first to rectify this.
11 – Remove blanks from End of Line
Removes spaces and tabs from the end of every line.
12 – Remove blanks from Start of Line
Removes spaces and tabs from the start of every line.
13 – Remove binary characters

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Removes binary characters such as those higher than ASCII code 127, and those less than ASCII code 32 except for carriage returns (ASCII code 13) and line feeds (ASCII code 10).
This filter if very useful if you have a corrupted text file, or if you just want to see what text is inside a binary file. The binary information is removed, leaving you with just the text.

14 – Remove ANSI codes
ANSI (American National Standards Institute) codes are included in various streams of information, to provide a remote computer with control over cursor positioning, text attributes, etc. They are also used in connections between minicomputers and mainframe computers and the terminals connected to them.

The need to use an ANSI filter can be recognized when something like the following example shows up in a file viewed in a text editor:

<[0;1;4mas<[m - MC88000 assembler

In this example, the "as" near the beginning is displayed in a different color than the rest of the line when the ANSI codes are properly processed. The Escape (ASCII 27) codes above have been replaced by the < symbol to make this line printable.

The Remove ANSI Escape Sequences filter can be used to filter out these codes and "clean up" the text so that it can be used in standard fashions such as copying and pasting into a word processor. On Unix machines the man (manual) help utility will only allow page-by-page browsing through a file in a forward direction. By piping the man output to a text file, transferring it to a DOS machine, and running it through the Remove ANSI Escape Sequences filter (and the Convert EOL filter - Unix to DOS if desired), a standard DOS editor can be used for browsing through the file, quoting from it, etc.

15 – Convert IBM drawing characters
IBM drawing characters in the upper ASCII range (128-255) are commonly used to draw lines and boxes, single and double line borders, shaded characters etc. Many devices (such as printers, non-IBM computers etc.) do not support the display of these characters.
This filter converts them to standard ASCII characters (+, - and |) that all computers can display.

16 – Remove HTML and SGML
Use this filter to convert HTML documents to a readable format. This filter removes HTML and XML markup tags i.e. everything including and between <> brackets.

17 – Remove backspaces
Remove backspaces, i.e. all ASCII code 8's.

18 – Resolve backspaces
Resolve backspaces -- i.e., remove both the backspaces and the characters prior to the backspaces that would have been deleted.

19 – Remove multiple whitespace
Removes sequences of multiple spaces or tabs and replaces them with a single space.

20 – UUEncode
Usually used for transmitting binary files inside an email. Files of this type are usually given an extension of ***.uue***. Warning – UUencoded text may be corrupted when passing over a mainframe mail gateway. To avoid corruption, use Mime Base 64 or XXEncode.

21 – Hex Encode
A very simple encoding of a file. Usually used for small files, because it uses a large amount of space. The benefit is that the file is very easy to encode/decode, and the file cannot be corrupted passing through mail gateways.

22 – Hex Decode

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Converts a file from its hex representation back to binary. The file to be decoded MUST NOT have any extra characters at the start or end if it is to be successfully processed.

23 – MIME Encode (Base 64)
Used for binary data. Files of this type are usually given an extension of ***.b64***.

24 – MIME Decode (Base 64)
Used for binary data. Files of this type are usually given an extension of ***.b64***. The file to be decoded MUST NOT have any extra characters at the start or end if it is to be successfully processed.

25 – MIME Encode (Quoted printable)
Quoted printable is used for text that is mainly readable, but may contain special characters with accents etc.

26 – MIME Decode (Quoted printable)
The inverse of the above encoding.

27 – UUDecode
Mail attachments can be uuencoded, use this filter to convert the file back to its correct form. Files of this type are usually given an extension of .uue.

28 – Extract email addresses
Extract email addresses. This filter searches for email addresses of the form user@server.domain, and writes them out one per line (using a DOS line feed, CR/LF). Usually this filter is followed by a filter to remove duplicate lines, and then by a Search and Replace filter, searching for \013\010 and replacing with a comma or semi-colon, depending on the email address separator used by your email software.

29 – Unscramble (ROT13)
This is a simple email encoding usually used to disguise text that some people may find offensive. The encoding is totally reversible (applying it twice removes the encoding). Only alpha characters are affected (A..Z and a..z).

30 – Hex dump
This changes the text to lines consisting of 16 bytes each. Each line has an 8 hex digit file index, 16 bytes (in hex) and the ASCII representation:

```
00000000 65 67 69 6E 0D 0A 20 20 20 20 20 20 61 64 64 72 egin.....addr
00000010 65 73 73 20 3A 3D 20 0D 0A 20 20 20 20 20 20 20 ess.:=.....
00000020 20 64 65 63 54 6F 48 65 78 53 74 72 28 20 28 66 .decToHexStr(.(f
```

This filter is very useful for identifying special characters to search and replace.

32 – XXEncode
Essentially identical to UUEncode except that the character set used is different to allow it to pass through EBCDIC gateways without corruption. The XXencoding implemented by TPIPE uses the following characters:

```
+-
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
```

33 – XXDecode
Essentially identical to UUDecode except that the character set used is different to allow it to pass through EBCDIC gateways without corruption.

34 – Reverse line order
The order of the input lines is reversed i.e. the last line comes out first and the first line comes out last. A file is read entirely into RAM before being reversed, so be wary of reversing files that are larger than your machine's RAM size.

35 – Remove email headers
This filter removes the email headers that accompany emails exported to a text format. The email headers are the lines such as To:, From:, Subject: and various other message headers added by all the servers through which your email passes before it gets to its destination.

36 – Decimal dump

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This changes the text to lines consisting of 10 bytes each. Each line has a 10 decimal digit file index, 10 bytes (in decimal) and the ASCII representation:

```
0000000000 080 108 101 097 115 101 032 102 101 101 Please fee
0000000010 108 032 102 114 101 101 032 116 111 032 l free to
0000000020 099 111 109 109 101 110 116 013 010 111 comment..o
```

This filter is very useful for identifying special characters to search and replace.

37 – HTTP Encode

This filter is used to encode text for use in an HTTP header – a (usually) small piece of text that accompanies a web page request to a web server. This filter is very useful for debugging CGI scripts because it can create HTTP requests in the correct form. HTTP encoded text usually looks like the following:

```
a+%28usually%
29+small+piece+of+text+that+accompanies+a+web+page+request+to+a+web
+server.+This+filter+is+very+
```

38 – HTTP Decode

This filter is used to decode text from an HTTP header – a (usually) small piece of text that accompanies a web page request to a web server.

39 – Randomize lines

This filter put lines into random order. This is useful when a random sample of data is required for statistical purposes - just follow this filter with a head/tail of file filter (/head or /tail). The lines output will differ from one run to the next; the order is determined by a pseudo-random number generator.

40 – Create word list

This filter takes all the incoming words and outputs them one per line. This can be used to generate word lists for Indexes, encryption programs etc. Hyphenated words are recognized as single words, provided that they aren't broken across lines. To get around this limitation, use a Search and Replace filter to replace hyphens followed by line feeds with just a hyphen. Normally you would follow this filter with a remove duplicates filter, or alternatively, a Count Duplicate Lines filter (with Include counts of 1).

```
catch22 – a word
24-7 – a word
twenty-four – a word
5th – a word
ice cream – two words
```

Commas or periods after words are treated as word separators.

41 – Reverse each line

Each line is output reversed from left to right. This can be useful to extract domain names from web site log files - use this filter to reverse each line, use an extract matches filter of [\w\d]+\.[\w\d]+ to extract each domain name, then reverse each line again. Note: This filter will NOT work on Unicode or UTF-8 data. It will only work on single-byte data such as ASCII or ANSI.

42 – Convert to RanDOm case

This filter randomly changes the case of characters. This routine calculates a table of upper and lower case letters on TPIPE startup, and this determination is based on the semantics of the language selected in the Windows Control Panel.

Running this filter again will generate different results; for example:

1. ranDoMIze cASe
2. RanDOmIZE case
3. randOMIZE casE

43 – Extract URLs

Extract URLs. This filter lists mailto:, http://, https://, ftp://, ftps://, nntp:, skype:, call:, and gopher:// URLs one per line.

44 – ANSI to Unicode

Converts single byte ANSI characters to double byte Unicode characters. This filter can be useful if you want to send a text file to someone using a language other than

your own. This filter is often followed by an Add Header filter, to add a Unicode byte order mark (BOM), \xFF\xFE.

45 – Unicode to ANSI

Converts double byte Unicode characters to single byte ANSI characters. This filter can be useful if you want to send a text file to someone using a language other than your own. This filter is often followed by a Remove start or end of file filter, to either remove the first two bytes of Unicode (before the conversion) or the first byte of ANSI (after the conversion), to remove the leading Unicode byte order mark (BOM).

46 – Display debug window

A debug filter is very handy for debugging filters. When text is passed through this filter, it places the output into a window so that you can see what the text looks like at that stage of the filtering process.

47 – Word concordance

This filter generates a word concordance. A word concordance shows the context or surrounding words for a given set of words in a dictionary.

48 – Remove all

This filter removes all text. Unlike a pattern match filter that matches everything and then throws it away, this filter is far more efficient, especially for large files, as it signals completion back to the input filter so only the first chunk of a multi-gigabyte file will ever get processed.

It is useful in two main situations

1. Inside a subfilter, it prevents any of the subfiltered text from re-entering the text stream. So you could restrict to lines matching a pattern, output the matching lines to a new file, and then remove them.
2. To remove all of the text of a file, then use an Add Header filter with the @fullInputFilename macro to obtain the name of the file.

Note: An Add Left Margin or Add Right Margin filter will not work after a Remove All filter, as they require an actual line to trigger them. Instead, use an Add Header or Add Footer filter.

49 – Restrict to each line in turn

This filter restricts sub filters to operate on each line in turn. This filter is used for its side effect of limiting the matched text to a single line at most.

50 – Convert CSV to Tab-delimited

Converts CSV data (quoted or unquoted) to tab-delimited form. It's preferable to use a file with column headers, because then TPIPE can easily determine if the fields have embedded CR/LFs in them. If the data is properly quoted then TPIPE will determine this automatically. TPIPE will eliminate unnecessary quotes.

51 – Convert CSV to XML

Converts CSV data (quoted or unquoted) to XML form. It's preferable to use a file with column headers, because then TPIPE can easily determine if the fields have embedded CR/LFs in them. If the data is properly quoted then TPIPE will determine this automatically. TPIPE correctly escapes **< > " '** and **&** in the data to the corresponding XML entity. If your data contains invalid XML characters such as ASCII 26 (End-of-file, hex \x1A), follow this filter with a search/replace filter to remove \x1A and replace with nothing.

52 – Convert Tab-delimited to CSV

Converts Tab-delimited data to CSV data. It's preferable to use a file with column headers, because then TPIPE can easily determine if the fields have embedded CR/LFs in them. TPIPE cannot determine this without column headers.

53 – Convert Tab-delimited to XML

Converts Tab-delimited data to XML data. It's preferable to use a file with column headers (/simple=55), because then TPIPE can easily determine if the fields have embedded CR/LFs in them. TPIPE cannot determine this without column headers. TPIPE correctly escapes **< > " '** and **&** in the data to the corresponding XML entity. If your data contains invalid XML characters such as ASCII 26 (End-of-file, hex

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\x1A), follow this filter with a search/replace filter to remove \x1A and replace with nothing.

54 – Convert CSV (with column headers) to XML
See description for 51 – Convert CSV to XML.

55 – Convert Tab-delimited (with column headers) to XML
See description for 53 – Convert Tab-delimited to XML.

56 – Convert CSV (with column headers) to Tab-delimited
See description for 50 – Convert CSV to Tab-delimited.

57 – Convert Tab-delimited (with column headers) to CSV
See description for 52 – Convert Tab-delimited to CSV.

58 – Restrict to file name
This filter applies its subfilters only to files with filenames (ie drive + path + filename) matching or not matching a pattern or list of patterns. This is very handy for only applying a Convert Word Documents to Text filter only to files matching the pattern

\.DOC$

With the appropriate pattern, this filter can also be used to control subfilters based on filename, folder and drive. Note that this filter uses case-insensitive Perl regular expressions, not Windows wildcards.

59 – Convert Word documents to (UTF8) text
This filter takes ALL incoming documents, opens them with Microsoft Word, and outputs them as text files. This can be used to process a set of Word Documents to text file format. After this filter you can add search and replace filters or any other filters you choose.
This filter requires Microsoft Word 98 or higher to be installed. If you wish to convert documents other than the default .DOC files, you may also need to install Word's conversion filters. If Word cannot be started automatically TPIPE will prompt you to start it manually before continuing.
Unless you know that all documents being processed are Word documents (e.g. by using a wildcard of *.doc in the Files to Process tab), you should restrict this filter to only files matching the pattern:

\.DOC$

60 – Swap UTF-16 word order
This filter swaps pairs of bytes
e.g.

Byte number	1	2	3	4	5	6	7	8
Input File	FF	FE	00	20	00	31	00	32
Output File	FE	FF	20	00	31	00	32	00

This is commonly used to transform big-endian or little-endian Unicode files so that other programs can use them.

61 – Swap UTF-32 word order
This filter swaps groups of 2-byte words.
e.g.

Byte number	1	2	3	4	5	6	7	8
Input File	FF	FE	00	00	00	31	00	00
Output File	00	00	FE	FF	00	00	31	00

This is commonly used to transform big-endian or little-endian Unicode files so that other programs can use them.

62 – Remove BOM (Byte Order Mark)
This filter removes the Unicode Byte Order Mark from the start of Unicode files, if it is present.

Bytes removed	**Description**
00 00 FE FF	UTF-32, big-endian
FF FE 00 00	UTF-32, little-endian

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FE FF	UTF-16, big-endian
FF FE	UTF-16, little-endian
EF BB BF	UTF-8

63 – Make Big Endian

Converts a Little Endian Unicode file into a Big Endian Unicode file
e.g.

Input file	Output file
00 00 FE FF 00 00 00 4D	Unchanged
FE FF 4E 8C	Unchanged
FF FE 00 00 4D 00 00 00	00 00 FE FF 00 00 00 4D
FF FE 8C 4E	FE FF 4E 8C

Note - the file MUST start with a Byte Order Mark (BOM) for it to be correctly identified.

64 – Make Little Endian

Converts a Big Endian Unicode file into a Little Endian Unicode file
e.g.

Input file	Output file
00 00 FE FF 00 00 00 4D	FF FF 00 00 4D 00 00 00
FE FF 4E 8C	FF FE 8C 4E
FF FE 00 00 4D 00 00 00	Unchanged
FF FE 8C 4E	Unchanged

Note - the file MUST start with a Byte Order Mark (BOM) for it to be correctly identified.

65 – Compress to Packed Decimal

This filter compresses EBCDIC numeric data (optional leading sign, numbers and periods) to an EBCDIC packed decimal field (also known as Comp-3).
There are several notes to keep in mind when using this filter:

1. You MUST use this filter inside a Restrict to Byte Range filter. The field WIDTH is then set by the containing filter.
2. Compressing a field will decrease your output record length, so ensure you allow for this. A good strategy to avoid problems is to first compress the rightmost field, then work your work back to the leftmost field. This prevents the field column positions from changing and makes the file easier to work with.

This filter will add hex 'B' to negative fields, hex 'C' to positive fields and hex 'F' to unsigned fields. If these codes don't match what your target needs, use a column or CSV restriction to apply a search/replace.

66 – Compress to Zoned Decimal

This filter expands an EBCDIC zoned decimal field to a raw EBCDIC number with a sign. Typically this filter is then followed by a Convert EBCDIC to ASCII filter - after all other fields have been expanded as well.
There are several notes to keep in mind when using this filter:

1. You MUST use this filter inside a Restrict to Byte Range filter. The field WIDTH is then set by the containing filter.
2. Expanding a field will increase your output record length, so ensure you allow for this. A good strategy to avoid problems is to first expand the rightmost field, then work your work back to the leftmost field. This prevents the field column positions from changing and makes the file easier to work with.

67 – Expand Binary Number to EBCDIC

This filter expands a series of digits stored in binary (BIG ENDIAN) form. The maximum width is 8 bytes.
There are several notes to keep in mind when using this filter:

1. You MUST use this filter inside a Restrict to Byte Range filter. The field WIDTH is then set by the containing filter.
2. Expanding a field will increase your output record length, so ensure you allow for this. A good strategy to avoid problems is to first expand the rightmost field, then work your work back to the leftmost field. This prevents the field column positions from changing and makes the file easier to work with.
3. If the data is stored in LITTLE ENDIAN order, use a Reverse filter inside the Restriction prior to the Expand Binary Numbers filter.

68 – Expand Binary Number to ASCII

This filter expands a series of digits stored in binary (BIG ENDIAN) form. The maximum width is 8 bytes.

There are several notes to keep in mind when using this filter:

1. You MUST use this filter inside a Restrict to Byte Range filter. The field WIDTH is then set by the containing filter.
2. Expanding a field will increase your output record length, so ensure you allow for this. A good strategy to avoid problems is to first expand the rightmost field, then work your work back to the leftmost field. This prevents the field column positions from changing and makes the file easier to work with.
3. If the data is stored in LITTLE ENDIAN order, use a Reverse filter inside the Restriction prior to the Expand Binary Numbers filter.

69 – NFC - Canonical Decomposition, followed by Canonical Composition

Applies a Unicode NFC - Canonical Decomposition, followed by Canonical Composition transformation to incoming Unicode text (UTF16-LE). Output is also Unicode UTF16-LE.

70 – NFD - Canonical Decomposition

Applies a Unicode NFD - Canonical Decomposition transformation to incoming Unicode text (UTF16-LE). Output is also Unicode UTF16-LE.

71 – NFKD - Compatibility Decomposition

Applies a Unicode NFKD - Compatibility Decomposition transformation to incoming Unicode text (UTF16-LE). Output is also Unicode UTF16-LE.

72 – NFKC - Compatibility Decomposition, followed by Canonical Composition

Applies a Unicode NFKC - Compatibility Decomposition, followed by Canonical Composition transformation to incoming Unicode text (UTF16-LE). Output is also Unicode UTF16-LE.

73 – Decompose

74 – Compose

Applies a Unicode Compose transformation to incoming Unicode text (UTF16-LE). The output is also Unicode UTF16-LE.

75 – Convert numeric HTML Entities to text

This filter converts decimal/hex numeric HTML/XML entities to plain text. For example:

® → ®

® → ®

Typically, the input file is ANSI (single byte) format. This filter will output UTF-8 characters for high-value entities e.g. ᠀ The best approach is to first convert the file from ANSI to UTF-8 (/unicode), then apply this filter.

76 – Convert PDF documents to (UTF8) text

This filter takes ALL incoming documents and converts them from PDF to text. Most of the formatting will be lost.

77 – Restrict to ANSI files

78 – Restrict to Unicode UTF16 files

79 – Restrict to Unicode UTF32 files

80 – Convert Excel spreadsheets to (UTF8) text

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This filter takes ALL incoming documents, opens them with Microsoft Excel, and outputs them as CSV (comma-delimited) files (hidden worksheets will be ignored). After running this filter, you can add search and replace filters or any other filters you choose, such as convert the data to Tab-delimited or XML.
This filter requires Microsoft Excel 98 or higher to be installed. If you wish to convert documents other than the default .XLS files, you may also need to install Excel's conversion filters.
Unless you know that all documents being processed are Excel documents (e.g. by using a wildcard of *.xls in the Files to Process tab), you should restrict (/simple=58) this filter to only files matching the pattern
\.XLS$

81 - Shred file
82 - Unicode to escaped ASCII
83 - Restrict to Unicode files
84 - T-filter
The T-Filter allows you to process the same output in multiple ways. You can create a subfilter, and add filters to create the desired output. When this side of the T has finished processing, the data is discarded and the original text continues processing as though the T-filter did not exist.
85 - Convert decimal/hex numeric HTML/XML entities and entity names to text (i.e., &#174 -> ®, or ® -> ®). This filter outputs UTF-8 characters for high-value entities.
86 - Convert JSON to Tab
87 - Convert Tab to JSON
88 - Convert Word documents to RTF

/Simple has some redaction filters which are designed to work inside restriction filters.

89 - Remove diacritics
91 - Redact x-over text
92 - Redact x-over digits
93 - Redact x-over all but last 4 digits
94 - Redact x-over non-blanks
95 - Replace with blanks
96 - Redact with pseudo NHS
97 - Redact with pseudo SSN
98 - Redact with pseudo bank number

/sort=Type,Reverse,RemoveDuplicates,StartColumn,Length

Sort text files.

Type - the sort type

0 - ANSI sort
1 - ANSI sort (case sensitive)
2 - ASCII sort
3 - ASCII sort (case sensitive)
4 - Numeric sort
5 - Sort by length of line
6 - sort by date and time
7 - sort by date
8 - sort by time
9 - UTF8 sort (case insensitive)
10 - UTF8 sort (case sensitive)

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Reverse - If 1, sort in descending order; if 0, sort in ascending order

RemoveDuplicates - If 1, remove duplicate lines; if 0 keep duplicate lines

StartColumn - The column in the line to begin the comparisons

Length - The length of the comparison

/split=type,SplitSize,SplitChar,SplitCharPos,SplitCharCount,SplitLines,SplitFilename[,FirstFileNumber,PreventOverload]

Adds a split type filter. The arguments are:

type:
0 Split at a given size
1 Split at a given character
2 Split at a given number of lines

splitSize - the size file to split at

splitChar - the character to split at

splitCharPos
0 Split before the character (it goes into the next file)
1 Split after the character (it remains in the first file)
2 Split on top of the character (remove it)

SplitCharCount - the number of times to see SplitChar before splitting

SplitLines - (optional) split after a given number of lines, default 60

SplitFilename - (optional) the name to give to each output split file. /split will append a "%3.3d" format specifier to the name; i.e. SplitFilename of "foo.txt" will generate output files named "foo.txt.000", "foo.txt.001", etc. If you don't specify a SplitFilename, /split will use the input filename as the base.

FirstFileNumber - (optional) the number of the first file; default is 0

PreventOverload - (optional) true to prevent more than 10,000 files in one folder, default false

The split file filter will remove the last file if it is empty.

/string=type,MatchCase,string

Add a string-type filter. The arguments are:

type:
0 - Add left margin
1 - Add header
2 - Add footer
3 - Add right margin
4 - Remove lines that match exactly
5 - Retain lines that match exactly

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6 - Remove lines matching the Perl pattern
7 - Retain lines matching the Perl pattern
8 - Add text side by side
9 - Add repeating text side by side
10 - Not Used
11 - Not Used
12 - XSLT transform
13 - Restrict to lines from list
14 - Restrict to lines NOT in list
15 - Restrict to lines matching the Perl pattern
16 - Restrict to lines NOT matching the Perl pattern
17 - Restrict to filenames patching the Perl pattern
18 - Restrict to filenames NOT matching the Perl pattern

matchCase - case sensitive or not (where appropriate)

string - the string to use

/tail=Exclude,LinesOrBytes,Count

Add a tail type filter (includes or excludes text at the end of the file). The arguments are:

Exclude:
0 - Include the text
1 - Exclude the text

LinesOrBytes:
0 - Measure in lines
1 - Measure in bytes

Count - the number of lines or bytes to include or exclude

/unicode=input,output

Convert the file to or from Unicode. **input** is the encoding for the input file; **output** is the encoding for the output file. The possible values are:

UTF-16LE
UTF-16BE
UTF-32LE
UTF-32BE
UTF-8
ANSI
ASCII
CP*nnn*, where *nnn* is a Windows code page (for example, CP437 or CP1251).

TPIPE handles files internally as UTF-8, so if you want to process a Windows UTF-16LE file, you'll need to convert it to UTF-8 first, then apply the desired filters, and convert it back to UTF-16LE. For example, to wrap a Unicode file at column 80:

```
tpipe /input=inputname /output=outputname /unicode=UTF-16LE,UTF-
8 /number=2,80 /unicode=UTF-8,UTF-16LE
```

/xml=Type,IncludeText,IncludeQuotes,MatchCase,BufferSize,Tag,Attribute,EndTag

Adds an HTML / XML filter. The arguments are:

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Type - the operation to perform:
0 restrict to an element
1 restrict to an attribute
2 restrict to between tags

IncludeText - whether to include the find string in the restriction result (default false)

IncludeQuotes - whether to include surrounding quotes in the attribute result or not (default false)

MatchCase - match case exactly or not (default false)

BufferSize - the maximum expected size of the match (default 32768)

Tag - the element or start tag to find

Attribute - the attribute to find

EndTag - the endTag to find

4.3.206 TRANSIENT

Purpose: Toggle the shell's transient mode

Format: TRANSIENT [on | off]

Usage:

TRANSIENT allows you to change the shell's transient mode (i.e., whether it was started with a /C), so that you can make a transient session permanent (or vice versa).

4.3.207 TREE

Purpose: Display a graphical directory tree

Format: TREE [/= /\ /A:[-|+]rhsadecijopt /A /B /D /F /H /L /Nj /O:[-]acdeginorstuz /P[n] /S[n] /T[:a|c|w] /Z] *dir*...

dir The directory to use as the start of the tree. If one or more directories are specified, TREE will display a tree for each specified directory. If none are specified, the tree for the current working directory is displayed.

/A: (Attribute select)
/A(SCII)
/B(are)
/D(escriptions)
/F(iles)
/H(idden directories)
/N (disable option)
/L (colorize display)
/O(rder)
/P(ause)
/S (file size)
/Sn (subdirectory depth)
/T(ime and date)
/Z (file size)

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges (with **/F**), and multiple file names.

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File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

The TREE command displays a graphical representation of the directory tree using standard or extended ASCII characters. For example, to display the directory structure on drive C:

```
[c:\] tree c:\
```

TREE uses the standard line drawing characters in the U.S. English extended ASCII character set. If your system is configured for a different country or language, or if you use a font which does not include these line drawing characters, the connecting lines in the tree display may not appear correctly (or not appear at all) on your screen. To correct the problem, use /A, or configure the ***TCC*** to use a font which can display standard extended ASCII characters.

You can print the display, save it in a file, or view it with LIST by using standard redirection symbols. Be sure to review the /A option before attempting to print the TREE output. The options discussed below specify the amount of information included in the display.

Colors

TREE can display each file name and the associated file information in a different color, depending on the file's extension, attributes, or matching range.

To choose the display colors, you must either use the SET command to create an environment variable called COLORDIR, or use the Directory Colors configuration option. If you use neither the variable nor the configuration option, DIR will use the default screen colors for all files.

If you use the COLORDIR variable, it will override the Directory Colors option. You may find it useful to use the COLORDIR variable for experimenting, then to set permanent directory colors with the Directory Colors option.

The format for both the COLORDIR environment variable and the Directory Colors option is:

```
ext ... :ColorName; ...
```

where "ext" is either a file extension (which may include wildcards), one or more of the following file types:

type	*files affected*
ARCHIVE	Files with archive attribute set (modified since the last backup)
COMPRESSED	Compressed files
DIRS	Directories
ENCRYPTED	Encrypted files
HIDDEN	Hidden files
JUNCTION	Junctions or symbolic links
NORMAL	File with no attribute set
NOTINDEXED	Files whose content is not indexed
OFFLINE	Offline files
RDONLY	Read-only files

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SPARSE	Sparse files
SYSTEM	System files
TEMPORARY	temporary files

or a range (size, date, time, description, owner, and/or exclusion), or a file subsystem type:

EXETYPE_WIN32GUI	Windows x86 GUI app
EXETYPE_WIN32CUI	Windows x86 console app
EXETYPE_WIN64GUI	Windows x64 GUI app
EXETYPE_WIN64CUI	Windows x64 console app
EXETYPE_DOS	DOS (16-bit) app (obsolete)
EXETYPE_POSIX	POSIX app (obsolete)
EXETYPE_EFI	EFI app

and "ColorName" is any valid color name (see Colors and Color Names for information on color names). Specifying a subsystem type will significantly slow down the directory display, as ***TCC*** has to read the header of each file to find a match.

Note that if a file uses one of the reserved file type names shown above as its extension (e.g. *xyz.hidden*) , that file will receive the color defined for the file type.

Unlike most color specifications, the background portion of the color name may be omitted for directory colors. If you don't specify a background color, DIR will use the current screen background color.

For example, to display *.COM* and *.EXE* files in red on the current background, *.C* and *.ASM* files in bright cyan on the current background, read-only files in green on white, and everything else in the default color:

```
set colordir=exe:red; c asm:bright cyan; rdonly:green on white
```

To display 32-bit console apps in bright green and 64-bit console apps in bright red:

```
set colordir=EXETYPE_WIN32CUI:bri green;EXETYPE_WIN64CUI:bri red
```

Extended wildcards can be used in directory color specifications. For example, to display *.BAK*, *.BAX*, and *.BAC* files in red, and everything else in the default color:

```
set colordir=BA[KXC]:red
```

You can combine attribute tests with the **.and.** / **.or.** / **.xor. / .not.** keywords. For example, to display directories that are also hidden in blue:

```
set colordir=dirs .and. hidden:blue
```

COLORDIR processes the line from left to right, and does not support parentheses.

Options:

/= Display the TREE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/ Display directory names with a trailing \.

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/A Display the tree using standard ASCII characters. You can use this option if you want to save the directory tree in a file for further processing or print the tree on a printer which does not support the graphical symbols that TREE normally uses.

/A:[..] Select only those files that match the specified attribute(s).See Attribute Switches for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Display the full pathname of each directory, without any of the line-drawing characters.

/D Display file and directory descriptions.

/F Display files as well as directories. If you use this option, the name of each file is displayed beneath the name of the directory in which it resides.

/H Display hidden as well as normal directories. If you combine **/H** and /F, hidden files are also displayed.

/L Colorize the display. See **Colors** (above) for details.

/N Disables the specified options:

j Skip junctions

/O:... Sort the files before processing. You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

`n` Sort by filename and extension, unless **e** is explicitly included. This is the default.
`-` Reverse the sort order for the next sort key
`a` Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
`c` Sort by compression ratio
`d` Sort by date and time (oldest first); also see **/T:acw**
`e` Sort by extension
`g` Group subdirectories first, then files
`i` Sort by description
`o` Sort by owner
`r` Reverse the sort order for all options
`s` Sort by size
`t` Same as `d`
`u` Unsorted
`z` Same as `s`

/P[*n*] Wait for a key to be pressed after each screen page before continuing the display. Your options at the prompt are explained in detail under Page and File Prompts. The /P option has an optional argument *n* that specifies the number of seconds to wait for a keystroke before continuing.

/S If you specify a number after the /S, TREE will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories. If you do not specify a number, /S shows the file sizes (see /Z).

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/T Display the time and date for each directory. If you combine **/T** and /F, the time and date for each file will also be displayed.

By default, the time and date shown will be of the last modification. You can select a specific time and date stamp by using the following variations of **/T**:

/T:a Last access date and time (access time is not displayed on VFAT and FAT32 volumes).
/T:c Creation date and time.
/T:w Last modification ("*write*") date and time (default).

/Z Display the size of each file. /Z without a /F will display the subdirectory tree sizes (the size of the current directory and all of its subdirectories).

4.3.208 TRUENAME

Purpose: Find the full, true path and file name for a file

Format: TRUENAME *file*

See also: The @TRUENAME variable function.

Usage:

Network reassignments, junctions, symbolic links, and the SUBST command can obscure the true name of a file. TRUENAME "sees through" these obstacles and reports the fully qualified name of a file.

A leading ~\ or ~/ will be interpreted as the current user's home directory.

Example:

Call TRUENAME to get the true pathname for a file:

```
[c:\] subst d: c:\util\test
[c:\] truename d:\test.exe
c:\util\test\test.exe
```

4.3.209 TS

Purpose: Reads line from STDIN, prefix a date/time stamp, and write the lines to STDOUT

Format: TS [/D /T "*format*"]

"format" The date / time format

/D(ate)
/T(ime)

Usage:

TS is intended to be used in pipes, when you need to know when each line was received.

If you don't specify any options, TS defaults to /D /T.

Options:

/"..." The *format* string. See @DATEFMT for details on *format* arguments. If you specify a format string, it will override /D and/or /T.

/D Prefix each line with the current date (in yyyy-mm-dd format).

/T Prefix each line with the current time (in hh:mm:ss.ms format).

4.3.210 TYPE

Purpose: Display the contents of the specified file(s)

Format: TYPE [/= /A:[[-][+]rhsadecijopt] /B /I"*text*" /L[0] /O:[-]acdeginorstuz /P /X /XS] [@*file*] *file*...

file The file or list of files that you want to display.
@file A text file containing the names of the files to display, one per line (see @file lists for details).

/A: (Attribute select)
/B(ell)
/I"text" (match description)
/L(ine numbers)
/P(ause)
/O(rder)
/X (hex)
/XS (hex w/spaces)

See also: HEAD, TAIL, LIST.

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Internet: Can be used with FTP and HTTP servers, e.g.

```
type "https://jpsoft.com/notfound.htm"
```

Usage:

The TYPE command displays a file. It is normally only useful for displaying text files (i.e. alphanumeric characters arranged in lines separated by CR/LF). Most text files use either ASCII or Unicode.

Executable files (*.EXE*) and many data files may be unreadable when displayed with TYPE because they include non-alphanumeric characters or unusual line separators.

To display the files *MEMO1* and *MEMO2*:

```
type /p memo1 memo2
```

You can press **Ctrl-S** to pause TYPE's display and then any key to continue.

To display text from the clipboard use **CLIP:** as the file name. CLIP: will not return any data if the clipboard does not contain text. See Redirection for more information on CLIP:.

You will probably find LIST to be more useful for displaying files on the screen. The TYPE /L command used with redirection is useful if you want to add line numbers to a file, for example:

```
type /l myfile > myfile.num
```

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If you don't enter any arguments, TYPE will display its command dialog.

TYPE sets two internal variables:

%_type_files	The number of files displayed
%_type_errors	The number of errors

TYPE will recognize Unicode (UTF-16) files based on either a BOM or specific UTF-16 sequences at the beginning of the file. TYPE will recognize UTF-8 files based on either a BOM or UTF-8 extended characters within the first 2K of the file.

- **NTFS File Streams**

TYPE supports file streams on NTFS drives. You can type an individual stream by specifying the stream name, for example:

```
type streamfile:s1
```

See NTFS File Streams for additional details.

Options:

/= Display the TYPE command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow **/A:**. Do not use /A: with @file lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/B Ignore bell (ASCII 7) characters.

/I"*text*" Select files by matching text in their descriptions. The text can include wildcards and extended wildcards. The search text must be enclosed in double quotes, and must follow the **/I** immediately, with no intervening spaces. You can select all filenames that have a description with **/I"[?]*"**, or all filenames that do not have a description with **/I"[]"**. Do not use /I with @file lists. See @file lists for details.

/L[*n*] Display a line number preceding each line of text. /L0 will not number blank lines.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the listing will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension

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g	Group subdirectories first, then files
i	Sort by description
o	Sort by owner
r	Reverse the sort order for all options
s	Sort by size
t	Same as **d**
u	Unsorted
z	Same as **s**

/P Prompt after displaying each page. Your options at the prompt are explained in detail under Page and File Prompts.

/X Display the file in hex.

/XS Display the file in hex, using spaces instead of periods for non-printable characters.

4.3.211 UNALIAS

Purpose: Remove aliases from the alias list

Format: UNALIAS [/Q /R *file*... (alias ...)] *alias*...
or
UNALIAS *

alias One or more aliases to remove from memory.
file One or more files from which to read the aliases to be undefined.

/Q(uiet) /R(ead file)

See also: ALIAS and ESET.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1*] aliases**

Usage:

TCC maintains a list of the aliases that you have defined. The UNALIAS command will remove aliases from that list. UNALIAS supports wildcards in the alias name.

You can use regular expressions in the alias name.

Examples:

To remove the alias DDIR:

```
unalias ddir
```

To remove all the aliases:

```
unalias *
```

To remove all the aliases that begin with "DD":

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```
unalias dd*
```

You can delete all matching aliases except for those specified by enclosing the exceptions in parentheses. For example, to remove all aliases beginning with "a" except for *alias1* and *alias2*:

```
unalias (alias1 alias2) a*
```

If you keep aliases in a file that can be loaded with the ALIAS /R command, you can remove the aliases by using the UNALIAS /R command with the same file name:

```
unalias /r alias.lst
```

This is much faster than removing each alias individually in a batch file, and can be more selective than using UNALIAS *. UNALIAS /R accepts all of the alias definition formats you can use in a file for ALIAS /R.

Options:

/Q Prevents UNALIAS from displaying an error message if one or more of the aliases does not exist. This option is most useful in batch files, for removing a group of aliases when some of the aliases may not have been defined.

/R Read the list of aliases to remove from a file. The file format should be the same format as that used by the ALIAS /R command. You can use multiple files with one UNALIAS /R command by placing the names on the command line, separated by spaces:

```
unalias /r alias1.lst alias2.lst
```

UNALIAS /R will read from stdin if no filename is present and input is redirected.

4.3.212 UNBZIP2

Purpose: Uncompress bzip2 archives

Format: UNBZIP2 [/= /C /E /O /Q /V] *bzip2archive* [*path*]

bzip2archive	The .bz2 file to work with
path	The path where files will be extracted

/C(ontents)	/Q(uiet)
/E(xtract)	/V(iew)
/O(verwrite)	

File Completion Syntax:

The default filename completion syntax is: **[1] dirs bz2 [2*] dirs**

Usage:

The UNBZIP2 command will uncompress archives that have been compressed using the bzip2 format.

Options:

/C Display (on standard output) the contents of a file in the bzip2 archive.

/E Extract (default).

/O Overwrite existing files.

/Q Don't display the filenames as they are extracted from the archive.

/V View the list of files in the .bz2 file (date, time, and filename).

/= Display the UNBZIP2 command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.213 UNFUNCTION

Purpose: Remove user-defined functions from the function list

Format: UNFUNCTION [/Q /R *file*... (function ...)] *function*...
or
UNFUNCTION *

function One or more functions to remove from memory.
file One or more files from which to read functions to be undefined.

/Q(uiet) /R(ead file)

See also: FUNCTION and ESET.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1*] functions**

Usage:

TCC maintains a list of the functions that you have defined. The UNFUNCTION command will remove functions from that list. UNFUNCTION supports wildcards in the function name.

You can use regular expressions in the function name.

Examples:

To remove the function DDIR:

```
unfunction ddir
```

To remove all the functions:

```
unfunction *
```

To remove all the functions that begin with "DD":

```
unfunction dd*
```

You can delete all matching functions except for those specified by enclosing the exceptions in parentheses. For example, to remove all functions beginning with "f" except for *func1* and *func2*:

```
unfunction (func1 func2) f*
```

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If you keep functions in a file that can be loaded with the FUNCTION /R command, you can remove the functions by using the UNFUNCTION /R command with the same file name:

```
unfunction /r function.lst
```

This is much faster than removing each function individually in a batch file, and can be more selective than using UNFUNCTION *.

Options:

/Q Prevents UNFUNCTION from displaying an error message if one or more of the functions does not exist. This option is most useful in batch files, for removing a group of functions when some of the functions may not have been defined.

/R Read the list of functions to remove from a file. The file format should be the same format as that used by the FUNCTION /R command. You can use multiple files with one UNFUNCTION /R command by placing the names on the command line, separated by spaces:

```
unfunction /r function1.lst function2.lst
```

UNFUNCTION /R will read from stdin if no filename is present and input is redirected.

4.3.214 UNGZIP

Purpose: Add, update, or delete files in a .gz (GZIP) archive

Format: UNGZIP [/= /A:[[-][+]rhsdaecjot] /E /O /Q /V] [*gziparchive*] *path*

gziparchive The gzip file to work with
path The path where files will be extracted

/A:... (attribute switch) /Q(uiet)
/E(xtract) /V(iew)
/O(verwrite)

See also GZIP.

File Selection

Supports attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs gz [2] dirs**

Usage:

UNGZIP is compatible with the archives created by the Linux / UNIX gunzip utility, and supports RFC 1952.

You can specify a pathname for *gziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, GZIP adds ".gz". If you don't specify an operation, UNGZIP will default to Extract.

Option:

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/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/E Extract (default).

/O Overwrite existing files.

/Q Don't display the filenames as they are extracted from the archive.

/V View the list of files in the zip file (date, time, and filename). Due to the limitations of the GZIP format, this can only display the first file in the archive. If the file was compressed with lzw, it will not have a header, so it cannot be viewed.

/= Display the UNGZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.215 UNJAR

Purpose: Extract or list files in a Java JAR archive

Format: UNJAR [/= /A:[[-][+]rhsdaecjot] /C /E /F /O /P /Q /T /TEST /U /V] *jararchive* [*path*] [@*file*] *file*...

jararchive	The JAR file to work with
path	The path where files will be extracted
file	The file(s) to extract

/A:... (attribute switch)
/C(ontents)
/E(xtract)
/F(reshen)
/O(verwrite)
/P(ercent)
/Q(uiet)
/TEST
/U(pdate)
/V(iew)

File Completion Syntax:

The default filename completion syntax is: **[1] dirs jar [2*] ***

Usage:

UNJAR will extract or list files in a Java JAR archive. The syntax is similar to the UNZIP command.

See also JAR and JARPATH.

Options:

/= Display the UNJAR command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

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You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Display (on standard output) the contents of a file in the tar archive.

/E Extract the specified file(s). (This is the default.)

/F Extract only those files that currently exist in the target folder, and which are older than the file in the Jar archive.

/O Overwrite existing files. UNJAR normally prompts before overwriting an existing file; /O will suppress the prompt.

/P Display the progress (0 - 100%) for each file as it is extracted.

/Q Don't display filenames as they are extracted.

/TEST Test the integrity of the JAR file (header and contents). Any errors will be displayed on STDERR.

/U Extract files which either don't exist in the target folder, or which are older than the file in the Jar archive.

/V View the list of files in the archive (date, time, size, and filename).

4.3.216 UNLIBRARY

Purpose: Remove functions from the library function list

Format: UNLIBRARY [/Q /R *file*... (function ...)] *function*...
or
UNLIBRARY *

function One or more library functions to remove from memory.
file One or more files from which to read library functions to be undefined.

/Q(uiet) /R(ead file)

See also: FUNCTION and ESET.

Usage:

TCC maintains a list of the functions that you have defined. The UNLIBRARY command will remove functions from that list. UNLIBRARY supports wildcards in the function name.

Examples:

To remove the function DDIR:

```
unlibrary ddir
```

To remove all the functions:

```
unlibrary *
```

To remove all the functions that begin with "DD":

```
unlibrary dd*
```

You can delete all matching library functions except for those specified by enclosing the exceptions in parentheses. For example, to remove all functions beginning with "f" except for *func1* and *func2*:

```
unlibrary (func1 func2) f*
```

If you keep functions in a file that can be loaded with the LIBRARY /R command, you can remove the functions by using the UNLIBRARY /R command with the same file name:

```
unlibrary /r function.lst
```

This is much faster than removing each function individually in a batch file, and can be more selective than using UNLIBRARY *.

Options:

/Q Prevents UNLIBRARY from displaying an error message if one or more of the library functions do not exist. This option is most useful in batch files, for removing a group of functions when some of the functions may not have been defined.

/R Read the list of functions to remove from a file. The file format should be the same format as that used by the LIBRARY /R command. You can use multiple files with one UNLIBRARY /R command by placing the names on the command line, separated by spaces:

```
unlibrary /r function1.lst function2.lst
```

4.3.217 UNMOUNTISO

Purpose: Unmount an ISO image previously mounted with MOUNTISO

Format: UNMOUNTISO [*d:*\ | *d:**path*\]

d: Optional drive letter.
d:\path Optional mount path

See also MOUNTISO.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

UNMOUNTISO is only supported in Windows 8 or later.

You must be running an elevated session to unmount the ISO image.

4.3.218 UNMOUNTVHD

Purpose: Unmount a VHD or VHDX image previously mounted with MOUNTVHD

Format: UNMOUNTVHD [*d:*\ | *d:**path*\]

d: Optional drive letter.

d:\path Optional mount path

See also MOUNTVHD.

File Completion Syntax:

The default filename completion syntax is: **dirs**

Usage:

You must be running an elevated session to unmount the VHD or VHDX image.

4.3.219 UNQLITE

Purpose: Create / Read / Write a NoSQL database

Format: UNQLITE [/RWC [/RO [/MM] /RW /TEMP /MM] [/DB:"name"] [/C] [/D key] [/R key] [/KVBA "key" handle length] [/KVF "key" filename length] [/KVFA "key" filename length] [/KVS "key" "value"] [/KVSA "key" "string"]

/C(lose)
/D(elete)
/DB:name (database name)
/KVB (create key/binary blob)
/KVBA (append key/binary blob)
/KVF (create key/file)
/KVFA (append key/file)
/KVS (create key/value)
/KVSA (append)
/MM (memory mapped)
/R(ead)
/RO (open read-only)
/RW (open read+write)
/RWC (open read+write+create)
/TEMP (temporary db)

Usage:

UnQLite is an embedded NoSQL (Key/Value store and Document-store) database engine. UnQLite reads and writes directly to ordinary disk files. The complete database with multiple collections is contained in a single disk file. The database file format is cross-platform, you can copy a database between 32-bit and 64-bit systems or between big-endian and little-endian architectures.

You can only perform one operation (open, close, write, read, etc.) each time you call UNQLITE. For example:

```
unqlite  /db:"test.db"/rwc
unqlite /db:"test.db" /kvs "keyone" "This is a string value assigned to
keyone"
unqlite /db:"test.db" /c
```

If *filename* is ":mem:", then a private in-memory database is created. The in-memory database will be discarded when the database is closed.

UNQLITE does not support extended Unicode characters for the database name.

Both keys and values are treated as arrays of bytes, so the content can be ASCII strings, Unicode strings, binary blogs, or disk files.

The maximum size of a file for /KVF or /KVFA is dependent on the RAM and disk space available.

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UNQLITE has an internal command variable:

%_unq_db	The name of the current database

Options:

/C Close a database. If you omit the name, UNQLITE will close the most recently opened database.

/D Delete the specified key

/DB:*name* Open an existing database for a read / write / delete operation. The database name should be quoted. You need to use the same name when calling any of the read / write options. If this option is omitted, UNQLITE will use the last database name (if any).

/KVB Create a key / binary blob value. If the key exists, it will be overwritten with the new value. *handle* is a handle returned by @BALLOC; *length* is the length to write (or -1 for the entire buffer).

/KVBA Append a binary blob to the value of an existing key. *handle* is a handle returned by @BALLOC; *length* is the length to write (or -1 for the entire buffer).

/KVF Create a key / file value pair. If the key exists, it will be overwritten with the new value. *length* is the length of the file to write (or -1 for the entire file).

/KVFA Append a file to the value of an existing key. *length* is the length of the file to write (or -1 for the entire file).

/KVS Create a key / value pair. If the key exists, it will be overwritten with the new value.

/KVSA Append a string to the value of an existing key.

/MM A read-only memory-mapped view of the database. Only valid when used with /RO.

/R Read the specified key and display the value. If the key doesn't exist (or doesn't have a value) UNQLITE will not display anything.

/RO Open the database in read-only mode. If the database does not exist, an error is returned.

/RW Open the database with read+write privileges. If the database does not exist, an error is returned.

/RWC Open a database with read+write privileges. The database is created if it doesn't exist.

/TEMP A private, temporary on-disk database will be created. The database will be deleted when the database is closed.

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4.3.220 UNSET

Purpose: Remove variables from the environment or the registry

Format: UNSET [/= /D /E /Q /S /U /V /R *file*... (*name* ...)] *name* [*name*...]}]
or
UNSET *

name One or more variables to remove (wildcards accepted except for registry variables).
file One or more files from which to read variables to be removed.

/D(efault)
/E(nvironment)
/Q(uiet)
/R(ead)
/S(ystem)
/U(ser)
/V(olatile)

See also: ESET and SET.

File Completion Syntax:

The default filename completion syntax is: **[/r] * [1*] variables**

Usage:

UNSET removes one or more variables from the environment or from the Windows Registry.

You can also use regular expressions in the variable name.

UNSET can be used in a batch file, in conjunction with the SETLOCAL and ENDLOCAL commands, to clear the environment of variables that may cause problems for applications run from that batch file.

For more information on environment variables, see the SET command and the general discussion of the environment.

Note: You cannot use UNSET with GOSUB variables.

Use caution when removing environment variables, and especially when using **UNSET ***. Many programs will not work properly without certain environment variables; for example, ***TCC*** depends on PATH.

Registry Variables: Default, System, User, and Volatile registry variables can be manipulated with the UNSET command's /D, /S, /U and /V switches, respectively. To remove the variable from both the registry and from the local environment, use both the /E switch and the registry variable selection switch together. (You cannot use wildcards for the variable name.) For example, to remove the volatile variable ***myvar*** from both the registry and the local environment, use:

```
unset /v /e myvar
```

Use caution when directly removing registry variables as they may be essential to various Windows processes and applications.

Examples:

To remove the environment variable **CMDLINE**:

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```
unset cmdline
```

If you use the command **UNSET** *, all of the environment variables will be deleted:

```
unset *
```

You can delete all matching variables except for those specified by enclosing the exceptions in parentheses. For example, to remove all variables beginning with "v" except for *var1* and *var2*:

```
unset (var1 var2) v*
```

Options:

/= Display the UNSET command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/D Delete a default variable from the registry (HKU\.DEFAULT\Environment).

/E When used together with one of /D, /S, /U, or /V, unsets both the registry variable and the local environment variable.

/Q Prevents UNSET from displaying any error messages.

/R Read environment variables to be UNSET from a file. This is much faster than using multiple UNSET commands in a batch file, and can be more selective than **UNSET** *. The file format may be the same as that used by the SET /R command (see SET for more details), or it could just be one variable per line, wildcards not processed.

UNSET /R will read from STDIN if no filename is present and input is redirected.

/S Delete a **system** variable from the registry (HKLM\System\CurrentControlSet\Control\Session Manager\Environment).

/U Delete a **user** variable from the registry (HKCU\Environment).

/V Delete a **volatile** variable from the registry (HKCU\Volatile Environment)

4.3.221 UNSETARRAY

Purpose: Remove array variables

Format: UNSETARRAY [/Q] *name* [*name*...]
or
UNSETARRAY *

name One or more array variables to remove (wildcards accepted).

/Q(uiet)

See also: SETARRAY.

Usage:

UNSETARRAY removes one or more array variables.

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For more information on array variables, see the SETARRAY command.

Examples:

To remove the array variable **ARRAY1**:

```
unsetarray array1
```

If you use the command **UNSETARRAY ***, all of the array variables will be deleted:

```
unsetarray *
```

You can delete all matching array variables except for those specified by enclosing the exceptions in parentheses. For example, to remove all array variables beginning with "v" except for *var1* and *var2*:

```
unsetarray (var1 var2) v*
```

Options:

/Q Prevents UNSETARRAY from displaying an error message if one or more of the array variables do not exist. This option is most useful in batch files, for removing a group of arrays when some of the arrays may not have been defined.

4.3.222 UNSETP

Purpose: Delete an environment variable in another process

Format: UNSETP *pid* [/= /R *filename*][(*except...*)] var

pid Process ID, or the window title, or the task name
var The variable name to delete. The name can contain wildcards

/R Read variables and values from a file

See also SETP.

Usage:

You can delete all matching variables except for those specified by enclosing the exceptions in parentheses.

UNSETP works by injecting a dll into the specified process and executing a command in that dll to remove the environment variable. Depending on your Windows configuration, you may need to be running an elevated session for UNSETP to work.

Examples:

To remove all variables beginning with "v" except for *var1* and *var2* in the process with a PID of 1234:

```
unsetp 1234 (var1 var2) v*
```

Options:

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/= Display the UNSETP command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.223 UNTAR

Purpose: Extract files from .TAR archives

Format: UNTAR [/= /A:[[-][+]rhsdaecjot] /C /D /E /F /G /Net /O /P /Q /TEST /U /V] *tararchive path file* ...

ziparchive	The .tar file to work with
path	The path where files will be extracted
file	The file(s) to extract

/A:... (attribute switch)
/C(ontents)
/D(irectory)
/E(xtract)
/F(reshen)
/G(zip)
/N (defaults)
/O(verwrite)
/P(ercent)
/Q(uiet)
/TEST
/U(pdate)
/V(iew)

See also TAR.

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs tar [2*] ***

Usage:

UNTAR is compatible with tar archives created in Linux / UNIX. Unlike .zip archives, .tar archives are not compressed unless you use the gzip option. If you don't specify any arguments, UNTAR will display its command dialog.

You can specify a pathname for *tararchive*. If you don't provide an extension, and the filename as entered doesn't exist, UNTAR adds ".tar". If you don't specify an operation, UNTAR will default to Extract.

UNTAR supports wildcards for the tar archive name and for the filenames to extract.

path specifies the path where files will be extracted. If *path* is not specified, files are extracted to the current directory.

UNTAR supports gzip decompression, and can be used to extract .tar.gz archives.

UNTAR sets two internal variables:

%_untar_files	The number of files extracted
%_untar_errors	The number of errors

Options:

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/= Display the UNTAR command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Display (on standard output) the contents of a file in the tar archive.

/D Recreate the directory structure saved in the tar file.

/E Extract the specified file(s). (This is the default.)

/F Extract only those files that currently exist in the target folder, and which are older than the file in the tar archive.

/G Use Gzip decompression.

/N Disable one or more default behaviors:

e Don't display errors.
t Don't update the CD / CDD extended directory search database *(JPSTREE.IDX).*

/O Overwrite existing files. UNTAR normally prompts before overwriting an existing file; /O will suppress the prompt.

/P Display the progress (0 - 100%) for each file as it is extracted.

/Q Don't display filenames as they are extracted.

/TEST Test the integrity of the TAR file (header and contents). Any errors will be displayed on STDERR.

/U Extract files which either don't exist in the target folder, or which are older than the file in the tar archive.

/V View the list of files in the archive (date, time, size, and filename).

4.3.224 UNZIP

Purpose: Extract files from .ZIP archives

Format: UNZIP [/= /A:[[-][+]rhsdaecjot] /C /CRC /D /E /F /I /Nt /O /P /Q /S"*password*" /TEST /U /V] *ziparchive path file* ...

ziparchive The Zip file to work with
path The path where files will be extracted
file The file(s) to extract

/A:... (attribute switch)
/C(ontents)
/CRC
/O(verwrite)
/P(ercent)
/Q(uiet)

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/D(irectory)
/E(xtract)
/F(reshen)
/I (descriptions)
/N
/S"password"
/TEST
/U(pdate)
/V(iew)

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs zip [2*] ***

Usage:

You can specify a pathname for *ziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, UNZIP adds ".zip". If you don't specify an operation, UNZIP will default to Extract. If you don't specify any arguments, UNZIP will display its command dialog.

UNZIP supports wildcards for the zip archive name and for the filenames to extract. UNZIP will prompt before overwriting existing files. Your options at the prompt are explained in detail under Page and File Prompts.

path specifies the path where files will be extracted. If *path* is not specified, files are extracted to the current directory.

UNZIP will automatically use the Zip64 extensions if the archive is in Zip64 format.

UNZIP sets two internal variables:

%_unzip_files	The number of files extracted
%_unzip_errors	The number of errors

Example:

Extract the files in *myzip.zip,* recreating the saved directory structure, overwriting any existing files:

```
unzip /d /o myzip.zip
```

Option:

/= Display the UNZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Display (on standard output) the contents of a file in the zip archive.

/CRC Display the file CRCs (must be used with /V).

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/D Recreate the directory structure saved in the zip file.

/E Extract the specified file(s). (This is the default.)

/F Extract only those files that currently exist in the target folder, and which are older than the file in the zip archive.

/I Save the "File Comment" (if any) for each extracted file to the NTFS description or the DESCRIPT.ION file.

/Nt Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.

/O Overwrite existing files. UNZIP normally prompts before overwriting an existing file; /O will suppress the prompt.

/P Display the progress (0 - 100%) for each file as it is extracted.

/Q Don't display filenames as they are extracted.

/S Use the specified password to extract the file(s) from an encrypted archive. If you don't provide a password on the command line, UNZIP will prompt you to enter one.

/TEST Test the integrity of the ZIP file (header and contents). Any errors will be displayed on STDERR.

/U Extract files which either don't exist in the target folder, or which are older than the file in the zip archive.

/V View the list of files in the archive (date, time, size, compression ratio, and filename). If the zip file is password protected, UNZIP will append a * after the filename.

4.3.225 UPTIME

Purpose: Display the time since startup and the active time

Format: UPTIME

Usage:

UPTIME displays the time since the system was last rebooted, and the time the system has been active (i.e., not sleeping or hibernating).

Example:

```
[D:\TakeCommand28]uptime

Uptime  4 days 14 hours 58 minutes 42 seconds
Boot    6/19/2021 3:31:35 AM
Logon   6/19/2021 10:23:51 AM
```

4.3.226 USBMONITOR

Purpose: Monitor USB device connection and disconnection

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Format: USBMONITOR [/C [*name*]]
USBMONITOR [/=] *name* CONNECTED | DISCONNECTED *n command*

name	Device name
n	Number of repetitions (or **FOREVER**)
command	Command to execute when condition is triggered

/C(lear)

Usage:

The USB device name can include wildcards. You can use either the device ID or the "friendly" name for the device.

The command line will be parsed and expanded before USBMONITOR is executed, so if you want to pass redirection characters or variables to ***command*** you will need to protect them (by enclosing in single back quotes, doubling the %'s, or using command grouping).

If the last argument on the line is a single **(**, it is interpreted as the beginning of a command group. USBMONITOR will append the following lines (in a batch file) or prompt you for more input (at the command line) until it gets a closing **)**.

If you don't enter any arguments, USBMONITOR will display the USB devices it is currently monitoring.

The monitoring runs asynchronously in a separate thread. When the condition is triggered, the command will be executed immediately. This may cause problems if you try to write to the display or access files while the main ***TCC*** thread is also performing I/O. You may need to use START or DETACH in ***command*** to avoid conflicts.

USBMONITOR creates two environment variables when a device is connected or disconnected that can be queried by ***command***. The variables are deleted after ***command*** is executed.

_usbdeviceid	The device ID (this will usually have special characters like **&** in the name, so you will probably need to use double quotes around the variable name to prevent ***TCC*** from parsing the special characters)
_usbname	The "friendly" name of the device

There is another variable that is updated after each trigger:

_usbcount	The number of times the command has been triggered

Options:

/=	Display the USBMONITOR command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.
/C	If ***name*** is specified, remove the monitor for that USB device. Otherwise, remove all USB monitors.

4.3.227 UUID

Purpose: Create UUIDs in different formats

Format: UUID [/=] [/B] [/C*n*] [/F*n*]

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/B(races)
/Cn (create)
/Fn (format)

Usage:

A UUID (also referred to as a GUID in Windows) is a 128-bit integer number used to uniquely identify resources.

Examples:

```
[D:\TakeCommand28]uuid /b
{0634f6db-823e-4536-bb40-eb025d3020bc}

[D:\TakeCommand28]uuid /f1
5ED9BCD0-B6B0-4C01-822B-20A03CECB6B0

[D:\TakeCommand28]uuid /f3
42D9909D2385495D9D51C8C6F4AB8D36
```

Option:

/= Display the UUID command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/B Enclose the UID in curly braces

/C*n* Create *n* UUIDs

/F*n* Format for the UUID, where *n* is:

0 - returns the UUID with lower case alphabetic characters and embedded hyphens
1 - returns the UUID with upper case alphabetic characters and embedded hyphens
2 - returns the UUID with lower case alphabetic characters and no hyphens
3 - returns the UUID with upper chase alphabetic characters and no hyphens

4.3.228 VBEEP

Purpose: Flash the screen and beep the speaker

Format: VBEEP [/=] [*frequency duration* ...] [asterisk | exclamation | hand | question | ok]

frequency	The beep frequency in Hertz (cycles per second).
duration	The beep length in 1/18th second intervals.
asterisk	Plays the system default "asterisk" sound.
exclamation	Plays the system default "exclamation" sound.
hand	Plays the system default "hand" sound.
question	Plays the system default "question" sound.
ok	Plays the system default "ok" sound.

See also: the Length and Frequency configuration options.

Usage:

VBEEP flashes the screen (by setting all attributes to their inverse), and generates a sound through your computer's speaker. You can use it in batch files to signal that an operation has been completed, or that the computer needs attention.

You can include as many frequency and duration pairs as you wish. No sound will be generated for frequencies less than 20 Hz.. The default value for *frequency* is 440 Hz; the default value for *duration* is 2.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Option:

/= Display the VBEEP command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

4.3.229 VDESKTOP

Purpose: Manage Windows 10 virtual desktops

Format: VDESKTOP [[/N="*name"]* /C [/W="file"] /R id /S [id] - +]

/C(reate)
/R(emove)
/S(switch)
/N="name"
/W="file"

Usage:

VDESKTOP lets you create, remove, or switch Windows 10 virtual desktops.

VDESKTOP requires Windows 10 build 21313 or later.

Options:

/C Create a new desktop

/N You can optionally specify a desktop name. If you don't specify a name, you need to use a desktop number (1 - *n*) or the desktop GUID. Note that with the current Windows builds, the name is not updated in the Task View, though it is usable with subsequent VDESKTOP commands, and it will be displayed properly when the system is restarted.

/R Remove the specified desktop. Id can be a desktop number (1 - n) or the GUID for that desktop.

/S Switch to the specified desktop. If *id* isn't specified, switch to the desktop created with /C. *id* can either be a desktop number (1 - n) or the GUID for that desktop.

/W When used with /C, /W specifies the image file to use for the background wallpaper for the desktop. Note that with the current Windows builds, the background will not be updated until the system is restarted.

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4.3.230 VER

Purpose: Display the ***TCC*** and operating system versions

Format: VER [/C /R]

/C(MD format)
/R(evision)

Usage:

Version numbers consist of a one or two-digit major version number, a separator, and a one- or two-digit minor version number. VER uses the default decimal separator defined by the current country information. The VER command displays version numbers for both ***TCC*** and Windows:

```
[c:\] ver
TCC  28.00.2 x64   Windows 10 [Version 10.0.21390.2025]
```

Options:

/C Display Windows version information in the same format as CMD.EXE (i.e., "Microsoft Windows [Version 10.0.21390.2025]").

/R Display the ***TCC*** and operating system internal revision level (if any), plus your registered name.

4.3.231 VERIFY

Purpose: Enable or disable disk write verification or display the verification state

Format: VERIFY [ON | OFF]

Usage:

Disk write verification cannot actually be enabled under Windows. ***TCC*** supports VERIFY as a "do-nothing" command, for compatibility with CMD. This avoids **unknown command** errors in old batch files which use the VERIFY command. You can set verification for file copying with the COPY /V option.

If used without any parameters, VERIFY will display the state of the verify flag:

```
[c:\] verify
VERIFY is ON
```

4.3.232 VIEW

Purpose: Display the contents of files

Format: VIEW [/= /A:[[-|+]rhsadecijopt /A /B /E /FIX /FLAT / GB /H /L /L:*n* ? LEN:n /O:*xx* /P /QUIET /R /S:*xx* /T /TEXT /VH /W] *file* ...

file One or more files.

/A: (Attribute select)
/A(SCII mode)
/B (EBCDIC)
/E (start at end)
/LEN:n (wrap length)
/O:xx (start at offset)
/P(rint)
/QUIET

/FIX
/FLAT
/GB (greenbar)
/H(ex)
/L(ast file)
/L:n (start at line n)
/S:xx (search)
/T (file tail)
/TEXT
/VH (vertical hex)
/W (Take Command tab window)

See also LIST.

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

Usage:

VIEW provides a fast and flexible way to view a file, without the overhead of loading and using a text editor. VIEW is a replacement for the old LIST command.

For example, to display a file called *MEMO.TXT*:

```
view memo.txt
```

View includes per-monitor DPI support. If you drag a VIEW window from one monitor to another with a different DPI setting, it will adjust itself accordingly.

Note: VIEW is primarily intended for displaying the contents of ASCII, Unicode, and EBCDIC text files (i.e. alphanumeric characters arranged in lines separated by CR/LF). It can be used for other files which contain non-alphabetic characters or unusual line separators, but you may need to use hexadecimal mode (see below) to display or search these files.

If you don't specify any filenames on the VIEW command line, VIEW will first check to see if standard input has been redirected (i.e., with a pipe like "DIR | VIEW"). If so, VIEW will display the contents of standard input. If not, VIEW will display a dialog to allow you to select files to display.

VIEW can view CSV files as tables. CSV files are typically used to represent tabular data, where each line in the file represents a row of a table. Each line contains the text of each column in the row, separated by a comma (although other characters can be used, such as a tab). By default, VIEW will automatically recognize CSV files and will display them as a table - where all the columns have the same width (much like a spreadsheet). Although unlike a spreadsheet, the column widths in V are fixed (determined by the longest entry in the column) and cannot be resized. You can press the arrow button next to the new CSV Mode button in the toolbar to customize the CSV behavior. Press the CSV Mode button to toggle between CSV mode and standard text mode.

VIEW can also display the clipboard (CLIP:), FTP, and HTTP files.

You can override the default HTTP proxy server, proxy user, and proxy password (set in TCMD.INI) with the **/Proxy...** options.

/Proxy=*server*
/ProxyUser=*username*
/ProxyPwd=*password*

Line Wrapping:

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When a line is too long to fit in the view, horizontal scroll bars appear at the bottom of the view, allowing you to scroll through the entire line. The horizontal scroll bars will appear when at least one line of the file being viewed is wider than the width of the view.

Sometimes scrolling through lines is not very convenient, particularly if a file contains many really long lines. In this case, lines can be wrapped. Lines may be wrapped in several ways:

Wrap to Screen

The lines are wrapped so that all text fits inside the file view. In this case, the horizontal scroll bars disappear. Screen wrapping may be toggled by selecting the Wrap to Screen command from the View menu, pressing the Wrap to Screen button on the toolbar, or by pressing Alt-W. Wrapping text to the screen may be permanently enabled by setting the Wrap lines to screen option in the Preferences Dialog box.

Wrap to Length

In this case, the lines are wrapped whenever they reach the wrap length. Wrapping may be toggled by selecting the Wrap to Length command from the View menu, pressing the Wrap to Length button on the toolbar, or by pressing Alt-L. The wrap length may be quickly changed by selecting the Set Wrap Length command from the View menu, or by pressing Ctrl-W. You may enter a new wrap length, or select a previously used length from the list.

Wrap on Word Boundary

Normally, lines will be wrapped at the exact position where they exceed the width of the view (if wrapping to screen), or the wrap length - even if it happens to be in the middle of a word. To ensure that lines are not split mid-word, select the Wrap on Word Boundary option from the Preferences Dialog box.

Hex Mode:

Hex mode displays a file as a series of hexadecimal (base 16) numbers together with the corresponding ASCII character equivalent (this is also known as Debug Format).

The first 8 digits on each line represents a hex address which indicates the position (or offset) of the corresponding line in the file. This is followed by up to 16 hex numbers (or bytes) which correspond to the file data. The right hand side of the view consists of the ASCII character representation of the corresponding file data If the hex byte does not correspond to a printable ASCII character, it is displayed as a "." (dot).

Split Windows:

The File window can be split in two by clicking on the Split Screen button on the toolbar and selecting Horizontal or Vertical Split Mode. It can also be split from the Split submenu of the View menu, or by pressing Alt+S. This allows you to view different parts of the same file in different windows.

Note that both windows must use the same display mode. For example, you cannot have one window in hex mode and the other in text mode. Also, if you enable line wrapping, the wrapping will apply to both windows.

The Ruler:

The ruler makes it easy to determine the position of a particular character. The ruler is displayed at the top of the File View and its format depends on the mode of the view.

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If the view is in Text mode, the ruler consists of a sequence of incrementing numbers (starting at 1) which indicate the column number of the character below. In this case, the length of the ruler is determined by the length of the longest line in the file.

If the view is in Hex mode, the ruler always consists of 16 hex offsets (from 00 to 0F) which indicate the offset from the start of the line of the corresponding hex bytes displayed below.

The ruler may be dragged over any part of the file. The floating ruler may be removed by either double-clicking on it or by dragging it back to the top.

The ruler numbering usually starts at 1. To start from 0, right-click on the ruler with the Control key pressed and select the required option. Alternatively, you can press Ctrl+Alt+R to toggle the starting column.

Up to 10 floating rulers may be displayed while viewing a file. To create a new ruler simply drag it from the top (fixed) ruler. To close a ruler, double click on it. To close all rulers (but to remember their position), double click on the fixed ruler. To redisplay the floating rulers in their last position, double click again on the fixed ruler.

Right-clicking (or shift-clicking) on the ruler will cause a vertical grid line to be drawn at the clicked column position. The grid line will disappear once the button is released.

Options:

/= Display the VIEW command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A: Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use **/A:** with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A View the file in ASCII mode. This is the default mode and will only need to be specified in order to override an existing EBCDIC mode.

/B View the file in EBCDIC mode. VIEW normally automatically determines if a file is EBCDIC and automatically sets this mode.

/E Start viewing the file from the end instead of the beginning.

/FIX:n When viewing a file, the display may be fixed at a certain column position so that any text to the left of the fixed column will always be visible (ie, it will not scroll off the screen).

/FLAT Enables Flat Text Mode. This is a cross between text and hex modes. The file is displayed as text, however, control characters like line feeds and tabs are not expanded, and the file is always wrapped at the specified wrap length.

/GB Enables Greenbar Mode. Each alternating line is in a different color.

/H View the file in Hex mode.

/L Display the last file that was viewed. (This will be the first file in the Recent Files list.)

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/L:n Start displaying the file from line number *n.* A solid blue line will appear at the top of the file, indicating that a non-zero start offset is being used.

/LEN:n Set the wrap length to *n.*

/O:xx Start displaying the file from offset *xx*.

/P Print the file and exit VIEW when finished.

/QUIET Quiet option for printing.

/Proxy=*server*

/ProxyUser=*username*

/ProxyPwd=*password*

/S The /S option is used to tell VIEW to start displaying the file at the position of a string match. The format of the /S command line option is as follows:

/S:SearchString /SO:[CWRHUB] /SN:n /SC:Columns

where SO can contain a series of letters which correspond to the options in the search dialog box. These can be one of:

C Match case

W Word Only

R Regular Expression

H Hex/Binary

U Unicode

B Search backwards (from end of file)

SN indicates which occurrence of the string to find. By default, the first match is found (n=1).

SC can be used to restrict the search to certain columns.

If the search string contains spaces, you must enclose it in double quotes.

/T Enable File Tailing. If data is added to the file while you are viewing it, it will automatically be updated. There is no need to press the Refresh button to see any changes since the file was loaded. This is particularly useful when viewing log files while they are still being updated.

/TEXT Open the files in text mode (opposite of /H). (This is the default.)

/VH Display the file in Vertical Hex Mode. This is a cross between Text and Hex modes. The file is displayed one line at a time (just as in text mode). However, each line is followed by 2 lines containing the hex code of each character in the line.

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/W If in a ***Take Command*** tab window, moves the VIEW window into the tab window (and keeps it there if you resize or move the ***Take Command*** window). If in a ***TCC*** console window, sizes & moves the VIEW window to the same size and position as the ***TCC*** window (but you can drag the VIEW window away).

4.3.232.1 VIEW Command Line Options

Command line options may be entered on the **VIEW** command line.

For example,

```
VIEW FileName [options]
```

The following options are valid:

/A View the file in ASCII mode. This is the default mode and will only need to be specified in order to override an existing EBCDIC mode.

/B View the file in EBCDIC mode.
/E **V** will start viewing the file from the **end** instead of the beginning.
/FL Enables Flat Text Mode

/GB Enables Greenbar Mode
/H This will force the file to be viewed in Hex mode.
/I A new instance of **V** will be started (multiple calls to VIEW are usually handled by a single instance of **V**)
/IC Enables the Ignore Consecutive CRs option

/IF Enables the Ignore Form Feed option

/L **V** will display the **last** file that it viewed. This will be the first file in the Recent Files list.
/L: **V** will start displaying the file from **line number** nn

/LE Sets the wrap length to nn

/O: **V** will start displaying the file from **offset** xxxx

/P Indicates that the specified file(s) are to be **printed**. Click here for further printing options.
/R When started with no parameters, **V** will browse the current directory. By specifying the **/R** option, **V** will display the directory that it last browsed. Note that this option is automatically added to all shortcuts that **V** creates for itself.
/T Enable File Tailing
/TE This forces a file to be opened in text mode (opposite of /H)

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/VFO See Font Options
NT
/VH The file will be viewed in Vertical Hex Mode
/OE **V** will display the file using the DOS/OEM character set (if available).

/OE **V** will use the DOS/OEM character set when printing.

/AN **V** will use the default character set.

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Further command line options are explained in the following sections:

/Delete Option
/S Option
/Fix Option
Font Options
Printing Options
Text Only Printing Options
EBCDIC Options

Notes

The options may also appear **before** the file name(s)

The options are **not** case sensitive.

You can use an equals (=) instead of a colon (:). For example, /L=20 instead of /L:20

4.3.232.1.1 /Delete Option

The **/delete** option is used to tell **V** to delete the file once it has finished viewing it.

This option may be necessary if you are using **V** as an external file viewer. When using external file viewers, programs usually create temporary files and then launch the file viewer to display the temporary file. It is up to the program that launches the file viewer to delete any temporary files it has created.

However, not all programs are well behaved and it is sometimes not possible to delete the file because **V** may still have the file open. If you know that the program in question always creates temporary files before it passes them to **V**, you should use the **/delete** flag.

***** Please use this option with caution *****

4.3.232.1.2 Find String Option: /S

The **/S** option is used to tell **V** to start displaying the file at the position of a string match.

The format of the /S command line option is as follows:

V Filename /S:SearchString /SO:[CWRHUB] /SN:n /SC:Columns

where

SO can contain a series of letters which correspond to the options in the search dialog box. These can be one of:

C Match case
W Word Only
R Regular Expression
H Hex/Binary
U Unicode
B Search backwards (from end of file)

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SN indicates which occurrence of the string to find. By default, the first match is found (n=1).

SC can be used to restrict the search to certain columns.

If the search string contains spaces, you must enclose it in double quotes.

Examples

Start viewing at the second occurrence of "Error"

V Filename /S:Error /SN:2

Start viewing at the last line that contains the *word* "Error"

V Filename /S:Error /SO:WB

Note that the first example will match "errors", whereas the second will not.

Start viewing at the first line that *begins* with "Error Log"

V Filename /S:"^Error Log" /SO:R

Note

The /S parameter will not work on wild cards - you must specify a valid file name.

For example, you cannot specify "**V *.txt /S:Error**" hoping that **V** will display the first txt file that contains "Error"

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4.3.232.1.3 /Fix Option

The **/FIX** option tells **V** to fix the columns when viewing the specified file(s).

The column position may also be specified on the command line.

For example,

```
V TABLE.TXT /FIX:6
```

If no column position is specified, the most recent fixed column position is used.

To disable fixed columns, specify a column position of zero. That is,

```
V TABLE.TXT /FIX:0
```

4.3.232.1.4 Font Options

You may specify the display font on the command line by using the **VFONT** option as follows:

```
/VFont:"Font Name",size
```

For example:

```
V Filename /VFont:"Courier New",10
```

Notes

The **size** option is optional. If not specified, it will default to 10 point.

The **/FONT** option is used to specify what font will be used when printing.

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4.3.232.1.5 Viewing Redirected Output

When using a Command Prompt, it is awkward to view the output of a command (like DIR or GREP) when that command outputs more lines than can fit on the screen.

Sometimes, the Command Prompt allows you to scroll back through the output. However, you still can't search, or select and copy the output.

Typically, the **more** command is used as a filter to pause the output a screen at a time. However, it is still very limited - you can't scroll back or search.

You can solve all the above problems by using **V** to view the redirected output. You will be able to scroll and search the output, and even save it to a file.

No option is required to view redirected output. If you do not provide a file name on the command line, **V** will automatically check if there is any redirected output.

4.3.232.1.6 Printing Options

The **/P** option is used on the command line to print the specified file(s). **V** will immediately start printing the file (in a minimized state), and will exit when it has finished. If you have **V** installed in the tray, a separate instance of **V** will be launched to do the printing.

The Print Dialog box will not appear when printing from the command line (unless the **/PD** option is specified). All the current print settings will be used for printing. Most of these settings can be overridden by specifying them on the command line. The following command line options are available:

```
/Portrait
/Landscape
/2up
```

If one of the above 3 options is used, the **/P** option is implied and does not need to be specified.

`/Font:"Font Name",size`	eg, /Font:"Courier New",10
`/Printer:"Printer Name"`	eg, Printer:"HP LaserJet III"
`/AM:0.5`	Set ALL margins to 0.5 inches
`/LM:0.5`	Left margin
`/RM:0.5`	Right
`/TM:0.5`	Top
`/BM:0.5`	Bottom
`/Header:"Header Text"`	/Header:"%f;;Page %p"
`/Footer:"Footer Text"`	
`/Copies:2`	
`/From:2 /To:3`	Print From Page 2 to Page 3
`/L1:1 /L2:200`	Print From Line 1 to Line 200
`/Pagelen:60`	Override Page Length
`/Wrap`	Wrap Long Lines

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/Wrappage	Wraps long lines onto a new page instead of onto a new line
/EOL	Print End of Line
/PLN	Print Line Numbers
/IFFP	Ignore Form Feeds
/ODD	Only print odd numbered pages
/EVEN	Only print even numbered pages
/PX	Use Text Only printing
/PB	Use Raw/Binary printing
/PGB	Enables Greenbar printing
/Profile:"Profile Name"	Use the settings stored in the specified printer profile

You may also specify the **/PD** option which will cause the Print Dialog box to be displayed, allowing the user to override any print options.

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If your printer supports duplexing (double sided printing), you may also specify one of the following options:

/dups	Enable duplexing with short edge binding
/dupl	Enable duplexing with long edge binding

If you do not specify a print setting, the current (most recent) setting will be used. To disable a setting, prefix the corresponding option with **NO**.

For example, if the default setting was to print a Header, you would have to specify the **/NOHEADER** option to disable the header. You can also use, **NOFOOTER**, **NO2UP**, **NOWRAP**, **NOEOL**, **NOPLN** and **NOPAGELEN**.

/NOP option

When the **/P** option is used (or implied), **V** will immediately start to print the file. However, if you would like the user to be able to view the file before it is printed, you need to specify the **/NOP** option. **V** will retain the command line parameters and use them when the user decides to print the file.

/PAGELIMIT:xxx option

The /PAGELIMIT option is used to specify the maximum number of pages that can be printed. This can be used to prevent users from accidentally printing the entire contents of very large files.

Notes

Case is not important (ie, /Font or /font can be used).

Make sure that there is no space before or after the ":" in each option, and no space before or after the comma separating the font name and font size.

The header text, printer name and font name should be enclosed in "quotes".

If not specified, the default margins will be used. However, if one margin is specified on the command line, they must ALL be specified. Any margin not specified will default to ZERO.

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4.3.232.1.7 Text Only Printing Options

The Text Only Printing options can be entered on the command line.

They correspond to the options in the Text Only dialog box, and are as follows:

/TOAM:nn	Set *all* margins to nn
/TOLM:nn **/TORM:nn** **/TOTM:nn** **/TOBM:nn**	Set left, right, top and bottom margins
/TOW:nn	Set page width to nn
/TOH:nn	Set page height to nn (ie, page length)
/TOLD:n	Set the Line Delay to n
/TOPD:n	Set the Page Delay to n
/TODISABLE	To disable Text Only printing
/TOSOF:xxx	String to send before the start of file is printed
/TOEOF:xxx	String to send at end of file
/TOEOL:xxx	String to send after each line
/TOEOP:xxx	String to send after each page

To include control characters in a string, you must specify their 2 character hex code prefixed by a "**%**". For example to send a CR/LF at the end of each line and a FF (form feed) at the end of each page, you would specify the following options:

```
/TOEOL:%0d%0a /TOEOP:%0c
```

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4.3.232.1.8 EBCDIC Options

You can specify the EBCDIC record format and record length by using the **RECFM** and **LRECL** options.

/RECFM=xxx
Use this to specify the record format. The record format can be one of **V**, **VB**, **F** or **U**. If the file uses carriage control, you can also specify the type of carriage control by appending one of **A**, **M** or **Z**. An **S** may be appended to signify that the file contains ASCII characters (instead of EBCDIC).

/LRECL=nn
Use this to specify the record length for fixed length files (RECFM=F). This is not required for RECFM=V/VB/U.

Examples

```
V Filename /RECFM=F /LRECL=132
V Filename /RECFM=FM /LRECL=80
V Filename /RECFM=VBA
V Filename /RECFM=VS
```

Click here for further details on EBCDIC record formats

Note

V can usually auto-detect RECFM=V/VB files, so it is not necessary to specify these formats on the command line. However, **V** cannot detect if the file contains carriage control. If it does, you will need to use the RECFM option to specify the type of carriage control (eg, /RECFM=VA).

4.3.232.1.9 Sending Error Reports

If **V** *crashes*, it will display a message saying that it encountered an *unexpected problem* and that it cannot continue.

Press the *Send* button to send a detailed report to fileviewer.com for analysis.

Error reports can also be sent to fileviewer.com by selecting *Send Error Report* from the Help menu

You will be presented with a list of crash files (**Crash-xxxx.dat**) and a log file (**V.log**). Simply select the files that you want to send and press the Send button.

Please include a description of what you were doing just before the crash.

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4.3.232.2 The File View

The File View is the view in which the file is displayed. The view can be in one of two modes - Text and Hex, and can be configured in several ways.

The font in which the file is displayed may be selected from the Fonts section of the Preferences Dialog box. Note that **V** only supports non-proportional (or fixed pitch) display fonts - like Courier.

Right-clicking on any part of the File View will display a pop-up menu containing most of the available commands.

The following sections describe the File View in greater detail:

The Toolbar
Text Mode
Hex Mode
Unicode Files
Flat Text Mode
End of Line
Tabs
Start Offset
EBCDIC
The Ruler
Line Numbers
Line Wrapping
Column Fixing
Line Lengths
OEM Character Set
Bookmarks
Scrolling
Searching
Goto
Block Marking
File Chunks
Greenbar Mode
File Tailing

Click here for details on how to configure V to view multiple files.

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4.3.232.2.1 The Toolbar

Below is the default toolbar. It can be customized so that the buttons are re-arranged or deleted (right-click on the toolbar and select Customize).

Directory
Not available.

Refresh
Refreshes (or reloads) the file. It is possible that the file being viewed is also being modified by another program (eg, a log file). In order to be able to view any data appended to the file since the file was opened, you need to refresh it (unless File Tailing is enabled).

Previous/Next
Displays the previous/next file in the file list. If you select several files in the Directory View, the file list will consist just of the files selected, otherwise the file list will consist of all files in the directory. If you position the mouse over the Previous/Next buttons, the name of the corresponding file will be displayed. Note that these buttons work differently from the Back/Forward buttons in a browser.

File List
This brings up a list box containing all the files in the current file list. As above, if you have selected several files in the Directory View, this list will only contain the selected files. Otherwise, it will contain all the file in the current directory. To view another file, simply select it from the file list. Note that this feature is only available once **V** has been registered.

Find
Searches for a string.

Find Next/Find Previous
Searches for the next (or previous) occurrence of a string.

Goto
Goes to a specified position in the file. Click here for further details.

Clipboard
Copies (or appends) selected text to the clipboard. Click here for further details.

Text Mode
Displays the file in Text Mode

Hex Mode
Displays the file in Hex Mode

Wrap To Screen/Wrap To length
Click here for further details on line wrapping.

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Line Numbers
Toggles line numbers on/off in Text mode.

EOL
This specifies whether an **End Of Line** character will be displayed at the end of every line. This is useful when viewing files with trailing spaces. Note that this option is not available in Hex mode. The character used as the End Of Line terminator may be specified in the Fonts tab of the Preferences dialog box. The **EOL** mode can also be toggled by pressing the **Enter** key. Note that the **EOL** character will not be displayed at the end of a line that has been wrapped. It will only be displayed if it corresponds to an actual end of line character in the file.

Tail
This enables File Tailing

Greenbar
Clicking on this button enables/disables Greenbar Mode. Clicking on the arrow portion of the button allows you to modify the Greenbar Options.

Tools
Clicking the Tools button displays a further menu where you may select one of the following:

MD5/CRC32
This calculates the MD5 and CRC32 of the file being viewed.

Word/Line Count
This counts the number of words and lines in the file.

Zoom
You may easily increase (or decrease) the size of the current font by using the + and - keys. This does not do a "bitmap zoom", but simply selects the next point size in the current font. If a larger (or smaller) point size is not available, nothing will happen. Note that this will not work properly with the Terminal font.

Send
This will construct an email message using your email client and will attach the file being viewed. Note that this will only work if MAPI (or Windows Messaging) is installed on your system.

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4.3.232.2.2 Text Mode

The Text mode displays the contents of a file exactly as they are stored on disk - much like an editor does.

The Text mode may be enhanced by adding line numbers, adding a ruler and wrapping lines. These topics are discussed further in later sections.

When **V** opens a file, it determines whether it is a text or binary file, and displays the file in Text or Hex mode respectively. Basically, text files contain only alphanumeric, punctuation and new line characters. If files contain characters other than these, they will be displayed in Hex mode.

It takes a little bit longer for files to be displayed in Text mode rather than Hex mode. Files that are loaded in Hex mode will display almost instantaneously - regardless of size (1 byte or 500Mb). However, displaying files in Text mode is different. To display the file properly (and to handle the scroll bars correctly), **V** needs to know the number of lines in the file, and also the length of the longest line. As files get larger, it naturally takes longer to do this. Normally, you will not notice any delay unless the files are at least 8Mb in size.

File Chunks
To enable fast loading of even **very large files** (hundreds of Mb to several Gb), **V** can view files in **chunks**, instead of loading the entire file. Click here for further details on file chunks.

File Tailing
If you want **V** to automatically refresh a file as it is being viewed, you need to enable File Tailing. Click here for further details.

Notes

Binary files (like ZIP and EXE files) can be viewed in Text mode, although it usually doesn't make sense to do so. If such files are viewed in text mode, many strange characters will be displayed. These strange characters correspond to non-printable (or control) characters and will differ depending on which font is selected.

Sometimes **V** can incorrectly decide that a text file is a binary file, and display it in Hex mode. This usually happens if a file contains an unexpected control character (eg, line drawing characters). In this case, just click on the Text icon on the toolbar (or press **Alt-H**) to display the file in Text mode. If you find that **V** is incorrectly displaying most of your text files in Hex mode, you can force **V** to always view them in text mode by enabling the Always Open as Text option in the Preferences Dialog box. However, by enabling this option, even ZIP and EXE files will initially be displayed as text.

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4.3.232.2.3 Unicode Files

Most text files are stored using ASCII characters - each character is encoded using one byte (8 bits). This means that we can have a maximum of 256 different characters. This isn't a problem in most English speaking environments, but it does become a problem once you start encoding characters in different languages.

Unicode is a standard for encoding characters that tries to address the problem of encoding all possible international characters into a single, unified format.

As with most standards, there are several flavors to choose from. **V** supports UCS-2 and UTF-8. (See the note below regarding UTF-16)

Status Bar Indicator

V will automatically detect most Unicode files and display them accordingly, including files with foreign characters. **UNI** will be displayed in the status bar to indicate that the file is a Unicode file. **ANS** (for ANSI) will be displayed in the status bar when the file is not a Unicode file.

If **V** does not guess the correct encoding, you can click on the **UNI/ANS** indicator in the status bar and select the correct encoding (assuming that you know what it is).

Font Substitution

V does not support font substitution (or font fallback). Under font substitution, if the selected font does not contain a particular character, the program will try to use another font to display that character. Since **V** does not do font substitution, it is very important to use a font that contains all the characters to be displayed. In particular, the standard **Courier** font should not be used to display Unicode files - **Courier New** should be used instead.

UCS-2 vs UTF-16

Strictly speaking, **V** does not fully support UTF-16 - it only supports UCS-2 (which is the outdated predecessor to UTF-16).

UCS-2 is a fixed length encoding that encodes all characters to a 16 bit value (from 0 to FFFF). UTF-16 is a variable length encoding capable of encoding the entire Unicode range of characters. In particular, UTF-16 can be used to encode characters greater than FFFF.

However, in most cases, UCS-2 and UTF-16 are identical. If users encounter any problems viewing Unicode files, please contact v@fileviewer.com (preferably attaching a copy of the Unicode file).

Notes

V does not support UTF-32

V does not support RTL (Right To Left) display

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4.3.232.2.4 Flat Text mode

This is a cross between text and hex modes.

The file is displayed as text, however, control characters like line feeds and tabs are not expanded, and the file is always wrapped at the specified wrap length.

This is useful for displaying files of fixed length records, where records may contain control characters (eg, packed decimal fields).

See the Wrap Here section for details on how to quickly wrap lines at different line lengths.

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4.3.232.2.5 End of Line (EOL)

When displaying files in text mode, **V** will automatically start a new line whenever a line terminator is encountered (unless the file is displayed in Flat Text or Wrap to Length mode).

Most files created on Windows use a Carriage Return/Line Feed pair as a line terminator (CR/LF) . That is, a Carriage Return followed by a Line Feed. However, some files use a single CR or a single LF as a line terminator. **V** will also start a new line whenever a single CR or LF is encountered.

The **End of Line** submenu (on the View menu) allows you to configure how you want **V** to handle line terminator characters.

Display EOL Marker
Enabling this will display the End Of Line marker at the end of every line. This is equivalent to pressing the End of Line button on the toolbar. The character displayed as the EOL marker can be set in the Fonts section of Preferences.

Ignore Form Feeds
Form feed characters (ASCII 12 or Ctrl-L) are generally used to signify a page break. **V** uses form feeds to start a new page when printing, and also treats a form feed as a line terminator (since a new page implies a new line.

If you do not want **V** to treat a form feed as a line terminator, you can enable this option. The form feed character will still be displayed, but a new line will not be started. Note that this option only applies to *viewing* files. If you also do not want **V** to start a new page when *printing*, you need to enable "Ignore Form Feeds" on the Print dialog box.

Customize EOL Options
If you want to change any of the default EOL options, select *Customize EOL Options* from the *End Of Line* submenu.

Select **Use Default EOL Options** to revert to the default EOL behavior.

The following options are available:

Ignore Single CR (without LF)
This requires a CR to be following by a LF for it to be treated as a line terminator.

Ignore Single LF (without CR)
This requires a LF to be following by a CR for it to be treated as a line terminator.

Ignore Consecutive CRs
Some files have a strange EOL combination - CRCRLF. That is, 2 carriage returns followed by a line feed. Some users want this displayed as 2 lines, others as one. By default, **V** will treat this a 2 line terminators. If you enable this option, **V** will ignore the first CR and treat CRCRLF as a single line terminator.

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Use the following Custom EOL characters(s)
Enable this option if you want to set custom EOL characters. Simply enter the characters in the space provided. **V** will start a new line whenever it encounters any of these characters. Multiple EOL characters are allowed, but *each* character will be treated as an EOL. That is, multiple characters will not be treated as a multiple character EOL combination.

Disable default EOL characters
When setting custom EOL characters, the default EOL characters (CR, LF) will still be treated as line terminators. Enable this option if you do not want CR and LF to be treated as line terminators.

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4.3.232.2.6 Tabs

When displaying text files, tabs will be expanded according to the number of characters specified in Tab Size.

Specifying a Tab Size of 1 causes tabs to be treated as spaces.

Tabs may also be made visible by selecting "Tabs->Show Tabs" from the View menu. In this case, a tab will not be expanded and will be displayed according to the corresponding character in the selected font.

4.3.232.2.7 Start Offset

V allows you to specify a non-zero **start of file** position - any data before this position will be ignored.

To set the start offset, right-click on the position in the file where you want to start viewing from and select **View/Layout->StartOffset->StartFromHere**

Alternatively, you can specify an absolute position by selecting **Set Offset** from the above right-click menu or from the main **View->StartOffset** menu.

A solid blue line will appear at the top of the file, indicating that a non-zero start offset is being used.

Note that the start offset is not "sticky". That is, it is reset to zero once a new file is viewed.

This is useful if you want view files with fixed line lengths, but the fixed lines do not begin from the start of the file.

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4.3.232.2.8 The Status Bar

The status bar of the File View usually consists of 3 panes:

Pane 1 - Current Position

Usually this will contain the current line number. If you press the left mouse button at any position and keep it pressed, the corresponding line number and column will be displayed. If you have enabled "Hex offset in status bar" (in the File Options tab of Preferences), the hex offset of the position will also be displayed.

In Hex mode, the corresponding file offset will be displayed. Also, as a block is being highlighted, the start and end positions of the block are displayed, as well as the number of characters highlighted.

The offsets are displayed in both hex and decimal. For example,
"**Offset: 669h->8e8h (1641d->2280d) Len=640 (280h**)"

Note that as long as a block of text remains highlighted, its details will be displayed in this pane - even if the block has been scrolled out of view.

Pane 2 - Position as Percentage

This displays a number between 0 and 100 and represents the current line (ie, the last line in the view) as a percentage of the number of lines in the file.

If the file is paginated, the current page number and the total number of pages will be displayed instead of the percentage.

Pane 3 - File Details

This displays the file size, the number of lines in the file and the date and time the file was last modified.

Unicode and EBCDIC

When **V** displays Unicode or EBCDIC files, **UNI** or **EBC** will be displayed in the status bar. You may click on this area of the status bar to display a menu of available options.

Notes

When the file is being displayed as chunks, a fourth status pane appears which displays which chunk is currently being viewed.

Left-clicking on a character while viewing a file displays the hex offset of the character on the status bar (providing the Hex Offset option is enabled in Preferences).

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4.3.232.2.9 EBCDIC Mode

EBCDIC stands for **E**xtended **B**inary **C**oded **D**ecimal **I**nterchange **C**ode, and is the character set used by most IBM mainframes to store documents (in preference to the more commonly used ASCII character set).

If you try to view an EBCDIC file with a standard ASCII file viewer/editor (eg, notepad), the text will appear as a stream of unprintable control characters. For example, the EBCDIC code for the number zero is **hex F0**, which is not a printable character in ASCII.

When **V** opens a file, it automatically tries to determine if it is ASCII or EBCDIC. If a file is EBCDIC, **EBC** will be displayed on the bottom status bar.

If an EBCDIC file is incorrectly displayed as ASCII, you can view it as EBCDIC by pressing Alt+B (or selecting EBCDIC from the View menu).

Once in EBCDIC mode, you may modify EBCDIC viewing options by selecting **EBCDIC Options** from the View menu, or by clicking on **EBC** in the status bar.

V views EBCDIC files by mapping each EBCDIC character to the ASCII equivalent before displaying. However, there are at least 6 incompatible versions of EBCDIC (all having non-contiguous letter sequences and missing punctuation characters). In order to support all of these mappings (and more), **V** defines a default mapping which can then be modified in the EBCDIC tab of the Preferences.

V supports files with variable length records (RECFM=V) and fixed length records (RECFM=F).

Click here for further details on viewing EBCDIC files.

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4.3.232.2.10 The Ruler

The ruler makes it easy to determine the position of a particular character - you will no longer leave finger prints on your monitor as you count!

The ruler is displayed at the top of the File View and its format depends on the mode of the view.

Text Ruler

If the view is in Text mode, the ruler consists of a sequence of incrementing numbers (starting at 1) which indicate the column number of the character below. In this case, the length of the ruler is determined by the length of the longest line in the file.

Hex Ruler

If the view is in Hex mode, the ruler always consists of 16 hex offsets (from 00 to 0F) which indicate the offset from the start of the line of the corresponding hex bytes displayed below.

Floating the Ruler
The ruler may be dragged over any part of the file. The floating ruler may be removed by either double-clicking on it or by dragging it back to the top.

Starting Column
The ruler numbering usually starts at 1. To start from 0, right-click on the ruler with the Control key pressed and select the required option. Alternatively, you can press Ctrl+Alt+R to toggle the starting column.

Multiple Rulers
Up to 10 floating rulers may be displayed while viewing a file. To create a new ruler simply drag it from the top (fixed) ruler. To close a ruler, double click on it. To close all rulers (but to remember their position), double click on the fixed ruler. To redisplay the floating rulers in their last position, double click again on the fixed ruler.

Displaying Grid Lines
Right-clicking (or shift-clicking) on the ruler will cause a vertical grid line to be drawn at the clicked column position. The grid line will disappear once the button is released.

The color of the grid line can be customized in the File View section of *Customize Colors* (selected from the View menu).

Notes

- In Text mode, the ruler can be shifted by one character to the right (ie, the first column will be treated as column 0 instead of column 1) by setting the Start Text Ruler at 0 option in the Preferences Dialog box.
- The ruler is always displayed in the same font as the file.
- The floating ruler and grid lines only become fully functional once V has been registered.

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4.3.232.2.11 Line Numbers

When viewing the file in Text mode, the corresponding number of the line can be displayed to the left of the line by enabling the **Line Numbers** option in the View menu. The line numbers display can also be toggled by pressing the line numbers icon in the toolbar.

Look at the Line Numbers Configuration section for further details on how to customize the line number display.

Line Numbers in Chunks

If a file is being viewed in chunks, **V** will display the correct line numbers as long as consecutive chunks are loaded. However, if you load a chunk without having viewed the previous chunk, **V** will start the line numbers from 1.

For example, if you load the last chunk in the file after having loaded the first chunk, the line numbers in the last chunk will start from 1. If you need to know the exact line number, you will have to load the entire file.

Notes

Line numbers always start at 1.

The line numbers are not **fixed**. That is, the line numbers are scrolled off the screen when the line is scrolled horizontally. You can fix the line numbers (so they do not scroll) by enabling *Fix Line Numbers* from the *Fix LHS* submenu of the *View* menu.

Although line numbers in Text mode are optional, the hex addresses in Hex mode are always displayed.

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4.3.232.2.12 Line Wrapping

When a line is too long to fit in the view, horizontal scroll bars appear at the bottom of the view, allowing you to scroll through the entire line. The horizontal scroll bars will appear when at least one line of the file being viewed is wider than the width of the view.

Sometimes scrolling through lines is not very convenient, particularly if a file contains many really long lines. In this case, lines can be wrapped. Lines may be wrapped in several ways:

Wrap to Screen

The lines are wrapped so that all text fits inside the file view. In this case, the horizontal scroll bars disappear. Screen wrapping may be toggled by selecting the **Wrap to Screen** command from the **View** menu, pressing the Wrap to Screen button on the toolbar, or by pressing **Alt-W**. Wrapping text to the screen may be permanently enabled by setting the Wrap lines to screen option in the Preferences Dialog box.

Wrap to Length

In this case, the lines are wrapped whenever they reach the **wrap length**. Wrapping may be toggled by selecting the **Wrap to Length** command from the **View** menu, pressing the Wrap to Length button on the toolbar, or by pressing **Alt-L**.

The wrap length may be quickly changed by selecting the **Set Wrap Length** command from the **View** menu, or by pressing **Ctrl-W**. You may enter a new wrap length, or select a previously used length from the list.

Wrap on Word Boundary

Normally, lines will be wrapped at the exact position where they exceed the width of the view (if wrapping to screen), or the wrap length - even if it happens to be in the middle of a word. To ensure that lines are not split mid-word, select the Wrap on Word Boundary option from the Preferences Dialog box.

Wrap Here

Flat text mode allows you to display the text file as fixed length records by specifying a record length (or wrap length).

Using the "Wrap Here" command, you can easily change the wrap length without actually entering a number.

All you do is right click on the position where you want the **first** record to end (or wrap) and then select "Wrap Here" from the Wrap menu.

Note

The **Wrap Lines to screen** option in the Preferences Dialog box, does not apply to printing. There is a separate option in the Print Dialog box which enables line wrapping when printing. However, the **Wrap on Word Boundary** option applies to both printing and display.

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4.3.232.2.13 Column Fixing

When viewing a file, the display may be fixed at a certain column position so that any text to the left of the fixed column will always be visible (ie, it will not scroll off the screen). To do this, select the **Fix Column** option from the View menu. Select **Set Fixed Column** to specify the column position.

You may also just fix the line numbers by selecting the **Fix Line Numbers** option from the View menu.

Note: Unregistered versions cannot fix the display past column 6.

4.3.232.2.14 DOS/OEM Character Set

Most Windows applications use the **ANSI** character set to display text. The actual character displayed depends on the font selected.

Before Windows and GUI programs existed (in the DOS days), special line drawing characters were used to "draw" simple boxes and frames in standard text files. These special characters were a part of what was called the **OEM** or IBM character set.

Windows (True Type) fonts do not usually support these line drawing characters. These characters will usually be replaced by some strange symbol.

However, some fonts (like Courier New) support both ANSI and OEM character sets. By selecting the **DOS/OEM Char Set** option (from the View menu) the OEM character set will be selected (if available), and your lines and boxes will be drawn correctly.

Note that this will only work if the selected font supports the OEM character set. If it doesn't, this option will have no effect. For example, an OEM character set is available for Courier New but not for Courier.

4.3.232.2.15 Display Fonts

The file is displayed using the currently selected Screen Font which is specified in the Preferences.

If you find that you regularly use different fonts, you may create a fonts list and then select the required font from the Fonts menu.

To create or modify the fonts list, select **Fonts->Organize** from the View menu.

Organizing fonts is similar to Organizing Favorites or User Commands.

Once a font has been added to the list, it may be selected from the **View->Fonts** menu.

A shortcut key can also be assigned to a font so that the font will always be selected whenever the corresponding shortcut key is pressed.

Note: **V** maintains different fonts for text and hex modes.

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4.3.232.2.16 Greenbar Mode

Files can be viewed (and printed) with a greenbar effect. This is where each alternating line is a different color. To enable, simply press the Greenbar icon in the toolbar.

Greenbar Options

The greenbar effect can be customized by clicking on the small arrow next to the Greenbar icon on the toolbar.

Greenbar Background Color
Click on this button to select the Greenbar color. Right-click on the button to select one of several pre-defined colors. You can select a different greenbar color for display and printing.

Number of lines to greenbar
By default, the greenbar color will alternate after every line. This option allows you to increase the number of consecutive lines that are "greenbarred".

Start greenbar at line 1
Enable this option if you want the greenbar coloring to start from line 1.

Do not greenbar line numbers
If you enable this option, the greenbar colors will not extend to the line number portion of the line.

Do not change color for wrapped lines
Enabling this option ensures that the greenbar color does not change if it has been wrapped. That is, the entire line will be displayed in the same color, regardless of how many lines it wraps to.

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4.3.232.2.17 File Attributes / Line Lengths

If the File Attributes command is selected in text mode, the dialog box that displays the file attributes will contain an extra 4 lines of file details:

Longest Line
Displays the length (and number) of the longest line in the file.

Shortest Line
Displays the length (and number) of the shortest line in the file - including empty lines. That is, if the file contains an empty line, this length will be zero.

Shortest non-empty
Displays the length (and number) of the shortest non-empty line in the file. That is, this length will never be zero

Line Terminator
Displays the character (or character pair) used by the file to delimit lines. Depending on the origin of the file, the character(s) used to terminate lines are usually one of:

CR The terminator is a single **carriage return** character (hex 0D). This terminator is uncommon.
LF The terminator is a single **line feed** character (hex 0A). This is the standard terminator used on Unix systems.
CR/LF A carriage return followed by a line feed is used to terminate lines. This is the standard terminator used on PC based systems.
LF/CR As above, but the line feed is placed before the carriage return. This is very uncommon.
CR/CR Two carriage returns are used to terminate lines. This is also very uncommon.

Notes

This extra information is not displayed if the file is being viewed in hex mode, or if the File Attributes command has been selected from the Directory View.

If multiple lines share the same length, only the first line in the file with that length is displayed.

If a file chunk is being viewed, the line length information only applies to the lines in that chunk, and not the entire file.

The number of lines in the entire file (together with the total number of words) may be displayed by selecting *Word/Line Count* from the Tools menu.

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4.3.232.2.18 Hex Mode

Use this command to view a file in Hex format. This mode is generally used for binary (non-text) files, although text files can also be viewed in Hex mode.

Vertical Hex mode can be enabled by selecting **Text+Vertical Hex** from the View menu (or by pressing Alt+J). This is a cross between Text and Hex modes.

Click here for further details on viewing files in hex (and vertical hex) mode.

4.3.232.2.19 File Tailing

File Tailing refers to the ability to automatically refresh a file as it is being modified.

By default, File Tailing is disabled. To enable it, press the Tail icon on the toolbar (or select Tail from the File menu).

If data is **added** to the file while you are viewing it, it will automatically be updated. There is no need to press the Refresh button to see any changes since the file was loaded.

This is particularly useful when viewing log files while they are still being updated.

Because there is some overhead in File Tailing, it is best not to enable it when it is not needed. To overcome the problem of the user accidentally leaving File Tailing enabled, **V** always disables File Tailing on startup.

If you want **V** to restore its previous Tailing state on startup, enable "Save File Tailing state" (in the File Options tab of Preferences).

Tailing on Network Drives

Tailing relies on notifications from the operating system whenever a file has been modified. These notifications are not always sent for network drives. In particular, they are usually not sent for Unix network drives. Under such circumstances, file tailing will not work.

Note

File Tailing only applies if data is added to the end of the file. If any other part of the file is updated, **V** will not automatically update it.

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4.3.232.2.20 Viewing the Clipboard Contents

The File menu contains a View Clipboard submenu that displays the different types of data that are stored in the Windows clipboard (if any). Selecting the various data types will cause **V** to view the corresponding data just like it was viewing a file.

Notes

V can only view the clipboard data as text/hex. It cannot launch another program to view the clipboard data. For example, it cannot launch your image viewer to view bitmap data. However, you can save the data to a file and then use your image viewer to view that file.

Some data types cannot be viewed. If this is the case, the data type will be disabled on the menu.

The clipboard contents can be printed - just like a normal file.

4.3.232.2.21 Customizing Colors

Select *Customize Colors* from the *View* menu to customize the colors that **V** uses to display the file.

Once **Use Default Colors** has been disabled, the following colors can be customized:

Normal Background/Text
The colors used to display the file.

Highlighted Background/Text
These colors are used to display highlighted/selected text. By default, these colors are the inverse of the text colors. That is, the background color is the text color and the text color is the background color.

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Search Line Background/Text
When searching, the found text is displayed using the above **highlighted** colors.

Only the portion of the line that contains the found text will normally be highlighted. However, the part of the line that does not contain the found text may also be displayed in a different color to the standard text color. Doing this makes it easier to distinguish the line which contains the found text, especially if the found text is scrolled off the screen.

Highlight All Background/Text
These colors are used to display all string matches when the Highlight All option is enabled in the Search Bar.

Highlight All Line Background/Text
These colors are used to display the non-highlighted portion of all lines that contain a Highlight All match.

Line Numbers Normal/Highlight All
The first color is used to display line numbers (and addresses in HEX mode). It is also used to display text in fixed columns.
The second color will be used to display the line number for all lines that contain a Highlight All match.

Current Line Background
This color is used to draw the background of the *current* line.

Bookmark Background
This background color is used to display bookmarked lines.

Grid Line
This color is used to draw the Grid Lines when right-clicking on the ruler.

Block Marker
This color is used to draw the start of block marker. A block marker is created by right-clicking on a position in the file and selecting Mark Block->Start Point.

4.3.232.3 Split File View

The File window can be split in two by clicking on the Split Screen button on the toolbar and selecting Horizontal or Vertical Split Mode. It can also be split from the Split submenu of the View menu, or by pressing Alt+S. This allows you to view different parts of the same file in different windows. Below is an example of a file which has been split horizontally.

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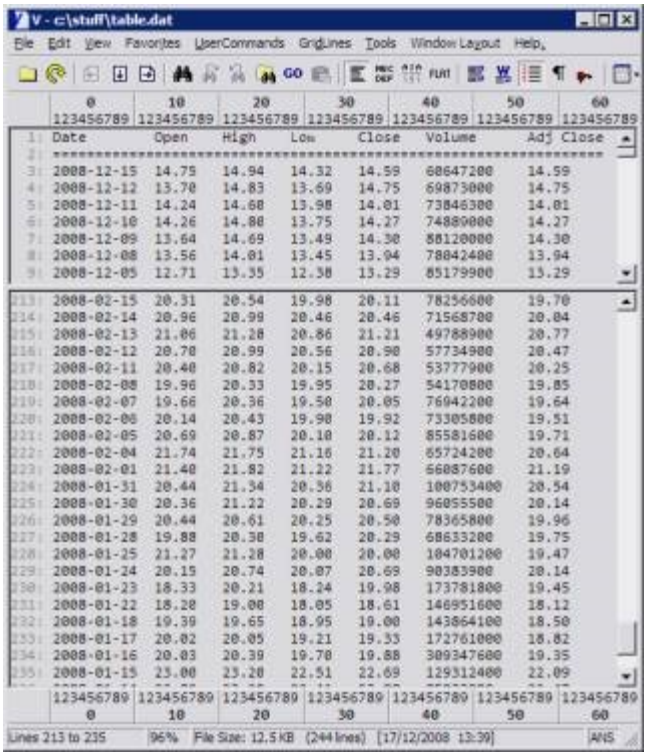

Synchronized scrolling is enabled by default. Click here for further details on synchronized scrolling.

Note that both windows must use the same display mode. For example, you cannot have one window in hex mode and the other in text mode. Also, if you enable line wrapping, the wrapping will apply to both windows.

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4.3.232.3.1 Synchronized Scrolling

By default, synchronized scrolling is enabled when the file view is split.

For example, if the file is split horizontally, you can use either of the horizontal scrollbars to scroll both views simultaneously (the vertical scrollbars work independently of each other). Similarly, if the file is split vertically, either of the vertical scrollbars can be used to scroll both views vertically.

You can disable synchronized scrolling by pressing the *Split Screen* button on the toolbar and selecting *Split Options*. This allows you to modify the following options:

Disable Horizontal Synchronized Scrolling (in Horizontal Split Mode)
This disables horizontal synchronized scrolling when the file view is split horizontally. When enabled, the horizontal scrollbars will work independently of each other. Note that vertical scrolling is never synchronized when the file view is split horizontally.

Disable Vertical Synchronized Scrolling (in Vertical Split Mode)
This disables vertical synchronized scrolling when the file view is split vertically. When enabled, the vertical scrollbars will work independently of each other. Note that horizontal scrolling is never synchronized when the file view is split vertically.

4.3.232.4 Multiple File Windows

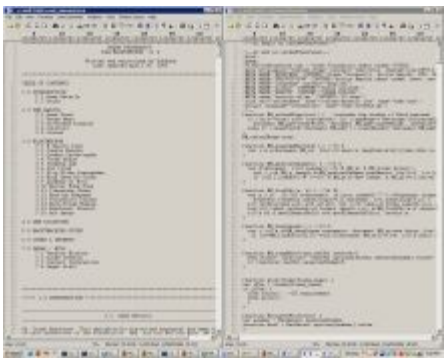
By default, every file you view will be displayed in a separate window. If you prefer to only have one file window open at a time, enable "Use existing File window to view new file" in the Window Layout tab of Preferences.

4.3.232.4.1 Arranging File Windows

By default, when you view multiple files, the file windows will be positioned so that the new file window slightly overlaps the previous window. If you rearrange the multiple window position, **V** tries to maintain this position when it opens multiple files.

You can tile the files by selecting the desired tiling option from the Window Layout menu (Vertical, Horizontal or Auto-Arrange). If you tile the files vertically, each file window will have the same height as the screen. Each window will have the same width and be placed next to each other so they completely fill up the screen.

The image below shows 2 file windows, tiled vertically.



Automatic Tiling

Multiple file windows can be automatically tiled by enabling "Automatically Tile multiple file windows" in the Window Layout tab of Preferences. That is, once a second (and subsequent) file is opened, **V** will automatically tile all the file windows.

File windows can also be "Auto-Arranged". Click here for further details.

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4.3.232.4.2 Auto-Arranging File Windows

File windows can be auto-arranged based on a "grid size" which you define in the Window Layout tab of Preferences.

To see how auto-arranging works, consider a grid size of 3 x 3. With 2 or 3 windows open, they will be tiled vertically. When the user opens up a fourth file, they will be displayed in a 2 x 2 grid (as in the image below). When a user opens up a fifth and sixth file, the first 3 files will be displayed on the top and the remaining 2 (or 3) files will be displayed on the bottom. If the user opens up a seventh file, **V** will display the files in 3 rows of windows. The first 2 rows will contain 3 windows each, and the third will contain the seventh file. The eighth and ninth file will also be displayed on the 3rd row.

Because the grid size is only 3 x 3, the automatic arranging will stop with the ninth file. Should the user open up a tenth file, it will be displayed in a normal overlapping window.

4.3.232.4.3 Synchronized Scrolling

When multiple files are open, scrolling can be *synchronized* by right-clicking on the scrollbar and selecting *Synchronize Scrolling*. Once enabled, whenever one window is scrolled (either via the keyboard or the mouse), all other file windows are also scrolled by the same amount.

Horizontal and vertical scrolling are *separate*. Enabling synchronized scrolling by right-clicking on the vertical scrollbar will only synchronize vertical scrolling. If you also want horizontal scrolling to be synchronized, you also need to right-click on the horizontal scrollbar and select *Synchronize Scrolling*.

Notes

Synchronized scrolling only applies to multiple file windows - it does not apply to the directory listing.

This is different to the synchronized scrolling which is available when the file view is split.

4.3.232.5 Hex Mode

Files displayed in hex mode look something like this:

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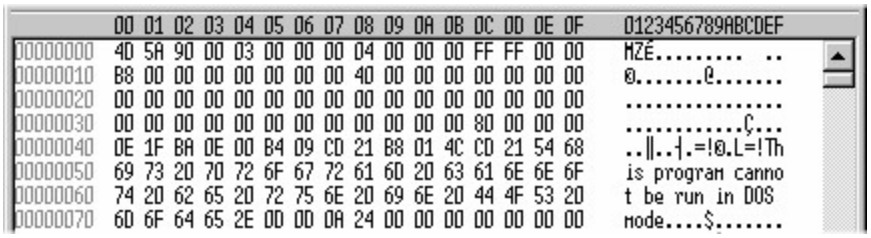

```
          00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F    0123456789ABCDEF
00000000  4D 5A 90 00 03 00 00 00 04 00 00 00 FF FF 00 00    MZÉ.........  ..
00000010  B8 00 00 00 00 00 00 00 40 00 00 00 00 00 00 00    ¸.......@.......
00000020  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
00000030  00 00 00 00 00 00 00 00 00 00 00 00 80 00 00 00    ............Ç...
00000040  0E 1F BA 0E 00 B4 09 CD 21 B8 01 4C CD 21 54 68    ..º..´.Í!¸.LÍ!Th
00000050  69 73 20 70 72 6F 67 72 61 6D 20 63 61 6E 6E 6F    is program canno
00000060  74 20 62 65 20 72 75 6E 20 69 6E 20 44 4F 53 20    t be run in DOS
00000070  6D 6F 64 65 2E 0D 0D 0A 24 00 00 00 00 00 00 00    mode....$.......
```

Hex mode displays a file as a series of hexadecimal (base 16) numbers together with the corresponding ASCII character equivalent (this is also known as **Debug Format**).

The first 8 digits on each line represents a hex address which indicates the position (or offset) of the corresponding line in the file. This is followed by up to 16 hex numbers (or bytes) which correspond to the file data.

The right hand side of the view consists of the ASCII character representation of the corresponding file data If the hex byte does not correspond to a **printable** ASCII character, it is displayed as a **"."** (dot).

If the Display ALL hex codes option is enabled, all codes will be displayed on the right hand side instead of a dot. The character displayed depends on the selected font, and will usually not be unique for each control character.

Click here for a description of the various hex formats available.

Note

By default, each line displays 16 bytes of data, although the line length can be changed

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4.3.232.5.1 Hex Formats

When in Hex Mode, the file may be viewed in one of several hex formats which are selected from the View menu (under Hex Formats) or from the right-click menu (Layout->Hex Formats).

The available formats are:

Byte
This is the default format. Each character in the file is displayed as an individual hex code (from 00 to FF).

Decimal
As above, but each byte is displayed in DECIMAL (from 0 to 255).

Octal
As above, but each byte is displayed in OCTAL (from 0 to 377).

Word
The data in the file is displayed as 16-bit words (always in hex)

DWord
The data is displayed as 32-bit double words (in hex)

Double DWord
The data is displayed as 64-bit quad-words (in hex)

Flip Ends
This only applies when in Word, DWord or Double DWord mode. The "ends" of each "word" are "flipped". This makes it easier to view data that is stored in little-endian format.

By default, each line displays 16 bytes of data, although the line length can be changed.

Note

The file offsets are always displayed in Hex.

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4.3.232.5.2 Hex Line Length

By default, each line in hex mode contains 16 bytes.

This can be changed by selecting "Hex Formats"->"Set Hex Line Length" from the View menu (or pressing Ctrl-W).

The line length must be a multiple of the format size.

For example, if the data is being displayed as "words", the length must be a multiple of 2 (the size of a word).

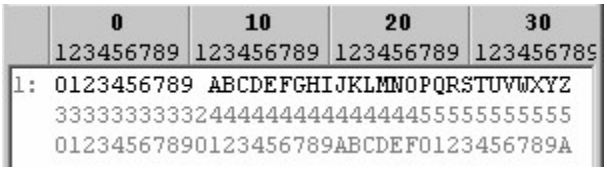
4.3.232.5.3 Hex Font

A different font can be used to display files in text and hex modes, although by default, these fonts are the same.

If you change the font in hex mode, the font will not be changed in text mode.

4.3.232.5.4 Vertical Hex Mode

Vertical Hex Mode is enabled by pressing Alt+J (or selecting **Text + Vertical Hex** from the View menu). Vertical Hex mode looks as follows:



The file is displayed one line at a time (just as in text mode). However, each line is followed by 2 lines containing the hex code of each character in the line.

The 2 lines need to be read **vertically**. That is, the first line contains the first nibble (4 bits) of the code and the second line contains the second nibble.

In the example above, the first character in line 1 is ZERO, which is **30** in hex. Therefore, the first character in line 2 is **3** and the first character in line 3 is **0**.

4.3.232.6 Searching

The **Find** command allows you to search for a string (or sequence of bytes) in the file being viewed. It may be selected from the toolbar, the Edit menu, from the right-click menu or from a keyboard shortcut.

When you select the Find command, you will be presented with the Find dialog box, where you can specify your search. The Find dialog box contains the following:

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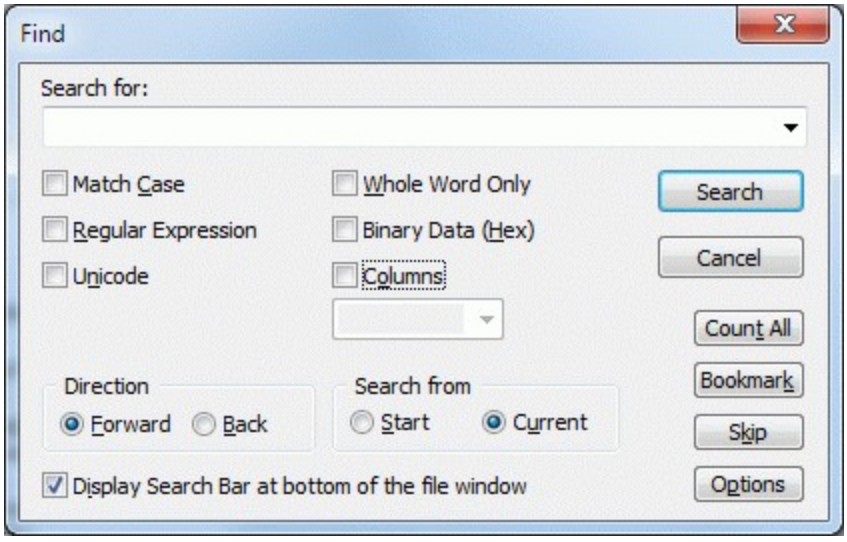

Note that a Search Bar can also be displayed at the bottom of the file window. Click here for details.

Search for
Enter the string to search for.
Click here for several different ways of entering the search string.

Match Case
Usually **V** will ignore case (upper and lower) when searching for strings. Check this option if you only want **V** to find strings that exactly match the case of the string entered. Note that this option is disabled if the **Binary Data** option is checked.

Whole Word Only
Check this option if you are only interested in matching the entered text when it appears as a word. For example, searching for the string **"soft"** will usually find a match in **"software"**. Setting this option, will not find a match in "software"**.**

Regular Expression
This option indicates that the string specified in "Search For" is a regular expression.

Binary Data (Hex)
This option indicates that the search string is a sequence of hex bytes rather than a text string.

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Direction
This specifies the direction of the search. If **Forward** is selected, the file is searched from the beginning to the end. If **Back** is selected, the search begins from the end of the file and goes backwards.

Unicode
This will search for the Unicode equivalent of the specified string. This is useful if you want to search for strings in a Win32 executable. If the file being viewed is a Unicode file, there is no need to enable this option.

Search from
Specifies from where the search is to commence. If **Start** is selected, the search will begin from the start of the file. If **Current** is selected, the search will begin from the current line. If the direction of the search is backwards, the Start option will be replaced with End. By selecting **End**, the search will commence from the end of the file.

Columns
You may restrict the search to a particular column or range of columns. Click here for further details on specifying column ranges.

Flip Search String
When viewing hex files in flipped mode, the this option is available to also flip the entered search string before searching.

Display Search Bar at bottom of the file window
This will display a Search Bar at the bottom of the file window that can be used instead of the Search dialog for searching.

Press the **Count All** button to count the number of times the search string appears in the file.

Press the **Bookmark** button to bookmark the lines that contain the search string.

Press the **Options** button to modify the search options.

The **Search Again** command (or **Find Next**) will search for the next occurrence of the entered text. Use Alt+A to continue the Find Next onto the next file.

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Cancelling the Search

If **V** has not found the specified string within 5 seconds, it will display a dialog box which will let you cancel the search by pressing the "Cancel" button.

Notes

The Find Next command will always search forwards even if the previous search was backwards.

Ctrl+F3 can be used to search for the next occurrence of any highlighted text.

The search history is limited to **5** strings if **V** is not registered.

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4.3.232.6.1 Search String

In its simplest form, a search string consists of a sequence of text characters.

By enabling the **Binary Data (Hex)** option, the search string is treated as a sequence of hex bytes (eg, **FF096C3A**). Do not enter any spaces between the hex bytes.

You can also use specify hex characters within a text string by using the **\x hex notation.** For example, the above sequence of hex bytes can also be entered as:

```
"\xff\x09\x6c\x3a"
```

If you use the \x notation, you will need to first enable "Allow hex characters in text search string" in the Search Options.

Notes

Case is not significant when entering hex data

When using \x notation, do not enable the Binary Data option

If \x notation is enabled and you actually want to search for "\x", you will need to enter "\\x"

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4.3.232.6.2 Search Options

Pressing the **Options** button in the Find dialog box will allow you to modify several search options.

Find Next from Current Position
The **Find Next** (or Previous) command will find the string immediately after (or before) the last string found - even if you have changed the file position. Enable this option to commence the search from the current file position (instead of the previous match).

Find Next from next line
By enabling this, **V** will ignore the rest of the line when doing a "Find Next" and will begin searching from the start of the next line.

Wrap to Start
By enabling this, **V** will continue searching from the start of the file once the end of the file is reached.

Do not center found text
This causes found text to always be displayed on the top line of the window - instead of being centered.

Do not center found text if it is already on screen
By enabling this option, if the string you are searching for is already visible, the window will not be scrolled when the string is highlighted.

Only "beep" if search fails
Enabling this will stop **V** displaying a "String not Found" message when no match is found.
Instead, a short beep will sound.

Always Start Ctrl-F search from the beginning
By default, pressing Ctrl-F (or starting a search) will start the search from the current position. Enabling this option will cause the search to always start from the beginning of the file.

Allow hex characters in text search string
This enable the use of the \x prefix to indicate a hex character when entering text strings.

Disable "Match Case Toggling" (using the \ key)
This disables Match Case Toggling. That is, the **** key behaves just like the **/** key.

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4.3.232.6.3 Search Count

Pressing the **Count** button in the Find dialog box will count the number of times the search string appears in the file.

The number of matches found will be displayed on the screen as **V** is counting. Press the Cancel button to stop the count.

If any text is selected before starting the count, the number of times the search string appears in the selection will also be displayed

Note: Each instance of the specified string is not highlighted after the count is complete.

4.3.232.6.4 Search Skip

Pressing the **Skip** button in the Find dialog box lets you skip over a specified number of matches.

For example, you can use this to find the 100th occurrence of a string in a file or to skip over 100 matches before continuing your search.

When the button is pressed, simply enter the number of matches to skip and press OK.

4.3.232.6.5 Column Search

When searching a file for text, you may restrict your search to a column or range of columns.

To do this, you must enable the **Columns** checkbox and enter the column (or range) in the space provided. The most recently used columns may be selected from the drop-down list box.

Only text that begins in the column (or lies in the column range) will be matched.

You may specify a column range in one of 2 ways:

n-m Match strings that start anywhere between columns n and m
n- Match strings that start anywhere after (and including) column n

You may also specify more than one column range by separating them with commas. The following are examples of valid column specifiers:

1	Match if text starts at column 1 (ie, start of the line)
1-10	Match if text starts in columns 1 to 10
1,12,80	Match if text starts in column 1 or 12 or 80
1-5,20-29,80-	Match if text starts in columns 1 to 5, or columns 20 to 29, or starts anywhere after (and including) column 80

Using Regular Expressions to search for data in columns

Regular expressions can also be used to search for text in columns (and even for text not in a certain column).

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4.3.232.6.6 Tips on using the Keyboard

The following keys can be used to initiate a search:

Normal Find
/ and **Ctrl+F**.

Find Next
F3, **A**, **Ctrl+L**, **Ctrl+N**
You can also use the SPACE key if Use SPACE as Find Next is enabled in the Keyboard tab of Preferences.

Ctrl+F3 can be used to search for the next occurrence of any highlighted text.
Alt+A (and **Alt+F3**) will continue searching the "next file" if no further matches are found in the file being viewed.

Find Previous
To search backwards, use any of the Find Next keys with the SHIFT key pressed.

Backwards Search
Using **?** will always initiate a backwards search. That is, a normal search with the Direction option set to Back.

Match Case toggle
Using **** will initiate a search with the default "Match Case" option toggled.

That is, if you perform a normal search (eg, using /) with the Match Case option disabled, pressing "\" will initiate a search with the Match Case option disabled. If you perform a normal search with the Match Case option enabled, using "\" will disable the Match Case option.

You can disable this behavior by enabling Disable "Match Case Toggling" (using the \ key).

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4.3.232.6.7 Scrolling

The File View may be scrolled in the standard ways - via the keyboard or the scroll bars.

Using the keys

PageUp and PageDown
Scroll the view one screen-full at a time in the specified direction.

UpArrow and DownArrow
Scroll the view vertically one line at a time.

LeftArrow and RightArrow
Scroll the view horizontally, one column at a time.

Ctrl-LeftArrow and Ctrl-RightArrow
Scroll the view horizontally by the width of the view.

Ctrl-Home and Control-End
Ctrl-End scrolls the window so the end of the current line is visible. **Ctrl-Home** scrolls the window to its leftmost position.

Home/End
The **Home** key goes to the start of the file and the **End** key goes to the end of the file.

If the Use Space as PgDown option is enabled, the **SPACE** key will behave like **PageDown** and **Shift-SPACE** will behave like **PageUp**.

Using the scroll bars
If you click on the arrows on either side of the scroll bars (vertical or horizontal), the view is scrolled by one line (or column) in the appropriate direction. Clicking on the area below the vertical scroll box (or slider) is equivalent to pressing **PageDown** and clicking on the area above the scroll box is the same as pressing **PageUp**. Similarly, clicking to the right of the horizontal scroll box will scroll the view to the right by the width of the view and clicking to the left will scroll the view to the left.

Dragging the vertical slider allows you to quickly move the file position. You may enable smooth scrolling in order to improve the file display while dragging.

Current Line Marker

Pressing the Up/Down arrow keys will move the current line marker (instead of scrolling the window). The window is only scrolled when the line marker reaches the bottom (or top) of the window. If you would like the window to always scroll on an arrow key, enable Always scroll window when using arrow keys in the File Options tab of Preferences.

If the window is scrolled using the scroll bars (with the mouse), **V** will automatically move the current line marker accordingly. If you prefer the current line marker to stay where it is, enable Do not move current line marker when using scroll bars.

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Continuous scrolling

The view may also be scrolled continuously in the vertical direction. This is basically equivalent to continually pressing the UpArrow or DownArrow key.

To commence continuous scrolling, simply press **Ctrl+Shift+DownArrow** or **Ctlrl+Shift+UpArrow** depending on the direction in which you want to scroll. The view will then start to scroll automatically. The speed of the scrolling may be increased by pressing the **+ (PLUS)** key and decreased by pressing the **- (MINUS)** key.

Continuous scrolling may be stopped by pressing the **ESC** key and paused by pressing **SPACE**. Once paused, the scrolling may be re-started by pressing **SPACE** again, or terminated by pressing **ESC.**The scrolling will stop when the top (or bottom) of the file is reached.

IntelliMouse Support

V makes full use of the Microsoft IntelliMouse. Click here for details.

Customizing the keys

All of the cursor keys can be customized by selecting Customize Keyboard from the Tools menu. For example, you can change the behavior of the Home/End keys so they go to the start/end of the line instead of the start/end of the file. The commands corresponding to the cursor keys (such as Line Up/Line Down) can be found in the *Other* submenu of the FILE commands.

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4.3.232.6.8 Smooth Scrolling

The slider on the vertical scrollbar may be dragged to quickly change the position of the file. **V** will continually try to redisplay the file as the scrollbar is being dragged.

If you find the screen refresh during scrolling annoying, you may try to make it "smoother" by enabling "Smooth Scrolling" in the File Options section of Preferences.

To do this, you must specify a **Smooth Delay** which will be used to "slow down" the speed of the scrolling. Typically, a delay of between 50 and 200 will be used. If no delay is entered, **V** will use a delay of 180.

The delay specified will depend on the speed of your system. If you find the scrolling too slow, enter a smaller delay. If the screen "flashes" too quickly during scrolling, enter a larger delay.

Note

The **V** smooth scrolling is different from, and independent of the "smooth scrolling" which is available in programs like Internet Explorer.

4.3.232.6.9 IntelliMouse Support

The Microsoft IntelliMouse is a mouse with a small wheel between the two mouse buttons. The wheel can be used to scroll windows without having to move the cursor over the scroll bars.

V supports the IntelliMouse as follows:

When viewing a file, scrolling the IntelliMouse wheel will scroll the document three lines at a time.

- If the SHIFT key is pressed while scrolling the wheel (or if the wheel itself is pressed), the document will be scrolled a screen at a time.
- If the wheel is scrolled while it is pressed and the SHIFT key is also pressed, continuous scrolling will begin. Pressing the wheel will pause/restart the scrolling. Pressing the wheel while the SHIFT key is pressed will stop the scrolling.
- If the CONTROL key is pressed as the wheel is scrolled, the Previous/Next document in the File List is displayed.

Note

In order for the operations requiring a wheel press to work correctly, you must "Turn on the wheel button" in the IntelliMouse setup (in the Control Panel) and set the "Button Assignment" to "Default".

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4.3.232.6.10 Goto

The Goto dialog box allows you to specify a location in the file to jump to. The specified location will be displayed at the very top of the File View. You may enter the location either as a **Line Number, Column Number, Offset, Page#, Record#** or **Chunk** by selecting the appropriate option.

Note that **Page#** is only enabled if the file is paginated.

Record Numbers

A **record** is different from a **line** in that it is always a fixed length (and it doesn't have to end with a newline character).

If the file being viewed consists of fixed length records, the record length will automatically be placed in the **Length** field. If the file does not consist of fixed length records, you may specify your own record length (although it probably wouldn't make much sense to do this).

The other options in the Goto dialog box are:

Hex
This specifies that the Offset entered is in hex instead of decimal.

From End of File
This indicates that the specified location is to be treated as being from the end of the file. For example, if you enter a Line Number of 100, **V** will position the view 100 lines from the end of the file.

Notes

It is quite valid to goto a file offset while in text mode. In this case **V** will simply goto the line which corresponds to the offset entered.

On the other hand, it is not possible to goto a particular line number if the file is opened in Hex mode (unless the file has also been opened in Text mode). In this case, the Line Numbers option in the Goto dialog box is disabled.

If the file is being displayed in chunks, the numbers in the Goto dialog box are relative to the **start** of the file. Click here for further details.

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4.3.232.6.11 Goto and Chunks

All entries in the Goto dialog are relative to the **start** of the file, regardless of which chunk is currently being viewed.

For example, if you were viewing the last chunk of a file, going to line 1 will take you to the very first line of the file (not the first line of the chunk).

You can also enter numbers outside the current chunk.

For example, if you were viewing the first chunk (which contained 1000 lines), you could enter line 5000 in the Goto dialog.

In this case, **V** would load the chunk that contained line 5000.

Note that **V** may take some time to locate the required position (especially if you are viewing a very large file). If the time taken is more than five seconds, a Cancel button will be displayed which will allow you to stop the goto operation.

Note

This behavior was introduced in Version 7. In prior versions, the line number was restricted to the current chunk.

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4.3.232.6.12 Bookmarks

Bookmarking allows you to remember the current file position so that you can easily return to it.

V implements two types of bookmarking - **numbered** and **traditional.**

Numbered bookmarking allows you to create up to 10 bookmarks (numbered from 0 to 9). Click here for further details.

Traditional bookmarking allows you to bookmark a line by pressing **Ctrl+F2**. Pressing Ctrl+F2 again will clear the bookmark. Unlike numbered bookmarks, there is no limit to the number of traditional bookmarks you can have.

Bookmarked lines will be displayed in a different color. When multiple lines have been bookmarked, pressing **F2** will take you to the *next* bookmark in the file and pressing **Shift+F2** will take you to the *previous* bookmark in the file. All bookmarks in the file can be cleared by pressing **Ctrl+Shift+F2** or by selecting *Bookmarks->Clear All Bookmarks* from the Edit menu.

Search and Bookmark

The Search dialog box contains a *Bookmark* button. Pressing this button will bookmark all lines that contain the search string. If you are using the Search Bar, you can right-click on the *Find Next* button (down arrow) to bookmark lines containing the search string. The number of bookmarked lines will be displayed in the status bar.

All bookmarked lines can be *copied to the clipboard* by selecting *Copy Bookmarked Lines* from the *Bookmarks* submenu of the *Edit* menu. All bookmarked lines can be saved to a file by selecting *Save Bookmarked Lines* from the same submenu.

By default, **V** will clear all bookmarks when it exits. If you want the bookmarks saved so they will be available every time you view the file, enable Save Bookmarks on Exit in the File Options tab of Preferences.

Note

The color of the bookmarked lines can be changed by selecting *Customize Colors* from the View menu.

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4.3.232.6.13 Numbered Bookmarks

Up to 10 bookmarks (numbered from 0 to 9) may be set by either selecting the appropriate bookmark number from the **Edit->Bookmark->Set Numbered** menu, or by pressing **Alt-0** to **Alt-9** (for bookmarks 0 to 9 respectively). Bookmarked lines are displayed in a different color.

Once a numbered bookmark has been set, it may be restored by selecting it from the **Edit->Bookmark-> Goto Numbered** menu. Alternatively, it may be restored by pressing **Ctrl-0** to **Ctrl 9**.

Numbered bookmarks are *global*. That is, you can save a bookmark in one file and restore it while you are viewing another file.

Notes

Numbered bookmarks not only save the current file position, but they also save the current file mode (ie, text or hex).

Unlike traditional bookmarks, numbered bookmarks can not saved when you exit **V**. That is, every time you start **V**, all numbered bookmarks will be cleared. If you want to save a numbered bookmark, you should use Favorites and assign a shortcut key to the Favorite created..

4.3.232.6.14 Sending selected text to your browser

V does not underline hyperlinks in files - such as http://www.fileviewer.com/, or create clickable hotspots like a browser does.

However, if a text file contains a URL, you may open the URL in your browser (not in **V**) by highlighting the text that forms the URL, right-clicking and selecting **Open Selection in Browser**.

You may also simply right-click over the URL (without selecting the actual text).

Notes

You do not have to highlight the entire URL - any part of the URL (even just one character) is sufficient.

If you only want to send **part** of the URL to the browser, simply select exactly what you want sent, and then press the Shift key when selecting **Open Selection in Browser**.

4.3.232.6.15 Open Selection in V

While viewing a file, you may highlight some text and then select "**Open Selection in V**" from the File menu. The selection will be treated as a file name, and if it exists, will be viewed by **V**.

Alternatively, you can simply right-click on any part of the file name (without having to highlight anything) and then select "Open Selection in V". Note that this will only work if the file name does not contain any spaces. If it does, you will need to highlight the entire file name.

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4.3.232.6.16 Maintaining File Position

When viewing a file, the file position when last viewed is restored. This means that if you are quickly swapping between 2 files (using the Previous/Next commands), the file positions will not be reset to the beginning of the file.

You can disable this behaviour by enabling the Do not restore file position option in the File Options tab of Preferences.

Note that the file positions are only remembered while **V** is active - they are not saved when you exit **V**.

4.3.232.6.17 Paginated Files

A **paginated** file is one that contains form feeds (ASCII 12).

V will automatically paginate files that contain form feeds, displaying a page marker (dotted line) before the first line in each page.

By enabling Page Up/Down go to start of page in the Keyboard tab of Preferences, **V** will always scroll to the first line in a page when pressing Page Up/Down.

If you press Ctrl+Shift+Page Up/Down, **V** will scroll to the next page, but maintain the current position in the page. For example, if you are currently on line 10 of page 1, pressing Ctrl+Shift+Page Down will take you to line 10 of page 2.

Do not enable this option if you want Page Up/Down to behave normally (ie, scroll by the length of the window).

Line Numbers
By default, **V** will increment the line number for each line in the file. If you want the line number of each page to always start at 1, enable the Reset Line Numbers on New Page option.

Note

If you don't want **V** to paginate the files, select End Of Line->Ignore Form Feeds from the View menu.

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4.3.232.6.18 The Search Bar

The Search Bar is displayed at the bottom of the file window by enabling the Display Search Bar at bottom of the file window option located at the bottom of the Search dialog box.

If the Search Bar is enabled, it will be used for searching instead of the Find dialog. To search, simply enter the search string in the "Find" box and press the Enter key. You can also click on one of the arrow buttons to search in the required direction (forwards or backwards).

If the search bar is not wide enough to display all of the search options, you can right-click on any empty area of the search bar to select the required option. This right-click menu also allows you to modify several other search options.

After doing a search, you can click on the arrow buttons to do a Find Next (down arrow) or Find Previous (up arrow).

String Count

Right-click on the *Find Next Match* button (the down arrow) and select *Count All* to count the number of times the search string occurs in the file.

Bookmarking

Right-click on the *Find Next Match* button and select one of the Bookmark options to bookmark all the lines that contain the search string.

Favorite Searches

By clicking on the "Favorites Searches" button and selecting "Add Search", the current search is added to the list of Favorite Searches. The user can them perform this search by simply clicking on the Favorite Searches button and selecting the search from the list.

Organize/Configure can be selected from the Favorite Searches menu to modify the search or customize the menu (similar to how Favorites are organized).

Highlight All

Enabling Highlight All will highlight every occurrence of the search bar text (this does not work in hex mode). Note that the search is not incremental (as in Firefox). That is, it does not search for the next match as you type each character. You must click on the Refresh button (or Find Next) for the highlight/search to be updated.

Search Bar Options

You can customize some of the Search Bar functionality by right clicking on the Search Bar and selecting "Search Bar Options" or by clicking on the two small arrows at the very right of the search bar.

Only display after first search
By default, if the Search Bar is enabled, it will be displayed as soon as a file is viewed. By enabling this option, the Search Bar will be hidden when the user first views the file, and will only be displayed once the user starts searching (by clicking the Find button in the toolbar or by using a search key).

Do not use when searching from toolbar

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If the Search Bar is enabled, clicking on "Find" in the toolbar will move the cursor to the Search Bar for the user to enter the search text (instead of displaying the dialog box). By enabling this option, the default Find dialog will be displayed instead. If a search key is used (like '/' or Ctrl+F), the cursor will still be moved to the Search Bar.

Automatically Search from Favorites
Selecting a search from Favorite Searches only updates the search bar with the search text/options. The user still needs to click on a search button to perform the search. By enabling this option, the search is performed as soon as the favorite is selected.

Automatically apply when file is loaded
If Highlight All is enabled, enabling this option will automatically start highlighting text as soon as the file is loaded (using the most recent search string). If this option is not enabled, highlighting will only commence after the user does a search (or clicks on the Refresh button).

Colors

Five colors can be defined in the Search Bar Options. These colors can also be set by selecting Change Colors from the View menu.

Text/Background
This is the color that will be used to display the "highlight all" text.

Line Text/Background
This color will be used to display any non-matching text on lines that contain highlighted text. This makes it easy to see what lines contain matches.

Line Numbers
This color will be used to display the line number of all lines that contain highlighted text.

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4.3.232.6.19 Continuing Search onto Next File

By default, **V** only searches the file being viewed for the search string. In particular, doing a Find Next will fail to find anything if no further matches of the search string can be found.

However, doing a Find Next using Alt+A (or Alt+F3), will cause **V** to continue searching the "next file" for further matches. If it finds any, it will load the new file and display the next match.

What is the "next file"?

You can always tell what the "next file" will be by placing your mouse over the Next File icon in the toolbar (the icon with the small right-arrow). Alternatively, you can click on the File List icon (small down-arrow) to display an ordered list of the files.

If you viewed the current file by selecting it from the **V** directory listing, the next file will be the next file in the directory listing.

If you launched **V** from the command line with more than one file (eg, **V** *.txt), the file list contains all the files specified on the command line.

Note

You cannot search backwards across files.

4.3.232.7 Block Marking / Text Highlighting

Several very useful operations can be performed on marked blocks (or selected text).

See the following sections for further details:

Status Bar
Selecting Words
Marking Columns
Adding Columns
Copying to the clipboard
Copying to a file

Blocks can be marked in several ways:

Using the Keyboard
Click here for further details.

Mark with mouse
A block may be marked in the usual method of holding down the left mouse button and dragging it over the text to be selected, releasing the button when the required text has been highlighted.

Specifying the start and end positions
This method is useful when marking very large blocks, or in hex mode, when you want to mark a specific address range.

To mark the start of a block, simply right-click on the corresponding character (or hex bytes) and select **Mark Block->Start Point**. To select the end of the block, scroll to the appropriate position in the file, right

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click on the corresponding character and select **Mark Block->End Point**. Once the start and end points have been specified, **V** will highlight the appropriate area.

Note that the end of the block may be marked before the start. Also, once a block is marked, it may be modified by choosing a new start or end point.

V will draw a marker around the start (or end) of a character to indicate the start (or end) marker. This marker will remain visible until it is cleared (by right-clicking and selecting **Mark Block->Clear**) or moved (by selecting a different position).

Note that the color of the marker may be specified by selecting Change Colors from the View menu.

Marking to End or Start
This method is similar to the above, except you only need to specify one point in the file (by right clicking at the appropriate location). The second point will either be the end or the start of the file. To mark a block from a character position to the end of the file, right click on that character position and select **Mark Block->To End**. Similarly, to mark a block from the start of the file to a character position, right-click on the end character position and select **Mark Block->To Start**.

Offset from current position
You may mark an exact number of characters from a file position by right-clicking on the file position, choosing **Mark Block->Plus Offset** (or Minus Offset) and then specifying the number of characters to mark.

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Marking the entire file

The entire file may be marked by selecting **Select Block->Entire File** from the **Edit** menu, or by right-clicking and selecting **Mark Block->Entire File**. The entire file may also be selected by pressing **Ctrl-A**.

Selecting a word or line

To highlight an entire word, simply double-click anywhere on the word. Usually, only alphanumeric characters and the underscore are used to determine what constitutes a word. To use a more extended character set to select a word, press the **shift** key while you double-click. For example, double-clicking at the start of "**http://www.fileviewer.com/**" will only highlight "**http**". However, by also pressing the **shift** key, the entire URL is highlighted. Click here for further details on how to customize this behaviour.

To select the entire line, simply press the **control** key while you double click anywhere on the line.

If you double-click on a word (to select it) and then move the mouse before releasing the left mouse button (to select further text), **V** will always end the selection at the end of a word.

Extending the selected text

Once text has been selected, it can be extended (or shortened) by **shift-clicking** on the new end (or start) position. That is, click on the new end position while the **shift** key is pressed.

Marking Columns

Click here for details on how to select text in a particular column range.

Notes

- Pressing Ctrl+F3 will search for the next occurrence of any highlighted text.
- When HEX data is highlighted, both the Hex and Character views of the file are highlighted.
- Clicking the left mouse button on any part of the file view will clear any marked block (but it will not clear any block marker).

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4.3.232.7.1 Using The Keyboard

Text selection via the keyboard is achieved as in most text editors - and usually involves using the cursor keys together with the Shift key. In particular:

Shift+DownArrow will select the current line.
Shift+RightArrow will will increase the text selection by one character.
Shift+End will select to the end of the current line
Shift+PageDown will select an entire "page" of text

Selected Text and Scrolling

Unlike most text editors, **V** does not clear any selected text when the keyboard is used for scrolling. That is, as you scroll the file with the arrow keys, any selected text remains selected. The selected text will remain selected until you either start a new text selection or you left-click on the file with the mouse.

The selected text can also be cleared by pressing the key associated with the *Clear Selected Text* command. There is no default keyboard shortcut to do this, but you can customize the keyboard to assign a key to *Clear Selected Text* (which is in the *Other* submenu of *FILE*).

4.3.232.7.2 Status Bar

The bottom left section of the status bar will display details of the selected text as it is being highlighted.

In text mode it will display:

- The line and column number of the start and end positions of the selected text
- The total number of characters in the selected text (in decimal and hex)
- If the Hex offset in status bar option is enabled, the hex offsets corresponding to the start and end of the selected text will also be displayed.
- If highlighting a column, V will also display the sum of the column data if the column consists of numbers.

In hex mode it will display:

- The start and end offsets of the selected text (in hex)
- The number of characters in the selected text (in decimal and hex)

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4.3.232.7.3 Selecting words

While viewing a file, **V** will highlight an entire word by double-clicking anywhere on the word. By default, a word is defined to consist of alphanumeric characters (ie, a-z, A-Z, 0-9) and an underscore .
Pressing the shift key while double-clicking on a word uses an extended character set to determine what characters to highlight. By default, the extended character set consists of all alphanumeric characters and any character **not** contained in the following:

```
"'!$=;<>{}[](),
```

4.3.232.7.4 Marking Columns

Usually when marking blocks that span several lines, complete lines in the block are highlighted - except for maybe the first and last line in the block, which may be partially highlighted.

Sometimes you may only want to highlight text that appears in certain columns. You may do this by pressing the **Control** key as you drag the mouse over the text to be selected. In this case, the highlighted area will form a rectangle consisting of only the required columns. Note that it is not necessary to continue pressing the **Control** key as you are marking the text - only when you begin to mark the text.

When you copy the column selection to the clipboard (or save it to a file), only the text in the highlighted columns is copied/saved.

Notes

- Column marking is not available in HEX mode.
- Once a column is marked, it may be extended by shift-clicking, as described in the How to mark blocks section.
- If the columns contain numbers, you can have V add them together and display the sum in the status bar.
- Although it is possible to mark columns if V is unregistered, you may only copy the selected text to the clipboard (or save it to a file) once V has been registered.

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4.3.232.7.5 Adding Columns

When selecting columns which contain numbers, **V** can add these numbers and display the sum in the status bar.

To do this, right-click on the bottom left of the status bar and select **Sum Column Data**.

If you want **V** to automatically display the sum as you are selecting the column, right-click on the status bar and enable **Auto-Sum**. You may copy the sum to the clipboard by right-clicking on the status bar and selecting **Copy Sum to Clipboard**.

By default, **V** looks for valid decimal numbers to add. If the numbers in the column are in hex, also press the SHIFT key.

Notes

- Any lines in the selection that do not contain valid numbers will be ignored.
- This only applies to selected columns. That is, text that has been selected with the Ctrl key pressed.
- When selecting very large columns of data, the auto-sum option may slow down the selection process.

4.3.232.7.6 Copying text to the clipboard

The selected text may be copied to the clipboard by either pressing **Ctrl-C,** by selecting **Copy/Cut** from the **Edit** menu (the right-click menu) or by clicking on the Clipboard toolbar button.

If you are displaying the file with line numbers, they will not usually be copied to the clipboard. If you would like the line numbers included, you have to enable the Include line numbers on copy to Clipboard option in the Preferences Dialog box.

Copying in Hex mode
In hex mode, the data to be copied to the clipboard depends on how the data is selected. If the data is selected by drawing the mouse over the right side of the display, then only the data bytes will be copied (nulls will be ignored).

If the data is selected by moving the mouse over the left side of the display, the actual hex representation of the data (including the hex address) will be copied.

Notes

- The selected text will usually remain highlighted once it has been copied to the clipboard (or copied to a file). If you want the selection to be cleared once the selection has been copied, set the Unmark block after copy option in the File Options tab of the Preferences dialog box.
- When selecting the left side of a view In Hex mode, only complete lines are copied to the clipboard, regardless of how much of the line is highlighted. Even if only one byte in a line is highlighted, the entire line (and address) is copied to the clipboard. (This does not apply when selecting the right side of the view)
- The selected text may also be appended to the current clipboard contents by pressing the SHIFT key while doing the copy.

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4.3.232.7.7 Appending to the cliboard

The selected text may be **appended** to the clipboard by pressing the SHIFT key while doing the copy. That is, press SHIFT while clicking on the clipboard toolbar button, or by pressing Ctrl-Shift-C instead of Ctrl-C.

4.3.232.7.8 Copying to a file

The selected text may be copied to a file by selecting **Select Block->Write to File** from the **Edit** menu or by selecting **Mark Block->Write to File** from the right-click menu.

Copying selected text to a file is similar to copying to the clipboard, however you are asked to specify a file name to copy the text to. If the file already exists, you have the option of appending to the file instead of over-writing it.

This feature makes it easy to extract several small portions from a large file and save them to a much smaller file (perhaps to be printed).

File Encoding

When saving text files, select the type of encoding from the "File Encoding" drop-down list box. The File Encoding will default to Unicode. The encoding should be set to ANSI/ASCII to save the text in the more common single-byte ASCII format.

Copying in Hex mode

Unlike copying to the clipboard, copying to a file in Hex mode does not copy the hex data as it is displayed, but as it is stored. That is, if you highlight 6 hex bytes and copy them to a file, the resulting file will contain exactly 6 bytes.

4.3.232.8 GridLines

A **Grid** consists of vertical lines (**GridLines**) and column headings that can be displayed while viewing a file. It behaves just like a ruler. It can be displayed at the top of the file and it can be floated over any part of the file.

	0 123456789	10 123456789	20 123456789	30 123456789	40 123456789	50 123456789	60 123456789	70 1234567
	Surname	**First**	**Address**				**City**	
1:	Madison	Oscar	Apartment 1102, 1049 Park Avenue				New York City	
2:	Mulder	Fox	Apartment 42, 2630 Hegal Place				Alexandria	
3:	Seinfeld	Jerry	Apartment 5A, 129 West 81st Street				New York City	
4:	Ricardo	Ricky	Apartment 4A, 623 East 68th Street				New York City	
5:	Richards	Mary	Apartment D, 119 North Weatherly Avenue				Minneapolis	
	Surname	**First**	**Address**				**City**	

A Grid may be displayed by manually selecting it from the GridLines menu, or it can be automatically loaded whenever a particular file is viewed.

The state of the current Grid can be toggled by pressing Ctrl+Shift+G or by selecting Toggle Grid from the GridLines menu.

Note that GridLines are only useful when the data in the file consists of **fixed length records** which are properly **aligned** into columns.

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GridLines will not work on delimited files (or CSV files), where each field in a record is separated by a delimiter (like a comma or a TAB). However, it is possible to use a program called **TuFix** to convert a delimited file into a fixed record length file. The converted file can then be viewed in **V** with an appropriate Grid.

Tufix can be downloaded from:

http://www.fileviewer.com/TuFix.html

Click on the following sections for further details on GridLines:

Creating Grids
Organizing Grids
Wrap Options
Automatically Loading Grids
Associating Grids with a File Extension
Exporting Grids
Importing Grids
Exporting Data to a CSV File

Note

GridLines can be printed by using %g in the header/footer

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4.3.232.8.1 Creating Grids

To create a Grid, select **Edit/Create Grid** from the GridLines menu. This will display a blank Grid. After making the necessary modifications, you need to save the Grid before exiting.

To make modifications, **right-click** on the Grid and select the desired option. The following options are available:

Add Grid Line Here
Right-click at the position where you want to add a Grid Line and select this option. You can then use "Edit Column Name" to give the column a meaningful name. If you place the Grid Line at the incorrect position, you can simply left-click on the end of the column and drag it to the required position.

Note that you can also add a Grid Line by **Shift-Left-Clicking** at the required position.

Edit Column Name
Right-click on the appropriate column, then enter the column name (followed by the Enter key). You can leave the column name unchanged by pressing the ESCape key.

Edit Column Length
Right-click on the column and enter the new length. In most cases it would be easier to set the column length by simply left-clicking on the end of the column and dragging to the desired position.

Select Font
This lets you specify the Font to display the Column names. Note that all columns are displayed using the same font.

Insert Column
This always inserts a column of 10 characters just before the column that you right-click on. You can then drag the new column to the required position. In most cases, it would be easier to use "Add Grid Line Here".

Delete Column
Deletes the column that you right-click on.

Hide Grid Lines
This specifies that the vertical Grid Lines will not be drawn over the file. Only the Grid header will be displayed.

Center Column Names
The column names will be centered instead of starting at the left.

Set Wrap Options
This allows fixed length record files to automatically wrap to the correct record length when a Grid is loaded. Click here for further details.

Save
This saves the Grid. If you are saving a newly created Grid (instead of an edited Grid), the Organize Grid dialog will be displayed, allowing you to enter a name for the Grid. This name will appear on the GridLines menu.

Save As
This lets you save the edited Grid with a new name. The Grid originally loaded will not be modified.

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Export
This lets you export the Grid to a .vgrid file. Click here for further details.
Note that exported Grids do not appear on the GridLines menu. If you want the Grid to also appear on the GridLines menu, you will have select Organize/Configure from the GridLines menu and then import the Grid.

Set Export Data
This lets you specify additional data that will be exported to the .vgrid file.
Click here for further details.

Close Menu
Select this if you do not want to make a selection from the right-click menu.

Exit Edit Mode
Terminates the Grid edit. If you have not saved a modified Grid, you will be asked if you want to save it before exiting.

Notes

You can also maintain Grids by selecting Organize/Configure from the GridLines menu.

You can only create/edit a grid while you are viewing a file.

Unregistered versions of **V** cannot save grids that have more than 3 columns.

4.3.232.8.2 Organizing Grids

Select **Organize/Configure** from the GridLines menu if you want to re-organize your Grids.

Note that the easiest way of creating a Grid is to select **Create Grid** from the GridLines menu. The easiest way of modifying a Grid is to first load it, and then to select **Edit Grid** from the GridLines menu.

Using the Organize option to modify a Grid does not give you visual feedback as you are making the changes. You will need to exit the Organize dialog before any Grid modifications are displayed.

Organize/Configure is best used to make minor changes to the Grid, or to re-organize the Grids on the GridLines menu.

Organizing Grids is very similar to Organizing Favorites. See the Creating Grids section for an explanation of the various options in the Organize dialog box. When organizing the grids, a shortcut key can be assigned so that the grid is selected whenever the corresponding keyboard shortcut is entered.

You can copy a Grid from another user by first exporting the Grid and then importing it.

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4.3.232.8.3 Wrap Options

When viewing files with fixed length records (and no line terminator), you need to manually enter the correct record length (or wrap length) for the file to be displayed correctly.

By entering the Wrap Options for a Grid, the file will be automatically wrapped to the specified record length when the Grid is loaded.

To enter the Wrap Options while creating/editing a Grid, right-click on the Grid header and select **Set Wrap Options**. The wrap options consist of the following:

Wrap Lines at Column
This is length at which all lines will be wrapped (ie, the record length).

Restore wrap settings when Grid is removed
By default, **V** will maintain the current wrap settings when the Grid is removed - even when you view a different file. If the wrap options do not apply to this file, you will need to disable (or change) them.

By enabling this option, **V** assumes that the wrap options only apply to the file being viewed and will restore the original wrap settings when the Grid is removed (or the file is closed).

4.3.232.8.4 Automatically Loading Grids

A Grid is usually manually loaded by selecting it from the GridLines menu. If you always want a particular grid to be displayed when a file is loaded, you need to export the grid to a file name that is the same as the file with a **.vgrid** extension.

For example, to always display a grid with **Filename.dat**, you need to create a grid file with the name **Filename.dat.vgrid**.

The **.vgrid** file needs to be in the same directory as the file being viewed - or in the Default Grid Directory (see below).

Creating a .vgrid File
After you have created a Grid, you can export it by selecting Export from the right-click Grid menu. Note that an exported Grid will not appear on the GridLines menu. If you want the Grid displayed in the GridLines menu, you will also need to Save it.

If you export the Grid to a file named **.vgrid** (just an extension, with no file name), that Grid will be used for **all files** in that directory.

Default Grid Directory
You can specify a Default Grid Directory by selecting Default Grid Directory from the GridLines menu. If a .vgrid file does not exist in the current directory, **V** will also look in this directory.

You can use rules based loading to load a grid based on part of the file name. This makes it possible to load the same grid for multiple files without having to create multiple .vgrid files.

Note: In order to load grids automatically, you need to enable the **Auto-Load Grids** option on the GridLines->Options menu.

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4.3.232.8.5 Using Rules (Regular Expressions) to Load Grids

If **Enable Grid Rules** is enabled (on the GridLines->Options menu), **V** will look for a **.rules** file which contains a list of file expressions and corresponding .vgrid files to load if the currently viewed file matches that expression.

You will need to create a file called **.rules** in the Default Grid Directory (select Set Default Grid Directory from the GridLines menu). This file must be created manually with an editor (you cannot use **V** to create it).

Each line in this file (.rules) consists of a regular expression followed by a replacement string (separated by a "/").

When viewing a file, **V** will try to match the file name against each expression in .rules. If it finds a match, it tries to load the .vgrid file specified by the replacement.

For example, let's say that a directory consisted of many files named **`Test1-YYYY-MM-DD.log and Test2-YYYY-MM-DD.log`** where YYYY-MM-DD represented the date the file was created.

You could apply a single .vgrid file for all such files by adding the following line to ".rules":

```
Test.*\.log/Test.vgrid
```

This will cause **V** to load Test.vgrid for any file of the form **`Testxxxxx.log`**.

If you wanted to load a different grid for Test1 and Test2 files, you could add the following line to .rules:

```
Test([0-9]).*\.log/Test\1.vgrid
```

This would load Test1.vgrid for all file names that started with Test1, Test2.vgrid for all file names that started with Test2, and so on, up to Test9.vgrid.

Notes

The expressions in .rules must be regular expressions - which are different from simple Windows/DOS wildcard expressions (like Test*.log - which will not work).

Any lines in .rules that begin with either # or ; are ignored (they can be used for comments).

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4.3.232.8.6 Associating with a File Extension

By associating a Grid with a File Extension, that Grid will be automatically loaded whenever a file with that extension is viewed.

To do this, simply create a Grid, and when saving it, make sure that the **name of the Grid** begins with the file extension.

For example, to associate a Grid with **.xyz files**, simply name the Grid something like "**.xyz (Grid for XYZ Files)**". Any description may follow the file extension (as long as there is a separating space).

You must also enable **Auto-Load Grid Extensions** on the GridLines menu.

Note

A File Extension Grid must be saved on the GridLines menu. You cannot save it as a .vgrid file in the current directory or the Default Grid Directory.

4.3.232.8.7 Exporting Grids

Grids can either be exported to .vexp files or to .vgrid files.

Exporting to a .vexp file

Press the More button and select Export. This will allow you to export either the selected grid(s) or all the grids to a .vexp file. This is usually done so the grids can be copied by another user.

Once another user has imported the exported .vexp file, the imported gridlines will appear on their GridLines menu.

Exporting to a .vgrid file

Press the More button and select Export to .vgrid.

A Grid is exported to a .vgrid file so that it can be automatically loaded by **V** when a file is viewed.

The **Set Export Data** option in the Grid right-click menu is used to specify extra data that will be appended to **every line** in the exported .vgrid file.

You can also append different data for each line (column) by entering the extra data to be exported in the **Column Length**. Simply include the extra data **immediately after** the length.

For example, if you enter **16, A** for the Column Length, "**, A**" (without the quotes) will be added to the corresponding exported line.

Note that the comma in this example does not act as a separator. The extra data to be exported begins at the first non-numeric character after the column length. If you add a space after the column length, the space will also be exported.

Note

.vgrid files can only be exported/imported one at a time. Export to a .vexp file if you would like to export/import multiple grids.

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4.3.232.8.8 Importing Grids

When organizing GridLines, pressing the More button allows you to import GridLines that had previously been exported. Two different types of import are available.

Import from a .vexp file

Selecting the Import option allows you import a previously exported .vexp file. The imported grids will appear on the GridLines menu.

Import from .vgrid

This allows you to add a Grid to the GridLines menu that has previously been exported to a .vgrid file.

Note

.vgrid files can only be exported/imported one at a time. Export to a .vexp file if you would like to export/import multiple grids.

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4.3.232.8.9 Exporting Data to CSV

The file being viewed can be exported to a CSV file by selecting *Export to CSV* from the *GridLines* menu. This option is only available if a Grid has been applied to the file being viewed.

Each line in a CSV file consists of multiple fields separated by a delimiter (typically a comma). Each field will contain the text in the corresponding grid column.

The following options can be set when exporting to a CSV file:

Delimiter
If nothing is specified in the Delimiter box, a comma will be used as the delimiter. If you want to specify another delimiter (eg, a vertical bar "|"), simply enter it here. Note that the delimiter can contain more than one character. If you want to use a TAB for the delimiter, enter "**\x8**" (without the quotes).

Quotes
By default, **V** will only place quotes around a field if the field contains a delimiter. You can change this behavior by specifying one of the following:

- Use Quote Always
- Use Quotes only if field contains delimiter
- Use Quotes only if field contains delimiter or spaces

Do not strip trailing spaces
By default, **V** will remove any trailing spaces from a field. Enable this options if you want the trailing spaces exported.

Do not export grid headings
V will export the grid headings to the first line of the CSV file. Enable this option if you do not want the headings exported.

Note

Only the first 500 lines are exported if **V** is unregistered.

4.3.232.9 File Chunks

The time taken to load a file (in text mode) increases as the file gets larger. When viewing really large files, it is likely that you just want to look at the start and/or end of the file. In this case, it is pointless to try and load the entire file. Why load all of a 100Mb file, when you just want to view the last few lines?

In order to keep the load time to a minimum, **V** breaks the file into chunks. The size of the chunk is specified in the More Options tab of the Preferences Dialog box (it defaults to 8Mb). File Chunks are enabled by default - to disable them, just clear the Enable File Chunks option.

When a file is to be viewed, **V** checks the size of the file, and if it is larger than the chunk size, will only load the first chunk in the file (or the last chunk if you are viewing the tail).

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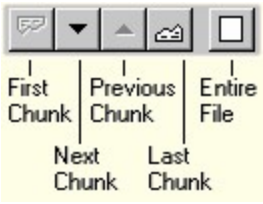

An extra toolbar will appear in the top right of the window, which lets you load further chunks, and an extra status bar pane also appears in the bottom of the window, which displays which chunk is currently being viewed. You may also click on this area of the status bar to display available chunk options.

Once a chunk is loaded, the scrollbars restrict movement to within the chunk. That is, sliding the vertical scrollbar all the way to the bottom, will take you to the end of the chunk, not the end of the file. Also, the displayed line numbers are not always correct when viewing a file in chunks.
Click here for further details on line numbering in chunks.

Searching is not restricted to the current chunk. If a string is found outside the current chunk, then the appropriate chunk is automatically loaded.

In the Goto Dialog Box, offsets and line numbers are relative to the start of the **file**, not to the start of the chunk. This means that if you were viewing the last chunk of a file, going to line 1 will take you to the very start of the file and not to the start of the chunk.
Click here for further details on Goto and chunks.

The buttons on the chunk toolbar have the following function:

First Chunk Loads the first chunk in the file. This will be disabled if the first chunk is the chunk currently being viewed.

Next Chunk Loads the next chunk in the file.

Previous Chunk Loads the previous chunk in the file.

Last Chunk Loads the last chunk in the file. This will be disabled if the last chunk is the chunk currently being viewed.

Entire File This will load the entire file, and the chunk toolbar will disappear. Note that this may take some time, depending on the size of the file. (See note below).

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Pressing the **PageDown** and **LineDown** keys while at the very end of a chunk will automatically load the next chunk. Pressing the **PageUp** and **LineUp** keys while at the very start of a chunk will load the previous chunk.

Chunks in Hex mode

File chunks do not usually apply in hex mode - the entire file is displayed, even if it is larger than the chunk size. However, if the file size is extremely large (usually > 2Gb), **V** will also use chunks in hex mode. This behaviour depends on available system memory and cannot be disabled.

Notes

- The end of a chunk will usually fall somewhere in the middle of a line. **V** tries to break a chunk at the end of a line, however, this may not always be possible. Because of this, the last line of a chunk may sometimes be the same as the first line of the next chunk.
- You may go to an absolute chunk number by using the Goto Dialog box.
- If V takes more than 5 seconds to load the entire file, it will display a progress dialog that will allow you to cancel the operation if you think it will take too long.

4.3.232.1 EBCDIC Files

When **V** opens a file, it tries to detect if the file is ASCII or EBCDIC. If it detects an EBCDIC file, it will automatically display it in EBCDIC mode.

If it incorrectly displays it as ASCII (text or hex), you can switch to EBCDIC mode by selecting EBCDIC from the View menu (or pressing Alt+B).

Similarly, if an ASCII file is incorrectly displayed as EBCDIC, you can return to ASCII mode by selecting ASCII from the View menu (or pressing Alt+B).

When a file is displayed in EBCDIC mode, **EBC** will be displayed on the bottom status bar. Clicking on EBC will allow you to modify several EBCDIC options.

Click here for details on the various EBCDIC file formats supported

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4.3.232.10.1 EBCDIC File Formats

If **V** does not display the EBCDIC file correctly, you can click on **EBC** on the status bar (or select EBCDIC Options from the View menu) to specify the correct file format.

EBCDIC files are usually in one of 4 formats.

Carriage Return Delimited
These files are just like ASCII files. That is, each line is terminated by a carriage return (or carriage return + line feed). The only difference is that the file contains EBCDIC characters instead of ASCII characters.

To display these types of files the **No Formatting (Display as EBCDIC file with CR/LF)** option should be enabled.

If some EBCDIC characters are not displayed correctly, you can modify the EBCDIC to ASCII mapping in the EBCDIC tab of Preferences.

Fixed Length Records (RECFM=F)
Each line (or record) in the file consists of a fixed number of characters. To view these files, enable the RECFM=**F** option and enter the fixed record length in the **LRECL** field.

Click here for further details on viewing RECFM=F files.

Variable Length Records (RECFM=V/VB)
These files consist of variable length lines (or records). Each record is preceded by a 4 byte record descriptor which specifies the record length. **V** will automatically decode the records and display the lines as if they were delimited by a carriage return.

Undefined Format (RECFM=U)
By strict definition, the format of these files is **U**ndefined (or **U**nknown). However in **V**, the meaning is slightly different. Click here for further details.

Carriage Control (CCTYPE)
Click here for details on Carriage Control.

Use ASCII Character Set
By default, EBCDIC RECFM files consist of EBCDIC characters. Enable this option if the file consists of ASCII characters.

Trailing Spaces
It is common for records/lines in EBCDIC files to be padded with trailing spaces - especially when files with variable length records are stored as RECFM=**F**.

Enable the **Ignore Trailing Spaces** option if you do not want the trailing spaces displayed.

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4.3.232.10.2 RECFM=F

V will try to "guess" if an EBCDIC file contains fixed length records (RECFM=F) and will try to guess the fixed record length.

However, it may sometimes get the record length wrong - requiring the user to select the EBCDIC Options and enter the correct record length.

If you do not want **V** to guess the record length, you can enable Do not guess EBCDIC fixed record length (RECFM=F) in the File Options tab of Preferences.

If this is enabled, all fixed record length files will be displayed as Carriage Return Delimited files. To display as fixed record length files, you will need to:

1. Select EBCDIC Options from the View menu (or click on EBC in the status bar)
2. Disable the No Formatting option
3. Enable RECFM=F
4. Enter the correct record length in LRECL

Use Wrap To Length

Alternatively, you can make use of the Wrap To Length command to display the file without having to specify RECFM=F.

You can enable **Wrap To Length** in one of 3 ways:

1. By pressing the Wrap To Length icon on the toolbar
2. By selecting Wrap->Wrap To Length from the View menu
3. By pressing Alt+L

You will also need to specify the record length by selecting Wrap->Set Wrap Length from the View menu (or pressing Ctrl+W). **V** will remember the last wrap length used, so you will only need to set it if it has changed.

The disadvantage of using Wrap To Length to display RECFM=F files is that all files subsequently viewed will be wrapped to this length. That is, if they contain lines that are longer than the wrap length, they will be wrapped. You will need to remember to disable Wrap To Length after you have finished viewing the fixed record length file.

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4.3.232.10.3 RECFM=U

RECFM=U usually means that the file format is unknown or undefined.

However, I have seen files labeled as RECFM=**U** which are very similar to RECFM=**V** files - the only difference being that they have a 2 byte descriptor length instead of a 4 byte descriptor length.

V too will refer to these files as RECFM=**U**.

If you have a file that is in this format (that is, each record in the file consists of a 2 byte length followed by the record data), just set RECFM to **U** and the file should be displayed correctly.

V may not automatically recognize RECFM=U files. If this is the case, you will have to manually set the format to RECFM=U - which can be done in one of 2 ways:

1. If V incorrectly displays the file as an EBCDIC Carriage Return Delimited file
In this case, you will be able to see most of the data, but the lines will not line up correctly. To display as RECFM=U:

- Select EBCDIC Options from the View menu (or click on EBC on the status bar)
- Disable the No Formatting option
- Select RECFM=U

2. If the file is displayed as ASCII text or hex
In this case, the data will be unrecognizable.

To display as RECFM=U, you will first need to enable EBCDIC mode by selecting EBCDIC from the View menu (or pressing Alt+B). Then perform the operations above.

Note: **V** will display an error message if it does not recognize the file as RECFM=U.

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4.3.232.10.4 Carriage Control

Carriage control is used by some EBCDIC files to indicate line and page breaks.

In files that have carriage control, the first character in each line is used to indicate whether a line or page break should be placed after (or even before) the line.

Carriage control (sometimes referred to as **CCTYPE**) can be one of 3 types:

- ANSI (CCTYPE=A)
- Machine (CCTYPE=M)
- ASCII (CCTYPE=Z)

V does not automatically recognize files with carriage control. If your EBCDIC file contains carriage control, you need to select EBCDIC Options from the View menu (or click on **EBC** on the status bar) and select the correct CCTYPE.

If a file contains page breaks, **V** will paginate it. In particular, **V** will display a page marker (dotted line) before the start of each page.

Notes

- Carriage Control is only supported for EBCDIC files - not for ASCII files.

4.3.232.11 Preferences / Configuration Options

The Preferences Dialog Box is where you configure most of the program options. You may select it from the toolbar, the **View** menu, or from various right-click menus.

The tabbed dialog box consists of:

File Options
More Options
Window Layout
EBCDIC
Editor/CMD
Fonts
Keyboard
Line Numbers
Search

These are described in the following sections.

Note

You must press the **OK** button in order to save the settings that were modified in any of the tabbed dialog boxes. If you press the **Cancel** button, all the modifications will be lost.

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4.3.232.11.1 File Options

Tab Size
Specifies the tab length. If you don't want **V** to expand tabs, leave this field blank (or set it to 1).

Date Format
Specifies what format the date will be displayed throughout the program (including when printing).

Always Open as Text
When **V** opens a file, it tries to determine what kind of file it is. If it is a binary file (like a **JPG** or **EXE** file) it will display the file in HEX mode, otherwise it will open it in TEXT mode. Check this option if you always want the file to be opened in TEXT mode.

Start at End of File
If this is checked, **V** will start viewing from the end of the file instead of the beginning.

Wrap Lines to Screen
Usually, when displaying files in Text mode, **V** will not wrap any long lines - you will have to use the horizontal scroll bar to view lines longer than the width of the window. Check this option if you want **V** to wrap the lines to the width of the window. In this case there will be no horizontal scroll bar.

Wrap on Word Boundary
Usually when lines are wrapped they are wrapped at the exact position where the line would exceed the width of the window - even if it means splitting the line in the middle of a word. When this option is checked, the line is always wrapped at the end of a word.

Unmark block after copy
By enabling this option, any highlighted text will be cleared once it is copied to the clipboard (or saved to a file).

Do not restore file position
When **V** views a file that it has viewed before, it will restore the previous file position. Enable this option if you want **V** to always start viewing files from the beginning.

Hex offset in status bar
This causes the hex offset to be displayed in the status bar whenever the user clicks the mouse on a file position, while viewing a file in text mode. The hex code of the corresponding character is also displayed (in text mode only).

Display ALL hex codes
Replaces any dots (unprintable characters) on the right hand side of the hex dump with the corresponding symbol in the selected font.

Auto-sum columns
Enable this option if you want **V** to automatically display the sum when selecting columns.

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Use Bold Cursor
V will use a **bold** cross-hair cursor when viewing a file.

Save File Tailing state
V always disables File Tailing on startup. Enable this option if you want the previous File Tailing state restored.

Save Bookmarks on Exit
By default, all bookmarks are cleared when **V** exits. Enable this option if you want the bookmarks saved so they will be available every time you view the file.

Closing File Window to behave like pressing ESC key
While viewing a file, pressing the upper right **[x]** button on the window causes **V** to exit. By enabling this option, **V** will now treat the **[x]** button like the ESC key. In particular, if you enable the "Browse in File View" option in the Keyboard tab of Preferences, **V** will return to the directory listing when pressing **[x]** instead of exiting.

Do not scroll current line marker when using scroll bars
If the window is scrolled using the scroll bars, the current line marker is moved so that it remains visible. Enable this option if you prefer the current line marker to stay where it is.

Always scroll window when using arrow keys
Pressing the Up/Down arrow keys moves the current line marker. The window is only scrolled when the line marker reaches the bottom (or top) of the window. Enable this option if you want the window to always scroll when you press the arrow keys.

Disable Page Down on Middle Mouse Button
While viewing a file, **V** treats the middle mouse button as a Page Down key. This can interfere with the behavior of some mice (like the IntelliMouse) that can use the middle button (or scroll wheel) for panning. You can disable the default **V** behavior by enabling this option.

Prompt before reloading modified file
V will automatically reload the file it is currently viewing if it has been modified by another program. Check this option if you want **V** to warn you before it does this.

Do not guess EBCDIC fixed record length (RECFM=F)
When **V** detects an EBCDIC file, it tries to determine if it contains fixed length records. However, it can sometimes incorrectly guess the record length. By enabling this option, **V** will not try to guess the format. Once the file is displayed, the user will have to select the EBCDIC Options and manually select the correct format.

Do not copy CR/LF to clipboard for wrapped (to screen) lines
When wrapping lines to the screen width, V will include a newline (CR/LF) at the screen wrap position whenever the lines are copied to the clipboard. Enable this option if you do not want to include a CR/LF at the screen wrap position. That is, a CR/LF will only be included at the very end of the line.

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4.3.232.11.2 More Options

Enable File Chunks
This indicates that **V** will display large files a chunk at a time, instead of reading the entire file. This greatly reduces the time taken for **V** to load a file.

Chunk Size
This is the size of the file chunk (in Kb). When File Chunks are enabled, **V** will only load this much of the file, regardless of how large the file is. The default chunk size is 8192 (ie, 8 Mb). Click here for more details on File Chunks.

Enable Smooth Scrolling
Enables "smooth" scrolling. Note that this is different from the "smooth scrolling" that programs like Internet Explorer support.

Smooth Delay
Typically a number between 50 and 200 (depending on the speed of your system). Click here for further details on Smooth Scrolling.

Enable MRU File List
Enable this option if you want **V** to keep a history of the Most Recently Used (MRU) viewed files. These files will be listed on the Recent Files menu. You may also specify the number of files to remember (up to 50).

Word Sets

You may define your own wordsets which determine what is highlighted when you double-click and shift-double-click on a word. Click here for further details.

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4.3.232.11.3 Window Layout

Use Existing File window to view new file (unless SHIFT pressed)
By default, every file you view will be displayed in a separate window. Enable this option if you prefer to only have one file window open at a time. If you enable this option, you can still view files in a separate window by pressing the SHIFT key when you view the file.

Automatically Tile multiple file windows (Auto-Arrange, Vertical, Horizontal)
Enable this option if you want multiple file windows to be automatically tiled.

Auto Arrange Grid Size
This defines the grid size used for auto-arranging.

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4.3.232.11.4 EBCDIC

This allows the mapping of the 256 EBCDIC characters to their corresponding ASCII equivalent to be modified. This is necessary because not all EBCDIC character mappings are the same - particularly when it comes to special or control characters.

The current character mapping is displayed in the **EBCDIC to ASCII** table. The first column of the table displays the EBCDIC code, the second displays the ASCII character which it maps to. The code in the second column is also displayed in the **Current Mapping** list box. For example, the EBCDIC character **F0h** represents a 0 (zero) which is **30h** in ASCII. To modify the ASCII character to which the EBCDIC character will be mapped, simply select the new character from the **Current Mapping** list box.

If you wish, the mapping table may be sorted on the ASCII code, by selecting the **ASCII to EBCDIC** option. In this case, the first column of the table will contain the ASCII code and the second column will contain the EBCDIC character which maps to it.

Character codes can be displayed in decimal instead of hex by selecting the **Display as Hex** checkbox.

The **Default Mapping** button can be used to restore the EBCDIC to ASCII mapping to the default.

Notes

- If modified, the EBCDIC to ASCII mapping is not saved unless V has been registered.
- The EBCDIC end-of-line character should be mapped to a Line Feed (LF = ASCII 0Ah) and not a Carriage Return (CR = ASCII 0Dh).

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4.3.232.11.5 Editor/CMD

V is not an editor. If while you are viewing a file, you decide you want to edit it, you must do so with a separate editor. Most people will have an editor of choice on their system. If you don't, you can always use **notepad.exe** which should be in your WINDOWS system directory.

The Editor options tell **V** what editor to use to edit the file. To launch the file in your editor of choice, you need to select the File->Edit command. There are 2 options you can specify - just click on the corresponding button to set them.

Path The full path name of your editor (usually an EXE file)
Options The options you want passed to your editor (if any)

The above path and options will be used to construct a command that Windows will execute. The command will look as follows:

Path + **Options** + **FileName**

For example,

\bin\editor.exe /v file.cpp

Where more than one file has been selected, the file names will be appended onto the end of the command, separated by spaces.

Advanced Options

You can pass further options (like the current line number) by using option specifiers (like **%L**). An explanation of the available options specifiers is given in the User Commands section.

Hex Editor

If you want a different editor to be called while you are viewing a file in hex mode, simply define a second editor in the "Hex Editor" section.

Passing the MSDOS File Name

Enable the **Use MSDOS file name** option in each of the above cases in order to pass the MSDOS (8.3) file name to the command. This may be necessary if the specified executable is a 16-bit program which does not support long file names.

Command Processor

You can use a different Command Processor (to TCC.EXE) to launch a Command Prompt by enabling "Use the following Command Processor" and clicking on the Path button to select its path.

Notes

If you want to use more than one editor, you can define it as a User Command.

By default, you can use **Ctrl+E** to launch the editor and **Ctrl+Shift+E** to launch the hex editor.

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4.3.232.11.6 Fonts

To change the fonts, simply click on the corresponding button.

Screen Font
The font used in the File View to display the contents of the file.

Printer Font
Specifies the font to be used when printing.

2UP Font
Specifies the font to be used when printing in 2UP mode.

End of Line Indicator
You can also specify which character is to be used as the **End Of Line Indicator.** This character will be displayed at the end of every line if the Show EOL option is set, or will be printed at the end of every line if the Print End of Line option is selected in the Print dialog box.

Use DOS/OEM character set when viewing file
This is equivalent to the DOS/OEM Char Set option (on the View menu while viewing a file).

Use DOS/OEM character set when printing
The same as above - but for printing. Enable this option if you are printing files that contain line drawing characters. Note that this will only work if the selected font supports the OEM character set.

Notes

- V only allows use of non-proportional (or fixed-pitch) fonts (like Courier) when displaying files. This makes file display, block highlighting and line wrapping much quicker than would be possible using proportional fonts (like Arial or MS Sans Serif).
- Screen fonts can also be selected from the Fonts menu.
- When printing, it is usually best to use the printer's own built in font (if it has any) - it looks much better than Courier. For HP LaserJet printers, you should be able to select a font called LinePrinter. Printer fonts have a small printer icon next to them in the Font Selection List.
- Proportional fonts may be chosen when printing, however, line wrapping will not work correctly. Click here for further details.
- Not all fonts share the same character set. Because of this, you may need to reselect the End Of Line Indicator whenever you select a new font.
- The Printer fonts may also be selected from the Print Dialog box.

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4.3.232.11.7 Keyboard

Page Up/Down to go to start of page if file is paginated
If a file is paginated, enabling this option will cause Page Up/Down to scroll to the start of a new page instead of scrolling the length of the window. Click here for further details on paginated files.

Escape Key

The following options determine how the Escape key is treated. Note that some of these options are mutually exclusive.

Close File Window if pressed in the File View
Pressing ESC will simply close the file window. If another file window is open, **V** will give it focus, otherwise, **V** will return to the Directory Listing.

View Next File
If multiple files were specified on the Command Line, pressing ESC will view the next file. This is equivalent to pressing Ctrl+Shift+PgDn

4.3.232.11.8 Line Numbers

V gives you several options when it comes to displaying/printing line numbers alongside the file data.

Display Line Numbers
Check this option if you want **V** to prefix each line displayed with its corresponding line number. Line numbers always begin at 1.

Display Line Number 1
When an increment is specified, the first line in the file (line 1) will usually not be numbered. Check this option if you want the line number displayed on the first line.

Line Number Increment
This tells **V** how often to display line numbers. For example, if the increment was 10, the line number would be displayed every 10 lines (lines 10, 20, 30, ...). If the increment is left blank (or set to 1), every line will be numbered.

Pad with zero (instead of space)
The line numbers are always a fixed length, depending on the size of the file. For example, if the file has 199 lines, the line numbers would contain 3 digits. Usually **V** will pad unused digits of the line numbers with spaces. Check this option if you want zeroes used instead. In this case **V** will display **"001"** instead of **" 1"**.

Reset Line Numbers on New Page (if paginated)
If the file is paginated, enabling this option will reset the line number to 1 at the start of each page.

Include line numbers on Copy to Clipboard
Enable this option if you also want the line number(s) included when you copy selected text to the clipboard.

Printing Line Numbers

The above options also apply when printing a file, however they must be specified separately as they may differ from the display options. For example, you may want to display line numbers but not print them.

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The option to enable line numbers when printing is not found in this dialog box, but on the main Print Dialog Box.

Two extra line number options exist when printing files.

Print First Line in Page
Check this to print the line number for the **first** line in each page.

Print Last Line in Page
Check this to print the line number for the **last** line in each page.

Note

These options only apply to **Text** mode. In Hex mode, the hex address is always displayed/printed.

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4.3.232.11.9 Search

The options presented here are the same as those presented when you press the Options button in the Search Dialog box.

4.3.232.11 Favorites

Favorites provide an easy way to bookmark frequently viewed files and directories for faster retrieval. Once saved, a favorite may be viewed by selecting it from the Favorites menu.

The currently viewed file or directory may be added to the Favorites by selecting the Add to Favorites option from the Favorites menu.

When adding a favorite, you can give it a meaningful description which will be displayed in the Favorites menu. If you do not, the path name will be displayed.

You can also store the favorite in a "Folder" by highlighting a folder name in the "Create in" list. You can create a new folder by pressing the "New Folder" button. Favorites stored in folders will appear in popup menus off the main Favorites menu.

The favorites may be modified by selecting the Organize Favorites option.

Note

Unregistered versions will only be able to select the first 3 favorites.

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4.3.232.12.1 Add To Favorites

Adding a File

You will usually add a file to the Favorites while you are viewing it. When adding a file to the Favorites, you may set the following option:

Restore File Position
If this is enabled, the current file position will be restored whenever the favorite is selected. Otherwise, the file will be viewed from the start.

Executing a Favorite
You can also add a file to the Favorites from the Directory View by highlighting it and selecting "Add Selection to Favorites" from the Favorites menu. You will then have the option of enabling the **Execute** option. If this is enabled, the file will be "executed" when selected from the Favorites menu. Otherwise, it will be displayed.

For example, if you add a "Word Document" to your Favorites, enabling the "execute" option will cause the file to be loaded in Word when you select it from the Favorites menu (instead of being displayed by **V**).

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4.3.232.12.2 Organizing Favorites

You may add, delete, move and edit favorites by selecting "Organize Favorites" from the Favorites menu. A favorite may be moved to a new position by simply dragging it and dropping it into its new position. The favorite will be placed **before** the entry on which it was dropped.

Favorites may be created by pressing the "Insert File" or "Insert Directory" buttons. "Insert Copy" will create a copy of the currently highlighted favorite. "Insert Separator" will insert a separator into the Favorites menu.

Organizing into Submenus

If you have many favorites, you will probably find it useful to organize them into submenus. To create a new submenu, press the "Insert Submenu" button.

To move a favorite into an empty submenu, simply drop it onto the submenu name. If the submenu is not empty, it will expand so you can drop the favorite into the required position. The dropped favorite will be placed *before* the entry it is dropped on. If you want to place the favorite at the *end* of the submenu, drop it onto the submenu name you want it placed under.

If you want to move a favorite so that it is positioned just before a submenu, you need to press the SHIFT key as you drop the favorite onto the submenu you want it to precede. If you do not press the SHIFT key, the favorite will be placed inside the submenu.

For further details on modifying favorites, see the following:

Favorite Files
Sorting Favorites
Using Numeric Drive Letters in path names

Pressing the **More** button displays a menu that allows you to sort, export and import.

Note

You cannot create a submenu within a submenu.

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4.3.232.12.3 Favorite Files

The following may be specified for a favorite file:

File Path
The file name. Press the "..." button to browse. You can use numeric drive letters in the file path which will be expanded depending on the environment in which **V** is being run. Click here for further details.

Tail
If this is enabled, the file position is set to the end of the file.

Hex
The favorite is viewed in Hex mode.

EBCDIC
The favorite is viewed in EBCDIC mode.

Restore File Position
If this is enabled, the file position will be restored. Otherwise, the file will be viewed from the start.

The file position consists of:

Line Number
The line number at which to position the file. If the file is to be opened in Hex mode, this will refer to a Hex **offset** instead of a line number.

Column
The column position.

Chunk
The chunk to load (if the file is large enough to be loaded in chunks)

Shortcut Key
You can assign a keyboard shortcut to this Favorite so that is it executed every time the keyboard shortcut is entered. Simply click in the *Shortcut Key* box and enter the desired key combination. Press the ESCape key to clear the shortcut key. A beep will sound if the shortcut key is currently assigned.

Blank File name

The file name may be left blank. In this case, only the file position and/or mode will be modified.

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4.3.232.12.4 Sorting Favorites

Pressing the More button and selecting the*Sort* option will display a dialog box, allowing you to sort the Favorites.

By default, the Favorites will be sorted alphabetically on their description, regardless of whether they are a file, a directory or a submenu. The following options can be set to modify the default behavior.

Place Files before Directories
If this is enabled, all files will be placed at the top of the list.

Place Directories before Files
Enable this to place all directories at the top of the list.

Place Submenus at top
Enable this, to place all submenus at the top.

Place Submenus at bottom
Enable this, to place all submenus at the bottom.

Sort Submenu contents
By default, submenu contents will not be sorted. Enable this option to also sort submenus.

4.3.232.12.5 Exporting/Importing Favorites

Pressing the More button and selecting the*Export* option will display a dialog box allowing the Favorites to be exported to a file.

The exported file can then be imported by another user by selecting the*Import* option and specifying the imported file.

Note

User Commands and GridLines can also be exported/imported in the same way as Favorites.

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4.3.232.12.6 Using Numeric Drive Letters in Paths

When specifying a file or directory path (in Favorites and User Commands), certain numeric drive letters can be used to specify various system paths. This is particularly useful when using the U3 version of **V** - where the actual file paths can be different every time **V** is run.

The following drive letters are currently defined:

0: The folder from where **V** is being executed. On a U3 system, this will be a temporary folder on the host machine, not on the U3 drive.
1: The Windows folder (usually C:\Windows)
2: The System folder (usually C:\Windows\System32)
3: The U3 Drive (eg, X:\)
4: The U3 Folder where the **V** settings are stored.
5: The user's My Documents folder
6: The user's Program Files folder
7: The user's Profiles folder (usually C:\Documents and Settings)

Note

Numeric Drive Letters can also be used when specifying a text editor and a Command Processor.

4.3.232.13 User Commands

A User Command is any program (usually an EXE file) that the user may wish to execute from **V**.

In the Directory View, the currently selected file(s) may be passed to the User Command and in the File View, the currently viewed file may be passed to the command.

This is a great way to extend **V**.

For example, **V** cannot encrypt files. However, if you already have a program which does this, you can define a User Command which will let you encrypt files using **V**.

User Commands are created by selecting Organize from the UserCommands menu. Once created, User Commands are executed by selecting them from the UserCommands menu.

Keyboard Shortcuts

The default User Command is the first in the list and can be executed by pressing Ctrl+U. The most recently executed User Command can also be repeated by pressing Ctrl+Shift+U. Each User Command can also be assigned its own keyboard shortcut.

Running as Administrator

Under Vista or Windows 7, the User Command can be run as an Administrator by right-clicking on the command and selecting *Run As Administrator*

Debug Mode

If you right-click on the User Command and select *Run in Debug Mode*, the command to be executed will be displayed before it is run. You will then have the option of running the command or cancelling it. This is a good way of making sure that the correct file names are being passed to the command.

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4.3.232.13.1 Organizing User Commands

Organizing User Commands is very similar to Organizing Favorites.

You may add, delete, move and edit User Commands by selecting "Organize" from the UserCommands menu. A command may be moved to a new position by simply dragging it and dropping it into its new position.

User Commands may be created by pressing the "Insert Command" button. "Insert Copy" will create a copy of the currently highlighted command. "Insert Separator" will insert a separator into the UserCommands menu.

Organizing into Submenus
If you have many User Commands, you will probably find it useful to organize them into submenus. To create a new submenu, press the "Insert Submenu" button.

To move a command into an empty submenu, simply drop it onto the submenu name. If the submenu is not empty, it will expand so you can drop the command into the required position. The dropped command will be placed *before* the entry it is dropped on. If you want to place the command at the *end* of the submenu, drop it onto the submenu name you want it placed under.

If you want to move a command so that it is positioned just before a submenu, you need to press the SHIFT key as you drop the command onto the submenu you want it to precede. If you do not press the SHIFT key, the command will be placed inside the submenu.

For further details on modifying User Commands, see the following:

Specifying User Command Options
Using Option Specifiers
Using Numeric Drive Letters in path names

Pressing the **More** button displays a menu that allows you to sort, export and import.

Note: You cannot create a submenu within a submenu.

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4.3.232.13.2 User Command Options

To define a User Command you must specify the following information and options:

Command Path
The full path name of the command to be executed. Press the "..." button to browse.
%A can also be entered as the command path. In this case, it will be replaced by whatever program is associated with the selected file when the User Command is invoked.

Numeric drive letters can be used in the file path, which will be expanded depending on the environment in which **V** is being run. Click here for further details. Pressing the small question mark button will display a list of valid drive letters.

Shortcut Key
You can assign a keyboard shortcut to this User Command so that is it executed every time the keyboard shortcut is entered. Simply click in the *Shortcut Key* box and enter the desired key combination. Press the ESCape key to clear the shortcut key. A beep will sound if the shortcut key is currently assigned.

Command Options
The options that will be passed to the command (if any). This will usually look something like **/option1 /option2.** The options may also contain option specifiers which are expanded when the user command is run.

Options after file name
Will place the command options after the file name. See the explanation of the Command Format below.

Start in Command Path
By default, the working directory of the User Command will be the directly currently being viewed or the directory of the current file. By enabling this option, the working directory will be set to the directory that contains the User Command.

Run As Admin
Enable this (on Vista and Windows 7) to run the command as an Administrator.

Window
This describes the state of the User Command window when it is executed. It may be either **Normal**, **Minimized**, or **Maximized**.

Do not pass File names
By default, any selected files (or directories) will be passed to the command. Enabling this option will cause nothing to be passed to the command (apart from the Command Options).

Prompt for extra options
By enabling this, the user will be prompted for extra options that will be passed to the command. These options will be appended to any options in **Command Options**.

Use MSDOS names
If any files are selected, the MSDOS (8.3) form of the file name will be passed to the command.

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Do not allow multiple files
Enabling this option will ensure that the command is not executed when more than one file is selected.

Execute command for each file
If multiple files are selected, all the file names will be passed to the User Command, and the command will be executed once. By enabling this option, the User Command will be executed for each selected file.

Wait for command to finish
When executing a User Command, **V** simply launches it and then gets back to business - it does not wait for the command to terminate. In the above case, executing a User Command for each selected file can result in multiple instances of the same program being active at the same time. By enabling this option, **V** will only execute the User Command on a file once the command on the previous file has finished.

Debug Mode
If this option is enabled, the User Command will be displayed, and the user asked to confirm if it is to be executed. This allows the user to experiment with option specifiers without actually having to execute any commands.

Default User Command

The **default** user command may be executed by pressing Ctrl-U. The default user command is considered to be the **first** command in the User Command list.

Command Format

By default, the actual command that **V** will execute will look as follows:

[Command Path] [Options] [Extra Options] file(s)

If "Options after file name" is enabled the command will look as follows:

[Command Path] file(s) [Options] [Extra Options]

In the case where more than one file name is selected, all the file names are included on the command line, separated by spaces.

Notes

- Unregistered versions will only be able to execute the first defined User Command.
- If a option specifier is used in the Command Options, any selected file names are not automatically added to the command line. If the user wants the file name(s) passed to the command, the appropriate file name specifier (%f or %F) needs to be used.

4.3.232.13.3 Option Specifiers

User commands are constructed by appending the selected file name(s) to the command options. Although there is an option to place the options last, no further flexibility is available. For example, you cannot place some options before the file name(s) and some after.

Unless you use Option Specifiers.

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Option specifiers are entered in the **Command Options** and are expanded when the command is executed. An option specifier consists of a percent sign (%) followed by a single character. The valid specifiers are as follows (note that case is important):

F	The selected file name(s) - includes fully qualified path
f	File name only (no path)
G	The fully qualified selected file names(s) with any extension omitted
g	File name only with extension omitted
D	The name of the current directory - includes fully qualified path
d	Directory name only
Z	The name of the ZIP file - fully qualified path (Zip View only)
z	ZIP file name only
T or t	The currently selected text (File View or Search Results View
U or u	The currently selected (or right-clicked) URL
W	The currently selected (or right-clicked) word (using word set 1)
w	using word set 2
X	The column number of the start of the selected text
x	The column number of the end of the selected text
Y	The line number of the start of the selected text
y	The line number of the end of the selected text
L or l	The line number at the top of the display
n	The number of characters highlighted (in decimal)
N	(in hex)
s	The start offset of the selected text (in decimal)
S	(in hex)
e	The end offset of the selected text (in decimal)
E	(in hex)
P or p	Prompts the user for "extra options" which will be appended to the Command Options

Note

A User Command will not be executed if a option specifier cannot be expanded. For example, if **%W** is specified and no text has been selected.

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4.3.232.13.4 Sorting User Commands

Pressing the More button and selecting *Sort* will display a dialog box, allowing you to sort the User Commands.

By default, the User Commands will be sorted alphabetically on their description. The following options can be set to modify the default behavior.

Place Submenus at top
Enable this, to place all submenus at the top.

Place Submenus at bottom
Enable this, to place all submenus at the bottom.

Sort Submenu contents
By default, submenu contents will not be sorted. Enable this option to also sort submenus.

4.3.232.13.5 Exporting/Importing User Command

Pressing the More button and selecting the *Export* option will display a dialog box allowing the User Commands to be exported to a file.

The exported file can then be imported by another user by selecting the *Import* option and specifying the imported file.

4.3.232.13.6 Using Numeric Drive Letters in Paths

When specifying a file or directory path (in Favorites and User Commands), certain numeric drive letters can be used to specify various system paths. This is particularly useful when using the U3 version of **V** - where the actual file paths can be different every time **V** is run.

The following drive letters are currently defined:

0: The folder from where **V** is being executed. On a U3 system, this will be a temporary folder on the host machine, not on the U3 drive.
1: The Windows folder (usually C:\Windows)
2: The System folder (usually C:\Windows\System32)
3: The U3 Drive (eg, X:\)
4: The U3 Folder where the **V** settings are stored.
5: The user's My Documents folder
6: The user's Program Files folder
7: The user's Profiles folder (usually C:\Documents and Settings)

Note

Numeric Drive Letters can also be used when specifying a text editor and a Command Processor.

4.3.232.14 Printing Files

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When the Print command is selected, the Print Dialog Box will appear (which is different from the standard Windows Print Dialog Box). The following options may be specified:

Printer
The name of the printer to send the file to. All available printers will be listed in the drop-down list box.

Header & Footer
Check the appropriate box to print a header and/or footer. The text for the header/footer is entered in the corresponding edit box. A history of the previous 10 headers is maintained making it easy to select commonly used headers. Click here for a description of the Headers and Footers formats. If a header/footer is enabled, but no text entered in the edit box, the default header/footer is printed.

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Override Page Length
This option is used if you want your page size to have a certain length (in lines). Click here for further explanation.

Copies
The number of copies that you want printed.

Printer Font
This button will display the font that **V** will use for printing. Click here for more details.

Profile
This allows you to save all current settings in a Printer Profile or to restore the settings in a profile. Click here for further details.

2Up
Specifies that you want the document printed in 2UP Mode.

Hex Mode
This option can only be set if the print was initiated from the Directory View and specifies if the file is to be printed in Hex mode. If the print was initiated from the File View, this option would be disabled and would indicate the mode in which the file was being viewed.

Vertical Hex Mode
Prints the file in Vertical Hex Mode

Greenbar
Apply Greenbar to the printed text.

Print Line Numbers
Specifies whether line numbers will be printed with the file. Various options regarding the printed line numbers are set in the Line Numbers tab of the Preferences Dialog box. Note that the format of the printed line numbers can differ from that of the displayed line numbers.

Print End of Line
Enable this option if you want an End Of Line (EOL) indicator printed at the end of every line. The character that is used for the indicator depends on the font used and can be specified in the Fonts tab of the Preferences dialog box.

Duplex (long edge) / Duplex (short edge)

If your printer supports duplexing (double sided printing), you may also specify if you want to enable short/long edge binding. Note that the duplex options are always enabled - even if your printer does not support duplexing.

Wrap Long Lines
Click here for an explanation of line wrapping.

Form Feeds
This determines how Form Feeds will be handled. Click here for an explanation.

Margins
Set the size (in inches) of the top, bottom, left and right margins. Click here for further details.

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Portrait/Landscape
Specifies if the file is printed in Portrait or Landscape mode. Note that this option is ignored if the file is to be printed in 2UP mode (which is always printed in Landscape).

Page #
Select the pages you want printed. Click here for further details.

Line #
Select the lines you want printed. Click here for further details.

Sides
This lets you select if you want all pages printed or just the **odd/even** numbered pages (which makes double sided printing possible).

Setup
The **Setup** button is used to configure the selected printer. The **Print Setup** command from the File Menu can be used to configure the default printer.

More
Click here for further details.

Notes

It is always a good idea to do a Preview before printing - especially if the printout is going to be large.

Greenbar may not always preview correctly - but it should print correctly.

Unregistered versions of **V** have the following restrictions:

- Header/Footer history is not saved
- A ruler may not be printed as a header/footer
- A fixed footer is always printed

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4.3.232.14.1 Wrapping Lines

If a line is too long to fit on the printed page, you can have it wrap to the beginning of the next line by checking the **Wrap Long Lines** option.

You must then select the type of wrapping from the adjacent list box. This can be one of:

Right Margin
In this case, the text is wrapped whenever a line reaches the right margin.

Column
Select this option to have the text wrapped at a specified column position (which you enter in the adjacent box).

New Page
When this is selected, long lines are wrapped onto a new page. For example, if a page is 100 characters wide, a line of 300 characters will span 3 pages. That is, the first 100 characters will be printed on the first page, the second 100 on the next and the third 100 on the next.

Notes

- If this option is not enabled, any long lines will be truncated.
- If you select column wrapping and the column length is too long to fit on the page, the lines will be truncated.

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4.3.232.14.2 Print Range

This lets you specify what part of the file you want printed. You may select one of the following:

All
Prints the entire file

Page #
Prints the range of pages you specify in the **From** and **To** boxes.

Line #
Prints the range of lines you specify in the **From** and **To** boxes.

Selection
Prints the currently selected text. If no text is selected, this option will be disabled.

From Current Page
Starts printing from the start of the **current page** - which is the line that is currently displayed at the top of the screen. The number of pages to print is specified in **Pages**. If this is left blank, **V** will print to the end of the file.

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4.3.232.14.3 Headers and Footers

User defined headers and footers can be printed on every page. Headers (and footers) each consist of 3 sections - **left**, **center** and **right**, which are left justified, centered and right justified, respectively. To specify a header, you enter each of these 3 sections, separated by a semi-colon. That is - "**left;center;right**" (do not include the quotes).

Each of these sections can contain plain text, special format specifiers or can be empty. The format specifiers consist of a percent (**%**) followed by one character, and are expanded upon printing. The valid specifiers are as follows (note that case is important):

%f	Name of the current file (name only)
%F	Full Path Name of current file
%d	Current Date
%D	Directory Name (ie, %F without the file name)
%e	File Date
%t	Current Time (24 hour format)
%T	Current Time (12 hour format)
%u	File Time (24 hour format)
%U	File Time (12 hour format)
%p	Current Page Number
%P	Total pages to be printed
%r	Print the Ruler
%g	Print the Gridlines

If you want to use a **"%"** or **";"** in the header text - prefix them with a **"%"**. That is, use **"%%"** and **"%;"** respectively.

Examples: (once again, do not enter the quotes)

"%f;;Page %d"	Print the file name on the left and page number on the right
";%d;"	Just print the page number (with no text) in the center
";;"	Prints an empty header/footer

If the header/footer field is left blank, it defaults to "**%f;%d %t;Page %p**". That is, it prints the file name on the left, the date and time in the center, and the Page number on the right.

Notes

- The ruler and gridlines cannot be combined with any other specifier (only each other). For example, you cannot combine the ruler with a page number. If "%r" is specified, then anything else that may be entered in the header/footer is ignored (with the exception of %g).
- If both a ruler and a grid are specified ("%r %g" or "%g %r"), the grid will always be displayed after the ruler if printed as a header, and before the ruler if printed as a footer.
- The ruler specifier will be ignored unless **V** has been registered.

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4.3.232.14.4 Form Feeds

Form feed characters (ASCII 12 or Ctrl-L) are generally used in text files to signify a page break.

You may select one of the following 3 Form Feeds options in the Print Dialog Box:

New Page **V** will start a new page every time a form feed is encountered.
Draw Line A page separator (dotted line) will be printed whenever a Form Feed is encountered - a new page will not be started.
Ignore The form feed will be treated as a normal character - and will be printed. The appearance of the printed form feed will depend on the print font.

4.3.232.14.5 Margins

The margins specify the distance from the text to the edge of the page in each direction and are always specified in inches. For those who are only familiar with centimetres, **1 inch** is equal to **2.54cm**.

Modifying the size of the margins affects the size of the page that is available to print the file - the larger the margins, the smaller the area available to print the file.

4.3.232.14.6 Page Length

Usually, the number of lines that can fit on a page is determined by the physical length of the page, the size of the margins and the height of the printer font.

At times, files are pre-formatted to a particular page length (usually around 60 lines). That is, the file usually contains it's own header and/or footer every 60 lines. Printing a file which has been pre-formatted to 60 lines on a page that is physically 66 lines long will look awkward - headers and footers will start appearing all over the pages, instead of where they should be!

To overcome this problem, you can override the physical page length by specifying the length of the printer page. This causes **V** to start a new page as soon as the specified number of lines has been printed instead of waiting until the end of the page.

Notes

- The page length specified must be less than or equal to the maximum page length allowed by the printer.
- Pre-formatted files usually contain their own header/footer, so you will probably have to disable V printing any of its own.
- If your listing is already formatted to a certain page length which is larger than your printer page length, you will have to increase the size of the printer page (by reducing the top and bottom margins and/or disabling the header/footer) or reduce the size of the printer font.
- Some files contain form feed characters (Ctrl-L or ASCII 12 decimal) to indicate a page break. V will start a new page whenever it encounters a form feed.

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4.3.232.14.7 2UP Printing

2UP printing would probably have to be one of the most useful (and most used) features of **V**. At least it is for me!

2UP printing not only saves paper, but I find the listings actually look better and are easier to read, since you have more information on the one page.

When files are printed in 2UP mode (also known as book mode), the file is printed in Landscape mode with two pages being printed (side by side) on each sheet of paper.

2UP printing is ideal for program listings, hex dumps and README files.

Notes

- When printing in 2UP mode, you should use a smaller font than you would use for normal printing. On a HP LaserJet, the built-in LinePrinter font is ideal.
- See the Fonts section of the Preferences Dialog box for further information on selecting Printer fonts.
- The Orientation option (Portrait/Landscape) is ignored when 2UP printing is selected - the printer is always placed in Landscape mode.

4.3.232.14.8 Printer Fonts

The font that **V** will use for printing will be displayed in a button just above the "Options" group in the dialog box. You may change the font by clicking on the button and selecting a previously used font from the list displayed. You may add a font to the list by selecting **Add Font**.

Select **Organize Fonts** if you want to modify the font list.

When you change printing modes (Hex/Text and 2Up/Normal) **V** will automatically select the font last used in that mode.

Proportional fonts
Proportional fonts may not be selected for displaying files but they may be selected for printing. Proportional fonts will not work well for program listings and hex dumps since the spacing between characters is not fixed (it is proportional). However, proportional fonts may be preferable for printing text files.

Line Wrapping
Line wrapping will not work correctly if a non-proportional printer font is selected. In particular, the lines will usually wrap well before the end of the page.

If proportional fonts are used, it is suggested that the **Wrap Long Lines** option not be set.

Note
Selecting **Fonts** from the menu on the More button allows the user to select a new printer font. This is equivalent to selecting fonts from the Preferences dialog box. However, the font selected will not be added to the font list which is displayed when clicking on the button displaying the current print font.

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4.3.232.14.9 More Printing Commands

Pressing the **More** button allows you to select one of the following:

Fonts
This allows the user to select a new printer font. The font selected will not be added to the font list that is displayed when pressing the button displaying the current font.

Text Only Options
Sets the options for Text Only Printing

Start Text Only Printing
Starts Text Only Printing

Start Raw/Binary Printing
Starts Raw/Binary Printing

Apply Settings & Exit
This saves the print options and closes the Print dialog box. Note that pressing the Cancel button will not save any options that have been modified.

Note

You can start Text Only and Binary printing from the command line by specifying the **/PX** and **/PB** command line options respectively.

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4.3.232.14.10 Text Only Printing

Text Only printing causes **V** to send text directly to the printer, bypassing the Windows printer driver. This will normally be used to print to a very old printer that is not supported by Windows.

There are 2 ways of starting Text Only printing.

The first is to simply select **Start Text Only Printing** from the menu that is displayed when you click on the More button.

The second is to print to a printer that uses the **Generic/Text Only** printer driver. This is usually found under the manufacturer of **Generic** in the Add Printer Wizard. If a generic printer driver is used, **V** will bypass the Windows driver and print directly to the printer (unless Text Only printing has been disabled).

Text Only printing may be configured by selecting **Text Only Options** from the menu that is displayed when the More button is pressed. You will probably need to know certain technical information about the printer in order to configure it correctly (do you still have the manual?). The following options may be specified:

Disable Text Only Printing
Enable this if you really want to use the Windows printer driver (which will normally be bypassed).

Page Size
The page size of the printer in columns and rows. The column size will usually be 80 or 132 and the number of lines between 60 and 66.

Margins
The number of columns (or lines) to skip before printing each page. Note that the Page Size should include the margins. For example, if the page width was 80 columns and the left and right margins were 5 characters, the printable page width would be 70 characters.

Send after each LINE
This tells **V** what to send to the printer at the end of a new line. It will usually be one of:

CR	Carriage Return (Hex 0D)
LF	Line Feed (Hex 0A)
CRLF	A CR followed by a LF
Other	You may specify and of end of line character sequence if it is not one of the above. The format of the character sequence is described below.

Send after each PAGE
What to send to the printer at the end of each page to advance to the next page. It will usually be one of:

FF	Form Feed (Hex 0C)
Blank Lines	Advances to the next page by a series of blank lines (dependant on the page height).
Nothing	Send nothing
Other	Specify your own end of page character sequence.

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Send at Start of file
Character sequence to send at the start of the file (perhaps to put the printer in condensed mode).

Send at END of file
Character sequence to send at the end of the file.

Delay after each LINE and/or PAGE
You may also tell **V** to wait after printing each line and/or page. The delay is specified in milliseconds. For example, 500 milliseconds equals half a second.

A delay may be necessary if you find that the printer is losing characters due to its buffer not being large enough.

Character Sequence Format

To specify a character sequence to be sent to the printer, simply type in the characters (if they are alphanumeric). For control characters, type a **%** followed by the **2 digit hex code**.

For example, to send a LF/CR instead of a CR/LF you would specify **%0a%0d**. To send the **ESCAPE** (hex 1b) character followed by the letter **A** you would specify **%1bA**.

Notes

See also Raw/Binary Printing

Print Preview will probably not work correctly for Text Only printing.

4.3.232.14.11 Raw/Binary Printing

Text Only printing lets you send the file directly to the printer, bypassing the Windows printer driver.

This is only really useful for printing *text* files, as **V** will try to paginate the files. That is, start a new page depending on how many lines in a page.

Raw/Binary printing, however, does not paginate the file. It sends the file unmodified to the printer.

Raw/Binary printing can be used to print a file that already contains printer control codes, and needs to bypass the printer driver in order to print correctly.

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4.3.232.14.12 Printer Profiles

A Printer Profile is a collection of printer settings (header, footer, font, margins, orientation, etc).

To save the current printer settings in a profile, click on the **Profile** button and select Save in New Profile. You will then be asked to enter a profile name. This name will appear in the Profile drop-down list box in the Print dialog box.

When a profile is selected from this list box, all the printer settings stored in the profile will be restored.

Once a profile has been selected, any settings changes will not automatically be saved back to the profile. You will need to do this manually by clicking on the **Profile** button and selecting Save in Current Profile.

When a profile has been modified (without being saved), the Profile list box will display "Profile Name (Modified)" to indicate that the current settings are different from the saved profile. Note that this will not happen as soon as the options are modified - but the next time the Print dialog box is displayed.

Default Profile

A default profile can be defined by clicking on the **Profile** button and selecting Set as Default Profile.

Defining a default profile allows the user to revert to the default profile settings whenever **V** is started or after a specified number of minutes from the last print. To configure this, click on the **Profile** button and select Default Profile Options.

Notes

Profiles cannot be used to save Text Only options

Profiles are stored as **.vprofile** files in the user's Application Data folder - usually in:

```
C:\Documents and Settings\UserName\Application Data\V\Profiles\
```

4.3.232.15 Keyboard Shortcuts

Most of the Menu and Toolbar commands in **V** have a keyboard equivalent (and in many cases, more than one).

To many, it may seem that a lot of the keys have been selected at random. I'd like to think that there is a bit more to it than that. Many **V** users have been using PCs for a long time and they all have their own preferences when it comes to utilities, and in particular, to editors.

No one wants to learn a new set of keyboard commands. Windows and CUA was supposed to fix all this, but try telling someone who uses **vi** all day (a lot of people still do!) that they have to press "**Ctrl-F**" to search, when they are used to typing "**/**".

Most of the keyboard shortcuts can be customized. This allows the user to define a new keyboard shortcut or to re-assign an existing one. Click here for details.

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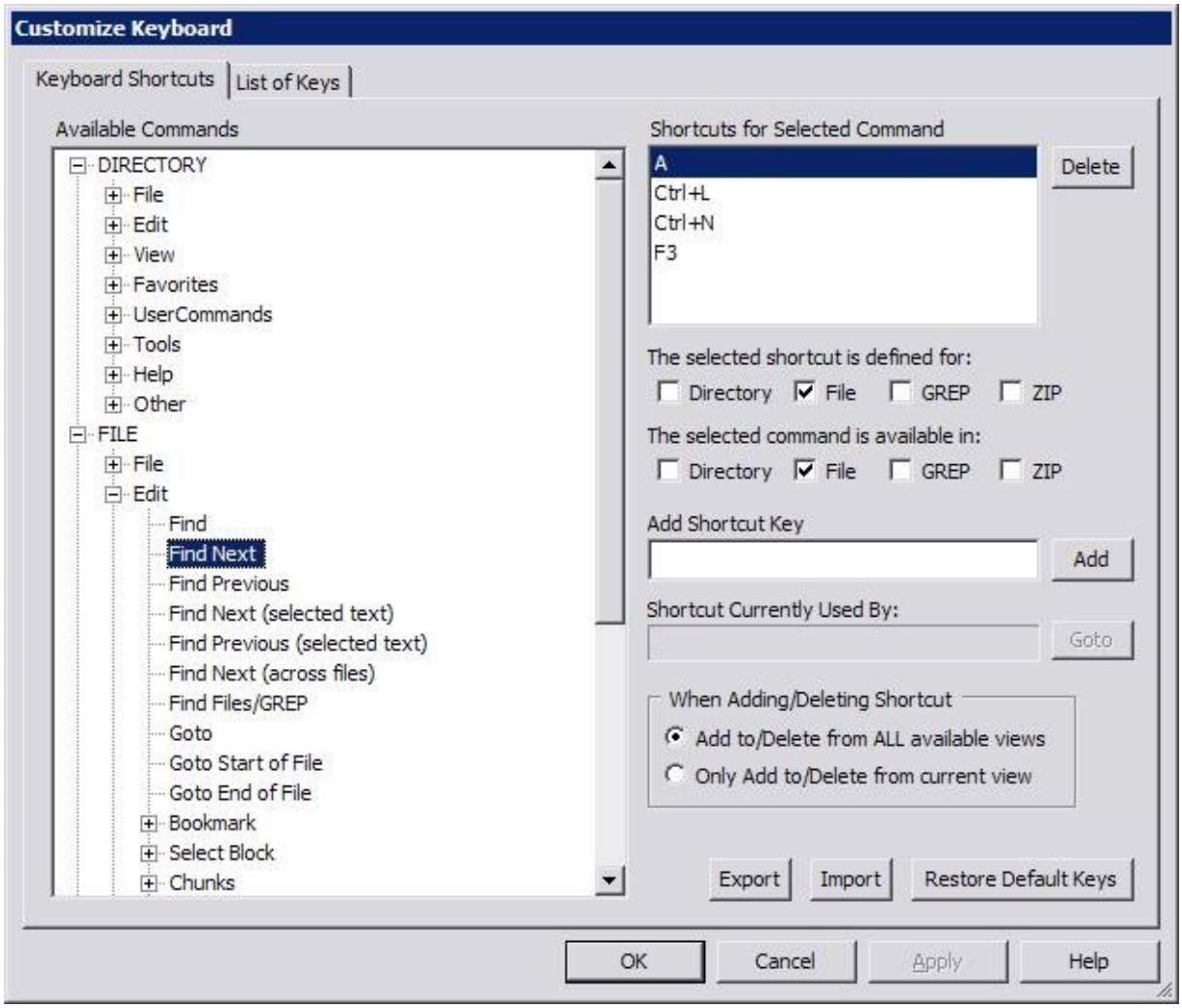
4.3.232.15.1 Customizing the Keys

The keyboard can be customized by selecting *Customize Keyboard* from the Tools menu.



A tree will be displayed that will contain the top level menus in each of **V**'s four views (Directory, File, GREP and ZIP). Commands that do not appear on any menus (like Goto Directory Box in the Directory View and Page Down in the File View) are listed underneath the **Other** branch of the corresponding view..

When you expand the tree and click on of the commands, the shortcut keys currently corresponding to that command (if any) will be displayed underneath *Shortcuts for Selected Command*.

Note that a command can have multiple shortcuts keys assigned to it. A key listed in **bold** (eg, **Alt+0**) indicates that the key cannot be deleted (or re-assigned). However, extra shortcut keys can be defined for that command.

The above screenshot shows the keys currently assigned to Find Next (A, Ctrl+L, Ctrl+N and F3).

The *selected shortcut is used in* indicates that the selected key (A) is currently only defined in the File view.

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The *selected command is available in* indicates that the Find Next command is only available in the File view.

Click on the following for further details:

Adding/Deleting Keys
List of Keys

4.3.232.15.2 Adding/Deleting Keys

To delete a shortcut key, simply select the key and press the *Delete* button. To assign a new shortcut to the command, click in the *Add Shortcut Key* box, enter the new key (or key combination) and press the Add button. Press the ESCape key to clear the *Add Shortcut Key* box.

When adding a new key, *Shortcut Currently Used By* will display any existing command that the key is already assigned to. You will have to delete this key from the existing command before you can assign it to the new command. Pressing the *Goto* button will take you to the menu command that is currently used by the key.

When adding or deleting a key, it will be added to (or deleted from) all available views unless *Only Add to/Delete from current view* is enabled.

For example, Ctrl+Enter displays the File Properties in the File, Directory and GREP views. By enabling *Only Add to/Delete from current view*, it is possible to only redefine Ctrl+Enter in the File View and maintain its existing functionality in the Directory and GREP views.

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4.3.232.15.3 Export/Import Keys

Press the *Export* button to export the shortcut keys to a .vkey file. Note that only the keys that have been customized by the user are exported to the file.

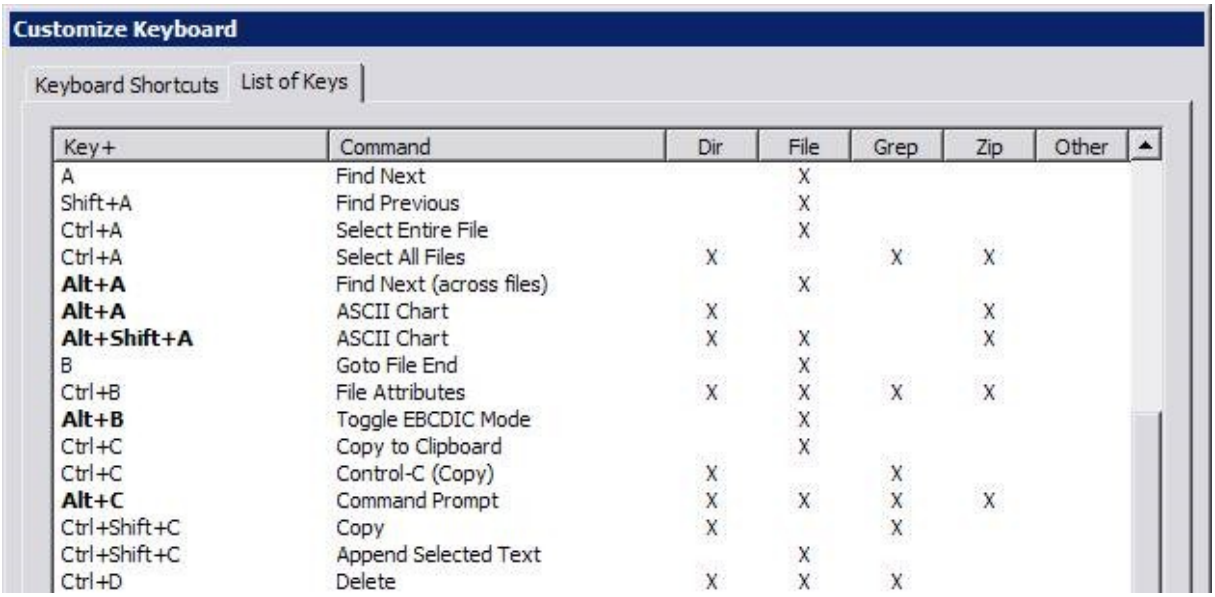
Press the *Import* button to import the customized keys from a .vkey file. Any keys that you have customized will remain customized, unless they have been redefined in the .vkey file.

Note

The .vkey file should not be edited

4.3.232.15.4 List of Keys

The *List of Keys* tab displays a list of all the keys currently used by **V**.



Key+	Command	Dir	File	Grep	Zip	Other
A	Find Next		X			
Shift+A	Find Previous		X			
Ctrl+A	Select Entire File		X			
Ctrl+A	Select All Files	X		X	X	
Alt+A	Find Next (across files)		X			
Alt+A	ASCII Chart	X			X	
Alt+Shift+A	ASCII Chart	X	X		X	
B	Goto File End		X			
Ctrl+B	File Attributes	X	X	X	X	
Alt+B	Toggle EBCDIC Mode		X			
Ctrl+C	Copy to Clipboard		X			
Ctrl+C	Control-C (Copy)	X		X		
Alt+C	Command Prompt	X	X	X	X	
Ctrl+Shift+C	Copy	X		X		
Ctrl+Shift+C	Append Selected Text		X			
Ctrl+D	Delete	X	X	X		

An X is displayed in a column if that key is available in the corresponding view. The four views are:

Dir The Directory View (ie, the Directory Listing)
File The File View (viewing the file contents)
Grep The GREP View (where **V** displays the GREP results)
Zip The ZIP View (viewing the contents of a ZIP file)

The *Other* column can contain one of the following:

FAV The key is assigned to a Favorite
UCMD The key is assigned to a User Command
FONT The key is assigned to a font
GRID The key is assigned to a grid

You can **delete a key** by right-clicking on the key in the list and selecting *Delete Key(s)*. Note that keys displayed in **bold** cannot be deleted (and therefore, cannot be re-assigned).

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Scroll Keys
If you **press a key** while viewing the list of keys, the list entry corresponding to that key will be selected (if it exists). For example, if you press Ctrl+A, the first list entry for Ctrl+A will be selected. Pressing Ctrl+A again will select the next entry for Ctrl+A (if it exists).

This causes a problem if you use one of the scroll keys to scroll the list (like PageUp/PageDown). Pressing PageUp will select the PageUp key in the list instead of scrolling the list. If you prefer the scroll keys to scroll the list, enable the *Scroll keys for the above list* option.

Sorting the List of Keys
The list of keys can be "sorted" by clicking on one of the column headers. Sorting on one of the view types (Dir, File, Grep, Zip) will display all of the keys defined in the corresponding view at the top of the list. For example, sorting on **Dir** will display all of the keys defined in the Directory View at the top of the list.

4.3.232.10 Copyright

VIEW is a customized version of **The V File Viewer** licensed to JP Software Inc. for use with Take Command.

V implements regular expressions using the PCRE library written by Philip Hazel.

The V File Viewer is Copyright © 1996-2018, Charles Prineas, All Rights Reserved.

Take Command is Copyright © 1993-2018, Rex Conn and JP Software Inc. All Rights Reserved.

PCRE is Copyright © 1997-2018 University of Cambridge. All Rights Reserved.

4.3.233 VOL

Purpose: Display disk volume label(s)

Format: VOL [*d*:] ...

d: The drive or drives to search.

Usage:

Each disk may have a volume label, created when the disk is formatted or with the external LABEL command. Also, every disk formatted with Windows has a volume serial number.

The VOL command will display the volume label and, if available, the volume serial number of a disk volume. If the disk doesn't have a volume label, VOL will report that it is "unlabeled." If you don't specify a drive, VOL displays information about the current drive:

```
[c:\] vol
Volume in drive C: is MYHARDDISK
```

If available, the volume serial number will appear after the drive label or name.

Example:

To display the disk labels for drives A and B :

```
[c:\] vol a: b:
Volume in drive A: is unlabeled
Volume in drive B: is BACKUP_2
```

VOL will also return volume information for UNC names.

See also: @LABEL.

4.3.234 VSCRPUT

Purpose: Display text vertically in the specified color

Format: VSCRPUT *row col* [/C /U] [BRIght] *fg* ON [BRIght] *bg text*

row	Starting row
col	Starting column
fg	Foreground text color
bg	Background text color
text	The text to display

/C (move cursor)
/U (move to end of string)

See also: SCRPUT.

Usage:

VSCRPUT writes text vertically on the screen rather than horizontally. It can be used for simple graphs and charts generated by batch files.
Like the SCRPUT command, it uses the colors you specify to write the text. See Colors and Color Names for details about colors and color names, and notes on the use of bright background colors.

The ***row*** and ***column*** values are zero-based, so on a 25 line by 80 column window valid rows are 0 - 24 and valid columns are 0 - 79. VSCRPUT checks for a valid ***row*** and ***column***, and displays a "Usage" error message if either value is out of range.

The maximum ***row*** value is determined by the current height of the ***TCC*** window. The maximum ***column*** value is determined by the current virtual screen width (see Resizing the Take Command Window for more information).

You can also specify the *row* and *column* as offsets from the current cursor position. Begin the value with a plus sign [**+**] to move down the specified number of rows or to the right the specified number of columns before displaying text, or with a minus sign [**-**] to move up or to the left.

If you specify 999 for the ***row***, VSCRPUT will center the text vertically. If you specify 999 for the ***column***, VSCRPUT will center the text horizontally.

VSCRPUT does not move the cursor when it displays the ***text***.

Example:

The following batch file fragment displays an X and Y axis and labels them:

```
cls bright white on blue
```

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```
drawhline 20 10 40 1 bright white on blue
drawvline 2 10 19 1 bright white on blue
scrput 21 20 bright red on blue X axis
vscrput 8 9 bright red on blue Y axis
```

Options:

/C Move the cursor to the specified position after writing the string.

/U Move the cursor to the end of the string.

4.3.235 WAKEONLAN

Purpose: Sends a "Wake-On_LAN" packet to a system

Format: WAKEONLAN *remotehost macaddress*

remotehost	The IP address of the machine to wake
macaddress	The physical address of the remote host

Usage:

WAKEONLAN send a "Wake-On-LAN" packet to the specified system (which may also be a broadcast address). This will power on the remote machine if the functionality is supported by the network card on the remote machine.

4.3.236 WEBFORM

Purpose: POST data to interactive web pages or scripts

Format: WEBFORM
[/= /A*n* /En /F*n* /*IPv6* /U"*username*" /O:*headers*" /P"*password*" /R"*referer*" /T*n* /V] /W"*url*" "*varname*" "*varvalue*" ...

varname	Form variable
varvalue	Form value

/An (authorization)
/En (encoding)
/F (HTTP agent)
/IPv6
/L(ocal file)
/O(ther headers)
/P(assword)
/R(eferrer)
/Tn (firewall)
/U(ser)
/V(erbose)
/W(eb URL)

Usage:

WEBFORM will POST data to interactive web pages or scripts (CGI, ASP, etc.), similar to what HTML forms do.

WEBFORM will use the proxy & firewall settings from TCMD.INI. WEBFORM will support either HTTP or HTTPS (SSL) connections.

Example:

```
webform /v /w"http://download.finance.yahoo.com/d/quotes.csv" "f",
"sl1d1t1c1ohgv" "e", ".csv" "s", "IBM"
```

Options:

/= Display the WEBFORM command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/An Authorization scheme:

0 - basic
1 - digest
2 - proprietary
3 - none
4 - NTLM
5 - Negotiate

/En Encoding:

0 (URLEncoding) This is the most common encoding for HTML form contents.
1 (MultipartFormData) This is MIME encoding allowing transmission of binary data.
2 (QueryString) This is an older form of encoding where the actual parameters are appended to the URL query string. (Generally not recommended because most servers limit the size of the URL to less than 1K or 2K).

/F Email address of the HTTP agent.

/IPv6 Use IPv6 instead of IPv4.

/L"localfile"
Local file for downloading. If the file exists, it will be overwritten.

/O"headers"
Other headers. The headers must be of the format "header: value" as described in the HTTP specifications. Header lines should be separated by CR/LF (^r^n).

/P"password"
Password if authentication is to be used.

/R"referer" The document referring the requested URL

/Tn Firewall type:

0 - no firewall (default)
1 - Connect through a tunneling proxy. Port is set to 80.
2 - Connect through a SOCKS4 proxy. Port is set to 1080.
3 - Connect through a SOCKS5 proxy. Port is set to 1080.

/U"username"
User name if authentication is to be used

/V Display retrieved document text

/W"url" URL of web page

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4.3.237 WEBUPLOAD

Purpose: Upload files to RFC1867-compliant web servers

Format: WEBUPLOAD
[/A
n /E
n /F"*from*" /IPV6 /L"*file*" /O"*headers*" /U"*username*" /P"*password*" /R"*referer*" /V] /W"*url*" [
/V "*varname*" "*varvalue*"] "*filevar*" "*filename*" ...

varname	Form variable
varvalue	Form value
filevar	The file(s) to extract
filename	The file(s) to upload

/An (authorization)	/P(assword)
/En (encoding)	/R(eferrer)
/F (HTTP agent)	/Tn (firewall)
/IPV6	/U(ser)
/L(ocal file)	/V(erbose)
/O(ther headers)	/W(eb URL)

Usage:

WEBUPLOAD will use the proxy & firewall settings from TCMD.INI. WEBUPLOAD will support either HTTP or HTTPS (SSL) connections.

Options:

/= Display the WEBUPLOAD command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/An Authorization scheme:

0 - basic
1 - digest
2 - proprietary
3 - none
4 - NTLM
5 - Negotiate

/En Encoding:

0 (URLEncoding) This is the most common encoding for HTML form contents.
1 (MultipartFormData) This is MIME encoding allowing transmission of binary data.
2 (QueryString) This is an older form of encoding where the actual parameters are appended to the URL query string. (Generally not recommended because most servers limit the size of the URL to less than 1K or 2K).

/F"from" Email address of the HTTP agent.

/IPv6 Use IPv6 instead of IPv4.

/U"username"
User name if authentication is to be used.

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/L"localfile"
Local file to upload.

/O"headers"
Other headers. The headers must be of the format "header: value" as described in the HTTP specifications. Header lines should be separated by CR/LF (^r^n).

/P"password"
Password if authentication is to be used.

/R"referer"
The document referring the requested URL

/Tn Firewall type:

0 - no firewall (default)
1 - Connect through a tunneling proxy. Port is set to 80.
2 - Connect through a SOCKS4 proxy. Port is set to 1080.
3 - Connect through a SOCKS5 proxy. Port is set to 1080.

/V The following two arguments are a varname / varvalue pair.

/W"url" URL of web page

4.3.238 WHICH

Purpose: Display the command type and what it would execute

Format: WHICH [/A] *command* [*command* ...]

command One or more commands or files.

/A(ll)

Usage:

WHICH displays information about internal and external commands, library functions, Aliases (including keystroke aliases), files, plugin variables, internal variables, variable functions, and user-defined variable functions. When a file matches an applicable Executable Extension or Windows File Association, that data will be displayed. The exact information reported depends on the type of command or file you specify. For example:

```
[c:\] which cdd buildtree notepad test.btm test.exe test.xyz test.doc
donothing
CDD is an internal command
buildtree is an alias : cdd /s
notepad is an external: C:\windows\notepad.exe
test.btm is a batch file : C:\test.btm
test.exe is an external : C:\test.exe
test.xyz is an executable extension : C:\path\mybatch.btm C:\test.xyz
test.doc is associated with : C:\Program Files\Microsoft
Office\OFFICE11\WINWORD.EXE
```

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```
donothing is an unknown command
```

If the command is an abbreviated alias, WHICH will display the full name; i.e.:

```
[c:\] alias opt*ions=*option
[c:\] which opt
opt*ions is an alias : *option
```

You can use regular expressions in the alias name. A leading * will skip the alias test (i.e., if **dir** is an alias, ***dir** will return the internal command).

WHICH can also recognize Plugin commands, REXX files, EXTPROC files, and associated files.

Note: WHICH does not support wildcard specifications unless you use the /A option. Parameters must be actual commands or actual file names (including variable and function references as in "which % comspec"). If a filename includes white space or special characters, it must be enclosed in double quotes. A file specified without an explicit path must be on the current PATH.

See Executable Files and File Searches for details on the order in which various locations are searched.

See also: @SEARCH, ASSOC, FTYPE.

Option:

/A Display all matching names. (Normally WHICH only displays the first match.) Executable files will be displayed in the order they are found in the PATH.

4.3.239 WINDOW

Purpose: Minimize or maximize the current window, restore the default window size, or change the window title

Format: WINDOW [/= MAX | MIN | RESTORE | HIDE | TRAY | TOPMOST | NOTOPMOST | TOP | BOTTOM | DETACH | /POS=*left,top,width,height* | /SIZE=*rows,columns* | /TRANS=*n* | /FLASH=*type,count* | VDESKTOP=*id* | "*newtitle*"]

newtitle	A new title for the window
height	New height of window
width	New width of window
left	New position of the left border of window
top	New position of the top border window
rows	New height of window
columns	New width of window
type	Type of window flash
count	Number of times to flash the window

/FLASH /SIZE (of screen buffer)
/POS(ition)

See also: ACTIVATE and TITLE.

Usage:

WINDOW is used to control the appearance and title of the current (***TCC***) window.

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Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

If you are running in a ***Take Command*** tab window, the MAX, MIN, RESTORE, HIDE, TRAY, TOPMOST, NOTOPMOST, TOP, BOTTOM, and /TRANS options will be sent to the main ***Take Command*** window, not the ***TCC*** window.

Note: You can specify only one **WINDOW** option at a time. The different options cannot be combined in a single **WINDOW** command. To perform multiple operations you must use multiple **WINDOW** commands.

Options:

/= Display the WINDOW command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

Option	***Description***
/POS=*left,top,width,height*	Set the window position and size on the desktop. The values are specified in pixels. ***Left*** and ***top*** refer to the position of the top left corner of the window relative to the top left corner (0,0) of the screen. The ***width*** and ***height*** values determine the window size. The window may be sized and positioned so that parts of it are beyond the physical area of the display. The **/** before the keyword is optional. ***/POS*** is not supported in ***Take Command*** tab windows (use ACTIVATE instead). **/POS** accepts a * value for any of the arguments. If the value is *, WINDOW will use the existing position / width / height value. For example, to resize a window without moving it: WINDOW /POS=*,*,1200,800 To move a window without resizing it: WINDOW /POS=200,400,*,*
/TRANS=n	Set the transparency level of the ***Take Command*** window. ***n*** is an value from 0 (invisible) to 255 (opaque).
/FLASH=*type,count*	Flash the ***TCC*** or ***Take Command*** window. The arguments are: ***type*** - type of flash; one or more of the following values: 0 - stop flashing 1 - flash the window caption 2 - flash the taskbar button 4 - flash continuously until WINDOW is called again with the /FLASH type set to 0 8 - flash continuously until the window comes to the foreground (cannot be used with 4) ***count*** - the number of times to flash the wndow
newtitle	Changes the window title. The title text must be enclosed in double quotes. (The quotes will not appear as part of the actual title as displayed.) Setting the title inside a batch file will only change the window title while the batch file is executing.
MAX	Expands the window to its maximum size.
MIN	Reduces the window to an icon.

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RESTORE	Returns the window to its default size and location.
HIDE	Makes the window invisible. Use **RESTORE** to make the window visible.
TRAY	Moves the window to the taskbar tray.
/SIZE=*rows,columns*	Specify the ***TCC*** screen buffer size. Due to the design of Windows console sessions, you cannot use **/SIZE** to reduce the size of the screen buffer; it can only be increased. Does not affect window size.
TOPMOST	Keeps the ***Take Command*** window on top of all other windows until it closes, or **NOTOPMOST** is used. (Only valid in a tab window.)
NOTOPMOST	Allows other windows to overlay the ***Take Command*** window (this is the normal state for most windows). (Only valid in a tab window.)
TOP	Moves the ***Take Command*** window to the top of the window order, above all other non-**TOPMOST** windows. (Only valid in a tab window.)
BOTTOM	Moves the ***Take Command*** window to the bottom of the window order. (Only valid in a tab window.)
DETACH	Detach ***TCC*** from a ***Take Command*** tab window.
VDESKTOP=*id*	Move the window to another virtual desktop. ***Id*** can be either a desktop number (1-*n*), the GUID for that desktop, or the desktop name. See VDESKTOP for more details.

4.3.240 WINSTATION

Purpose: Show the window stations and desktops on your system

Format: WINSTATION [/C /R /S] *winsta\desktop* [*command*]

/C(reate)
/R(un command)
/S(witch desktop)

Usage:

A *window station* contains a clipboard and one or more desktops. When a window station is created, it is associated with the calling process and assigned to the current session.

WinSta0 (the interactive window station) is the only window station that can display a user interface or receive user input. All other window stations are non-interactive, and they cannot display a user interface or receive user input. You can create other window stations, but you cannot create and switch to a desktop on anything other than WinSta0.

Option:

/C Create a new winstation and desktop

/R Run the specified command on the winstation\desktop. If you do not specify a command, WINSTATION will run Windows Explorer

/S Switch to the specified desktop. (You cannot switch to any winstation other than "WinSta0"; this is a Windows restriction.)

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4.3.241 WMIQUERY

Purpose: Query the Windows Management Interface

Format: WMIQUERY [/= /A /B /C /H /L /Q /USER=*username* /PASSWORD=*password*] *namespace* "*query string*" [*index*]

namespace	The namespace to query
"query string"	WQL query string
index	Class instance

/A(ll instances)	/L (no blank lines)
/B(lank)	/PASSWORD
/C(lasses)	/Q(uiet)
/H(eader)	/USER

Usage:

You can use a single period **.** for ***namespace*** to default to **root\cimv2**.

WMIQUERY also supports remote queries. The namespace argument for remote servers will look like "\\remote-server\root\cimv2" (substitute your server name for "remote-server").

For more details on what is available, see the Microsoft WMI and WQL documentation:

WMI Reference - Win32 apps | Microsoft Docs

If you don't enter any arguments, WMIQUERY will display its command dialog.

Examples:

To query the ***name*** property from the ***Win32_Processor*** class:

```
wmiquery root\cimv2 "SELECT name FROM Win32_Processor"
```

To query available classes:

```
wmiquery /A root "select name from __namespace"
```

Options:

/= Display the WMIQUERY command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A Display all class instances starting at "index".

/B Separate class instances with a blank line.

/C Display all the matching class names for the specified namespace. "***query string"*** is the filter to apply to the returned values; it can contain wildcards. For example:

```
wmiquery /c . "win32_q*"
```

/H Display a header for class instances.

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/L Don't separate records with a CR/LF. (This is probably only useful when you are querying single-line records.)

/PASSWORD=*password* The password to use for remote queries.

/Q Don't display the property name when displaying properties.

/USER=*name* The user name to use for remote queries.

4.3.242 WMIRUN

Purpose: Run WMI methods on a local or remote machine.

Format:

WMIRUN /USER=*user* /PASSWORD=*password* /CLASS=*classname* /METHOD=*methodname networkresource command*

/USER=*username*
/PASSWORD=*password*
/CLASS=*classname*
/METHOD=*methodname*
networkresource
command

Usage:

You must be running in an elevated session.

Example:

This command terminates process 26568 on the local machine:

```
WMIRUN /method=Terminate /class=Win32_Process "\\.\root\CIMV2"
Win32_Process.Handle="26568"
```

Options:

/USER The user name to use for remote queries

/PASSWORD The password to use for remote queries

/CLASS The WMI class name

/METHOD The WMI method name

networkresource WMI namespace. The namespace argument for remote servers will look something like "\\remote-server\root\cimv2" (substitute your server name for "remote-server").

command The command you want WMI to run.

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4.3.243 WSETTINGS

Purpose: Display a Windows settings dialog

Format: WSETTINGS [/=] *dialogname* ...

dialogname The settings dialog name

See also WSHELL and WSHORTCUT.

Usage:

If you don't enter any arguments, WSETTINGS will display its command dialog. The command dialog allows you to select the desired dialog from a list.

The settings dialogs that are available will depend on your Windows version. The list below is for Windows 10.

Options:

/= Display the WSETTINGS command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

Dialogname is one or more of the following:

```
About
AccessWorkOrSchool
Accounts
AccountInfo
Activation
ActivityHistory
AdvancedDisplay
AirplaneMode
AppDiagnostics
AppsAndFeatures
AppsForWebsites
AppVolume
Audio
AutomaticFileDownloads
AutoPlay
Background
BackgroundApps
Backup
BatterySaver
BatterySaverSettings
BatteryUsageByApp
Bluetooth
Broadcasting
Calendar
CallHistory
Camera
```

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```
CellularNetwork
Clipboard
ClosedCaptions
ConnectedDevices
Colors
Contacts
DataUsage
DateAndTime
DefaultApps
DeliveryOptimization
DeviceEncryption
Dial-up
DirectAccess
Display
Documents
DownloadMaps
Encryption
Email
EmailAndAppAccounts
Encryption
Ethernet
EyeTracker
Family & other users
FeedbackAndDiagnostics
FindMyDevice
Fonts
ForDevelopers
GameBar
GameDVR
GameMode
GraphicsSettings
HighContrast
Holographic
InkingAndTyping
Keyboard
Location
Lock screen
Magnifier
ManageOptionalFeatures
ManageKnownNetworks
Messaging
Microphone
MobileHotspot
Motion
Mouse
MouseAndTouchpad
Multitasking
Narrator
```

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```
NetworkStatus
NFCAndProximity
Nightlight
Notifications
NotificationsAndActions
OfflineMaps
OptionalFeatures
OtherDevices
OtherOptions
Pen
Personalization
Phone
PhoneCalls
Pictures
PowerAndSleep
PrintersAndScanners
Privacy
ProjectingToThisPC
ProximitySensor
Proxy
Radios
Recovery
RegionAndLanguage
RemoteDesktop
Screen rotation
Settings
SharedExperiences
SigninOptions
Sound
Speech
SpeechInkingAndTyping
Start
Storage
SyncSettings
TabletMode
Taskbar
Tasks
Themes
Touchpad
Troubleshoot
Typing
USB
VideoPlayback
Videos
VoiceActivation
VPN
Wheel
WiFi
```

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```
WiFiCalling
WindowsDefender
WindowsHelloFace
WindowsHelloFingerprint
WindowsInsiderProgram
WindowsSecurity
WindowsUpdate
WindowsUpdateAdvancedOptions
WindowsUpdateCheckForUpdates
WindowsUpdateHistory
WindowsUpdateRestartOptions
YourInfo
YourPhone
```

4.3.244 WSHELL

Purpose: Open a Windows Explorer window in the specified location

Format: WSHELL [/= /T] *folder*

folder The folder name to open

/T Use File Explorer in ***Take Command***

See also WSHORTCUT.

Usage:

If you don't enter any arguments, WSHELL will display its command dialog. The command dialog allows you to select the desired folder from a list.

The folder names available will depend on your Windows version. The list below is from Windows 10.

Option:

/= Display the WSHELL command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/T WSHELL will normally call Windows Explorer to display the folder. You can use /T to have the folder open in the ***Take Command*** File Explorer instead.

Folder is one or more of the following:

```
AccountPictures
AddNewProgramsFolder
AdministrativeTools
AppData
ApplicationShortcuts
AppsFolder
AppUpdatesFolder
Cache
```

```
CameraRoll
CDBurning
ChangeRemoveProgramsFolder
CommonAdminTools
CommonAppData
CommonDesktop
CommonDocuments
CommonDownloads
CommonMusic
CommonPictures
CommonPrograms
CommonRingtones
CommonStartMenu
CommonStartup
CommonTemplates
CommonVideo
ConflictFolder
ConnectionsFolder
Contacts
ControlPanelFolder
Cookies
Cookies\Low
CredentialManager
CryptoKeys
Desktop
DeviceMetadataStore
DocumentsLibrary
Downloads
dpapiKeys
Favorites
Fonts
Games
GameTasks
History
HomeGroupCurrentUserFolder
HomeGroupFolder
ImplicitAppShortcuts
InternetFolder
Libraries
Links
LocalAppData
LocalAppDataLow
MusicLibrary
MyComputerFolder
MyMusic
MyPictures
MyVideo
Nethood
```

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```
NetworkPlacesFolder
OneDrive
OneDriveCameraRoll
OneDriveDocuments
OneDriveMusic
OneDrivePictures
Personal
PicturesLibrary
PrintersFolder
PrintHood
Profile
ProgramFiles
ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
ProgramFilesX64
ProgramFilesX86
Programs
Public
PublicAccountPictures
PublicGameTasks
PublicLibraries
QuickLaunch
Recent
RecordedTVLibrary
RecycleBinrFolder
ResourceDir
RingTones
RoamedTileImages
RoamingTiles
SavedGames
Screenshots
Searches
SearchHistoryFolder
SearchHomeFolder
SearchTemplatesFolder
SendTo
StartMenuStart Menu
Startup
SyncCenterFolder
SyncResultsFolder
SyncSetupFolder
System
SystemCertificates
SystemX86
Templates
ThisPCDesktopFolder
UsersFilesFolder
```

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```
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
UsersLibrariesFolder
VideosLibrary
Windows
```

4.3.245 WSHORTCUT

Purpose: Call a Windows Explorer shortcut

Format: WSHORTCUT [/= /T] *shortcut*

folder The folder name to open

/T Use File Explorer in ***Take Command***

See also WSHELL.

Usage:

If you don't enter any arguments, WSHORTCUT will display its command dialog. The command dialog allows you to select the Explorer shortcut from a list.

The shortcuts available will depend on your Windows version. The list below is from Windows 10.

Option:

/= Display the WSHORTCUT command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/T WSHORTCUT will normally call Windows Explorer to invoke the shortcut. You can use /T to have the shortcut invoked by the ***Take Command*** File Explorer instead.

Shortcut is one or more of the following:

```
AddNetworkLocation
AdministrativeTools
Applications
AutoPlay
BackupAndRestore
BitLocker
BluetoothDevices
ColorManagement
CommandFolder
CommonPlacesFolder
ControlPanel
ControlPanelAllTasks
ControlPanelCategoryView
ControlPanelIconsView
CredentialManager
```

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```
DateAndTime
DefaultPrograms
DesktopFolder
DeviceManager
DevicesAndPrinters
Display
DocumentsFolder
DownloadsFolder
EaseOfAccessCenter
Email
FamilySafety
Favorites
FileExplorerOptions
FileHistory
FontSettings
FontsFolder
FrequentFolders
GamesExplorer
GetPrograms
HelpAndSupport
HomeGroupSettings
HomeGroupUsers
Hyper-VRemoteFileBrowsing
IndexingOptions
Infared
InstalledUpdates
InternetExplorerOptions
KeyboardProperties
LanguageSettings
Libraries
LocationInformation
LocationSettings
MediaServers
MouseProperties
MusicFolder
MyDocuments
Network
NetworkAndSharingCenter
NetworkConnectionsPCsettings
NetworkConnections
NetworkWorkGroup
NotificationAreaIcons
NVIDIAControlPanel
OfflineFiles
OneDrive
PenAndTouch
Personalization
PictureFfolder
```

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```
PortableDevices
PowerOptions
PreviousVersionsResultsFolder
PrinthoodDelegateFolder
Printers
ProgramsAndFeatures
PublicFolder
QuickAccess
RecentPlaces
Recovery
RecycleBin
RegionAndLanguage
RemoteAppAndDesktopConnections
RemotePrinters
RemovableStorageDevices
ResultsFolder
Run
Search
SearchEverywhere
SearchFiles
SecurityAndMaintenance
SetProgramAccess
ShowDesktop
Sound
SpeechRecognition
StorageSpaces
SyncCenter
SyncSetupFolder
System
SystemIcons
TabletPC
TaskbarAndNavigation
TextToSpeech
ThisPC
Troubleshooting
UserAccounts
UserAccounts(netplwiz)
UserPinned
UserProfile
VideosFolder
WebBrowser
WindowsDefender
WindowsMobilityCenter
WindowsFeatures
WindowsFirewall
WindowsToGo
WindowsUpdate
WorkFolders
```

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4.3.246 Y

Purpose: Copy standard input to standard output, and then copy the specified file(s) to standard output

Format: Y [/D /T /F"*format*"] *file* ...

file The file or list of files to send to standard output.

/D Prefix each line with the current date (yyyy-mm-dd)
/T Prefix each line with the current time (hh:mm:ss.ms)

/F"*format*" A custom time/date *format* string. See @DATEFMT for details on the *format* arguments.

See also: TEE, piping and redirection.

Usage:

The Y command copies input from standard input (usually the keyboard) to standard output (usually the screen). Once the input ends, the named files are appended to standard output.

If you are typing at the keyboard to produce input text for Y, you must enter a **Ctrl-Z** to terminate the input.

When using Y with a pipe you must take into account that the programs on the two ends of the pipe run simultaneously, not sequentially.

See Piping for more information on pipes.

Examples:

To get text from standard input, append the files *MEMO1* and *MEMO2* to it, and send the output to *MEMOS*:

```
y memo1 memo2 > memos
```

The Y command is most useful if you want to add redirected data to the beginning of a file instead of appending it to the end. For example, this command copies the output of DIR, followed by the contents of the file DIREND, to the file DIRALL:

```
dir | y direnд > dirall
```

4.3.247 ZIP

Purpose: Add, update, or delete files in a .ZIP archive

Format: ZIP [/= /A:[[-][+]rhsdaecjot] /A /C /CRC /D /E*n* /F /G /I /L*n* /M /O:[-]acdeginorstuz /P /Q /R /S"password" /T /TEST /U /V /YC /Z"*text*"] *ziparchive* [@*file*] *file*...

ziparchive The zip file to work with
file The files(s) to be added to the zip file

/A:... (attribute switch)
/A(dd)
/C(ontents)
/O:... (sort order)
/P(rogress)
/Q(uiet)

/CRC
/D(elete)
/En (encryption type)
/F(reshen)
/G(enerate keys)
/I (save descriptions)
/Ln (compression level)
/M(ove)
/R(ecurse)
/S"password"
/T (save attributes
/TEST
/U(pdate)
/V(iew)
/YC (AES 256)
/Z (comment)

See also UNZIP.

File Selection:

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs zip [2*] ***

Usage:

You can specify a pathname for *ziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, ZIP adds ".zip". If you don't specify an operation, ZIP will default to Add. If you don't specify any arguments, ZIP will display its command dialog.

ZIP will automatically use the Zip64 extensions if the archive is in Zip64 format.

ZIP supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is zipped, ZIP will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be added to the ZIP archive.

ZIP sets two internal variables:

%_zip_files	The number of files archived
%_zip_errors	The number of errors

Options:

/= Display the ZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file(s) to the zip file. (This is the default.)

/C Display (on standard output) the contents of a file in the zip archive.

/CRC Display the file CRCs (must be used with /V).

/D Delete the specified file(s) from the zip file.

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/En Set the encryption type (0=default, 1=AES 128-bit, 2=AES 192-bit, 3=AES 256-bit).

/F Update only those files that currently exist in the zip file, and which are older than the files on disk.

/G Generate unique keys for each file encrypted. This setting controls the algorithm that generates AES cryptographic keys from the Password specified. For added security, a random *salt* value is generated, and a unique key will be generated for every unique combination of Password and salt. If /G is specified, a unique salt value and key will be generated for each file encrypted. If /G is not specified, a single salt value and key will be generated for all encrypted files in the archive.

/I Save file descriptions (from DESCRIPT.ION or the NTFS description) as the compressed file's "File Comment".

/Ln Set the compression level (0 - 6, where 0=no compression, and 6=maximum compression). The default is 4.

/M Delete the files from the disk after adding them to the zip file. /M is intended for use with /R, /U, or /F. If you use it with the (default) "Add" (/A) it will only remove matching files in the local directory (because the path is not saved in the zip file without the /R option).

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

- **n** Sort by filename and extension, unless **e** is explicitly included. This is the default.
- **-** Reverse the sort order for the next sort key
- **a** Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
- **c** Sort by compression ratio
- **d** Sort by date and time (oldest first); also see **/T:acw**
- **e** Sort by extension
- **g** Group subdirectories first, then files
- **i** Sort by description
- **o** Sort by owner
- **r** Reverse the sort order for all options
- **s** Sort by size
- **t** Same as **d**
- **u** Unsorted
- **z** Same as **s**

/P Display the progress (0 - 100%) for each file as it is zipped.

/Q Don't display the files being zipped.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the zip file.

/S Use the specified password to encrypt the file(s). If you don't provide a password on the command line, ZIP will prompt you to enter one.

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/T Save the file attributes (they will be set when the file is extracted).

/TEST Test the integrity of the ZIP file (header and contents). Any errors will be displayed on STDERR.

/U Update files which either don't exist in the zip, or which are older than the files on disk.

/V View the list of files in the zip file (date, time, size, compression ratio, and filename). If the zip file is password protected, ZIP will append a * after the filename.

/YC Use AES 256-bit encryption instead of the default Zip 2.0 encryption.

/Z"..." Set the comment for the zip file.

4.3.248 ZIPSFX

Purpose: Create a ZIP-compatible self-extracting archive

Format: ZIPSFX
[/= /A /B"*banner*" /C"*caption*" /D"*path*" /F"*file*" /I /Ln /M"*message*" /N /P"*xxx*" /R /S"*password*" /X64] *exearchive directory*...

exearchive	The self-extracting executable
directory	The directory to be compressed into the self-extracting executable

/A(dmin)
/B(anner)
/C(aption)
/D (target directory)
/F (execute after open)
/I(nstall)
/Ln (compression level)
/M(essage)
/N (silent)
/P"xxx" (parameters)
/R(ecurse)
/S"password"
/X64 (64-bit executable)

File Selection:

Supports command dialog, extended wildcards and ranges,

File Completion Syntax:

The default filename completion syntax is: **[1] dirs exe [2*] dirs**

Usage:

You can specify a pathname for ***exearchive***. If you don't provide an extension, and the filename as entered doesn't exist, ZIPSFX adds ".exe".

ZIPSFX sets two internal variables:

%_zipsfx_files	The number of files archived
%_zipsfx_errors	The number of errors

Options:

/= Display the ZIPSFX command dialog to help you set the command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

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/A Require admin privileges to execute the created file.

/B Banner text to display before beginning the self-extraction.

/C Caption for the self-extractor dialogs.

/D Target directory for the self-extractor.

/F Optional name of the file to execute (open) after the archive is extracted. This must be a relative path to a file in ***directory***. If this is set to ".", the folder in which the archive has been decompressed will open in Windows Explorer. If it is set to "" (an empty string), the extractor will close and take no action.

/I Install to the specified directory, run the file (see /F), and then remove the extracted files.

/Ln Set the compression level (0 - 6, where 0=no compression, and 6=maximum compression). The default is 4.

/M Message to notify the user that the extraction has completed normally.

/N Silent installation - hide the extraction progress bar and the "success" window when the archive executable is run.

/P Optional parameters to pass to the file to be executed. Only valid with /F.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the zip file.

/S Use the specified password to extract the file(s). If you don't provide a password on the command line, ZIPSFX will prompt you to enter one.

/X64 Create a 64-bit executable.

4.3.249 7UNZIP

Purpose: Extract files from .7Z archives

Format: 7UNZIP [/= /A:[[-][+]rhsdaecjot] /C /CRC /D /E /F /Nt /P /O /Q /S"*password*" /TEST /U /V] *ziparchive path file* ...

ziparchive	The 7Zip file to work with
path	The path where files will be extracted
file	The file(s) to extract

/A:... (attribute switch)
/C(ontents)
/CRC
/D(irectory)
/E(xtract)
/F(reshen)
/N
/O(verwrite)
/P(ercent)
/Q(uiet)
/S"password"
/TEST
/U(pdate)
/V(iew)

File Selection:

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Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs 7z [2*] ***

Usage:

You can specify a pathname for *ziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, 7UNZIP adds ".7z". If you don't specify an operation, 7UNZIP will default to Extract. If you don't specify any arguments, 7UNZIP will display its command dialog.

7UNZIP supports wildcards for the 7Zip archive name and for the filenames to extract. 7UNZIP will prompt before overwriting existing files. Your options at the prompt are explained in detail under Page and File Prompts.

path specifies the path where files will be extracted. If *path* is not specified, files are extracted to the current directory.

7UNZIP sets two internal variables:

%_7unzip_files	The number of files extracted
%_7unzip_errors	The number of errors

Options:

/= Display the 7UNZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/C Display (on standard output) the contents of a file in the 7Zip archive.

/CRC Display the file CRCs (must be used with /V).

/D Recreate the directory structure saved in the 7Zip file.

/E Extract the specified file(s). (This is the default.)

/F Extract only those files that currently exist in the target folder, and which are older than the file in the 7Zip archive.

/Nt Don't update the CD / CDD extended directory search database *(JPSTREE.IDX)*.

/O Overwrite existing files. 7UNZIP normally prompts before overwriting an existing file; /O will suppress the prompt.

/P Display the progress (0 - 100%) for each file as it is extracted.

/Q Don't display filenames as they are extracted.

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/S Use the specified password to extract the file(s) from an encrypted archive. If you don't provide a password on the command line, 7UNZIP will prompt you to enter one.

/TEST Test the integrity of the 7Zip file (header and contents). Any errors will be displayed on STDERR.

/U Extract files which either don't exist in the target folder, or which are older than the file in the 7Zip archive.

/V View the list of files in the archive (date, time, size, and filename). If the 7Zip file is password protected, 7UNZIP will append a * after the filename.

4.3.250 7ZIP

Purpose: Add, update, or delete files in a .7Z archive

Format: 7ZIP [/= /A:[[-][+]rhsdaecjot] /A /C /CRC /D /F /K*n* /L*n* /M /O:[-]acdeginorstuz /P /Q /R /S"*password*" /T /TEST /U /V] *ziparchive* [@*file*] *file*...

ziparchive The 7zip file to work with
file The files(s) to be added to the 7zip file

/A:... (attribute switch)
/A(dd)
/C(ontents)
/CRC
/D(elete)
/F(reshen)
/Kn (compression method)
/Ln (compression level)
/M(ove)
/O:... (sort order)
/P(rogress)
/Q(uiet)
/R(ecurse)
/S"password"
/T (save attributes
/TEST
/U(pdate)
/V(iew)

File Selection

Supports command dialog, attribute switches, extended wildcards, ranges, multiple file names, and include lists.

File Completion Syntax:

The default filename completion syntax is: **[1] dirs 7z [2*] ***

Usage:

You can specify a pathname for *ziparchive*. If you don't provide an extension, and the filename as entered doesn't exist, 7ZIP adds ".7z". If you don't specify an operation, 7ZIP will default to Add. If you don't specify any arguments, 7ZIP will display its command dialog.

7ZIP supports connected web folders. If an HTML file (i.e., with an .htm or .html extension) is zipped, 7ZIP will look for a folder in the same directory with the same name and an extension of ".files". If it is found, the .files directory will be added to the 7ZIP archive.

7ZIP sets two internal variables:

%_7zip_files The number of files archived

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%_7zip_errors The number of errors

Options:

/= Display the 7ZIP command dialog to help you set the filename and command line options. The /= option can be anywhere on the line; additional options will set the appropriate fields in the command dialog.

/A:... Select only those files that have the specified attribute(s) set. See Attribute Switches for information on the attributes which can follow /A:. Do not use /A: with ***@file*** lists. See @file lists for details.

You can specify **/A:=** to display a dialog to help you set individual attributes.

/A Add the specified file(s) to the zip file. (This is the default.)

/C Display (on standard output) the contents of a file in the zip archive.

/CRC Display the file CRCs (must be used with /V).

/D Delete the specified file(s) from the zip file.

/F Update only those files that currently exist in the 7zip file, and which are older than the files on disk.

/Kn Set the compression method.

0 LZMA
1 BZip2
2 Delta
3 Copy (no compression)
4 Deflate
5 LZMA2 (default)

/Ln Set the compression level (1 - 5, where 1=minimum compression, and 5=maximum compression). The default is 2.

/M Delete the files from the disk after adding them to the 7zip file.

/O:... Sort the files before processing.

You may use any combination of the sorting options below. If multiple options are used, the files will be sorted with the first sort option as the primary key, the next as the secondary key, and so on:

n Sort by filename and extension, unless **e** is explicitly included. This is the default.
- Reverse the sort order for the next sort key
a Sort names and extensions in standard ASCII order, instead of numerically when numeric substrings are included in the name or extension.
c Sort by compression ratio
d Sort by date and time (oldest first); also see **/T:acw**
e Sort by extension
g Group subdirectories first, then files
i Sort by description
o Sort by owner

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`r` Reverse the sort order for all options
`s` Sort by size
`t` Same as `d`
`u` Unsorted
`z` Same as `s`

/P Display the progress (0 - 100%) for each file as it is zipped.

/Q Don't display the files being zipped.

/R If the argument is a subdirectory, copy all of the files in that subdirectory and all of its subdirectories to the zip file.

/S Use the specified password to encrypt the file(s). If you don't provide a password on the command line, 7ZIP will prompt you to enter one.

/T Save the file attributes (they will be set when the file is extracted).

/TEST Test the integrity of the 7ZIP file (header and contents). Any errors will be displayed on STDERR.

/U Update files which either don't exist in the 7zip, or which are older than the files on disk.

/V View the list of files in the 7zip file (date, time, size, and filename). If the 7zip file is password protected, 7ZIP will append a * after the filename.

4.4 Variables & Functions

The environment is a collection of information about your system that every program receives. Each entry in the environment consists of a variable name and a string value.

Usage

You can automatically substitute the text for the variable name in any command. To create the substitution, include a percent sign **%** and the variable name on the command line or in an alias or batch file, e.g., **% comspec**. If the name of the variable whose value you want to use is an expression, you can enclose the expression in brackets, e.g., **%[%n]**. If you want to use a variable or expression for an array variable name, the syntax is **%[var[*n*]]**.

You can create, alter, view, and delete environment variables with the SET, ESET, and UNSET commands.

A few environment variables have special meanings for ***TCC*** (they are listed in System Variables).

TCC also supports two special types of variables:

- Internal variables are similar to environment variables, but are interpreted internally by ***TCC***, and are not visible in the environment. They provide information about your system for use in batch files and aliases. Some of them provide access to information that may change even during the execution of a single command or batch file.

- Variable functions are referenced like environment variables, but perform additional actions like file handling, string manipulation and arithmetic calculations. In addition to the variable functions that

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are internal to ***TCC***, you can use the FUNCTION command to create your own. These latter ones are referred to as user defined variable functions or UDFs.

You can return the result of a command with %(*command*). This is the same as using the @EXEC variable function but a little easier to write.

%((...)) will evaluate and substitute the numeric expression. For example:

```
echo %((3+5)) is the answer.
```

%[[...]] will evaluate the conditional expression, and return 0 if the exit status is true; 1 if it is not. For example:

```
echo %[[5 == 6]]
```

Note: ***TCC*** inherits its initial environment from the process which started it. That process might be Explorer or another existing Windows process which launched the current ***TCC*** session. Note that if the starting process's environment is changed (through registry modifications, for example) while ***TCC*** is already running, those changes will not be automatically reflected in ***TCC***'s current environment. See the SET command for details.

You use the SET command to create a new environment variable. SET can also modify or delete a single environment variable, or display the value of one or more environment variables. ESET allows you to edit an environment variable. UNSET deletes environment variables. For example, you can create a variable named **BACKUP** like this:

```
set BACKUP=*.bak;*.bk
```

If you then type:

```
del %BACKUP
```

it is equivalent to having type the command:

```
del *.bak;*.bk
```

The environment variable names you use this way may contain any alphabetic or numeric characters, the underscore character **_**, and the dollar sign **$**. You can force acceptance of other characters by including the full variable name in square brackets, like this: **%[AB##2]**. You can also indirectly reference environment variables using square brackets. For example **%[%var1]** means "the contents of the variable whose name is stored in ***VAR1***".

In addition, ***TCC*** uses the environment to keep track of the default directory on each drive. Windows only tracks the default directory of the current drive; ***TCC*** overcomes this limitation by saving the default directory for each drive in the environment, using hidden variable names. Each variable begins with an equal sign followed by the drive letter and a colon (for example, **=C:**). You cannot view or change these variables with the SET command.

The trailing percent sign that was traditionally required for environment variable names is not usually required by ***TCC***, which accept any character that cannot be part of a variable name as the terminator. However, the trailing percent can be used to maintain compatibility with CMD.

The trailing percent sign is needed if you want to append variable values. The following examples show the possible interactions between variables and literal strings. First, create two environment variables called ONE and TWO this way:

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```
set ONE=abcd
set TWO=efgh
```

Now the following combinations produce the output text shown:

original	***expanded***	***method***
%ONE%TWO	abcdTWO	("%ONE%" + "TWO")
%ONE%TWO%	abcdTWO	("%ONE%" + "TWO%")
%ONE%%TWO	abcdefgh	("%ONE%" + "%TWO")
%ONE%%TWO%	abcdefgh	("%ONE%" + "%TWO%")
%ONE%[TWO]	abcd[TWO]	("%ONE%" + "[TWO]")
%ONE%[TWO]%	abcd[TWO]	("%ONE%" + "[TWO]%")
%[ONE]%TWO	abcdefgh	("%[ONE]" + "%TWO")
%[ONE]%TWO%	abcdefgh	("%[ONE]" + "%TWO%")

If you want to pass a percent sign to a command, or a string which includes a percent sign, you must use two percent signs in a row. Otherwise, the single percent sign will be seen as the beginning of a variable name and will not be passed on to the command. For example, to display the string "We're with you 100%" you would use the command:

```
echo We're with you 100%%
```

You can also use back quotes around the text, rather than a double percent sign. See Parameter Quoting for details.

Environment variables may contain alias names. ***TCC*** will substitute the variable value for the name, then check for any alias name which may have been included within the value. For example, the following commands would generate a 2-column directory of the .TXT files:

```
alias d2 dir /2
set cmd=d2
%cmd *.txt
```

For compatibility with some peculiar syntax introduced in recent CMD versions, ***TCC*** supports:

`%var:string1=string2%`	Substitutes the second string for all instances of the first string in the variable.
`%var:~x[,y]%`	Returns the substring starting at the xth character position (base 0) and continuing for y characters. If y is not specified, returns the remainder of the string. If x is negative, starts from the end of the string.

For string manipulations, we suggest you rely instead on the much more flexible Variable Functions.

4.4.1 Array Variables

In addition to environment variables, ***TCC*** also supports up to 4-dimensional array variables. Array variables are defined by the SETARRAY command, and you assign values to them with the SET command.

See also UNSETARRAY, @ARRAYINFO, @EXECARRAY and @FILEARRAY.

4.4.2 System Variables

The variables below have special meaning for ***TCC***:

CDPATH	Directory navigation search list

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CMDLINE	Command line after full expansion
CMDLINE2	Command line before any expansion
COLORDIR	Directory colorization specification
COMSPEC	Command processor specification
FILECOMPLETION	File completion control variable
HISTORYEXCLUDE	List of commands excluded from the command history
JARPATH	Execute JAR files in Java
PATH	Executable program location search list
PATHEXT	Ordered search list of extensions of executable programs
PROMPT	Command prompt format specification
PROMPT2	Prompt for line continuation
RECYCLEEXCLUDE	List of files excluded from the recycle bin
TCANSIEXCLUDE	Applications to exclude from ANSI support
TCMD	***Take Command***'s pathname
TCMDVER	***Take Command***'s version number
TEMP	Directory for temporary files
TITLEPROMPT	Command processor window title bar specification
TMP	Directory for temporary files
TREEEXCLUDE	List of directories excluded from JPSTREE.IDX
VARIABLEEXCLUDE	Variables to exclude from SET list

4.4.2.1 CDPATH

CDPATH specifies where to search for directories specified in CD, CDD, and PUSHD commands and in automatic directory changes. See the CDPATH feature for details.

This feature is maintained for backwards compatibility, but has largely been replaced by Extended Directory Searches.

4.4.2.2 CMDLINE

CMDLINE is set by ***TCC*** to the fully expanded text of the currently executing command line just before invoking any external command (*.EXE*, *.BTM*, *.BAT* or *.CMD),* unless the command line is prefaced with `@` to prevent echoing, in which case **CMDLINE** will be removed.

4.4.2.3 CMDLINE2

CMDLINE2 is set by ***TCC*** to the original unexpanded command line before doing any alias expansion, variable expansion, compound command processing, etc.

4.4.2.4 COLORDIR

COLORDIR controls directory display colors used by DIR. See Color-Coded Directories for a complete description of the format of this variable.

4.4.2.5 COMSPEC

Many programs expect the value of **COMSPEC** to contain the full path and name of the current character-mode command processor, e.g.

```
c:\program files\jpsoft\tcmd28\tcc.exe
```

TCC automatically sets COMSPEC to point to TCC.EXE on startup. If you need to run a program from ***TCC*** which utilizes COMSPEC to locate a command processor to process commands or batch files that are not compatible with ***TCC***, you may set COMSPEC to the command processor your program expects before you start it.

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4.4.2.6 FILECOMPLETION

FILECOMPLETION specifies the files made available during filename completion for selected commands. See Customizing Filename Completion for a complete description of the format.

4.4.2.7 HISTORYEXCLUDE

HistoryExclude specifies which commands should be excluded from the History List. The syntax is:

```
HistoryExclude=cmd1[;cmd2[;cmd3[;...]]]
```

For example, to exclude the DEL and FREE commands, the **Notepad** program and the user-defined alias **MYDIR**:

```
HistoryExclude=del;free;notepad;mydir
```

See also: HISTORY.

4.4.2.8 JARPATH

If the command name has a .JAR extension and JARPATH is set (the same syntax as PATH - path1;path2;path3) ***TCC*** will search it looking for a matching filename. If found, the command line will be reformatted (inserting "java.exe -jar" at the beginning) and executed. For example:

myjar.jar 1 2 3

will be executed as:

java.exe -jar myjar.jar 1 2 3

4.4.2.9 PATH

The **PATH** variable specifies the list of directories that ***TCC*** will search for executable files that aren't in the current directory. **PATH** is used by some application programs to find their own files. See the PATH command for a full description of this variable, which can also be changed or modified with SET and ESET.

Note: We strongly recommend that you always leave at least your **WINDOWS** and **SYSTEM32** directories in the **PATH**. The directory where ***TCC*** resides need not be included in **PATH**.

4.4.2.10 PATHEXT

PATHEXT is expected to contain a list of extensions (including a leading period **.**), separated by semicolons. For example, to replicate the default extension list used by ***TCC***:

```
set pathext=.exe;.btm;.bat;.cmd;.rex;.rexx;.pl;.py;.rb;.tcl;.lua
```

If you use a command in a batch file or at the command prompt and all of the following are true:

- the PathExt configuration option is set
- the command is not an alias
- the command is not an internal command
- the command is not a filename with an explicit extension (thus neither an executable extension nor a Windows file association is available)

then ***TCC*** will search the current directory and then each directory listed in PATH in turn for a file with its name matching the command and its extension matching one of the extensions in PATHEXT. The current

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directory is searched first, then the first directory in PATH is searched first, then the second, looking in each for each of the extensions in PATHEXT in the order listed.

Caution: If you set the PathExt configuration option, and fail to set the PATHEXT variable, path searches without an explicit extension will fail as there will be no extensions for which to search! If you set the PathExt configuration option but do not create or modify the PATHEXT variable, ***TCC*** will use the one defined by Windows (if any), which will probably not include the .BTM, .LUA, .REX, .REXX, .PL, .PY, .RB,or .TCL extensions.

4.4.2.11 PROMPT

PROMPT defines the command line prompt. It can be set or changed with the PROMPT, SET and ESET commands. See the PROMPT command for details.

See also: TITLEPROMPT.

4.4.2.12 PROMPT2

PROMPT2 defines the prompt used for line continuations (i.e., when the last character on a line is an escape character, or when there is an open command group). The default is "More? ".

4.4.2.13 RECYCLEEXCLUDE

RECYCLEEXCLUDE specifies files to be excluded from the Recycle Bin.

The syntax is:

RecycleExclude=*file1[;file2...]*

file1, file2, ... : file specifications, may include wildcards

For example, to exclude ***.lib**, ***.obj**, and ***.bak** files:

```
RecycleExclude=*.lib;*.obj;*.bak
```

See also: DEL / ERASE command and the Delete to Recycle Bin configuration option.

4.4.2.14 TCANSIEXCLUDE

TCANSIEXCLUDE specifies the applications where you do not want to have ***Take Command*** inject the ANSIxx.dll.

The syntax is:

TCAnsiExclude=*file1[;file2...]*

file1, file2, ... : file specifications, may include wildcards

For example, to exclude ***.lib**, ***.obj**, and ***.bak** files:

```
TCAnsiExclude=*.lib;*.obj;*.bak
```

4.4.2.15 TCMD

TCMD is the full pathname of the ***Take Command*** executable. It is only available to the applications running in ***Take Command*** tab windows.

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4.4.2.16 TCMDVER

TCMDVER is the current major version, minor version, and build number of ***Take Command.*** (For example, "22.00.40".) It is only available to applications started in ***Take Command*** tab windows.

4.4.2.17 TEMP

TEMP specifies the directory where ***TCC*** should store temporary files, unless the TMP variable exists. Many other programs also use TEMP to locate where they should place their temporary files.

4.4.2.18 TITLEPROMPT

TITLEPROMPT can be used to specify the contents of ***TCC***'s window title. Modifying its value changes the displayed title immediately. Unsetting it does NOT affect the title. It may contain the special escape-sequences acceptable in PROMPT, and all internal variables and functions can be used to generate it.

If you have specified a title for a startup tab in ***Take Command***, it will override the **TITLEPROMPT** value.

See also: ACTIVATE, PROMPT, TITLE and WINDOW.

4.4.2.19 TMP

If **TMP** is defined, it specifies the directory where ***TCC*** should store temporary files (overriding TEMP). Some other programs also use TMP to define where they should place their temporary files.

4.4.2.20 TREEEXCLUDE

TreeExclude specifies which drives and directories to ignore when updating the *JPSTREE.IDX* file. The syntax is:

```
TreeExclude=dir1[;dir2[;dir3[;...]]]
```

Any specified drive/directory and all of its subdirectories will be excluded from ***JPSTREE.IDX*** update. For example, to exclude everything in **c:\windows, d:\temp\temp2**, and everything on drive **g:**

```
TreeExclude=c:\windows;d:\temp\temp2;g:\
```

Setting **TreeExclude** to the base directory of the target of a directory tree copy can speed up the copying considerably.

See also: Extended Directory Searches and CDD.

4.4.2.21 VARIABLEEXCLUDE

VariableExclude specifies which environment variables should be excluded from the SET list. The syntax is:

```
VariableExclude=var1[;var2[;var3[;...]]]
```

For example, to exclude the SESSIONNAME, TMP, USERDOMAIN, and USERNAME variables:

```
SET VariableExclude=sessionname;tmp;userdomain;username
```

See also: SET.

4.4.3 CMD.EXE Variables

CMD has some built-in variables (i.e., which are treated as environment variables but which do not exist in the environment):

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CD - the current directory (see also _CWD).

CMDCMDLINE - the command line that started the command processor.

CMDEXTVERSION - the command extensions internal version number.

DATE - the current system date (see also _DATE).

RANDOM - a random number between 0 and 32767 (see also @RANDOM).

TIME - the current system time (see also _TIME).

TCC supports all of these built-in variables. (In ***TCC***, **CMDEXTVERSION** will always return **2**.)

The variables below are used by some Microsoft command processors, but are ignored by ***TCC***. To see their usage by Microsoft and the alternate methods to achieve the same purpose in ***TCC***, review:

COPYCMD	CMD default options for COPY command
DIRCMD	CMD default options for DIR command

4.4.3.1 COPYCMD

The **COPYCMD** variable is used by some versions of CMD to hold default options for the COPY command. ***TCC*** does not directly support this variable, i.e, its value has no affect on internal commands. In general, it is more efficient to define several aliases, each including a different combination of options. For example, if you want the COPY command to default to prompting you before overwriting an existing file, you could use this alias:

```
alias COPY=`*copy /r`
```

If you wish to use or create a COPYCMD variable for compatibility with CMD, you can define an alias to append the contents of that variable to the COPY command:

```
alias COPY=`*copy %copycmd`
```

Now each time the COPY alias is executed, the current value of COPYCMD will modify the execution of the COPY command.

4.4.3.2 DIRCMD

The **DIRCMD** variable is used by some versions of CMD to hold default options for the DIR command. ***TCC*** does not directly support this variable, i.e, its value has no affect on internal commands. In general, it is more efficient to define several aliases, each including a different combination of options. For example, if you want the DIR command to default to a 2-column display with a vertical sort and a pause at the end of each page, you could use this alias:

```
alias DIR=`*dir /2 /p /v`I
```

If you wish to use or create a DIRCMD variable for compatibility with CMD, you can define the alias to append the contents of that variable to the DIR command:

```
alias DIR=`*dir %dircmd`
```

Now each time the DIR alias is executed, the current value of DIRCMD will modify the execution of the DIR command.

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4.4.3.3 String substitution

For compatibility with some peculiar syntax introduced in recent CMD versions, ***TCC*** supports:

`%var:string1=string2%`	Substitutes the second string for all instances of the first string in the variable.
`%var:~x[,y]%`	Returns the substring starting at the xth character position (base 0) and continuing for y characters. If y is not specified, returns the remainder of the string. If x is negative, starts from the end of the string.

For string manipulations, we suggest you rely instead on the much more flexible Variable Functions.

4.4.4 Variables

Internal variables are special variables built into ***TCC*** to provide information about your system. They are not stored in the environment, but can be accessed as if they were environment variables in interactive commands, aliases, and batch files.

The values of these variables are stored internally in ***TCC***, and cannot be changed with the SET, UNSET, ESET or any other command. The DEFINED status test will always fail, too. You can override any of these variables by defining a new environment variable with the same name. The internal variable can be made available again by unsetting the identically name environment variable. The names of ALL internal variables (except the pseudovariables errorlevel, ?, and ??) begin with an underscore character to make it easier to distinguish them and to avoid accidentally overriding them.

These internal variables are often used in batch files and aliases to examine system resources and adjust to the current computer settings. You can examine the contents of any internal variable from the command line with a command like this:

```
echo %variablename
```

Variables which return a file or directory name from a volume that supports long filenames return it in the same case as it is stored. Returned names are not quoted automatically, you must add the quotes yourself if they are required by the syntax in which you use them.

Some variables return values based on information provided by your operating system. These variables will only return correct information if the operating system provides it. For example, _BATTERY will not return accurate results if your operating system and Advanced Power Management drivers do not provide correct information on battery status to ***TCC***.

For a list of internal variables organized by general categories of use, see Internal Variables by Category.

Examples

You can use internal variables in a wide variety of ways depending on your needs. Here are just a couple of examples:

Store the current date and time in a file, then save the output of a DIR command in the same file:

```
echo Directory as of %_date %_time > dirsave
dir >> dirsave
```

Use the IFF command to check whether there are enough resources free before running an application:

```
iff %_GDIFREE lt 40 then
   echo Not enough GDI resources!
```

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```
   quit
else
   d:\mydir\myapp
endiff
```

Call another batch file if today is Monday:

```
if "%_DOW" == "Mon" call c:\cleanup\weekly.bat
```

4.4.4.1 Variables by Name

!	Last argument of the previous command
?	Exit code, last external program
_4ver	***TCC*** version
_?	Exit code, last internal command

_acstatus	AC line status
_admin	1 if an administrator, else 0
_afswcell	OpenAFS workstation cell
_alt	Alt key depressed: 1, else 0
_ansi	ANSI X3.64 status

_batch	Batch nesting level
_batchline	Line number in current batch file.
_batchname	Full path and filename of current batch file.
_batchpath	Pathname of the current batch file
_batchtype	Type of the current batch file
_battery	Battery status
_batterylife	Remaining battery life, seconds
_batterypercent	Remaining battery life, %
_bdebugger	Batch debugger active: 1, else 0
_bg	Background color at cursor position
_boot	Boot drive letter, without a colon
_build	Build number

_capslock	CapsLock on: 1, else 0
_cdroms	List of the CD-ROM drives
_childpid	Process ID of most recent child process
_ci	Current text cursor shape in insert mode
_cmdline	Current command line
_cmdproc	Command processor name
_cmdspec	Full pathname of command processor
_co	Current text cursor shape in overstrike mode
_codepage	Current code page number
_column	Current cursor column
_columns	Virtual screen width
_consoleb	Handle to console screen buffer
_consolepids	Process IDs attached to this console
_country	Current country code
_cpuusage	CPU time usage (percent)
_ctrl	Ctrl key depressed: 1, else 0
_cwd	Current drive and directory
_cwds	Current drive and directory with trailing \

cwp	Current directory
cwps	Current directory with trailing \

date	Current date
datetime	Current date and time, yyyyMMddhhmmss
day	Current day of the month
detachpid	Process ID of most recent detached process
disk	Current drive
dname	Name of the description file.
dos	Operating system type
dosver	Operating system version
dow	Current day of the week, English, short
dowf	Current day of the week, English, full
dowi	Current day of the week as an integer
doy	Current day of the year
drives	List of the existing drives
dst	Daylight savings time: 1, else 0
dvds	List of the DVD drives

echo	Echo turned on: 1, else 0
editmode	0 if in overstrike mode, 1 if in insert mode
elevated	1 if the ***TCC*** process is elevated
errorlevel	Exit code, last external program
execarray	Array elements assigned by the last @EXECSTR
execstr	@EXECSTR return code
exit	***TCC*** exit return code
expansion	SETDOS /X value

fg	Foreground color at cursor position
filearray	Array elements returned by the last @FILEARRAY
ftperror	Last FTP error code

gpsalt	Altitude from sea level in meters
gpsazimuth	List of the azimuth of each satellite in view
gpselevation	List of the elevation of each satellite in view
gpserrorradius	Accuracy of the latitude and longitude values
gpsfixquality	Quality of the fix
gpsfixtype	Type of the fix
gpshdop	Horizontal dilution of precision
gpsheading	True heading
gpsids	List of the IDs of the satellites in view
gpslat	Latitude
gpslon	Longitude
gpsmagheading	Magnetic heading
gpsnmea	NMEA sentence
gpsopmode	GPS operation mode
gpspdop	Position dilution of precision
gpsprns	List of the PRN numbers of the satellites in view
gpssatsinview	Number of satellites in view
gpssatsused	Number of satellites used in solution
gpsselmode	GPS selection mode
gpssnr	List of the signal to noise ratio of each satellite in view
gpsspeed	Speed in knots

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_gpsstatus	GPS status
_gpsvdop	Vertical dilution of precision

_hdrives	List of the fixed drives
_hlogfile	Current history log file name
_host	Host name of local computer
_hour	Current hour
_hwprofile	Windows hardware profile if defined
_hyperv	Running inside Hyper-V: 1; else 0

_ide	In the IDE / debugger: 1, else 0
_idleticks	Milliseconds since the last user input
_idow	Current day of the week, local language, short
_idowf	Current day of the week, local language, full
_iftp	IFTP session active: 1, else 0
_iftps	IFTPS session active: 1, else 0
_imonth	Current month name, local language, short
_imonthf	Current month name, local language, full
_ininame	Full pathname of the current INI file
_insert	Current input editor state (0=overstrike, 1=insert)
_ip	IP address(es) of local computer.
_ipadapter	Index of the current adapter
_ipadapters	Number of adapters in the system
_iparpproxy	Returns 1 if the local computer is acting as an ARP proxy
_ipdns	Returns 1 if DNS is enabled on the local computer
_ipdnsother	List of other DNS servers configured for the host
_ipdnsserver	The default DNS server for the local computer
_iprouting	Returns 1 if routing is enabled on the local computer
_isftp	IFTP SSH session active: 1, else 0
_isodate	Current date in ISO 8601 format
_isodowi	ISO 8601 numeric day of week
_isowdate	ISO 8601 current week date (yyyy-Www-d)
_isoweek	ISO 8601 week of year
_isowyear	ISO 8601 week date year

_kbhit	Keyboard input character is waiting: 1, else 0

_lalt	left Alt key depressed: 1, else 0
_lastdir	Previous directory (from directory history)
_lastdisk	Last valid drive
_lctrl	Left Ctrl key depressed: 1, else 0
_logfile	Current log file name
_lshift	Left Shift key depressed: 1, else 0

_minute	Current minute
_monitors	Number of monitors
_month	Current month of the year as integer
_monthf	Current month of the year, English, full
_msg_checkbox	If user has checked MSGBOX checkbox : 1, else 0

_numlock	NumLock on: 1, else 0

_openafs	OpenAFS installed: 1, otherwise 0

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osbuild	Windows build number
osbuildex	Windows build + sub-build number

parent	Name of the parent process
pid	***TCC*** process ID (numeric)
pipe	Current process is running in a pipe: 1, else 0
ppid	Process ID of parent process

ralt	Right Alt key depressed: 1, else 0
rctrl	Right Ctrl key depressed: 1, else 0
ready	List of accessible drives
registered	Registered user name
row	Current cursor row
rows	Screen height
rshift	Right Shift key depressed: 1, else 0

scrolllock	ScrollLock on: 1, else 0
second	Current second
selected	Selected text in the ***TCC*** tab window
serialports	Display available serial pors (COM1 - COMn)
service	TCC is a service: 1, else 0
shell	Shell level
shift	Shift key depressed: 1, else 0
shortcut	Pathname of shortcut that started this process
shralias	SHRALIAS is loaded: 1, else 0
startpath	Startup directory of current shell.
startpid	Process ID of most recent STARTed process
stdin	STDIN redirected: 0, else 1
stdout	STDOUT redirected: 0, else 1
stderr	STDERR redirected: 0, else 1
stzn	Name of time zone for standard time
stzo	Offset in minutes from UTC for standard time
syserr	Latest Windows error code

tccinstances	Number of current ***TCC*** instances
tccrt	Running inside TCC RT: 1, else 0
tccrun	Length of time ***TCC*** session has been running
tccstart	Time ***TCC*** session was started
tcexit	Pathname to TCEXIT.*
tcfilter	Current filter in the File Explorer window
tcfolder	Selected folder in the File Explorer window
tclistview	Selected entries in the File Explorer window
tcmdinstances	Number of current ***Take Command*** instances
tcstart	Pathname of the active TCSTART.*
tctab	Running inside Take Command: 1; else 0
tctabactive	***TCC*** is active ***Take Command*** tab window: 1; else 0
tctabs	Current number of ***Take Command*** tab windows
time	Current time
transient	Current process is a transient shell: 1, else 0
tzn	Name of current time zone
tzo	Offset in minutes from UTC for current time zone

unicode	Shell uses unicode for redirected output: 1, else 0

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utctime	Current UTC time
utcdate	Current UTC date
utcdatetime	Current UTC date and time
utchour	Current UTC hour
utcisodate	Current UTC date in ISO format
utcminute	Current UTC minute
utcsecond	Current UTC second

vermajor	***TCC*** major version
verminor	***TCC*** minor version
version	***TCC*** version in major.minor format (i.e., **28.0**)
virtualbox	Running inside VirtualBox: 1; else 0
vxpixels	Virtual screen horizontal size
vypixels	Virtual screen vertical size

windir	Windows directory pathname
winfgwindow	Title of foreground window.
winname	Name of local computer
winsysdir	Windows system directory pathname
winticks	Milliseconds since Windows was started
wintitle	Current window title
winuser	Name of current user.
winver	Windows version number
wow64dir	System WOW64 directory

x64	1 if ***TCC*** is the x64 (64-bit) version
xen	Running inside Xen: 1; else 0
xmouse	Column of last mouse click
xpixels	Physical screen horizontal size in pixels
xwindow	Width of ***Take Command*** or ***TCC*** window in pixels

year	Current year
ymouse	Row of last mouse click
ypixels	Physical screen vertical size in pixels
ywindow	Height of ***Take Command*** or ***TCC*** window in pixels

4.4.4.2 Variables by Category

- TCC status
- Dates and times
- Drives and directories
- Error codes
- Hardware status
- Operating system and software status
- Screen, color, and cursor

The list below gives a one-line description of all Internal Variables and a cross reference which selects a separate help topic on that variable. Many variables are simple enough that the one-line description is probably sufficient, but in most cases you should check for any additional information in the cross referenced explanation if you are not already familiar with a variable. You can also obtain help on any function with a **HELP variablename** command at the prompt. See the HELP command for details.

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Hardware status

_acstatus	AC line status
_alt	Alt key depressed
_battery	Battery status
_batterylife	Remaining battery life, seconds
_batterypercent	Remaining battery life, %
_capslock	CapsLock on: 1, otherwise 0
_cpuusage	CPU time usage (percent)
_ctrl	Ctrl key depressed: 1, otherwise 0
_kbhit	A keyboard input character is waiting: 1, otherwise 0
_lalt	left Alt key depressed: 1, otherwise 0
_lctrl	left Ctrl key depressed: 1, otherwise 0
_lshift	left Shift key depressed: 1, otherwise 0
_numlock	NumLock on:r 1, otherwise 0
_ralt	right Alt key depressed: 1, otherwise 0
_rctrl	right Ctrl key depressed: 1, otherwise 0
_rshift	right Shift key depressed: 1, otherwise 0
_scrolllock	ScrollLock on: 1, otherwise 0
_shift	Shift key depressed: 1, otherwise 0

Operating system and software status

_!	Last argument of previous command
_admin	1 if administrator; else 0
_ansi	ANSI X3.64 status
_boot	Boot drive letter, without a colon
_codepage	Current code page number
_country	Current country code
_dos	Operating system type
_dosver	Operating system version
_elevated	1 if the ***TCC*** process is elevated
_host	Host name of local computer.
_hwprofile	Windows hardware profile if defined
_hyperv	Running inside Hyper-V: 1; else 0
_idleticks	Milliseconds since last user input
_ip	IP address(es) of local computer.
_ipadapter	Index of the current adapter
_ipadapters	Number of adapters in the system
_iparpproxy	Returns 1 if the local computer is acting as an ARP proxy
_ipdns	Returns 1 if DNS is enabled on the local computer
_ipdnsother	List of other DNS servers configured for the host
_ipdnsserver	The default DNS server for the local computer
_iprouting	Returns 1 if routing is enabled on the local computer
_osbuild	Windows build number
_osbuildex	Windows build + sub-build number
_serialports	Display available serial ports (COM1 - COMn)
_tctab	Running inside Take Command: 1; else 0
_virtualbox	Running inside VirtualBox: 1; else 0
_windir	Windows directory pathname
_winfgwindow	Title of foreground window.
_winname	Name of local computer
_winsysdir	Windows system directory pathname
_winticks	Milliseconds since Windows was started
_wintitle	Current window title

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_winuser	Name of current user.
_winver	Windows version number
_wow64dir	System WOW64 directory
_x64	1 if ***TCC*** is the x64 (64-bit) version
_xen	Running inside Xen: 1; else 0

***TCC* status**

_4ver	***TCC*** version
_batch	Batch nesting level
_batchline	Line number in current batch file.
_batchname	Full path and filename of current batch file
_batchpath	Pathname of the current batch file
_batchtype	Type of the current batch file
_bdebugger	Batch debugger active: 1, otherwise 0
_build	Build number
_childpid	Process ID of most recent child process
_cmdline	Current command line
_cmdproc	Command processor name
_cmdspec	Full pathname of command processor
_consoleb	Handle to the active console screen buffer
_detachpid	Process ID of most recent detached process
_dname	Name of the description file.
_echo	Echo status
_editmode	Default insert mode: 1; else 0
_execarray	Array elements assigned by the last @EXECARRAY
_exit	***TCC*** exit code
_expansion	Current expansion mode (SETDOS /X)
_filearray	Array elements assigned by the last @FILEARRAY
_hlogfile	Current history log file name
_ide	In the IDE / debugger: 1, else 0
_iftp	IFTP session active: 1, otherwise 0
_iftps	IFTPS session active: 1, otherwise 0
_isftp	ISFTP (SSH) session active: 1, otherwise 0
_ininame	Full pathname of the current INI file
_insert	Current input editor state (0=overstrike, 1=insert)
_logfile	Current log file name
_msgbox_checkbox	Checked box in MSGBOX : 1, else 0
_parent	Name of the parent process
_pid	The ***TCC*** process ID (numeric)
_pipe	Current process is running in a pipe: 1, otherwise 0
_ppid	Process ID of parent process
_registered	Registered user name
_selected	Selected text in current tab window
_service	***TCC*** is a service: 1, else 0
_shell	Shell level
_shortcut	Pathname of shortcut that started this process
_shralias	SHRALIAS is loaded: 1, otherwise 0
_startpath	Startup directory of current shell.
_startpid	Process ID of most recent STARTed process
_stdin	STDIN redirected: 0, otherwise 1
_stdout	STDOUT redirected: 0, otherwise 1
_stderr	STDERR redirected: 0, otherwise 1
_tccinstances	Number of ***TCC*** instances

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tccrt	Running inside TCC RT: 1, else
tccrun	Time current ***TCC*** session has been running
tccstart	Time current ***TCC*** session was started
tctabactive	***TCC*** is the active ***Take Command*** tab: 1, else 0
tcexit	Current value of TCEXIT.*
tcfilter	Current filter in the File Explorer window
tcfolder	Selected folder in File Explorer window
tclistview	Selected entries in the File Explorer window
tcmdinstances	Number of ***Take Command*** instances
tcstart	Current value of TCSTART.*
tctabs	Current number of ***Take Command*** tab windows
transient	Current process is a transient shell: 1, otherwise 0
unicode	*TCC* uses unicode for redirected output: 1, otherwise 0
vermajor	***TCC*** major version
verminor	***TCC*** minor version
version	***TCC*** version in major.minor format (i.e., **22.0**)

Screen, color, and cursor

bg	Background color at cursor position
ci	Current text cursor shape in insert mode
co	Current text cursor shape in overstrike mode
column	Current cursor column
columns	Virtual screen width
fg	Foreground color at cursor position
monitors	Number of monitors
row	Current cursor row
rows	Screen height
selected	Selected text in current tab window
vxpixels	Virtual screen horizontal size
vypixels	Virtual screen vertical size
xmouse	Column of last mouse click
xpixels	Physical screen horizontal size in pixels
xwindow	Width of ***Take Command*** or ***TCC*** window in pixels
ymouse	Row of last mouse click
ypixels	Physical screen vertical size in pixels
ywindow	Height of ***Take Command*** or ***TCC*** window in pixels

Drives and directories

afswcell	OpenAFS workstation cell
cdroms	List of CD-ROM drives
cwd	Current drive and directory
cwds	Current drive and directory with trailing \
cwp	Current directory
cwps	Current directory with trailing \
disk	Current drive
drives	List of all available drives
dvds	List of DVD drives
hdrives	List of hard (fixed) drives
lastdir	Previous directory (from directory history)
lastdisk	Last valid drive
openafs	OpenAFS service installed: 1, otherwise 0
ready	List of ready (accessible) drives

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Dates and times

_date	Current date
_datetime	Current date and time, yyyyMMddhhmmss
_day	Current day of the month
_dow	Current day of the week, English, short
_dowf	Current day of the week, English, full
_dowi	Current day of the week as an integer
_doy	Current day of the year
_dst	Daylight savings time: 1, else 0
_hour	Current hour
_idow	Current day of the week, local language, short
_idowf	Current day of the week, local language, full
_imonth	Current month name, local language, short
_imonthf	Current month name, local language, full
_isodate	Current date in ISO 8601 format
_isodowi	ISO 8601 numeric day of week
_isowdate	ISO 8601 current week date (yyyy-Www-d)
_isoweek	ISO 8601 week of year
_isowyear	ISO 8601 week date year
_minute	Current minute
_month	Current month of the year as integer
_monthf	Current month of the year, English, full
_second	Current second
_stzn	Name of time zone for standard time
_stzo	Offset in minutes from UTC for standard time
_time	Current time
_tzn	Name of current time zone
_tzo	Offset in minutes from UTC for current time zone
_utctime	Current UTC time
_utcdate	Current UTC date
_utcdatetime	Current UTC date and time
_utchour	Current UTC hour
_utcisodate	Current UTC date in ISO format
_utcminute	Current UTC minute
_utcsecond	Current UTC second
_year	Current year

Error codes

?	Exit code, last external program
_?	Exit code, last internal command
errorlevel	Exit code, last external program
_execstr	Last @EXECSTR return code
_ftperror	Last FTP error code
_syserr	Latest Windows error code

Windows Sensor

_gpsalt	Altitude from sea level in meters
_gpsazimuth	List of the azimuth of each satellite in view
_gpselevation	List of the elevation of each satellite in view
_gpserrorradius	Accuracy of the latitude and longitude values
_gpsfixquality	Quality of the fix
_gpsfixtype	Type of the fix
_gpshdop	Horizontal dilution of precision

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_gpsheading	True heading
_gpsids	List of the IDs of the satellites in view
_gpslat	Latitude
_gpslon	Longitude
_gpsmagheading	Magnetic heading
_gpsnmea	NMEA sentence
_gpsopmode	GPS operation mode
_gpspdop	Position dilution of precision
_gpsprns	List of the PRN numbers of the satellites in view
_gpssatsinview	Number of satellites in view
_gpssatsused	Number of satellites used in solution
_gpsselmode	GPS selection mode
_gpssnr	List of the signal to noise ratio of each satellite in view
_gpsspeed	Speed in knots
_gpsstatus	GPS status
_gpsvdop	Vertical dilution of precision

4.4.4.3 Command Variables

Most of the ***TCC*** file handling commands set internal variables with their results (for example, the number of files processed and the number of errors). See the help for the specific command for more details on the variables.

_7unzip_files
_7unzip_errors
_7zip_files
_7zip_errors
_attrib_dirs
_attrib_errors
_attrib_files
_copy_dirs
_copy_errors
_copy_files
_dedupe_errors
_dedupe_files
_del_dirs
_del_errors
_del_files
_differ_added
_differ_changed
_differ_deleted
_differ_errors
_dir_dirs
_dir_errors
_dir_files
_do_dirs
_do_errors
_do_files
_do_loop
_ffind_errors
_ffind_files
_ffind_matches
_foldertime
_for_errors
_for_files

_head_errors
_head_files
_md_dirs
_md_errors
_mklink_errors
_mklink_links
_mklnk_errors
_mklnk_links
_move_dirs
_move_errors
_move_files
_pdir_dirs
_pdir_errors
_pdir_files
_rd_dirs
_rd_errors
_ren_dirs
_ren_errors
_ren_files
_sync_dirs
_sync_errors
_sync_files
_tail_errors
_tail_files
_tar_errors
_tar_files
_toast
_toast_action
_touch_dirs
_touch_errors
_touch_files
_type_errors
_type_files
_untar_errors
_untar_files
_unzip_errors
_unzip_files
_zip_errors
_zip_files
_zipsfx_errors
_zipsfx_files

4.4.4.4 ! (Variable)

! returns the last argument of the previous command. The command is retrieved from the history list, so this will not work in a batch file -- it's intended for aliases and command line work.

4.4.4.5 ? variable

If an **external** command (i.e., a program) has an ***exit code***, its value is stored in the ? variable when the program terminates. Additionally. some **internal** commands, e.g., DIR - to emulate Microsoft's CMD - also set this variable to the same value they set the variable _?, an action which destroys the code from the last external command.

To insure that you use the ***exit code*** from the **external** command you want to check, not that of a subsequent internal or external command, it is best to save the value of **?** in another variable immediately

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on completion of the external command of interest, and use that variable instead. We also strongly recommend that for internal commands you query the _? variable instead.

Not all programs return an exit code. If a program does not explicitly return an exit code, the value of `%?` is undefined.

Alternate name: ERRORLEVEL.

See also: _?

4.4.4.6 _? variable

_? contains the exit code of the last internal command. You must use or save this value immediately, because it is set by every internal command, including the one used to save it.

Result codes:

0 command was successful
1 a usage error occurred
2 another ***TCC*** error or an operating system error occurred
3 the command was interrupted by **Ctrl-C** or **Ctrl-Break**

This variable can also be set in a subroutine by the RETURN command.

Note that in imitation of CMD some internal commands, e.g., DIR, also set the variables ? and ERRORLEVEL to the same value they set this variable. However, you are strongly urged to use this variable.

See also: ?

4.4.4.7 _4VER

_4VER returns the current ***TCC*** version (for example, 28). The current Decimal character is used to separate the major and minor version numbers.

See also: _BUILD.

4.4.4.8 _ACSTATUS

_ACSTATUS returns the AC line status.

value	*meaning*
`0`	Offline
`1`	Online
`unknown`	Unknown

4.4.4.9 _ADMIN

_ADMIN returns 1 if the current user is an administrator in the local group.

See also _ELEVATED.

4.4.4.10 _AFSWCELL

_AFSWCELL returns the OpenAFS workstation cell.

See http://www.openafs.org for more information on OpenAFS.

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4.4.4.11 _ALT

_ALT returns the status of the ***Alt*** key:

value	*status of selected key*
1	at least one Alt key is depressed
0	neither is depressed

4.4.4.12 _ANSI

_ANSI returns **1** if the internal ***TCC*** support for ANSI Std. X3.64 is enabled, or **0** if it is not.

4.4.4.13 _BATCH

_BATCH returns the current batch file nesting level. It is **0** if no batch file is currently being processed.

Batch files are nested with the internal CALL command.

4.4.4.14 _BATCHLINE

_BATCHLINE returns the current line number in the current batch file. It is **-1** if no batch file is active.

The first line in the batch file is numbered **1**.

4.4.4.15 _BATCHNAME

_BATCHNAME returns the full path and file name of the current batch file. It is an empty string if no batch file is active.

4.4.4.16 _BATCHPATH

_BATCHPATH returns the pathname of the current batch file (including the trailing \).

4.4.4.17 _BATCHTYPE

_BATCHTYPE returns the file type of the current batch file:

value	*meaning*
-1	not in a batch file
0	normal
1	compressed
2	encrypted

4.4.4.18 _BATTERY

_BATTERY returns the battery charge status, which can be one or more of the following flags:

value	*meaning*
0	Battery not charging and capacity is between low and high
1	High
2	Low
4	Critical
8	Charging
128	No battery
unknown	Unknown

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4.4.4.19 _BATTERYLIFE

_BATTERYLIFE returns either the number of seconds of battery life remaining, or **unknown**.

4.4.4.20 _BATTERYPERCENT

_BATTERYPERCENT returns the percentage of battery charge remaining (**0...100**), or **unknown**.

4.4.4.21 _BDEBUGGER

_BDEBUGGER returns **1** if the batch debugger is actively debugging a file, or **0** if it is not.

4.4.4.22 _BG

_BG returns a string containing the first three characters of the current background screen output color (for example, **Bla**). See Colors, Color Names and Codes for details.

4.4.4.23 _BOOT

_BOOT returns the boot drive letter, without a colon (usually C).

4.4.4.24 _BUILD

_BUILD returns the internal ***TCC*** build number (1 - *n*).

See also: _4VER.

4.4.4.25 _BTDEVICECOUNT

_BTDEVICECOUNT returns the number of Bluetooth devices found.

4.4.4.26 _BTRADIOCOUNT

_BTRADIOCOUNT returns the number of Bluetooth radios installed on the system.

4.4.4.27 _BTSERVICECOUNT

_BTSERVICECOUNT returns the number of Bluetooth services present.

4.4.4.28 _CAPSLOCK

_CAPSLOCK returns the current state of the ***Caps Lock*** key on the keyboard:

value	*toggled status*
1	ON
0	OFF

4.4.4.29 _CDROMS

_CDROMS returns a space-delimited list of the CD-ROM drives on the system.

4.4.4.30 _CHILDPID

_CHILDPID returns the process ID of the most recent child process.

4.4.4.31 _CI

_CI returns the insert mode cursor shape, as a percentage (**0** to **100**).

See also SETDOS /S and the Insert Cursor configuration option.

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4.4.4.32 _CMDLINE

_CMDLINE returns the current command line. (This is most useful in key aliases.) If you specify it on the command line, it is expanded to the contents of the command line (not including the %_cmdline variable itself).

Example:

```
echo one two three %_cmdline
```

will return:

```
one two three echo one two three
```

4.4.4.33 _CMDPROC

_CMDPROC returns the name of the current command processor (usually ***TCC***) .

4.4.4.34 _CMDSPEC

_CMDSPEC returns the full pathname of the command processor.

4.4.4.35 _CO

_CO returns the overstrike mode cursor shape, as a percentage (**0** to **100)**.

See also SETDOS /S and the Overstrike Cursor configuration option.

4.4.4.36 _CODEPAGE

_CODEPAGE returns the input code page used by the TCC console.

See also CHCP.

4.4.4.37 _COLUMN

_COLUMN is the current cursor column. The leftmost column is numbered **0**.

See also _COLUMNS, _ROW, and _ROWS.

4.4.4.38 _COLUMNS

_COLUMNS returns the current number of virtual screen columns (for example, **80**).

See Resizing the Take Command Window for additional details on the virtual screen width.

See also _COLUMN, _ROW, and _ROWS.

4.4.4.39 _CONSOLEB

_CONSOLEB returns the handle to the active console screen buffer.

See also @CONSOLEB.

4.4.4.40 _CONSOLEPIDS

_CONSOLEPIDS returns a space-delimited list of the process IDs of all processes attached to this console.

Example:

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```
echo %_consolepids
19544 34752
```

4.4.4.41 _COUNTRY

_COUNTRY returns the current country code as reported by the operating system. This code is usually the same as the international dialing code for the country.

4.4.4.42 _CPUUSAGE

_CPUUSAGE returns the current CPU usage, as a percent (**0** to **100**).

4.4.4.43 _CTRL

_CTRL returns the status of the ***Ctrl*** keys:

value	*status of selected key*
1	at least one Ctrl key is depressed
0	neither is depressed

4.4.4.44 _CWD

_CWD returns the current working directory, in the format ***d:\pathname***. If the current working directory is a root directory, the format is ***d:***\.

See also _CWDS, _CWP, _CWPS, @CWD, and @CWDS.

4.4.4.45 _CWDS

_CWDS returns the current working directory in the format ***d:\pathname***\.

See also _CWD, _CWP, _CWPS, @CWD, and @CWDS.

4.4.4.46 _CWP

_CWP returns the current working directory in the format ***\pathname*** (without the drive letter).

See also _CWD, _CWDS, _CWPS, @CWD, and @CWDS.

4.4.4.47 _CWPS

_CWPS returns the current working directory in the format **\pathname** (without the drive letter).

See also _CWD, _CWDS, _CWP, @CWD, and @CWDS.

4.4.4.48 _DATE

_DATE returns the current system date, in the format determined by your country settings. The year will be in two-digit format for compatibility unless your country setting is ***yyyy-mm-dd***.

See also _ISODATE.

4.4.4.49 _DATETIME

_DATETIME returns the current date and time in the format yyyyMMddhhmmss. The date part is the same as _isodate without separators.

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For the current UTC time, see _UTCDATETIME.

4.4.4.50 _DAY

_DAY returns the current day of the month (1 to 31).

4.4.4.51 _DETACHPID

_DETACHPID returns the process ID of the most recent process launched by the DETACH command.

4.4.4.52 _DISK

_DISK returns the current disk drive letter, without a colon (for example, **C**).

If the current directory is a UNC, **%_disk** will return the share name.

4.4.4.53 _DNAME

_DNAME returns the name of the file used to store file descriptions. It can be changed with the Description Filename configuration option, or the SETDOS /D command.

4.4.4.54 _DOS

_DOS returns the operating system type. ***TCC*** returns different values depending on the operating system, as follows:

Platform	*Take Command*
Windows 8	WINDOWS8
Windows 2012 Server	WIN2012
Windows 8.1	WINDOWS81
Windows 2012R2 Server	WIN2012R2
Windows 10	WINDOWS10
Windows 2016 Server	WIN2016
Windows 2019 Server	WIN2019

This variable is useful if you have batch files running in more than one environment, and need to take different actions depending on the underlying operating environment or command processor. See also the _WINVER variable.

4.4.4.55 _DOSVER

_DOSVER returns the current operating system version. The current Decimal character is used to separate the major and minor version numbers. For example, Windows 10 returns "10.0".

4.4.4.56 _DOW

_DOW returns the first three characters of the name of the current day of the week (**Mon**, **Tue**, **Wed**, etc.).

_DOW returns the English name for the day of the week. For a localized version, see _IDOW.

4.4.4.57 _DOWF

_DOWF returns the full name of the day of the week for the current date (**Monday**, **Tuesday**, etc.).

_DOWF returns the English name for the day of the week. For a localized version, see _IDOWF.

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4.4.4.58 _DOWI

_DOWI returns the current day of the week as an integer (**1** = Sunday, **2** = Monday, etc.).

4.4.4.59 _DOY

_DOY returns the current day of the year (1 to 366).

4.4.4.60 _DRIVES

_DRIVES returns a space-delimited list of the existing drives in the format:

A: C: D: E:

_DRIVES only checks to see if the drive exists, not whether it is ready.

4.4.4.61 _DST

_DST returns 1 if daylight savings time is in effect, or 0 if it is not.

4.4.4.62 _DVDS

_DVDS returns a space-delimited list of the DVD drives on the system.

4.4.4.63 _ECHO

_ECHO returns the current echo state (**0**=off, **1**=on). There are two ECHO states, one for the command line and one for batch files (see the ECHO command and the Batch Echo configuration option). The value returned by the _ECHO variable reflects the state applicable at the time the variable is queried.

4.4.4.64 _EDITMODE

_EDITMODE returns **0** if the line editor is in overstrike mode, or **1** if it is in insert mode.

4.4.4.65 _ELEVATED

_ELEVATED returns **1** if the ***TCC*** process is elevated, or **0** if it is not.

4.4.4.66 _EXECARRAY

_EXECARRAY returns the number of array elements assigned by the last @EXECARRAY function.

4.4.4.67 _EXECSTR

_EXECSTR returns the integer return code of the last @EXECSTR function.

4.4.4.68 _EXIT

_EXIT returns the reason for exiting ***TCC***. The possible values are:

0 EXIT command
2 CLOSE_EVENT
5 LOGOFF_EVENT
6 SHUTDOWN_EVENT

4.4.4.69 _EXPANSION

_EXPANSION returns the current expansion mode (i.e., SETDOS /X). It returns the string **0** if everything is enabled, or a string of up to 9 characters of the disabled modes.

For example, if you disable nested variable expansion and redirection:

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```
setdos /x-46
```

then %_expansion will return **46**.

Note that %_expansion will return **%_expansion** if you turn off variable expansion (setdos /x-3)!

4.4.4.70 _FG

_FG returns a string containing the first three letters of the current foreground screen output color (for example, "Whi"). See Colors, Color Names and Codes for details.

4.4.4.71 _FILEARRAY

_FILEARRAY returns the number of array elements assigned by the last @FILEARRAY function.

4.4.4.72 _FTPERROR

_FTPERROR returns the error code of the last error reported by FTP. Some of the possible codes are:

101	You cannot change the remote host at this time
102	The remote host address is invalid
118	Firewall error
141	FTP protocol error
142	Communication error
143	Busy performing current action
144	Local file error
145	Can't open local file for reading
146	No remote file specified while uploading
147	Data interface error
301	Operation interrupted
302	Can't open local file
311	Accept failed for data connection
312	Asynchronous select failed for data connection
11001	Host not found
11002	Non-authoritative 'Host not found'
11003	Non-recoverable errors: FORMERR, REFUSED, NOTIMP
11104	Valid name, no data record (check DNS setup)

4.4.4.73 _GPSALT

_GPSALT returns the altitude (from sea level) in meters.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.74 _GPSAZIMUTH

_GPSAZIMUTH returns a space-delimited list of the the azimuth of each satellite in view.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

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4.4.4.75 _GPSELEVATION

_GPSELEVATION returns a space-delimited list of the elevation of each satellite in view.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.76 _GPSERRORRADIUS

_GPSERRORRADIUS returns the accuracy of the latitude and longitude values, in meters.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.77 _GPSFIXQUALITY

_GPSFIXQUALITY returns the quality of the fix as an integer.

0 = no fix
1 = GPS SPS Mode, Fix Valid
2 = DGPS, SPS Mode, fix valid
3 = GPS PPS Mode, fix valid
4 = Real Time Kinematic
5 = Float RTK
6 = Estimated (dead reckoned)
7 = Manual input mode
8 = Simulator mode

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.78 _GPSFIXTYPE

_GPSFIXTYPE returns the type of the fix as an integer.

```
0 = no fix
1 = 2d fix
2 = 3d fix
```

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.79 _GPSHDOP

_GPSHDOP returns the horizontal dilution of precision.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

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4.4.4.80 _GPSHEADING

_GPSHEADING returns the true heading in degrees. See also _GPSMAGHEADING.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.81 _GPSIDS

_GPSIDS returns a space-delimited list of IDs (integers) of the satellites in view.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.82 _GPSLAT

_GPSLAT returns the latitude in degrees. North is positive.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.83 _GPSLON

_GPSLON returns the longitude in degrees. East is positive.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.84 _GPSMAGHEADING

_GPSHEADING returns the heading in degrees in relation to magnetic North. See also _GPSHEADING.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.85 _GPSNMEA

_GPSNMEA returns the NMEA sentence as a string..

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.86 _GPSOPMODE

_GPSOPMODE returns the GPS operation mode as an integer.

0 = Manual. The GPS sensor is set to operate in 2-D or 3-D mode.
1 = Automatic. The GPS sensor can automatically switch between 2-D and 3-D modes.

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The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.87 _GPSPDOP

_GPSPDOP returns the position dilution of precision..

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.88 _GPSPRNS

_GPSPRNS returns a space delimited list of the PRN numbers (integers) of the satellites in view.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.89 _GPSSATSINVIEW

_GPSSATSINVIEW returns the number of satellites in view as an integer.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.90 _GPSSATSUSED

_GPSSATSUSED returns the number of satellites used in the solution as an integer.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.91 _GPSSELMODE

_GPSSELMODE returns the GPS selection mode as an integer.

0 = Autonomous.
1 = DGPS.
2 = Estimated (dead reckoned).
3 = Manual input.
4 = Simulator.
5 = Data not valid.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

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4.4.4.92 _GPSSNR

_GPSSNR returns a space-delimited list of the signal to noise radio of each satellite in view.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.93 _GPSSPEED

_GPSSPEED returns the speed in knots.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.94 _GPSSTATUS

_GPSSTATUS returns the GPS status as an integer.

1 = Data is valid.
2 = Data is not valid.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.95 _GPSVDOP

_GPSVDOP returns the vertical dilution of precision.

The GPS internal variables require a GPS (internal or external) that supports the Windows Sensor Location APIs. Note that your GPS may not support all of the variables. If a value is not supported Windows will return "Element not found". Unless otherwise specified, the values returned are decimal numbers (for example, 38.735122).

4.4.4.96 _HDRIVES

_HDRIVES returns a space-delimited list of the hard (fixed) drives on the system.

4.4.4.97 _HLOGFILE

_HLOGFILE returns the name of the current history log file (or an empty string if LOG /H is OFF). See LOG for information on history logging.

4.4.4.98 _HOST

_HOST returns the host name for the local computer.

4.4.4.99 _HOUR

_HOUR returns the current hour (0 - 23) in local time.

For the current UTC time, see _UTCHOUR.

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4.4.4.100 _HWPROFILE

_HWPROFILE returns the name of the current Windows hardware profile.

Example:

```
echo %_hwprofile
Undocked Profile
```

4.4.4.101 _HYPERV

_HYPERV returns 1 if ***TCC*** is running inside a Hyper-V virtual machine, or 0 if not.

4.4.4.102 _IDE

_IDE returns 1 when in the IDE / batch debugger, or 0 if not.

See also BDEBUGGER.

4.4.4.103 _IDLETICKS

_IDLETICKS returns the number of milliseconds since the last user input.

4.4.4.104 _IDOW

_IDOW returns the 3-character abbreviation for the day of the week for the current date, in the current locale language.

See _DOW for the English language only version.

4.4.4.105 _IDOWF

_IDOWF returns the full name for the day of the week for the current date, in the current locale language.

For the English language only version, see _DOWF.

4.4.4.106 _IFTP

_IFTP returns **1** if an IFTP session is active, **0** if it is not.

4.4.4.107 _IFTPS

_IFTPS returns **1** if an SSL IFTP session is active, **0** if it is not.

4.4.4.108 _IMONTH

_IMONTH returns the abbreviated name for the current month, in the current locale language.

4.4.4.109 _IMONTHF

_IMONTHF returns the full name for the current month, in the current locale language.

4.4.4.110 _ININAME

_ININAME returns the fully qualified pathname of the INI file used by the current shell.

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4.4.4.111 _INSERT

_INSERT returns 0 if the line editor is currently in overstrike mode, or 1 if it is in insert mode.

See also _EDITMODE.

4.4.4.112 _IP

_IP returns the IP address of the local computer. If the computer has more than one NIC, **_IP** returns a space-delimited list of all IP addresses.

Example:

```
echo %_ip
172.28.96.1 192.168.0.13
```

4.4.4.113 _IPADAPTER

_IPADAPTER returns the index of the current adapter.

4.4.4.114 _IPADAPTERS

_IPADAPTERS returns the number of adapters in the system.

4.4.4.115 _IPARPPROXY

_IPARPPROXY returns 1 if the local computer is acting as an ARP proxy, or 0 if it is not.

4.4.4.116 _IPDNS

_IPDNS returns 1 if DNS is enabled for the local computer, or 0 if it is not enabled.

4.4.4.117 _IPDNSOTHER

_IPDNSOTHER returns a space-delimited list of other DNS servers configured for the host machine. (The primary server is returned by %_IPDNSSERVER.)

4.4.4.118 _IPDNSSERVER

_IPDNSSERVER returns the default DNS server for the local computer.

4.4.4.119 _IPROUTING

_IPROUTING returns 1 if routing is enabled on the local computer, or 0 if it is not.

4.4.4.120 _ISFTP

_ISFTP returns **1** if an SSH IFTP session is active, **0** if it is not.

4.4.4.121 _ISODATE

_ISODATE returns the current local system date, in ISO 8601 format (**yyyy-mm-dd**).

See also _DATE and _DATETIME.

4.4.4.122 _ISODOWI

_ISODOWI returns the ISO 8601 numeric day of the week (Monday=1, Sunday=7).

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4.4.4.123 _ISOWDATE

_ISOWDATE returns the ISO 8601 current week date (yyyy-Www-d).

4.4.4.124 _ISOWEEK

_ISOWEEK returns the ISO 8601 week of year.

4.4.4.125 _ISOWYEAR

_ISOWYEAR returns the ISO 8601 week date year.

4.4.4.126 _KBHIT

_KBHIT returns **1** if one or more keystrokes are waiting in the keyboard buffer, or **0** if the keyboard buffer is empty.

4.4.4.127 _LALT

_LALT returns the status of the left ***Alt*** key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _ALT and _RALT.

4.4.4.128 _LASTDIR

_LASTDIR returns the previous directory (from the directory history).

4.4.4.129 _LASTDISK

_LASTDISK returns the last valid drive letter (without a colon).

4.4.4.130 _LCTRL

_LCTRL returns the status of the Left Ctrl key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _CTRL and _RCTRL.

4.4.4.131 _LOGFILE

_LOGFILE returns the name of the current command log file (or an empty string if LOG is OFF). See LOG for information on logging.

4.4.4.132 _LSHIFT

_LSHIFT returns the status of the left shift key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _SHIFT and _RSHIFT.

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4.4.4.133 _MINUTE

_MINUTE returns the current minute (0 - 59).

For the current UTC time, see _UTCMINUTE.

4.4.4.134 _MONITORS

_MONITORS returns the number of video displays.

4.4.4.135 _MONTH

_MONTH returns the current numeric month of the year (1 to 12).

4.4.4.136 _MONTHF

_MONTHF returns the full name of the current month (**January**, **February**, etc.).

4.4.4.137 _MSGBOX_CHECKBOX

_MSGBOX_CHECKBOX returns 1 if the user has checked the optional MSGBOX checkbox.

See also MSGBOX.

4.4.4.138 _NUMLOCK

_NUMLOCK reports the current state of the ***Num Lock*** key:

value	*toggled status*
1	**ON**
0	**OFF**

4.4.4.139 _OPENAFS

_OPENAFS returns **1** if the OpenAFS service is active, **0** if it is not.

See http://www.openafs.org for more information on OpenAFS.

4.4.4.140 _OSBUILD

_OSBUILD returns the Windows build number. The build number does not include the major or minor version.

4.4.4.141 _OSBUILDEX

_OSBUILDEX returns the Windows build and sub-build number. The build number does not include the major or minor version.

4.4.4.142 _PARENT

_PARENT returns the name of the parent process (the process that started ***TCC***).

4.4.4.143 _PID

_PID returns the process ID number for the current ***TCC*** process.

4.4.4.144 _PIPE

_PIPE returns **1** if the current process is running inside a pipe, and **0** otherwise.

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4.4.4.145 _PPID

_PPID returns the process ID number of the parent process.

4.4.4.146 _RALT

_RALT returns the status of the right Alt key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _ALT and _LALT.

4.4.4.147 _RCTRL

_RCTRL returns the status of the right Ctrl key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _CTRL and _LCTRL.

4.4.4.148 _READY

_READY returns a space-delimited list of the currently ready (accessible) drives as a space-delimited list :

C: D: E:

4.4.4.149 _REGISTERED

_REGISTERED returns the registered computer name or an empty string if ***Take Command / TCC*** isn't registered.

4.4.4.150 _ROW

_ROW returns the current cursor row (for example, **0** for the top of the window).

4.4.4.151 _ROWS

_ROWS returns the current number of screen rows in the ***TCC*** window (for example, **25**).

4.4.4.152 _RSHIFT

_RSHIFT returns the status of the right Shift key on the keyboard:

value	*key status*
1	depressed
0	not depressed

See also _SHIFT and _LSHIFT.

4.4.4.153 _RUBYTYPE

_RUBYTYPE returns the type of the Ruby VALUE returned by the last @RUBY call.

4.4.4.154 _RUBYVALUE

_RUBYVALUE returns the Ruby VALUE returned by the last @RUBY call.

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4.4.4.155 _SCROLLLOCK

_SCROLLLOCK reports the current ***scroll lock*** state, which can be toggled using the ***scroll lock*** key:

value	*toggled status*
1	**ON**
0	**OFF**

4.4.4.156 _SECOND

_SECOND is the current second (0 - 59).

For the current UTC time, see _UTCSECOND.

4.4.4.157 _SELECTED

_SELECTED returns the first line of text highlighted in the ***Take Command*** tab window. If no text has been highlighted, **_SELECTED** returns an empty string.

4.4.4.158 _SERIALPORTS

_SERIALPORTS returns a space-delimited list of all of the available serial ports (COM1 - COMn). If there are no serial ports on the system, **_SERIALPORTS** returns an empty string.

4.4.4.159 _SERVICE

_SERVICE returns 1 if ***TCC*** was started as a service (TCC /N), or 0 if not.

4.4.4.160 _SHELL

_SHELL is the current shell number. **_SHELL** will return 0 for a primary shell, or 1 (or higher) for a ***TCC*** shell instance started by a parent ***TCC*** process (either directly or via a pipe).

Note that the concept of shell numbers is now mostly obsolete in Windows.

4.4.4.161 _SHIFT

_SHIFT is the status the two ***Shift*** keys:

value	*status of selected key*
1	at least one is depressed
0	neither is depressed

4.4.4.162 _SHORTCUT

_SHORTCUT returns the full pathname of the shortcut file that started this process. If the process was not started from a shortcut, _SHORTCUT returns an empty string.

4.4.4.163 _SHRALIAS

_SHRALIAS returns **1** if SHRALIAS is loaded, **0** if it is not.

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4.4.4.164 _STARTPATH

_STARTPATH returns the startup directory for the current ***TCC*** shell. (This is not necessarily the same as the location of the ***TCC*** executable!)

4.4.4.165 _STARTPID

_STARTPID returns the process ID of the most recent process launched by the START command.

4.4.4.166 _STDIN

_STDIN returns **1** if STDIN points to the console, or **0** if it has been redirected.

4.4.4.167 _STDOUT

_STDOUT returns **1** if STDOUT points to the console, or **0** if it has been redirected.

4.4.4.168 _STDERR

_STDERR returns **1** if STDERR points to the console, or **0** if it has been redirected.

4.4.4.169 _STZN

_STZN returns the name of standard time in the current time zone.

See also _STZO, _TZN, and _TZO.

4.4.4.170 _STZO

_STZO returns the offset in minutes from UTC for standard time in the current time zone.

See also _STZN, _TZN, and _TZO.

4.4.4.171 _SYSERR

_SYSERR returns the error code of the last Windows system error.

See the Windows System Errors table in the Reference section for examples.

4.4.4.172 _TCCINSTANCES

Returns the number of ***TCC*** (version 21 or later) instances currently active.

4.4.4.173 _TCCRT

_TCCRT returns 1 if the current batch file is running in ***TCC RT*** (runtime), or 0 if it is running in ***TCC***.

4.4.4.174 _TCCRUN

_TCCRUN returns the length of time the current ***TCC*** session has been running (as a 64-bit integer, in 100ns increments).

4.4.4.175 _TCCSTART

_TCCSTART returns the time the current ***TCC*** session was started (UTC, as a FILETIME, in 100ns increments).

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4.4.4.176 _TCCVER

_TCCVER returns the current ***TCC*** version (for example, 28). The current Decimal character is used to separate the major and minor version numbers.

See also: _BUILD.

4.4.4.177 _TCEXIT

_TCEXIT returns the full pathname of the TCEXIT.* file, or an empty string if ***TCC*** can't find TCEXIT.

Note that the string returned by _TCEXIT can change before TCEXIT is actually executed. (For example, if you modify the TCMD.INI settings.)

4.4.4.178 _TCFILTER

_TCFILTER returns the current filter in the ***Take Command*** File Explorer window if ***TCC*** is running in a tab window, or an empty string if it is not.

4.4.4.179 _TCFOLDER

_TCFOLDER returns the selected folder in the ***Take Command*** File Explorer window if ***TCC*** is running in a tab window, or an empty string if it is not.

4.4.4.180 _TCLISTVIEW

_TCLISTVIEW returns the selected entries in the ***Take Command*** File Explorer window if ***TCC*** is running in a tab window, or an empty string if it is not.

4.4.4.181 _TCMDINSTANCES

_TCMDINSTANCES returns the current number of ***Take Command*** (version 21 or later) instances.

4.4.4.182 _TCSTART

_TCSTART returns the full pathname of the TCSTART.* file, or an empty string if ***TCC*** didn't find TCSTART.

4.4.4.183 _TCTAB

_TCTAB returns **1** if this ***TCC*** process is running in a ***Take Command*** tab window, or **0** if it is not.

4.4.4.184 _TCTABACTIVE

_TCTABACTIVE returns 1 if this ***TCC*** instance is the active tab in ***Take Command***.

4.4.4.185 _TCTABS

_TCTABS returns the current number of ***Take Command*** tab windows (or 0 if ***TCC*** is not running in ***Take Command***).

4.4.4.186 _TIME

_TIME returns the current system time in the format **hh:mm:ss**. The separator character may vary depending upon your country information.

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4.4.4.187 _TRANSIENT

_TRANSIENT returns **1** if the current shell is transient (started with a **/C**, see Command Line Options for details), or **0** otherwise.

4.4.4.188 _TZN

_TZN returns the name of the current time zone.

See also _STZN, _STZO, and _TZO.

4.4.4.189 _TZO

_TZO returns the offset in minutes from UTC for the current time zone.

See also _STZN, _STZO, and _TZN.

4.4.4.190 _UNICODE

_UNICODE returns **1** if the shell is currently using Unicode for redirected output, **0** otherwise.

4.4.4.191 _USBS

_USBS : Returns a space-delimited list of the USB drives connected to the system.

4.4.4.192 _UTCDATE

_UTCDATE returns the current UTC date in the user's default format.

4.4.4.193 _UTCDATETIME

_UTCDATETIME returns the current UTC date and time.

For the local time, see _DATETIME.

4.4.4.194 _UTCHOUR

_UTCHOUR returns the current UTC hour.

For the local time, see _HOUR.

4.4.4.195 _UTCISODATE

_UTCISODATE returns the current UTC date in ISO format (yyyy-mm-dd).

For the current local date, see _ISODATE.

4.4.4.196 _UTCMINUTE

_UTCMINUTE returns the current UTC minute.

For the current local time, see _UTCMINUTE.

4.4.4.197 _UTCSECOND

_UTCSECOND returns the current UTC second.

For the current local time, see _SECOND.

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4.4.4.198 _UTCTIME

_UTCTIME returns the current UTC time.

See _TIME to retrieve the current local time.

4.4.4.199 _VERMAJOR

_VERMAJOR returns the ***TCC*** major version number (i.e., **28**).

4.4.4.200 _VERMINOR

_VERMINOR returns the ***TCC*** minor version number (the tenths or hundredths digit).

For example, for ***Take Command*** 28.01, _VERMINOR will return **1.**

4.4.4.201 _VERSION

_VERSION returns the ***TCC*** version in *major.minor* format (i.e., **28.0**).

4.4.4.202 _VIRTUALBOX

_VIRTUALBOX returns 1 if ***TCC*** is running inside a VirtualBox virtual machine.

4.4.4.203 _VOLUME

_VOLUME returns the current volume level of the default audio device (0 - 100).

4.4.4.204 _VXPIXELS

_VXPIXELS returns the horizontal size of the virtual screen (including multiple monitors) in pixels.

4.4.4.205 _VYPIXELS

_VYPIXELS returns the vertical size of the virtual screen (including multiple monitors) in pixels.

4.4.4.206 _WINDIR

_WINDIR returns the pathname of the Windows directory.

4.4.4.207 _WINFGWINDOW

_WINFGWINDOW returns the title of the foreground window. (This may or may not be the ***Take Command*** or ***TCC*** console window.)

4.4.4.208 _WINNAME

_WINNAME returns the computer name of the current system.

4.4.4.209 _WINSYSDIR

_WINSYSDIR returns the pathname of the Windows system directory.

4.4.4.210 _WINTICKS

_WINTICKS returns the number of milliseconds since Windows was started.

4.4.4.211 _WINTITLE

_WINTITLE returns the title of the current window.

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4.4.4.212 _WINUSER

_WINUSER returns the name of the user currently logged on.

4.4.4.213 _WINVER

_WINVER returns the current Windows version number. The current Decimal character is used to separate the major and minor version numbers.

4.4.4.214 _WOW64DIR

_WOW64DIR returns the system Wow64 directory (x64 Windows only).

4.4.4.215 _X64

_X64 returns 1 if ***TCC*** is the x64 (64-bit) version running on a 64-bit version of Windows.

4.4.4.216 _XEN

_XEN returns 1 if ***TCC*** is running inside a Xen virtual machine.

4.4.4.217 _XMOUSE

_XMOUSE returns the column position of the most recent left mouse click. (Note that this will only work in a ***Take Command*** tab window, or if you have enabled the console mouse in a stand-alone ***TCC*** session.)

4.4.4.218 _XPIXELS

_XPIXELS returns the number of horizontal pixels on the current physical display.

See also _YPIXELS.

4.4.4.219 _XWINDOW

_XWINDOW returns the width of the ***Take Command*** or ***TCC*** window in pixels.

4.4.4.220 _YEAR

_YEAR returns the current year (1980 to 2099).

4.4.4.221 _YMOUSE

_YMOUSE returns the row position of the most recent left mouse click. (Note that this will only work in a ***Take Command*** tab window, or if you have enabled the console mouse in a stand-alone ***TCC*** session.)

4.4.4.222 _YPIXELS

_YPIXELS returns the number of vertical pixels on the current physical display.

See also _XPIXELS.

4.4.4.223 _YWINDOW

_YWINDOW returns the height of the ***Take Command*** or ***TCC*** window in pixels.

4.4.4.224 ERRORLEVEL

ERRORLEVEL is an alternate name (included for compatibility with CMD) for the ? variable, and is the exit code of the last external command. Many programs return **0** to indicate success and a non-zero value to signal an error. However, not all programs return an exit code. If no explicit exit code is returned, the value of **ERRORLEVEL** is undefined.

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WARNING: For compatibility with CMD, some internal commands, e.g., **DIR**, also set this variable to the same value as the variable _?, which destroys the code from the last external command. If you need to preserve the return value of the external command, save the value in a variable immediately upon command completion, and use the saved variable instead. We also strongly recommend that for internal commands you query the _? variable instead.

See also _?

4.4.5 Functions

Variable functions are very similar to internal variables, but they take one or more parameters (which can be environment variables or even other variable functions).

Variable functions are useful at the command prompt as well as in aliases and batch files to check on available system resources, manipulate strings and numbers, and work with files and filenames.

The variable functions built into ***TCC*** are listed in alphabetical order in subsequent topics. You can also obtain help from the command prompt on any function with a **HELP @functionname** command, or by pressing Ctrl-F1 when the cursor is on the function name. See the HELP command for details.

Note: The FUNCTION command can be used to create, edit, or display user-defined variable functions, and the UNFUNCTION to delete them.

For a list of Variable Functions organized by general categories of use, see Variable Functions by Category.

Syntax

To have either a user-defined or a built-in variable function evaluated, its name must be preceded by a percent sign `%` (**%@EVAL**, **%@LEN**, etc.). All variable functions must have square brackets **[ ]** enclosing their parameter(s), if any. No space is allowed between the function name and the **[**.

Memory Size / Disk Space / File Size Units and Report Format

Some variable functions, such as @DISKFREE, accept an optional parameter ***scale code***. These functions return a size of a disk or of an entity on the disk as a multiple of the specified scale factor from the table below. Lower case letters denote a power of 1,000, upper case letters a power of 1,024.

Code	Scale Factor		Code	Scale Factor		Unit Name
b	1		B	1		byte
k	1,000	10**3	K	1,024	2**10	kilobyte
m	1,000,000	10**6	M	1,048,576	2**20	megabyte
g	1,000,000,000	10**9	G	1,073,741,824	2**30	gigabyte
t	1,000,000,000,000	10**12	T	1,099,511,627,776	2**40	terabyte
p	1,000,000,000,000,000	10**15	P	1,125,899,906,842,624	2**50	petabyte
e	1,000,000,000,000,000,000	10**18	E	1,152,921,504,606,846,976	2**60	exabyte

You can include **commas** (or the thousands separator) in the value returned from a function by appending the letter ***c*** to the scale code. For example, to add commas to a ***b*** (number of bytes) result, enter ***bc*** as the parameter, i.e.:

```
echo %@DISKFREE[C,bc]
```

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Notes

1) Disk manufacturers use the prefixes adopted from the metric system (kilo, mega, giga, tera) in their original meaning (powers of 1,000), while memory manufacturers and Microsoft use the slightly larger powers of 1,024 (2**10).

2) The ***scale code*** is one of the few instances in which ***TCC*** is case sensitive.

Date Parameter Format

See the Date Formats topic.

File Name Parameters

Filenames passed as variable function parameters must be enclosed in double quotes if they contain white space or special characters. Several functions also return filenames or parts of filenames. On LFN drives, the strings returned by these functions may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. For example (either of these methods would work):

```
set fname="%@findfirst[pro*]"
echo First PRO file contains:
type %fname
.....
set fname=%@findfirst[pro*]
echo First PRO file contains:
type "%fname"
.....
```

If you don't use the quotes in the SET or TYPE command in this example, TYPE will not interpret white space or special characters in the name properly.

Drive Letter Parameters

In variable functions which take a drive letter as a parameter, like @DISKFREE or @READY, the drive letter must be followed by a colon. The function will not work properly if you use the drive letter without the colon.

Functions Accessing File Handles

The @FILEREAD, @FILEWRITE, @FILEWRITEB, @FILESEEK, @FILESEEKL, and @FILECLOSE functions allow you to access files based on their file handle. These functions must be used only with file handles returned by @FILEOPEN, unless otherwise noted under the individual functions. If you use them with any other file handle you may damage files.

File Attributes

Several functions accept a file attribute string to help determine which files to process. The rules for constructing the attribute string are the same as the ones for Attribute Switches in commands.

Examples

You can use variable functions in a wide variety of ways depending on your needs. Here are a couple of examples to give you an idea of what's possible:

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The command below sets the prompt to show the amount of free memory (see PROMPT for details on including variable functions in your prompt):

```
prompt (%%@dosmem[K]K) $p$g
```

Set up a simple command line calculator. The calculator is used with a command such as CALC 3 * (4 + 5):

```
alias calc `echo The answer is:  %@eval[%$]`
```

4.4.5.1 Functions by Name

See also Functions by Category.

@ABS	Absolute value of number
@AFSCELL	OpenAFS cell name
@AFSMOUNT	OpenAFS mount point
@AFSPATH	Path in OpenAFS: 1, otherwise 0
@AFSSYMLINK	OpenAFS symbolic link
@AFSVOLID	OpenAFS volume ID
@AFSVOLNAME	OpenAFS volume name
@AGEDATE	Converts an age into date and time
@ALIAS	Value of an alias
@ALTNAME	Short name for the file
@ASCII	Set of ASCII-s for characters in string
@ARRAYINFO	Array variable information
@ASSOC	File association
@ATTRIB	Test or return file attributes
@AVERAGE	Average of a list of numbers

@B64DECODE	Decode Base64 file or string
@B64ENCODE	Encode file or string as Base64
@BALLOC	Allocate a binary buffer
@BFREE	Free a binary buffer
@BPEEK	Read a value from a binary buffer
@BPEEKSTR	Read a string from a binary buffer
@BPOKE	Write a value to a binary buffer
@BPOKESTR	Write a string to a binary buffer
@BREAD	Read from a file to a binary buffer
@BSIZE	Returns the size of a binary buffer
@BTDEVICEADDRESS	The Bluetooth address of the device
@BTDEVICEAUTHENTICATED	Returns 1 if the Bluetooth device has been authenticated
@BTDEVICECLASS	The device class for the Bluetooth device
@BTDEVICECONNECTED	Returns 1 if the Bluetooth device is connected
@BTDEVICELASTSEEN	The last time the Bluetooth device was seen
@BTDEVICELASTUSED	The last time the Bluetooth device was used
@BTDEVICENAME	The name of the Bluetooth device
@BTDEVICEREMEMBERED	Returns 1 if the Bluetooth radio is remembered
@BTRADIOADDRESS	The Bluetooth address of the radio
@BTRADIOCLASS	The device class of the Bluetooth radio
@BTRADIOCONNECTABLE	Returns 1 if the Bluetooth radio accepts connections
@BTRADIODISCOVERABLE	Returns 1 if the Bluetooth radio is discoverable
@BTRADIOMANUFACTURER	The manufacturer of the Bluetooth radio

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@BTRADIONAME	The name of the Bluetooth radio
@BTRADIOSUBVERSION	The radio subversion of the Bluetooth radio
@BTSERVICEADDRESS	The Bluetooth address of the service
@BTSERVICECLASSID	The service class ID (UUID) of the Bluetooth service
@BTSERVICECOMMENT	A comment describing the Bluetooth service
@BTSERVICENAME	The name of the Bluetooth service
@BTSERVICEOTHERCLASSID	A list of other class IDs for the Bluetooth service
@BTSERVICEPORT	The port on which the Bluetooth service is running
@BTSERVICEPROTOCOL	The protocol used by the Bluetooth service
@BWRITE	Write from a binary buffer to a file

@CAPI	Call a _cdecl function in a DLL
@CAPS	Capitalize first character of each word
@CDROM	CD-ROM drive: 1, otherwise 0
@CEILING	Smallest integer not less than a number
@CHAR	Character string, given a set of ASCII-s
@CKSUM	Linux cksum compatible CRC32 checksum
@CLIP	Specified line from clipboard
@CLIPW	Write string to the clipboard
@COLOR	RGB value of a color
@COMMA	Insert commas into a number (thousands separators)
@COMPARE	Two files are identical: 1, otherwise 0
@COMPUTERNAME	Return DNS or NetBIOS name
@CONSOLE	Identify console sessions
@CONSOLEB	Create or restore a console screen buffer
@CONVERT	Convert value from input base to output base
@COUNT	Number of times a character appears in a string
@CRC32	File CRC
@CWD	Current Working Directory of specified drive
@CWDS	Current Working Directory of specified drive, with trailing backslash

@DATE	Convert date to number of days
@DATECONV	Convert date to another format
@DATEFMT	Custom date / time formatting
@DAY	Day of month for date
@DEBUG	Write a string to the debugger
@DEC	Decrement a numeric value by 1
@DECIMAL	Decimal portion of a number
@DESCRIPT	File description
@DEVICE	Character device: 1, otherwise 0
@DIGITS	String is all digits: 1, otherwise 0
@DIRSTACK	Directory stack entry
@DISKFREE	Free disk space
@DISKTOTAL	Total disk space
@DISKUSED	Used disk space
@DOMAIN	Domain name of a computer
@DOW	Short name of day of week for date
@DOWF	Full name of day of week for date
@DOWI	Day of week number for date
@DOY	Day of year for date
@DRIVE	Disk drive for a filename
@DRIVETYPE	Type of a drive
@DRIVETYPEEX	Type of a drive

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@EMAIL	Validate an email address
@ENUMSERVERS	Identify server names on a network
@ENUMSHARES	Identify sharenames on a server
@ERRTEXT	Windows error description
@EVAL	Arithmetic calculations
@EVERYTHING	Call Everything Search
@EXEC	Execute a command and return its exit code
@EXECARRAY	Execute a command and store the results in an array variable
@EXECSTR	Execute a command and return the first output line
@EXETYPE	Application type
@EXPAND	All names that match filename
@EXT	File extension

@FIELD	Extract a field from a string
@FIELDS	Count fields in a string
@FILEAGE	File age (date and time)
@FILEARRAY	Read a file into an array
@FILECLOSE	Close a file handle
@FILEDATE	File date
@FILEHANDLE	Returns the filename for a handle
@FILELOCK	Returns PIDs with a lock on a file
@FILENAME	File name and extension
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file
@FILEREADB	Read bytes from a file
@FILES	Number of files matching a wildcard
@FILESEEK	Move a file handle pointer to specified file position
@FILESEEKL	Move a file handle pointer to a specified line
@FILESIZE	Total size of files matching a wildcard
@FILETIME	File time
@FILETYPE	File encoding type (ASCII, UTF8, UTF16)
@FILEWRITE	Write next line to a file
@FILEWRITEB	Write data to a file
@FILTER	Removes non-matching characters from a string
@FINDCLOSE	Closes the search handle.
@FINDFIRST	Find first matching file
@FINDNEXT	Find next matching file
@FLOOR	Largest integer not larger than a number
@FOLDERS	Number of folders
@FORMAT	Formats data string according to format string
@FONT	Return console font information
@FORMATN	Format a numeric value
@FORMATNC	Format a numeric value and insert the thousands separator(s)
@FSTYPE	File system type (FAT, NTFS, CDFS, etc.)
@FTYPE	Open command string for file type
@FULL	Full file name with path
@FUNCTION	Definition of a function

@GETDATE	Select a date from a calendar
@GETDATETIME	Select a date and/or time from a date picker
@GETDIR	Prompt for a directory name.
@GETFILE	Prompt for a path and file name.

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@GETFOLDER	Folder name from tree view.
@GROUP	User is member of group: 1, otherwise 0

@HEXDECODE	Decode hexadecimal file or string
@HEXENCODE	Encode file or string as hexadecimal
@HISTORY	A line or word from the command history
@HTMLDECODE	Decode an HTML escaped string
@HTMLENCODE	Encode a string for HTML

@IDOW	Short local name of day of week for date
@IDOWF	Full local name of day of week for date
@IF	Evaluates a conditional expression
@INC	Increment a numeric value by 1
@INDEX	Offset of string2 within string1
@INIREAD	Return an entry from an .INI file
@INIWRITE	Write an entry in an .INI file
@INSERT	Inserts string1 into string2
@INODE	File Inode (in hex)
@INSTR	Extract a substring
@INT	Integer part of a number
@IPADDRESS	Returns the numeric IP for a host name
@IPADDRESSN	Address of an adapter
@IPALIASES	Aliases of a host name
@IPBROADCAST	The broadcast address of an adapter
@IPDESC	Description of an adapter
@IPDHCP	DHCP server for an adapter
@IPDHCPENABLED	Returns 1 if the network adapter has DHCP enabled
@IPEXPIRES	Expiration date and time of the network adapter lease
@IPGATEWAY	Gateway for an adapter
@IPIPV6LL	IPv6 link local address of an adapter
@IPIPV6N	IPv6 address of an adapter
@IPNAME	Returns the host name for a numeric IP address
@IPNAMEN	Name of an adapter
@IPOBTAINED	Date and time of the network adapter lease
@IPOTHER	List of alternate addresses for the host
@IPOTHERL	List of other IP addresses leased by an adapter
@IPPHYSICAL	Physical address of an adapter
@IPPORT	Port number for a service
@IPSERVICEALIASES	Aliases for a service
@IPSTATUS	Current status of an adapter
@IPSUBNET	Subnet of an adapter
@IPTYPE	Type of an adapter
@IPWINS	Returns 1 if the adapter is using WINS
@IPWINSSERVER	Primary WINS server for an adapter
@IPWINSSERVER2	Secondary WINS server for an adapter
@IPZONEID	IPv6 Zone ID for an adapter
@ISALNUM	Test for alphanumeric characters
@ISALPHA	Test for alphabetic characters
@ISASCII	Test for ASCII characters
@ISCNTRL	Test for control characters
@ISDIGIT	Test for decimal digits
@ISFLOAT	Returns 1 if the string is a floating point number
@ISLOWER	Returns 1 if the string is only lower-case letters

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@ISODOWI	ISO 8601 numeric day of week
@ISOWEEK	ISO 8601 numeric week of year
@ISOWYEAR	ISO 8601 numeric week date year
@ISPRIME	Test for prime number
@ISPRINT	Test for printable characters
@ISPROC	Returns 1 if the process is active; otherwise 0
@ISPUNCT	Test for punctuation characters
@ISUPPER	Returns 1 if the string is only upper-case letters
@ISSPACE	Test for white space characters
@ISXDIGIT	Test for hexadecimal digits

@JSONCLOSE	Close a JSON file
@JSONENDARRAY	Write the closing bracket of a JSON array
@JSONENDOBJECT	Write the closing brace of a JSON object
@JSONFLUSH	Flush the JSON parser buffers
@JSONHASXPATH	Returns 1 if the XPath exists in the JSON file, 0 otherwise
@JSONINPUT	Parse input string as JSON data
@JSONINSERTPROPERTY	Writes a value of a property at a selected position
@JSONINSERTVALUE	Insert a value at a selected position
@JSONNODES	Returns the number of nodes for the specified path
@JSONOPEN	Open a JSON file
@JSONOUTPUT	Output JSON to string
@JSONPUTNAME	Write the name of a property
@JSONPUTPROPERTY	Writes a property and value
@JSONPUTRAW	Writes a raw JSON fragment
@JSONPUTVALUE	Write the value of a property
@JSONREMOVE	Remove the element or value set in XPath
@JSONRESET	Flush the JSON parser buffer & initialize parser to default state
@JSONSAVE	Save the modified JSON file to the output file
@JSONSETNAME	Set a new name for the element specified by XPath
@JSONSETVALUE	Set a new value for the element specified by XPath
@JSONSTARTARRAY	Write the opening bracket of a JSON array
@JSONSTARTOBJECT	Write the opening brace of a JSON object
@JSONXPATH	JSON XPath query
@JUNCTION	Directory referenced by the junction

@LABEL	Volume label
@LCS	Longest common sequence in two strings
@LEFT	Left end of string
@LEN	Length of a string
@LFN	Long name for a short filename
@LINE	Specified line from a file
@LINES	Count of lines in a file
@LINKS	Number of NTFS hard links for the file
@LOWER	Convert string to lower case
@LTRIM	Left trim specified characters.
@LUA	Execute a Lua expression

@MACADDRESS	MAC address of network interface
@MAKEAGE	Convert date and time to age
@MAKEDATE	Convert number of days to date
@MAKETIME	Convert number of seconds to time

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@MAX	Largest integer in the list
@MD5	MD5 hash of a string or file
@MIN	Smallest integer in the list
@MONTH	Month for date
@MX	Email server for the specified user address

@NAME	File name without path or extension
@NUMERIC	Test if a string is numeric

@OPTION	Current configuration option value
@OWNER	Return file owner

@PARSE	Parse the command line for switches
@PATH	File path without name
@PERL	Evaluate a Perl expression
@PID	PID for the specified process name
@PIDCOMMAND	Return startup command line for the specified process
@PIDUSER	Return user name for a PID
@PING	Response time from a host
@PLUGIN	Full pathname for plugin
@PLUGINVER	Plugin version number (major.minor.build)
@PPID	PID for the parent of the specified process
@PRIME	Generate a prime number
@PRIORITY	Priority class for the specified process
@PROCESSIO	Process I/O information
@PROCESSTIME	Process times (start, end, kernel mode, user mode)
@PSHELL	Evaluate a PowerShell expression
@PUNYDECODE	Decode a Punycode string or file
@PUNYENCODE	Encode a Punycode string or file
@PYTHON	Evaluate a Python expression

@QPDECODE	Decode using Quote-Printable MIME format
@QPENCODE	Encode using Quote-Printable MIME format
@QUOTE	Double quote the argument if necessary

@RANDOM	Generate a random integer
@READSCR	Read characters from the screen
@READY	Drive ready: 1, otherwise 0
@REGBREAD	Read a registry value to a binary buffer
@REGBWRITE	Write a registry value from a binary buffer
@REGCOPYKEY	Recursively copy a registry key to a new location
@REGCREATE	Create registry subkey
@REGDELKEY	Delete a registry key and its subkeys
@REGEX	Match a regular expression
@REGEXINDEX	Return the offset of a regular expression match
@REGEXIST	Test if a registry key exists
@REGEXSUB	Return nth matching regular expression group
@REGQUERY	Read value from registry
@REGSET	Write value to registry
@REGSETENV	Write value to registry and broadcast change.
@REGTYPE	Return type of registry variable
@REMOTE	Remote (network) drive: 1, otherwise 0
@REMOVABLE	Removable drive: 1, otherwise 0

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@REPEAT	Repeat a character
@REPLACE	Replace string1 with string2 in text
@REREPLACE	Regular expression back reference substitution
@REVERSE	Reverse a string
@REXX	Value of executing an expression by REXX
@RIGHT	Right end of string.
@RTRIM	Removes specified trailing characters.
@RUBY	Evaluate a Ruby expression

@SCRIPT	Evaluate expression in an active scripting engine.
@SEARCH	Path search
@SELECT	Menu selection from file
@SELECTARRAY	Menu selection from array variable
@SERIAL	Serial number of a disk
@SERIALHW	Hardware serial number of a disk
@SERIALPORTCLOSE	Close the serial port
@SERIALPORTFLUSH	Flush the serial port buffer
@SERIALPORTOPEN	Open a serial port
@SERIALPORTREAD	Read the serial port buffer
@SERIALPORTWRITE	Write a string to the serial port buffer
@SERVER	Query server information
@SERVICE	Query service information
@SFN	Short name for a long filename
@SHA1	SHA1 checksum for the file
@SHA256	SHA2-256 checksum for the file
@SHA384	SHA2-384 checksum for the file
@SHA512	SHA2-512 checksum for the file
@SHFOLDER	Get Windows folder locations
@SIMILAR	Compare two strings for similarity
@SMCLOSE	Close a shared memory handle
@SMOPEN	Return a handle to shared memory
@SMPEEK	Read a value from shared memory
@SMPOKE	Write a value to shared memory
@SMREAD	Read a string from shared memory
@SMWRITE	Write a string to shared memory
@SNAPSHOT	Save a window or desktop as a BMP
@STRIP	Strips all characters in char from string
@SUBST	Substitute a string within another string
@SUBSTR	Extract a substring
@SUMMARY	Query or set the NTFS SummaryInformation stream
@SYMLINK	Target of a symbolic link
@SYSTEMTIME	System idle, kernel, or user time

@TALNUM	Number of alphanumeric characters in a string
@TALPHA	Number of alphabetic characters in a string
@TARCFILE	Compressed name of a file in a tar archive
@TARCOUNT	Number of files in a tar archive
@TARDFILE	Uncompressed name of a file in a tar archive
@TARFILEDATE	Date and time of a file in a tar archive
@TARFILESIZE	Size of a file in a tar archive
@TASCII	Number of 7-bit ASCII characters in a string
@TCL	Evaluate a Tcl expression
@TCNTRL	Number of ASCII control characters in a string

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@TDIGIT	Number of digits (0-9) in a string
@TIME	Convert a time of day to number of seconds
@TIMER	Get split time from timer.
@TK	Evaluate a Tk (Tcl) script or expression
@TLOWER	Number of lower case characters in a string
@TPRINT	Number of printable characters in a string
@TPUNC	Number of punctuation characters in a string
@TRIM	Remove leading & trailing blanks from a string
@TRIMALL	Remove leading, trailing, and extra internal blanks from a string
@TRUENAME	Find true name of a file
@TRUNCATE	Truncate file at current position
@TSPACE	Number of white space characters in a string
@TUPPER	Number of upper case characters in a string
@TXDIGIT	Number of hexadecimal digits in a string

@UNC	UNC name of a file
@UNICODE	Numeric UNICODE value for a character
@UNIQUE	Create file with unique name
@UNQCLOSE	Close a UnQlite database
@UNQDELETE	Delete a key/value pair from a UnQlite database
@UNQKVB	Add a key/binary blob value pair to a UnQlite database
@UNQKVBA	Append a binary blob to the value of an existing UnQlite key/value pair
@UNQKVF	Add a key/file value pair to a UnQlite database
@UNQKVFA	Append a file to the value of an existing UnQlite key/value pair
@UNQKVS	Add a key/value pair to a UnQlite database
@UNQKVSA	Append a string to the value of an existing UnQlite key/value pair
@UNQOPEN	Open a UnQlite database
@UNQREADB	Read a binary value from a UnQlite database
@UNQREADF	Read a value from a UnQlite database and write it to a file
@UNQREADS	Read a string value from a UnQlite database
@UNQUOTE	Remove double quotes from a filename
@UNQUOTES	Remove leading and trailing double quotes
@UPPER	Convert string to upper case
@URLDECODE	Decode an URL string
@URLENCODE	Encode an URL string
@USB	If drive is USB : 1, else 0
@UTF8DECODE	Decode a UTF8 file or string
@UTF8ENCODE	Encode a file or string as UTF8
@UUDECODE	Decode a UU Encoded file
@UUENCODE	Encode a file as UU Encoded
@UUID	Returns a UUID (GUID)

@VARTYPE	Return the variable type
@VERINFO	Executable file version information
@VERSION	Returns a versioned replacement for a filename

@WATTRIB	Test or return file attributes
@WILD	Compares strings using wildcards
@WINAPI	Call a Windows API function
@WINCLASS	Title of first window with class name
@WINCLIENTSIZE	Client window size
@WINEXENAME	Executable name for window
@WININFO	Current system information

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@WINMEMORY	Windows memory information
@WINMETRICS	Windows system metrics
@WINPATH	Convert WSL filename to Windows
@WINPID	Process ID for a window
@WINPOS	Window position
@WINSIZE	Window size
@WINSTATE	Current state of window
@WINSYSTEM	Set/get windows system parameters
@WMI	Query WMI
@WORD	Extract a word from a string
@WORDS	Count words in a string
@WORKGROUP	Workgroup name of a computer
@WSLPATH	Convert Windows filename to WSL

@XMLCLOSE	Close an XML file previously opened by @XMLOPEN
@XMLENDELEMENT	Write the closing tab of an XML element
@XMLFLUSH	Flush the XML parser buffers
@XMLGETATTR	Return the value of the specified attribute
@XMLHASXPATH	Return 1 if the XPath exists in the XML file, 0 otherwise
@XMLINPUT	Parse input string as XML data
@XMLNODES	Return the number of nodes (children) for the specified path in an XML file
@XMLOPEN	Open an XML file for use by @XMLXPATH and/or @XMLNODES
@XMLOUTPUT	Output XML to a string
@XMLPUTATTR	Write an XML attribute
@XMLPUTCDATA	Write an XML CDATA block
@XMLPUTCOMMENT	Write an XML comment block
@XMLPUTELEMENT	Write a simple XML element with no attributes and a value
@XMLPUTSTRING	Write text inside an XML element
@XMLREMOVECHILDREN	Removes the children of the element at the specified path
@XMLREMOVEELEMENT	Removes the element and its children at the specified XPath
@XMLRESET	Flush the XML parser buffers and initialize parser to default state
@XMLSAVE	Save the modified XML document
@XMLSTARTELEMENT	Write the opening tab of a new XML element
@XMLXPATH	Return text of XML element

@YDECODE	Decode a Y Encoded file or string
@YEAR	Year for date
@YENCODE	Encode a file or string as Y Encoded

@ZIPCFILE	The compressed name of a file in a zip archive
@ZIPCOMMENT	The comment for a zip archive
@ZIPCOUNT	The number of files in a zip archive
@ZIPDFILE	The decompressed name of a file in a zip archive
@ZIPFILECOMMENT	The comment (description) of a file in a zip archive
@ZIPFILECRC	The CRC of a file in a zip archive
@ZIPFILEDATE	The date and time of a file in a zip archive
@ZIPCFILESIZE	The compressed size of a file in a zip archive
@ZIPDFILESIZE	The decompressed size of a file in a zip archive

4.4.5.2 Functions by Category

See also Functions by Name.

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This list gives a one-line description of all built-in Variable Functions, and a cross reference which selects a separate help topic on that function where you will find the detailed syntax and description. You can also obtain help on any function with a **HELP @functionname** command at the prompt or by pressing Ctrl-F1 when the cursor is on the function name. See the HELP command for details

- Binary buffers
- Compression
- Dates and times
- Drives and devices
- File content
- File names
- File properties
- Input dialog boxes
- Network properties
- Numbers and arithmetic
- Strings and characters
- System status
- Utility

Note: many functions have functionality that covers several categories.

System status

@ASSOC	File association for the extension
@CLIP	Specified line from clipboard
@CLIPW	Write string to the clipboard
@COMPUTERNAME	DNS or NetBIOS name for the local computer
@CONSOLE	Identify console sessions
@CONSOLEB	Create or restore console screen buffers
@ERRTEXT	Windows error description
@FTYPE	Open command string for the file type
@ISPROC	Returns 1 if a process is active; otherwise 0
@PID	Process ID for the process name
@PIDCOMMAND	Startup command line for a process
@PIDUSER	User name for a PID
@PPID	Process ID of the parent of the specified process
@PRIORITY	Priority class for a process
@PROCESSIO	Process I/O information
@PROCESSTIME	Process times (start, end, kernel mode, user mode)
@READSCR	Read characters from the screen
@REGBREAD	Read registry value into a binary buffer
@REGBWRITE	Write registry value from a binary buffer
@REGCOPYKEY	Recursively copy a registry key to a new location
@REGCREATE	Create registry subkey
@REGDELKEY	Delete a registry key and its subkeys
@REGEXIST	Test if a registry key exists
@REGQUERY	Read value from registry
@REGSET	Write value to registry
@REGSETENV	Write value to registry and broadcast change.
@REGTYPE	Type of registry variable
@SERIALPORTCLOSE	Close the serial port
@SERIALPORTFLUSH	Flush the serial port buffer
@SERIALPORTOPEN	Open a serial port
@SERIALPORTREAD	Read the serial port buffer
@SERIALPORTWRITE	Write a string to the serial port buffer
@SYSTEMTIME	System times (idle, kernel, and user)
@VARTYPE	Returns the variable type
@WINCLASS	Title of first window with classname
@WINCLIENTSIZE	Client window size
@WINEXENAME	Executable name for window

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@WININFO	Current system information
@WINMEMORY	Windows memory information
@WINMETRICS	Windows system metrics
@WINPID	Process ID for window
@WINPOS	Window position
@WINSIZE	Window size
@WINSTATE	Current state of window
@WINSYSTEM	Set/get windows system parameters
@WINTITLE	Window title of PID

Directories, drives and devices

@CDROM	CD-ROM drive: 1, otherwise 0
@CWD	Current Working Directory of specified drive
@CWDS	Current Working Directory of specified drive, with trailing backslash
@DEVICE	Character device: 1, otherwise 0
@DISKFREE	Free disk space
@DISKTOTAL	Total disk space
@DRIVE	Disk drive for filename
@DISKUSED	Used disk space
@DRIVETYPE	Type of drive (hard drive, CD-ROM, etc.)
@DRIVETYPEEX	Type of drive (hard drive, CD-ROM, etc.)
@FSTYPE	File system type (FAT, NTFS, CDFS, etc.)
@JUNCTION	Directory referenced by the junction
@LABEL	Volume label
@READY	Drive ready: 1, otherwise 0
@REMOTE	Remote (network) drive: 1, otherwise 0
@REMOVABLE	Removable drive: 1, otherwise 0
@SERIAL	Serial number of a disk
@SERIALHW	Hardware serial number of a disk
@SHFOLDER	Windows folder locations
@SYMLINK	Target of a symbolic link
@USB	Drive is USB : 1, else 0

File content

@B64DECODE	Decode a Base64 file or string
@B64ENCODE	Encode a file or string as Base64
@CKSUM	Linux cksum-compatible CRC32
@COMPARE	Compare two files
@CRC32	File CRC
@FILEARRAY	Read a file into an array
@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file
@FILEREADB	Read bytes from a file
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILETYPE	Returns the file encoding (ASCII, UTF8, UTF16)
@FILEWRITE	Write next line to a file
@FILEWRITEB	Write data to a file handle
@HEXDECODE	Decode a hexadecimal file or string
@HEXENCODE	Encode a file or string as hexadecimal

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@INIREAD	Return an entry from an .INI file
@INIWRITE	Write an entry in an .INI file
@INODE	Inode value for a file
@LINE	Specified line from a file
@LINES	Count lines in a file
@LINKS	Number of NTFS hard links for a file
@MD5	MD5 hash of a string or file
@PUNYDECODE	Decode a Punycode string or file
@PUNYENCODE	Encode a Punycode string or file
@QPDECODE	Decode using Quote-Printable MIME format
@QPENCODE	Encode using Quote-Printable MIME format
@SHA1	SHA1 checksum for a file
@SHA256	SHA2-256 checksum for a file
@SHA384	SHA2-384 checksum for a file
@SHA512	SHA2-512 checksum for a file
@SUMMARY	NTFS SummaryInformation stream for a file
@TRUNCATE	Truncate file at current position
@UTF8DECODE	Decode a UTF8 file or string
@UTF8ENCODE	Encode a file or string as UTF8
@UUDECODE	Decode a UU Encoded file
@UUENCODE	Encode a file as UU Encoded
@VERINFO	Executable file version information
@YDECODE	Decode a Y Encoded file or string
@YENCODE	Encode a file or string as Y Encoded

File names

@ALTNAME	Short name for the file.
@DRIVE	Disk drive for a filename
@EXPAND	All names that match filename
@EXT	File extension
@FILEHANDLE	Filename for a handle
@FILENAME	File name and extension
@FULL	Full file name with path
@LFN	Long name for a short filename
@NAME	File name without path or extension
@PATH	File path without name
@QUOTE	Double quote a filename
@SFN	Short name for a long filename
@SEARCH	Path search
@TRUENAME	True name of a file
@UNC	UNC name of a file
@UNIQUE	Create file with unique name
@UNQUOTE	Remove double quotes from a filename
@UNQUOTES	Remove leading and trailing double quotes
@VERSION	Returns a versioned filename
@WINPATH	Convert WSL filename to Windows
@WSLPATH	Convert Windows filename to WSL

File properties

@ATTRIB	Test or return file attributes
@DESCRIPT	File description

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@EVERYTHING	Call Everything Search
@EXETYPE	Application type
@FILEAGE	File age (date and time)
@FILEDATE	File date
@FILELOCK	Return PIDs with a lock on the file
@FILES	Number of files matching a wildcard
@FILESIZE	Total size of files matching a wildcard
@FILETIME	File time
@FILETYPE	Returns the file encoding (ASCII, UTF8, UTF16)
@FINDCLOSE	Closes the search handle.
@FINDFIRST	Find first matching file
@FINDNEXT	Find next matching file
@INODE	Inode value for a file
@LINKS	Number of NTFS hard links for a file
@OWNER	File owner
@SEARCH	Path search
@SUMMARY	NTFS SummaryInformation stream for a file
@TRUENAME	True name for a file
@UNIQUE	Create file with unique name
@VERINFO	Executable file version information
@WATTRIB	Test or return file attributes

Strings and characters

@ASCII	List of ASCII-s for characters in string
@CAPS	Capitalize first character of each word
@CHAR	Character string, given a set of ASCII-s
@COUNT	Counts occurrences of a character in a string
@EMAIL	Validate an email address
@EXECARRAY	Execute a command and store the results in an array variable
@EXECSTR	Execute a command and return the output line
@FIELD	Extract a field from a string
@FIELDS	Count fields in a string
@FILTER	Removes non-matching characters from a string
@FORMAT	Formats data string according to format string
@HTMLDECODE	Decode an HTML string
@HTMLENCODE	Encode a string for HTML
@INDEX	Offset of string2 within string1
@INSERT	Insert string1 into string2
@INSTR	Extract a substring
@ISALNUM	Test for alphanumeric characters
@ISALPHA	Test for alphabetic characters
@ISASCII	Test for ASCII characters
@ISCNTRL	Test for control characters
@ISDIGIT	Test for decimal digits
@ISFLOAT	Returns 1 if the string is a floating point number
@ISLOWER	Returns 1 if the string is all lower case
@ISPRINT	Test for printable characters
@ISPUNCT	Test for punctuation characters
@ISSPACE	Test for white space characters
@ISUPPER	Returns 1 if the string is all upper case
@ISXDIGIT	Test for hexadecimal digits
@LCS	Longest common sequence in two strings

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@LEFT	Left end of string
@LEN	Length of a string
@LOWER	Convert string to lower case
@LTRIM	Trims specified leading characters.
@MD5	MD5 hash of a string or file
@MX	Email server for a user address
@PARSE	Parse the command line for switches
@QUOTE	Double quote a string
@REGEX	Return a Regular Expression test
@REGEXINDEX	Return the offset of a regular expression match
@REGEXSUB	Return the nth matching group of a regular expression test
@REPEAT	Repeat a character
@REPLACE	Replace string1 with string2 in text
@REREPLACE	Regular expression back reference substitution
@REVERSE	Reverse a string
@RIGHT	Right end of string
@RTRIM	Trims specified trailing characters.
@SIMILAR	Test similarity between two strings
@STRIP	Strips all characters in char from string
@SUBST	Substitute a string within another string
@SUBSTR	Older version of @INSTR to extract a substring
@TALNUM	Number of alphanumeric characters in a string
@TALPHA	Number of alphabetic characters in a string
@TASCII	Number of 7-bit ASCII characters in a string
@TCNTRL	Number of ASCII control characters in a string
@TDIGIT	Number of digits (0-9) in a string
@TLOWER	Number of lower case characters in a string
@TPRINT	Number of printable characters in a string
@TPUNCT	Number of punctuation characters in a string
@TRIM	Remove leading and trailing blanks from a string
@TRIMALL	Removing leading, trailing, and extra internal blanks from a string
@TSPACE	Number of white space characters in a string
@TUPPER	Number of upper case characters in a string
@TXDIGIT	Number of hexadecimal digits in a string
@UNICODE	List of UNICODEs for characters in string
@UNQUOTE	Remove double quotes from a string
@UNQUOTES	Remove leading and trailing double quotes
@UPPER	Convert string to upper case
@URLDECODE	Decode an URL string
@URLENCODE	Encode an URL string
@WILD	Compares strings using wildcards
@WORD	Extract a word from a string
@WORDS	Count words in a string

Binary buffers and shared memory

@BALLOC	Allocate a binary buffer
@BFREE	Free a binary buffer
@BPEEK	Read a value from a binary buffer
@BPEEKSTR	Read a string from a binary buffer
@BPOKE	Write a value to a binary buffer
@BPOKESTR	Write a string to a binary buffer
@BREAD	Read from a file to a binary buffer

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@BSIZE	Returns the size of the binary buffer
@BWRITE	Write from a binary buffer to a file
@SMCLOSE	Close a handle to shared memory
@SMOPEN	Open a handle to shared memory
@SMPEEK	Read a value from shared memory
@SMPOKE	Write a value to shared memory
@SMREAD	Read a string from shared memory
@SMWRITE	Write a string to shared memory

Numbers and arithmetic

@ABS	Absolute value of n
@AVERAGE	Average of a list
@CEILING	Smallest integer not less than n
@COMMA	Insert commas (thousands separators) into a numeric string
@CONVERT	Convert value from input base to output base
@DEC	Decrement a numeric value by 1
@DECIMAL	Decimal fraction portion of a number
@DIGITS	Tests if string is all digits
@EVAL	Arithmetic calculations
@FORMATN	Format a numeric value
@FORMATNC	Format a numeric value and insert thousands separators
@FLOOR	Largest integer not larger than n
@INC	Increment a numeric value by 1
@INT	Integer part of a number
@ISPRIME	Test if a number is a prime
@MAX	Largest integer in the list
@MIN	Smallest integer in the list
@NUMERIC	Test if a string is numeric
@PRIME	Generate a prime number
@RANDOM	Generate a random integer

Dates and times

@AGEDATE	Converts an age into date and time
@DAY	Day of month for date
@DATE	Convert date to number of days
@DATECONV	Convert date formats
@DATEFMT	Custom date / time formatting
@DOW	Short name of day of week for date
@DOWF	Full name of day of week
@DOWI	Day of week as integer
@DOY	Day of year for date
@GETDATE	Select a date from a calendar
@GETDATETIME	Select a date and/or time from a date picker
@IDOW	Short localized name of day of week for date
@IDOWF	Full localized name of day of week for date
@ISODOWI	ISO 8601 numeric day of week
@ISOWEEK	ISO 8601 numeric week of year
@ISOWYEAR	ISO 8601 numeric week date year
@MAKEAGE	Convert date and time to age
@MAKEDATE	Convert number of days to date
@MAKETIME	Convert number of seconds to time

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@MONTH	Month in specified date
@TIME	Convert time to number of seconds
@YEAR	Year for date

Input dialog boxes

@GETDIR	Prompt for a directory name.
@GETFILE	Prompt for a path and file name.
@GETFOLDER	Folder name from tree view.
@SELECT	Menu selection

Network properties

@AFSCELL	OpenAFS cell name for a path
@AFSMOUNT	OpenAFS mount point for a path
@AFSPATH	Path is in OpenAFS: 1, otherwise 0
@AFSSYMLINK	OpenAFS symbolic link for a path
@AFSVOLID	OpenAFS volume ID for a path
@AFSVOLNAME	OpenAFS volume name for a path
@BTDEVICEADDRESS	The Bluetooth address of the device
@BTDEVICEAUTHENTICATED	Returns 1 if the Bluetooth device is authenticated
@BTDEVICECLASS	The device class for the Bluetooth device
@BTDEVICECONNECTED	Returns 1 if the Bluetooth device is connected
@BTDEVICELASTSEEN	The last time the Bluetooth device was seen
@BTDEVICELASTUSED	The last time the Bluetooth device was used
@BTDEVICENAME	The name of the Bluetooth device
@BTDEVICEREMEMBERED	Returns 1 if the Bluetooth radio is remembered
@BTRADIOADDRESS	The Bluetooth address of the radio
@BTRADIOCLASS	The device class of the Bluetooth radio
@BTRADIOCONNECTABLE	Returns 1 if the Bluetooth radio accepts connections
@BTRADIODISCOVERABLE	Returns 1 if the Bluetooth radio is discoverable
@BTRADIOMANUFACTURER	The manufacturer of the Bluetooth radio
@BTRADIONAME	The name of the Bluetooth radio
@BTRADIOSUBVERSION	The radio subversion of the Bluetooth radio
@BTSERVICEADDRESS	The Bluetooth address of the service
@BTSERVICECLASSID	The service class ID (UUID) of the Bluetooth service
@BTSERVICECOMMENT	A comment describing the Bluetooth service
@BTSERVICENAME	The name of the Bluetooth service
@BTSERVICEOTHERCLASSID	A list of other class IDs for the Bluetooth service
@BTSERVICEPORT	The port on which the Bluetooth service is running
@BTSERVICEPROTOCOL	The protocol used by the Bluetooth service
@DOMAIN	Domain name of a computer
@ENUMSERVERS	Identify server names on a network
@ENUMSHARES	Identify sharenames on a server
@GROUP	User is member of group: 1, otherwise 0
@IPADDRESS	Returns the numeric IP for a host name
@IPADDRESSN	Address of an adapter
@IPALIASES	Aliases of a host name
@IPBROADCAST	The broadcast address of an adapter
@IPDESC	Description of an adapter
@IPDHCP	DHCP server for an adapter
@IPDHCPENABLED	Returns 1 if the network adapter has DHCP enabled
@IPEXPIRES	Expiration date and time of the network adapter lease

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@IPGATEWAY	Gateway for an adapter
@IPIPV6LL	IPv6 link local address of an adapter
@IPIPV6N	IPv6 address of an adapter
@IPNAME	Returns the host name for a numeric IP address
@IPNAMEN	Name of an adapter
@IPOBTAINED	Date and time of the network adapter lease
@IPOTHER	List of alternate addresses for the host
@IPOTHERL	List of other IP addresses leased by an adapter
@IPPHYSICAL	Physical address of an adapter
@IPPORT	Port number for a service
@IPSERVICEALIASES	Aliases for a service
@IPSTATUS	Current status of an adapter
@IPSUBNET	Subnet of an adapter
@IPTYPE	Type of an adapter
@IPWINS	Returns 1 if the adapter is using WINS
@IPWINSSERVER	Primary WINS server for an adapter
@IPWINSSERVER2	Secondary WINS server for an adapter
@IPZONEID	IPv6 Zone ID for an adapter

JSON Parsing

@JSONCLOSE	Close a JSON file
@JSONENDARRAY	Write the closing bracket of a JSON array
@JSONENDOBJECT	Write the closing brace of a JSON object
@JSONFLUSH	Flush the JSON parser buffers
@JSONHASXPATH	Returns 1 if the XPath exists in the JSON file, 0 otherwise
@JSONINPUT	Parse input string as JSON data
@JSONINSERTPROPERTY	Writes a value of a property at a selected position
@JSONINSERTVALUE	Insert a value at a selected position
@JSONNODES	Returns the number of nodes for the specified path
@JSONOPEN	Open a JSON file
@JSONOUTPUT	Output JSON to a string after processing
@JSONPUTNAME	Write the name of a property
@JSONPUTPROPERTY	Write a property and value
@JSONPUTRAW	Write a raw JSON fragment
@JSONPUTVALUE	Write the value of a property
@JSONREMOVE	Remove the element or value set in XPath
@JSONRESET	Flush the JSON parser buffer & initialize parser to default state
@JSONSAVE	Save the modified JSON file to the output file
@JSONSETNAME	Set a new name for the element specified by XPath
@JSONSETVALUE	Set a new value for the element specified by XPath
@JSONSTARTARRAY	Write the opening bracket of a JSON array
@JSONSTARTOBJECT	Write the opening brace of a JSON object
@JSONXPATH	JSON XPath query

XML Parsing

@XMLCLOSE	Close an XML file previously opened by @XMLOPEN
@XMLENDELEMENT	Write the closing tab of an XML element
@XMLFLUSH	Flush the XML parser buffers
@XMLGETATTR	Return the value of the specified attribute
@XMLHASXPATH	Return 1 if the XPath exists in the XML file, 0 otherwise

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@XMLINPUT	Parse input string as XML data
@XMLNODES	Return the number of nodes (children) for the specified path in an XML file
@XMLOPEN	Open an XML file for use by @XMLXPATH and/or @XMLNODES
@XMLOUTPUT	Output XML to a string after processing
@XMLPUTATTR	Write an XML attribute
@XMLPUTCDATA	Write an XML CDATA block
@XMLPUTCOMMENT	Write an XML comment block
@XMLPUTELEMENT	Write a simple XML element with no attributes and a value
@XMLPUTSTRING	Write text inside an XML element
@XMLREMOVECHILDREN	Removes the children of the element at the specified path
@XMLREMOVEELEMENT	Removes the element and its children at the specified XPath
@XMLRESET	Flush the XML parser buffers and initialize parser to default state
@XMLSAVE	Save the modified XML document
@XMLSTARTELEMENT	Write the opening tab of a new XML element
@XMLXPATH	Return text of XML element

Utility

@ALIAS	Value of an alias
@ARRAYINFO	Array variable information
@CAPI	Call a _cdecl function in a DLL
@CLIP	Specified line from clipboard
@CLIPW	Write string to the clipboard
@COLOR	RGB value of a color
@DEBUG	Write a string to the debugger
@DIRSTACK	Display directory stack entry
@ERRTEXT	Windows error description
@EXEC	Execute a command, returns its exit code
@EXECSTR	Execute a command, returns its first output line
@FONT	Console font information
@FUNCTION	Definition of a function
@IF	Value dependent on a conditional expression
@LUA	Execute a Lua expression
@OPTION	Current configuration option value
@PERL	Evaluate a Perl expression
@PLUGIN	Full pathname for plugin
@PLUGINVER	Plugin version number
@PSHELL	Execute a Powershell expression
@READSCR	Read characters from the screen
@REXX	Evaluate a REXX expression
@SCRIPT	Evaluate expression in active scripting engine
@SELECT	Menu selection from file
@SELECTARRAY	Menu selection from array variable
@SERVICE	Query service information
@SNAPSHOT	Save a window or the desktop to a BMP
@TCL	Execute a Tcl/tk command
@TIMER	Get split time from timer.
@TK	Execute a Tk script or expression
@UNQCLOSE	Close a UnQlite database
@UNQDELETE	Delete a key/value pair from a UnQlite database
@UNQKVB	Add a key/binary blob value pair to a UnQlite database

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@UNQKVBA	Append a binary blob to the value of an existing UnQlite key/value pair
@UNQKVF	Add a key/file value pair to a UnQlite database
@UNQKVFA	Append a file to the value of an existing UnQlite key/value pair
@UNQKVS	Add a key/value pair to a UnQlite database
@UNQKVSA	Append a string to the value of an existing UnQlite key/value pair
@UNQOPEN	Open a UnQlite database
@UNQREADB	Read a binary value from a UnQlite database
@UNQREADF	Read a file value from a UnQlite database
@UNQREADS	Read a string value from a UnQlite database
@UUID	Create a UUID / GUID
@WINAPI	Call a Windows API function
@WMI	Query WMI

Compression and Decompression

@TARCOUNT	The number of files in a .tar archive
@TARCFILE	The compressed name of a file in a .tar archive
@TARDFILE	The decompressed name of a file in a .tar archive
@TARFILEDATE	The date and time of a file in a .tar archive
@TARFILESIZE	The (uncompressed) size of a file in a .tar archive
@ZIPCOUNT	The number of files in a .zip archive
@ZIPCOMMENT	The comment text for a .zip archive
@ZIPCFILE	The compressed name of a file in a .zip archive
@ZIPDFILE	The decompressed name of a file in a .zip archive
@ZIPFILECOMMENT	The comment (description) of a file in a .zip archive
@ZIPFILECRC	The CRC of a file in a .zip archive
@ZIPFILEDATE	The date and time of a file in a .zip archive
@ZIPCFILESIZE	The compressed size of a file in a .zip archive
@ZIPDFILESIZE	The decompressed size of a file in a .zip archive

4.4.5.3 Date Display Formats

All functions which ***return*** a date accept an **optional code** to specify the desired format of the date value:

Code	Date Format	Description
0 or none	***see below***	system default
1	`mm/dd/yy`	USA
2	`dd/mm/yy`	European
3	`yy/mm/dd`	Japanese
4	`yyyy-mm-dd`	ISO 8601
5	`yyyy-Www-d`	ISO 8601
6	`yyyy-ddd`	ISO 8601

Field Order

For codes **1...6** the field order is as shown above. For code **0** the field order will also be one of those shown above. ***TCC*** determines which field is reported first by Windows in a short date, and selects the order from the table above with the same first field. All other aspects of the Windows short date format are ignored,

Field Width

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Month and day are always 2 digits. Year is 2 digits for codes **1**, **2** and **3**, and 4 digits for codes **4**, **5,** and **6**. For code **0** the year is 4 digits if it is the first field returned, and 2 digits if it is the last one.

Field Separator

Codes **4**, **5,** and **6** (ISO 8601) uses a hyphen as the separator character. For the other formats, the default Windows date separator is returned.

4.4.5.4 @ABS

@ABS[*n***]** : Returns the absolute value of the number ***n.***

Examples:

```
echo %@abs[-1]
1

echo %@abs[123]
123
```

4.4.5.5 @AFSCELL

@AFSCELL[*path***]** : Returns the OpenAFS cell name for the path.

See http://www.openafs.org for more information on OpenAFS.

4.4.5.6 @AFSMOUNT

@AFSMOUNT[*path***]** : Returns the OpenAFS mount point for the pathname.

See http://www.openafs.org for more information on OpenAFS.

4.4.5.7 @AFSPATH

@AFSPATH[*path***]** : Returns 1 if the path is in the OpenAFS file system.

See http://www.openafs.org for more information on OpenAFS.

4.4.5.8 @AFSSYMLINK

@AFSSYMLINK[*path***]** : Returns the OpenAFS symbolic link for the path.

See http://www.openafs.org for more information on OpenAFS.

4.4.5.9 @AFSVOLID

@AFSVOLID[*path***]** : Returns the OpenAFS volume ID for the path.

See http://www.openafs.org for more information on OpenAFS.

4.4.5.10 @AFSVOLNAME

@AFSVOLNAME[*path***]** : Returns the OpenAFS volume name for the path.

See http://www.openafs.org for more information on OpenAFS.

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4.4.5.11 @AGEDATE

@AGEDATE[*n[,d]***]** : Converts an age ***n*** into a date and time pair, formatted according to the current country settings, or as explicitly specified by ***d*** (see Date Display Formats). The time is separated from the date by a comma, and is always in 24-hour format, displayed with 1 ms precision, as the examples show. The conversion does not take leap seconds into account.

Example:

```
for /l %n in (1,1,6) echo %n %@agedate[128551146920835000,%n]

1 05-13-08,01:11:32.083
2 13-05-08,01:11:32.083
3 08-05-13,01:11:32.083
4 2008-05-13,01:11:32.083
5 2008-W20-2,01:11:32.083
6 2008-134,01:11:32.083
```

See also: Time Stamps, @FILEAGE and @MAKEAGE.

4.4.5.12 @ALIAS

@ALIAS[*name***]** : Returns the contents of the specified alias as a string, or a null string if the alias doesn't exist.

When manipulating strings returned by @ALIAS you may need to disable certain special characters with SETDOS /X. Otherwise, command separators, redirection characters, and other similar characters in the alias may be interpreted as part of the current command, rather than part of a simple text string.

Examples:

```
alias xyz=d:\path\myprog.exe -options
echo %@alias[xyz]
d:\path\myprog.exe -options
```

4.4.5.13 @ALTNAME

@ALTNAME[*filename***]** : Returns the alternate (short, "8.3" FAT-format) name for the specified file. If the ***filename*** is already in 8.3 format, returns the filename. If the file does not exist, returns an empty string. If ***filename*** contains a \, @ALTNAME returns the SFN of the full path.

Examples:

```
echo %@altname["Long Name.exe"]
LONGNA~1.EXE

echo %@altname["C:\Program Files\Microsoft Office"]
C:\PROGRA~1\MICROS~4

echo %@altname["%CommonProgramFiles"]
C:\PROGRA~1\COMMON~1
```

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4.4.5.14 @ARRAYINFO

@ARRAYINFO[*arrayname,option*] : Returns information about the specified array.

arrayname - name of the array (defined by SETARRAY) to query

option - the type of information:

0 - total number of dimensions
1 - number of elements in the first dimension
2 - number of elements in the second dimension
3 - number of elements in the third dimension
4 - number of elements in the fourth dimension
5 - total number of elements

@ARRAYINFO will return -1 if the array doesn't exist.

Examples:

```
setarray array[5,10]
echo %@arrayinfo[array,0]
2

echo %@arrayinfo[array,2]
10
```

4.4.5.15 @ASCII

@ASCII[*string***]** : Returns the space separated list of ASCII values of the characters in ***string***. You can use the Escape character before a special character, e.g., a quote or greater than (>) sign, to include it in ***string***.

Note: The @UNICODE function will generally return more useful values.

Examples:

function	***value***
%@ascii[a]	97
%@ascii[A]	65
%@ascii[^`]	96
%@ascii[abc]	97 98 99

See also: ASCII, Key Codes and Key Names.

4.4.5.16 @ASSOC

@ASSOC[*.ext[,u]***]** : Returns the file association for the specified extension. If the optional second argument ***u*** is specified, @ASSOC will look in HKCU\SOFTWARE\CLASSES.

Example:

```
echo %@assoc[.doc]
Word.Document.8
```

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4.4.5.17 @ATTRIB

@ATTRIB[*filename[,-rhsadecijlopt[,p]]***]** : If you do not specify any attributes, @ATTRIB returns the attributes of the specified file in the format **RHSADECIJNOFTVPU**, rather than **0** or **1**. If two or more parameters are specified, @ATTRIB returns a **1** if the specified file has all the matching attribute(s); otherwise it returns a **0**. If the optional third argument **,p** is included (partial match), then @ATTRIB will return **1** if any of the attributes match

The basic attributes for FAT volumes are:

N Normal (no attributes set)
R Read-only
A Archive
H Hidden
S System
D Directory

In addition, NTFS volumes allow display of the following extended attributes:

E Encrypted
C Compressed
F Sparse file
I Not content-indexed
J Junction or symbolic link
L Junction or symbolic link
N Normal
O Offline
P Pinned
T Temporary
U Unpinned
V Virtualized

The extended attributes are displayed when @ATTRIB is invoked with a single parameter, but they cannot be specified when querying files (two or more parameters). To query files based on the extended attributes, see @WATTRIB.

Attributes which are not set will be replaced with an underscore. For example, if *SECURE.DAT* has the read-only, hidden, and archive attributes set, **%@ATTRIB[SECURE.DAT]** would return `RH_A__________`. If the file does not exist, @ATTRIB returns an empty string.

The attributes (other than **N**) can be combined (for example %@ATTRIB[MYFILE,HS]). For example, **%@ATTRIB[MYFILE,HS,p]** will return **1** if *MYFILE* has the hidden, system, or both attributes. Without **,p** the function will return **1** only if *MYFILE* has both attributes.

Filename must be in quotes if it contains white space or special characters.

See also: @WATTRIB, Attributes Switches and the ATTRIB command.

Examples:

```
echo %@attrib["C:\Program Files\My Program\myfile.exe",rhs,p]

echo Attributes for myfile.exe: %@attrib[myfile.exe]
```

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4.4.5.18 @AVERAGE

@AVERAGE[...**]** : Returns the average of a list of numbers. The average is returned as a double; you can adjust the decimal precision by running the result through @EVAL (or @INT).

Example:

```
echo %@average[1 3 6 8 10 13 15]
8.0
```

4.4.5.19 @B64DECODE

@B64DECODE[s,*string***]** : Decode a Base64 string (MIME encoding format). Returns the decoded string.
@B64DECODE[*inputfile,outputfile***]** : Decode a Base64 file (MIME encoding format). Returns 0 if the output file was successfully written.

See also: @B64ENCODE

Example:

```
echo %@b64decode[s,dGhpcyBpcyBhIHN0cmluZw==]
this is a string

echo %@b64decode[data.file.b64,date.file]
```

4.4.5.20 @B64ENCODE

@B64ENCODE[s,*string***]** : Encode a base 64 string (MIME encoding format). Returns the encoded string
@B64ENCODE[*inputfile,outputfile***]** : Encode a base 64 file (MIME encoding format). Returns 0 if the output file was successfully written.

Example:

```
echo %@b64encode[s,this is a string]
dGhpcyBpcyBhIHN0cmluZw==

echo %@b64encode[data.file,date.file.b64]
```

4.4.5.21 @BALLOC

@BALLOC[*size*] : Allocate a buffer for binary operations. @BALLOC returns a handle to the buffer, which must be used for the subsequent binary functions. The only limit on the number and size of binary buffers is the amount of virtual memory available.

Example:

```
set handle=%@balloc[128]
echo %handle
5d4f280
```

4.4.5.22 @BFREE

@BFREE[*handle*] : Free a binary buffer previously allocated by @BALLOC.

Example:

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```
set handle=%@balloc[128]
echo %@bfree[%handle]
```

4.4.5.23 @BPEEK

@BPEEK[*handle,offset,size*] : Read a value from a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value to read (in bytes):

1 - character
2 - short
4 - int
8 - int64

Example:

```
set handle=%@balloc[128]
set value=%@bpeek[%handle,0,4]
```

4.4.5.24 @BPEEKSTR

@BPEEKSTR[*handle,offset,type,length*] : Read a string from a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer (decimal or hex)

type - the string type:

a - ASCII
u - Unicode

length - the maximum number of characters to read (decimal or hex)

Example:

```
set handle=%@balloc[128]
set value=%@bpeekstr[%handle,0,a]
```

4.4.5.25 @BPOKE

@BPOKE[*handle,offset,size,value*] : Write a value to a binary buffer.

handle - a binary handle from **@BALLOC**

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value (in bytes):

1 - character

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2 - short
4 - int
8 - int64

value - the value to poke

@BPOKE returns 0 on success.

Example:

```
set handle=%@balloc[128]
set value=%@bpoke[%handle,0,4,1234]
```

4.4.5.26 @BPOKESTR

@BPOKESTR[*handle,offset,type,string*] : Write a string to a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer (decimal or hex)

type - the type of the string to write:

a - ASCII
u - Unicode

string - the string to poke. Strings will always be terminated by a null byte (ASCII) or word (Unicode).

@BPOKESTR returns 0 on success.

Example:

```
set handle=%@balloc[128]
set value=%@bpokestr[%handle,0,a,string value]
```

4.4.5.27 @BREAD

@BREAD[*handle,offset,filehandle,fileoffset,length*] : Read from a file to a binary buffer.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer (decimal or hex)

filehandle - a file handle opened for reading (from @FILEOPEN)

fileoffset - the read offset (from the current file position) (decimal or hex)

length - number of bytes to read (decimal or hex)

@BREAD returns the number of bytes actually read.

Example:

```
set fhandle=%@fileopen[filename,r]
set bhandle=%@balloc[128]
set value=%@bread[%bhandle,0,%fhandle,0,32]
```

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4.4.5.28 @BSIZE

@BSIZE[*handle*] : Returns the size of a binary buffer allocated with @BALLOC.

Example:

```
set handle=%@balloc[128]
echo @bsize[%handle]
128
```

4.4.5.29 @BTDEVICEADDRESS

@BTDEVICEADDRESS[n] : The Bluetooth address of the device whose index is n. (Indexes range from 0 to _btdevicecount.)

See also _BTDEVICECOUNT.

Example:

```
echo %@btdeviceaddress[0]
04:52:C7:25:47:13
```

4.4.5.30 @BTDEVICEAUTHENTICATED

@BTDEVICEAUTHENTICATED[n] : Returns 1 if the Bluetooth device whose index is *n* is authenticated; otherwise it returns 0. Indexes range from 0 to %_btdevicecount.

Example:

```
echo %@btdeviceauthenticated[0]
0
```

4.4.5.31 @BTDEVICECLASS

@BTDEVICECLASS[n] : Returns the device class for the Bluetooth device whose index is *n*. Indexes range from 0 to %_btdevicecount.

Example:

```
echo %@btdeviceclass[0]
```

4.4.5.32 @BTDEVICECONNECTED

@BTDEVICECONNECTED[n] : Returns 1 if the Bluetooth device whose index is *n* is connected; otherwise it returns 0. Indexes range from 0 to %_btdevicecount.

Example:

```
echo %@btdeviceconnected[0]
```

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4.4.5.33 @BTDEVICELASTSEEN

@BTDEVICELASTSEEN[n] : Returns the last time the Bluetooth device whose index is *n* was seen. Indexes range from 0 to %_btdevicecount. The format of the date is "mm/dd/yyyy hh:mm:ss".

Example:

```
echo %@btdevicelastseen[0]
06/12/2021 15:22:40
```

4.4.5.34 @BTDEVICELASTUSED

@BTDEVICELASTUSED[n] : Returns the last time the Bluetooth device whose index is *n* was used. Indexes range from 0 to %_btdevicecount. The format of the date is "mm/dd/yyyy hh:mm:ss".

Example:

```
echo %@btdevicelastused[0]
06/12/2021 15:22:40
```

4.4.5.35 @BTDEVICENAME

@BTDEVICENAME[n] : Returns the name of the Bluetooth device whose index is *n*. Indexes range from 0 to %_btdevicecount.

Example:

```
echo %@btdevicename[0]
```

4.4.5.36 @BTDEVICEREMEMBERED

@BTDEVICEREMEMBERED[n] : Returns 1 if the Bluetooth device whose index is *n* is a remembered device; otherwise it returns 0. Indexes range from 0 to %_btdevicecount.

Example:

```
echo %@btdeviceremembered[0]
0
```

4.4.5.37 @BTRADIOADDRESS

@BTRADIOADDRESS[n] : Returns the address of the Bluetooth radio whose index is *n* is discoverable. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradioaddress[0]
00:E0:4C:70:3A:03
```

4.4.5.38 @BTRADIOCLASS

@BTRADIOCLASS[n] : Returns the device class of the Bluetooth radio whose index is *n* is discoverable. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradioclass[0]
2752772
```

4.4.5.39 @BTRADIOCONNECTABLE

@BTRADIOCONNECTABLE[n] : Returns 1 if the Bluetooth radio whose index is *n* accepts incoming connections; otherwise returns 0. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradioconnectable[0]
1
```

4.4.5.40 @BTRADIODISCOVERABLE

@BTRADIODISCOVERABLE[n] : Returns 1 if the Bluetooth radio whose index is *n* is discoverable; otherwise returns 0. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradiodiscoverable[0]
1
```

4.4.5.41 @BTRADIOMANUFACTURER

@BTRADIOMANUFACTURER[n] : Returns the manufacturer of the Bluetooth radio whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradiomanufacturer[0]
93
```

4.4.5.42 @BTRADIONAME

@BTRADIONAME[n] : Returns the name of the Bluetooth radio whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradioname[0]
MSI-PC
```

4.4.5.43 @BTRADIOSUBVERSION

@BTRADIOSUBVERSION[n] : Returns the subversion of the Bluetooth radio whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btradiosubversion[0]
25805
```

4.4.5.44 @BTSERVICEADDRESS

@BTSERVICEADDRESS[n] : Returns the address of the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

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Example:

```
echo %@btserviceaddress[0]
```

4.4.5.45 @BTSERVICECLASSID

@BTSERVICECLASSID[n] : Returns the service class ID (UUID) of the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btserviceclassid[0]
```

4.4.5.46 @BTSERVICECOMMENT

@BTSERVICECOMMENT[n] : Returns a comment describing the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btservicecomment[0]
```

4.4.5.47 @BTSERVICENAME

@BTSERVICENAME[n] : Returns the name of the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btservicename[0]
```

4.4.5.48 @BTSERVICEOTHERCLASSID

@BTSERVICEOTHERCLASSID[n] : Returns a list of other class IDs used by the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btserviceotherclassid[0]
```

4.4.5.49 @BTSERVICEPORT

@BTSERVICEPORT[n] : Returns the port used by the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

```
echo %@btserviceport[0]
```

4.4.5.50 @BTSERVICEPROTOCOL

@BTSERVICEPROTOCOL[n] : Returns the protocol used by the Bluetooth service whose index is *n*. (Indexes range from 0 to _btdevicecount.)

Example:

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```
echo %@btserviceprotocol[0]
```

4.4.5.51 @BWRITE

@BWRITE[*handle,offset,filehandle,fileoffset,length*] : Write from a binary buffer to a file.

handle - a binary handle from @BALLOC

offset - the byte offset in the buffer (decimal or hex)

filehandle - a file handle opened for writing (from @FILEOPEN)

fileoffset - the write offset (from the current file position) (decimal or hex)

length - the number of bytes to write (decimal or hex)

@BWRITE returns the number of bytes written

Example:

```
set fhandle=%@fileopen[filename,w]
set bhandle=%@balloc[128]
set value=%@bwrite[%bhandle,0,%fhandle,0,32]
```

4.4.5.52 @CAPI

@CAPI[module,function[,integer | PINT=n | PLONG=n | PDWORD=n | NULL | BUFFER | "string"]**]** : Returns the result of calling a function with a _cdecl type in a DLL.

module - name of the DLL containing the function

function - function name (case sensitive)

integer - an integer value to pass to the function

PINT - a pointer to the integer ***n***

PLONG - a pointer to the long integer ***n***

PDWORD - a pointer to the DWORD ***n***

NULL - a null pointer (0)

BUFFER - @CAPI will pass an address for an internal buffer for the API to return a Unicode string value.

aBUFFER - @CAPI will pass an address for an internal buffer for the API to return an ASCII string value.

"**string**" - text argument (this must be enclosed in double quotes). If the argument is preceded by an 'a' (i.e., a"Argument") then it is converted from Unicode to ASCII before calling the API. (Some Windows APIs only accept ASCII arguments.)

@CAPI supports a maximum of 8 arguments. The return value is either a string value returned by the API (if BUFFER or aBUFFER is specified), or the integer value returned by the API. The function must be

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defined as _cdecl. If @CAPI can't find the specified function, it will append a "W" (for the Unicode version) to the function name and try again.

See also @WINAPI.

4.4.5.53 @CAPS

@CAPS[*["xxx"],text***]** : Capitalizes the first letter of each word in the string (words that do not start with a letter remain unchanged). The optional first parameter, ***xxx***, specifies the separators that you wish to use. The list must be enclosed in double quotes. If you want to use a double quote as a separator, prefix it with the Escape Character.

Examples:

```
echo %@caps[" ",i love take command]
I Love Take Command

echo %@caps[",",peter,paul,mary]
Peter,Paul,Mary

echo %@caps[" ^"","sacrebleu!", he said]
"Sacrebleu!", He Said
```

4.4.5.54 @CDROM

@CDROM[*d:***]** : Returns **1** if the drive is an optical drive (CD-ROM, CD-RW, DVD, etc) or **0** otherwise. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @CDROM will expand the filename to get the drive.

Examples:

```
echo %@cdrom[C:]
0

echo %@cdrom[G:]
1
```

4.4.5.55 @CEILING

@CEILING[*n***]** : Returns the value of the smallest integer that is not less than ***n.*** @CEILING will perform an implicit @EVAL on its argument, so you can enter an arithmetic expression.

Examples:

```
echo %@ceiling[3.14]
4

echo %@ceiling[-3.14]
-3

echo %@ceiling[0]
0
```

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```
echo %@ceiling[123*37.36]
4596
```

See also: @FLOOR.

4.4.5.56 @CHAR

@CHAR[*n***]** : Returns the character corresponding to a Unicode numeric value. If the parameter is a set of numeric values, CHAR returns a string. For example %@CHAR[65] returns A; %@CHAR[65 66 67] returns ABC.

To display the non-ASCII Unicode characters (>= 128), you need to be using a Unicode font in ***Take Command*** and/or ***TCC***.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Note: Not all characters are printable. High ASCII characters (128-255) and Unicode characters may vary depending on the font used.

Examples:

```
echo %@char[65]
A

echo %@char[65 97 66 98 67 99]
AaBbCc
```

4.4.5.57 @CKSUM

@CKSUM[*filename***] :** Returns a checksum matching the Unix / Linux cksum utility (Posix 100.32 decimal format).

Example:

```
echo %@cksum[tcc.exe]
2233279932
```

4.4.5.58 @CLIP

@CLIP[*n***]** : Returns line ***n*** from the Windows text clipboard. The first line is numbered 0. The string ****EOC**** is returned for all line numbers beyond the end of the clipboard.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Examples:

```
echo %@clip[0]

if "%@clip[2]" eq "**EOC**" echo No more data in the clipboard
```

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4.4.5.59 @CLIPW

@CLIPW[*string*] : Writes the ***string*** to the Windows text clipboard. Returns **0** if the operation was successful.

Examples:

```
if "%@clipw[save this line]" eq "0" echo Saved to the clipboard
Saved to the clipboard
```

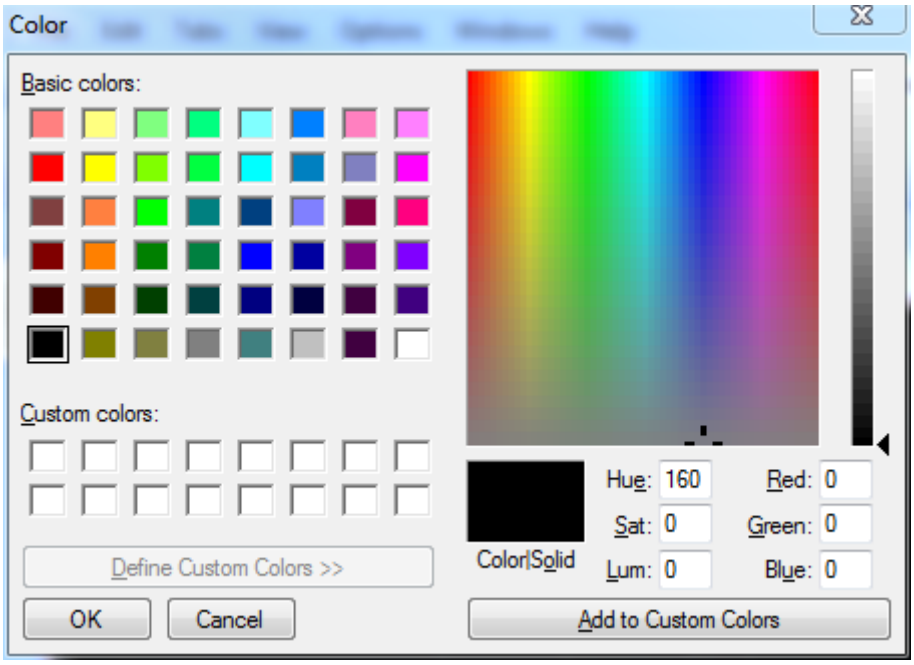
4.4.5.60 @COLOR

@COLOR[r,g,b] : Displays the Windows color common dialog and returns the RGB value for the selected color as a string in the form **r,g,b** (e.g. **0,128,64**). To specify the initially selected color, use the **r** (red), **g** (green) and **b** (blue) parameters. If no parameters are provided, the initial selection will be black (**0,0,0**). The parameters are optional, but if one is used all three must be used.

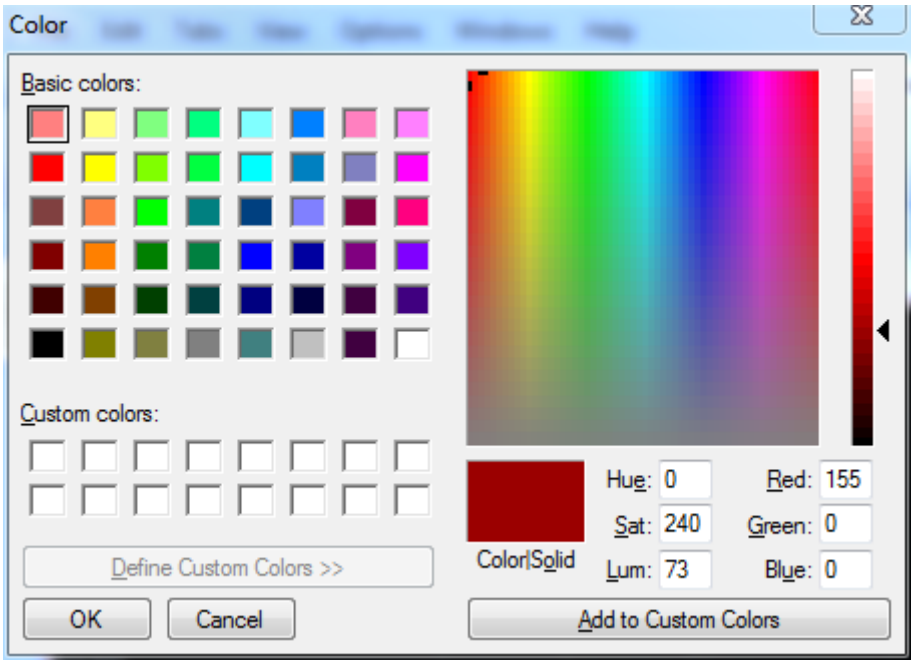
Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Examples:

```
echo %@color[]
```




```
echo %@color[155,0,0]
```



4.4.5.61 @COMMA

@COMMA[*n*] : Returns the number with commas (or the appropriate Thousands character for your current country setting) inserted where appropriate.

Note: Some variable functions can directly generate a numeric result with appropriate thousand separators if you add a ***c*** to their scale parameter.

Examples:

```
echo %@comma[12345678]
12,345,678

echo %@comma[0.12345678]
0.12345678

echo %@comma[%_xpixels]
1,920
```

See also: @CONVERT, @FORMAT, @FORMATN.

4.4.5.62 @COMPARE

@COMPARE[*file1,file2*] : Returns **1** if the two files are identical, or **0** if they differ. @COMPARE supports FTP or HTTP filenames for either *file1* or *file2*, but cannot compare two FTP or HTTP files.

Example:

```
echo %@compare["c:\windows\system32\cmd.exe","c:\windows\syswow64\cmd.exe"]
0
```

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4.4.5.63 @COMPUTERNAME

@COMPUTERNAME[*n*] - Returns a DNS or NetBIOS name associated with the local computer. The names are created at startup time. The type of name to be retrieved is specified by *n*:

0 The NetBIOS name of the local computer or the cluster associated with the local computer
1 The DNS name of the local computer or the cluster associated with the local computer
2 The name of the DNS domain assigned to the local computer or the cluster associated with the local computer.DNS
3 The fully qualified DNS name that uniquely identifies the local computer or the cluster associated with the local computer
4 The NetBIOS name of the local computer
5 The DNS host name of the local computer
6 The name of the DNS domain assigned to the local computer
7 The fully qualified DNS name that uniquely identifies the computer

Examples:

```
echo %computername[0]
MSI-PC
```

4.4.5.64 @CONSOLE

@CONSOLE[*title***]** : Returns **1** if the specified window title belongs to a console window; **0** if it does not. The ***title*** may include wildcards.

Example:

```
echo %@console[TCC Prompt]
1
```

4.4.5.65 @CONSOLEB

@CONSOLEB[*handle*] - create or restore a console screen buffer. "Handle" is the handle to the desired screen buffer. If "handle is -1, @CONSOLEB just returns the current buffer handle. If "handle" is 0, @CONSOLEB will create and activate a new console screen buffer. If "handle" is non-zero, @CONSOLEB will switch to that screen buffer. @CONSOLEB returns the handle to the active screen buffer. You can close an console handle with the @FILECLOSE function.

@CONSOLEB allows you to preserve the contents of the current screen buffer by switching to a second buffer temporarily and and then back to the original buffer.

Examples:

```
echo %@consoleb[-1]
760

echo %@consoleb[0]
1532

echo %@consoleb[760]
```

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4.4.5.66 @CONVERT

@CONVERT[*input, output, value***]** : Returns a numeric string ***value*** converted from one number base (***input***) to another (***output***). Valid bases range from 2 to 36. The ***value*** can be between 0 and 2**64-1. No error is returned if ***value*** is outside that range.

Examples:

```
echo binary 1010101 is decimal %@convert[2,10,1010101]
binary 1010101 is decimal 85

echo decimal 20 is hex %@convert[10,16,20]
decimal 20 is hex 14

echo hexadecimal FF is octal %@convert[16,8,FF]
hexadecimal FF is octal 377

echo this year is %@convert[10,2,%_year] in binary
this year is 11111011100 in binary
```

See also: @COMMA, @FORMAT, @FORMATN.

4.4.5.67 @COUNT

@COUNT[*c,string***]** : Returns the number of times the character ***c*** appears in ***string***.

Examples:

```
echo %@count[e,Another function example]
3
```

4.4.5.68 @CRC32

String mode: **@CRC32[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@CRC32[***[d,][f,]filename[,start*[,*length*]]**]**
Binary mode: **@CRC32[***[b,]handle[,start*[,*length*]]**]**

Returns the CRC32 value (using the same algorithm as PKZIP or WINZIP) of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer.

If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included. If the first argument is a ***b***, the ***filename*** argument should be the handle returned by @BALLOC.

If the first argument for file mode is a ***d***, @CRC32 will return the result in decimal (base 10) format. (This is the same format as POSIX 1003.2.) Otherwise, the result is returned in hexadecimal format.

Filename may be specified with or without an optional ***f***. @CRC32 returns **-1** if the file does not exist, or it cannot be read.

Since ***Take Command*** handles all internal strings as Unicode, @CRC32 will return different results for a string and the identical string in an ASCII file.

See also: @SHA256, @SHA384, @SHA512, and @MD5..

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Examples:

```
echo %@crc32["C:\windows\explorer.exe"]
3F1E7CFE

echo %@crc32["%comspec"]
F36EB74C

echo %@crc32[d,"%comspec"]
4084119372
```

4.4.5.69 @CWD

@CWD[*d:*] : Returns the current working directory of the specified disk drive in the format *d:\pathname*. If the current working directory is the root directory, the format is *d:*. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @CWD will expand the filename to get the drive.

Examples:

```
echo %@cwd[C:]
c:\Windows

echo %@cwd[%_disk:]
D:\release\version14
```

See also: @CWDS.

4.4.5.70 @CWDS

@CWDS[*d:*] : Returns the current working directory of the specified disk drive in the format *d:\pathname*. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @CWDS will expand the filename to get the drive.

Examples:

```
echo %@cwds[C:]
c:\Windows\

echo %@cwds[%_disk:]
D:\release\version17\
```

See also: @CWD.

4.4.5.71 @DATE

@DATE[*date[,format]*] : Returns the number of days since January 1, 1980 for the specified date. See date formats for information on acceptable date formats. ***Date*** must be between 1980-01-01 and 2099-12-31 (inclusive).

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@DATE accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

If you don't supply any argument(s), @DATE defaults to using the current date.

Examples:

```
echo %@date[01-01-2012]
11688

echo %@date[2012-01-01,4]
11688

echo %@date[%_date]
11814
```

4.4.5.72 @DATECONV

@DATECONV[*date,format*] - convert a date from the default format to another format. The output formats are:

0 system default
1 USA (mm/dd/yy)
2 European (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO 8601 (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Example:

```
echo %@dateconv[5-1-2012,4]
2012-05-01
```

4.4.5.73 @DATEFMT

@DATEFMT[*date,format*] - Formats a date/time in a custom format.

date - The date to format (in yyyy-mm-dd hh:mm:ss format). If *date* is *, @DATEFMT defaults to the current date/time. Valid dates are January 1, 1970 (1970-1-1) to December 31, 3000 (3000-12-31). The time must be in 24-hour format. If you omit the time, @DATEFMT will format to 00:00:00.

format - The custom format to use. (Note that the %'s will normally need to be doubled or escaped to prevent TCC from expanding them before @DATEFMT sees them.) The formatting options are:

Code	Replacement string
%a	Abbreviated weekday name in the locale

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%A	Full weekday name in the locale
%b	Abbreviated month name in the locale
%B	Full month name in the locale
%c	Date and time representation in the "C Locale" - equivalent to `"%a %b %e %T %Y"`
%C	The year divided by 100 and truncated to an integer, as a decimal number (00−99)
%d	Day of month as a decimal number (01 - 31)
%D	Equivalent to **%m/%d/%y**
%e	Day of month as a decimal number (1 - 31), where single digits are preceded by a space
%F	Equivalent to **%Y-%m-%d**
%g	The last 2 digits of the ISO 8601 week-based year (00 - 99)
%G	The ISO 8601 week-based year as a decimal number
%h	Abbreviated month name (equivalent to **%b**)
%H	Hour in 24-hour format (00 - 23)
%I	Hour in 12-hour format (01 - 12)
%j	Day of the year as a decimal number (001 - 366)
%m	Month as a decimal number (01 - 12)
%M	Minute as a decimal number (00 - 59)
%n	A newline character (**\n**)
%p	The locale's A.M./P.M. indicator for 12-hour clock
%r	The locale's 12-hour clock time
%R	Equivalent to **%H:%M**
%S	Second as a decimal number (00 - 59)
%t	A horizontal tab character (**\t**)
%T	Equivalent to **%H:%M:%S**, the ISO 8601 time format
%u	ISO 8601 weekday as a decimal number (1 - 7; Monday is 1)
%U	Week number of the year as a decimal number (00 - 53), where the first Sunday is the first day of week 1
%V	ISO 8601 week number as a decimal number (00 - 53)
%w	Weekday as a decimal number (0 - 6; Sunday is 0)
%W	Week number of the year as a decimal number (00 - 53), where the first Monday is the first day of week 1
%x	Date representation for the locale
%X	Time representation for the locale
%y	Year without century, as decimal number (00 - 99)
%Y	Year with century, as decimal number
%z	The offset from UTC in ISO 8601 format; no characters if time zone is unknown
%Z	Either the locale's time-zone name or time zone abbreviation, depending on registry settings; no characters if time zone is unknown
%%	Percent sign

Characters that do not begin with a % are displayed unchanged.

The **#** flag may prefix any formatting code. In that case, the meaning of the format code is changed as follows:

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Format code	Meaning
%#a, **%#A**, **%#b**, **%#B**, **%#g**, **%#G**, **%#h**, **%#n**, **%#p**, **%#t**, **%#u**, **%#w**, **%#X**, **%#z**, **%#Z**, **%#%**	**#** flag is ignored.
%#c	Long date and time representation, appropriate for the locale. For example: "Tuesday, February 25, 2020, 12:41:29".
%#x	Long date representation, appropriate to the locale. For example: "Tuesday, February 25, 2020".
%#d, **%#D**, **%#e**, **%#F**, **%#H**, **%#I**, **%#j**, **%#m**, **%#M**, **%#r**, **%#R**, **%#S**, **%#T**, **%#U**, **%#V**, **%#W**, **%#y**, **%#Y**	Remove leading zeros or spaces (if any).

The ISO 8601 week and week-based year produced by **%V**, **%g**, and **%G**, uses a week that begins on Monday, where week 1 is the week that contains January 4th, which is the first week that includes at least four days of the year. If the first Monday of the year is the 2nd, 3rd, or 4th, the preceding days are part of the last week of the preceding year. For those days, **%V** is replaced by 53, and both **%g** and **%G** are replaced by the digits of the preceding year.

4.4.5.74 @DAY

@DAY[*date[,format]***]** : Returns the numeric day of the month for the specified date. See date formats for information on acceptable date formats.

@DAY accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Examples:

```
echo %@day[2012-01-01]
1

echo %@day[%_date]
6
```

4.4.5.75 @DEBUG

@DEBUG[*string***]** : Write a string to the system debugger.

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4.4.5.76 @DEC

@DEC[*string***] :** Returns :

- **-1** if ***string*** is empty
- otherwise the same value as @EVAL[*string* - 1]

If ***string*** is the name of an environment variable, its value is used whether or not it is preceded by a percent sign `%` without modifying the value of the variable. To actually decrement the value of the variable **var** use:

```
set var=%@dec[%var]
```

Example:

```
set start=5
set result=%@dec[start]
echo %result
4
```

4.4.5.77 @DECIMAL

@DECIMAL[*number***]**: Returns the portion of ***number*** to the right of the Decimal character as an integer numeric string. Trailing zeros are used to pad to the Minimum Precision specified for @EVAL. For example:

```
%@decimal[%@eval[1/2]]
```

is **5** if minimum width is 0, and **50000** if minimum width is 5.

@DECIMAL will perform an implicit @EVAL on its argument, so you can enter an arithmetic expression (including the @EVAL =min,max format string following the argument).

Examples:

function	***value***
`%@decimal[1234]`	**0**
`%@decimal[1.234]`	**234**
`%@decimal[12.34]`	**34**

4.4.5.78 @DESCRIPT

@DESCRIPT[*filename***]**: Returns the file description for the specified filename (see DESCRIBE). If there is no description for the file, @DESCRIPT returns an empty string.

The ***filename*** must be in quotes if it contains white space or special characters.

Examples:

```
echo %@descript["D:\My Path\Myfile.exe"]

echo %@descript["%comspec"]
```

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4.4.5.79 @DEVICE

@DEVICE[*name***]** : Returns **1** if the specified name is a character device (such as a serial port), or **0** if not. A trailing **:** is optional except for the pseudo-device CLIP: (to differentiate it from a possible filename named "clip").

Examples:

```
echo %@device[%comspec]
0

echo %@device[lpt1]
1

echo %@device[com1]
1

echo %@device[com5]
0

echo %@device[clip]
0

echo %@device[clip:]
1
```

4.4.5.80 @DIGITS

@DIGITS[*n***]**: Returns **1** if the string is composed of decimal digits only, otherwise it returns **0.** The Decimal character, the Thousands character, and the sign characters (+ or -) are not digits, and if they are present in the string @DIGITS will return **0**.

Examples:

```
echo %@digits[12345]
1

echo %@digits[-12345]
0

echo %@digits[1.2345]
0
```

4.4.5.81 @DIRSTACK

@DIRSTACK[*n***]** : Returns the name of the ***n***th entry in the directory stack. The oldest is number 0. If no ***n*** parameter is specified, returns the total number of entries in the stack. The directory stack is set by calls to PUSHD / POPD.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

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See also: DIRS, POPD, PUSHD and Directory Navigation.

Examples:

```
pushd c:\windows
pushd c:\windows\system32
echo %@dirstack[0]
C:\

echo %@dirstack[1]
C:\Windows

echo %@dirstack[]
2
```

4.4.5.82 @DISKFREE

@DISKFREE[*d:[,scale[c]]]* : Returns the amount of free disk space on the specified drive. If you're specifying a drive, the drive letter must be followed by a colon. Optionally, you can specify a directory or UNC name, and @DISKFREE will display the free disk space on the drive referenced by that name (which may be different from the drive if the directory is a link to a directory on another drive).

The optional second parameter specifies the reporting scale (see Memory Size / Disk Space / File Size Units and Report Format). If the scale specification is suffixed with ***c*** the result will be formatted using the thousands separator.

@DISKFREE supports OpenAFS names.

See also: @DISKTOTAL and @DISKUSED.

Examples:

```
echo %@diskfree[c:]
19941240832

echo %@diskfree[%_disk:,Kc]
503,709,632
```

4.4.5.83 @DISKTOTAL

@DISKTOTAL[*d:[,scale[c]]***]** : Returns the total disk space on the specified drive. If you're specifying a drive, the drive letter must be followed by a colon. Optionally, you can specify a directory or UNC name, and @DISKTOTAL will display the total disk space on the drive referenced by that name (which may be different from the drive if the directory is a link to a directory on another drive).

The optional second parameter specifies the reporting scale (see Memory Size / Disk Space / File Size Units and Report Format). If the scale specification is suffixed with ***c*** the result will be formatted using the thousands separator.

@DISKTOTAL supports OpenAFS names.

See also: @DISKFREE and @DISKUSED.

Examples:

```
echo %@disktotal[c:]
120031539200

echo %@disktotal[%_disk:,Kc]
976,657,404
```

4.4.5.84 @DISKUSED

@DISKUSED[*d:[,scale[c]]***]** : Returns the amount of disk space in use on the specified drive. If you're specifying a drive, the drive letter must be followed by a colon. Optionally, you can specify a directory or UNC name, and @DISKUSED will display the disk space in use on the drive referenced by that name (which may be different from the drive if the directory is a link to a directory on another drive).

The optional second parameter specifies the reporting scale (see Memory Size / Disk Space / File Size Units and Report Format). If the scale specification is suffixed with ***c*** the result will be formatted using the thousands separator.

@DISKUSED supports OpenAFS names.

See also: @DISKFREE and @DISKTOTAL.

Examples:

```
echo %@diskused[c:]
100090298368

echo %@diskused[%_disk:,Kc]
472,947,772
```

4.4.5.85 @DOMAIN

@DOMAIN[*name***] :** Returns the domain of the computer specified by the DNS or NetBios ***name***. If ***name*** is not specified, returns the domain of the local computer.

4.4.5.86 @DOW

@DOW[*date[,format]***]** : Returns the first three characters of the English name of the day of the week for the specified date ("Mon", "Tue", "Wed", etc.). See date formats for information on acceptable date formats.

@DOW accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

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Examples:

```
echo %@dow[01-01-1980]
Tue

echo %@dow[%_date]
Sun
```

See also: @IDOW.

4.4.5.87 @DOWF

@DOWF[*date[,format]***]** : Returns the full English name of the day of the week for the specified date ("Monday", "Tuesday", etc.). See date formats for information on acceptable parameter formats.

@DOWF accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Examples:

```
echo %@dowf[01-01-1980]
Tuesday

echo %@dowf[%_date]
Sunday
```

See also: @IDOWF.

4.4.5.88 @DOWI

@DOWI[*date[,format]***]** : Returns an integer representing the day of the week for the specified date (1 = Sunday, 2 = Monday, etc.). See date formats for information on acceptable date formats.

@DOWI accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Examples:

```
echo %@dowi[01-01-1980]
3
```

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```
echo %@dowi[%_date]
1
```

4.4.5.89 @DOY

@DOY[*date[,format]***]** : Returns the day of year (1 - 366) for the specified date. See date formats for information on acceptable date formats.

@DOY accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Examples:

```
echo %@doy[02-02-2010]
33

echo %@doy[%_date]
127
```

4.4.5.90 @DRIVE

@DRIVE[*filename***]**: Returns the drive of ***filename***. If the ***filename*** parameter doesn't contain a drive specification, @DRIVE will expand ***filename*** before the drive is extracted.

filename must be in quotes if it contains white space or special characters.

If the path is a UNC, @DRIVE will return the computer name + sharename.

Examples:

```
echo @drive["c:\program files\xyz.abc"]
c:

echo "%@drive[\\system1\d_drive\myfile]"
\\system1\d_drive
```

4.4.5.91 @DRIVETYPE

@DRIVETYPE[*drive***]** : Return the type for the specified drive:

0 The drive type cannot be determined
1 The root path is invalid (no volume is mounted at the path)
2 Removable disk
3 Fixed disk
4 Remote (network) drive
5 CD-ROM

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6 RAM disk

Examples:

```
echo %@drivetype[c:]
3

echo %@drivetype[z:]
4

echo %@drivetype[e:]
5
```

4.4.5.92 @DRIVETYPEEX

@DRIVETYPEEX[*drive***]** : Return the type for the specified drive:

0 The drive type cannot be determined
1 The root path is invalid (no volume is mounted at the path)
2 Removable disk
3 Fixed disk
4 Remote (network) drive
5 CD-ROM
6 RAM disk
7 DVD
8 Tape

Examples:

```
echo %@drivetypeex[c:]
3

echo %@drivetypeex[z:]
4

echo %@drivetypeex[e:]
7
```

4.4.5.93 @EMAIL

@EMAIL[*address*] : Validate an email address.

@EMAIL uses the regular expression "^[\w-]+(\.[\w-]+)*@([a-z0-9-]+(\.[a-z0-9-]+)*?\.[a-z]{2,6}|(\d{1,3}\.){3}\d{1,3})(:\d{4})?$" to validate the address. This matches 99.99% of valid email address including ip's (which are rarely used). Allows for a-z0-9_.- in the username, but not ending in a full stop (i.e user.@domain.com is invalid) and a-z0-9- as the optional sub domain(s) with domain name and a 2-7 char (a-z) tld.

Examples:

```
echo %@email[bob@jpsoft.com]
1
```

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```
echo %@email[bob!@jpsoft.com]
0
```

4.4.5.94 @ENUMSERVERS

@ENUMSERVERS[*n,server[,type]***]** : Enumerate the servers on the network. ***n*** is the entry number in the list of servers (the first one is **0**). ***server*** is the machine name(s) to match and it may contain wildcards. Returns a null string if there are fewer than ***n-1*** matching servers. This function can be repeatedly called, incrementing ***n*** each time to enumerate all available server names until it returns a null string.

If ***n*** is -1, @ENUMSERVERS returns the number of matching servers.

@ENUMSERVERS takes an optional third argument to return only servers of that type. The possible types are:

WORKSTATION - All workstations.
SQLSERVER - Any server running Microsoft SQL Server
DOMAIN - Primary domain controller
DOMAINBACKUP - Backup domain controller
DOMAIN_ENUM - Primary domain
LOCAL - Servers maintained by the browser
AFP - Apple File Protocol servers
TIME - Servers running the Timesource service
PRINTQ - Server sharing print queue
TERMINAL - Terminal Servers
CLUSTER - Server clusters in the domain
VSCLUSTER - Cluster virtual servers in the domain
MASTER - Server running the master browser service

WARNING! Windows may require a significant amount of time before returning data to this function when used on large networks.

Examples:

```
echo %@enumservers[0,L*]
\\LINKSTATION

for %i in (0 1 2) echo %@enumservers[%i,*]
\\LINKSTATION
\\MUSIC
\\WEBHOST
```

4.4.5.95 @ENUMSHARES

@ENUMSHARES[*n,\\server\shares***]** : Enumerate the share names for the specified server. ***n*** is the entry number in the list of shares (the first one is **0**). ***server*** is the server name, and ***shares*** is the sharename(s) to match. ***Shares*** may contain wildcards. Returns a null string If there are fewer than ***n-1*** matching shares. This function can be repeatedly called, incrementing ***n*** each time to enumerate all available shares until it returns a null string.

If the ***n*** is -1, @ENUMSHARES returns the number of matching sharenames.

Examples:

```
echo %@enumshares[0,\\LINKSTATION\*]
```

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```
\\LINKSTATION\info

for %i in (0 1 2) echo %@enumshares[%i,\\LINKSTATION\*]
\\LINKSTATION\info
\\LINKSTATION\share
\\LINKSTATION\archive
```

4.4.5.96 @ERRTEXT

@ERRTEXT[*n*] : Returns the operating system error text for the specified code. The text will be in the default language.

Examples:

```
echo %@errtext[2]
The system cannot find the file specified.

echo %@errtext[255]
The extended attributes are inconsistent.

echo %@errtext[%_syserr]
Incorrect function.
```

4.4.5.97 @EVAL

@EVAL[*expression[=displayformat]]***: Evaluates a mathematical expression and returns its value in the format specified by ***displayformat*** or in the default format. Parameter Interpretation below describes what ***expression*** may contain. Display precision and output format below explains the result format.

The expression can contain environment variables and other variable functions, and may use any of the operators listed below. @EVAL also supports parentheses (to control evaluation order), commas, hexadecimals and decimal separators. Parentheses can be nested. @EVAL will strip leading and trailing zeros from the result unless you use the output formatting operators.

@EVAL supports very large numbers. The maximum size is 2,147,483,647 digits in Windows x64. (Windows x86 will be limited by memory to much less). If you want to use more than the default decimal values you'll need to change your @Eval Precision configuration options or use the "=x.y" format in @EVAL. The integer-only operators (AND, OR, and XOR) are limited to 64-bit integers.

- Parameter Interpretation
- Arithmetic operators
- Trigonometric and transcendental functions
- Other functions
- Order of precedence
- Precision of internal calculations
- Display precision and output format
- Examples

Parameter Interpretation

Expression may contain environment and internal variables, array variables, and variable functions. After all variables and functions have been expanded, it must be composed only of numeric strings and names

of functions in Trigonometric and transcendental functions or Other functions, connected by Arithmetic operators and optionally grouped with parentheses.

@EVAL permits you to simplify ***expression*** by dropping the `%` percent mark in front of the names of environment variables. This also prevents the ***TCC*** parser from expanding (possibly erroneously) variables before passing them to @EVAL. You must include `%` for internal variables and variable functions. @EVAL also permits you to use characters which normally have special meaning for ***TCC*** e.g., `& < > ^ |` without disabling their special meaning or quoting them.

Note: To ensure that ***expression*** is interpreted correctly, spaces should be placed on both sides of each operator, and parentheses used liberally. For example:

```
%@eval[(20 %% 3) + 4]
%@eval[12 and 65]
```

@EVAL accepts numbers in the scientific notation exponent syntax; i.e. 1575e-2 = 15.75. You can specify scientific notation output with the syntax **@eval[...=E]**. For example:

```
echo %@eval[1.4567e+4*7.6541e+2=E]
```

You can combine =E with a display precision (see below):

```
echo %@eval[1.4567e+4*7.6541e+2=E1.20]
```

Number base

If a string starts with the characters **`0x`** it is interpreted as an integer in hexadecimal notation. If a string starts with the characters **0b** it is interpreted as an integer in binary notation. Any other numeric string is considered to be a decimal number.

For example:

```
[c:\] echo %@eval[0x10 + 16]
32
```

You can specify hexadecimal output with the special syntax **`@eval[...=H]`**. For example:

```
echo %@eval[3*6=H]
```

will output 12 (hex). No leading 0x is included in the output. To convert between decimal and hexadecimal formats, see the @CONVERT function.

You can specify binary output with the special syntax **`@eval[...=B]`**. For example:

```
echo %@eval[3*6=B]
```

Hex and binary output is limited to 64-bit (signed) integers.

Arithmetic operators

Every operator accepts both integer and non-integer parameters, except as noted below.

Operators accepting fractional parameters

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+	(with one parameter) sign of numeric parameter (e.g. +3)
+	(with two parameters) addition
-	(with one parameter) negation of symbolic parameter (e.g., -n) or sign of numeric parameter (e.g. -1, +3)
-	(with two parameters) subtraction
*	multiplication
/	division
**	exponentiation
!	boolean not

Operators requiring integer parameters

\	integer division (returns the integer part of the quotient)
MOD	modulo (returns the remainder when the first parameter is divided by the second)
%%	same as **MOD**
SHL	arithmetic left shift of the first parameter, truncated toward zero to an integer, by the number of bits specified by the second parameter
<<	same as **SHL**
SHR	arithmetic right shift of the first parameter, truncated toward zero to an integer, by the number of bits specified by the second parameter
>>	same as **SHR**
>	greater than
<	less than

Operators which truncate parameters to integer

AND	bitwise and (returns 1 for each bit position where the corresponding bits in both parameters are 1)
&	same as **AND**
OR	bitwise or (returns 1 for each bit position where the corresponding bit in at least one parameter is 1)
|	same as **OR**
XOR	bitwise exclusive or (returns 1 for each bit position where the corresponding bits of the two parameters are different)
^	same as **XOR**
~	unary NOT

Trigonometric and transcendental functions

Expression may include the trigonometric and transcendental functions below. The argument is interpreted as radians.

log(x)	natural logarithm
log2(x)	binary logarithm
log10(x)	log 10
exp(x)	exponential
sin(x)	sine
asin(x)	arcsine
sinh(x)	hyperbolic sine
cos(x)	cosine
acos(x)	arccosine
cosh(x)	hyperbolic cosine
tan(x)	tangent
atan(x)	arctangent
tanh(x)	hyperbolic tangent

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The special string **PI** is a shortcut for the value ***3.14159265358979323846***.

Other functions

abs(x)	absolute value
ceil(x)	ceiling
fact(x)	factorial
floor(x)	floor
gcd(x y)	greatest common divisor (max 64-bit integer)
lcm(x y)	least common multiple (max 64-bit integer)
ror(x y z)	rotate **x** right **y** bits with a variable size of **z** (in bits) (max 64-bit integer)
rol(x y z)	rotate **x** left **y** bits with a variable size of **z** (in bits) (max 64-bit integer)

Order of precedence

1. variables
2. expressions in matching parentheses
3. functions listed in Trigonometric and transcendental functions
4. exponentiation
5. multiplication, division, and MOD
6. addition and subtraction
7. >, <, AND, OR, XOR, NOT, SHL, and SHR

When multiple consecutive expressions of a single precedence level are used, evaluation is left to right.

For example, `3 + 4 * 2` will be interpreted as `3 + 8`, not as `7 * 2`. To change this order of evaluation, use parentheses to specify the order you want.

Precision of internal calculations

@EVAL supports numbers up to 30,000 digits; it is highly unlikely you'll need greater precision than this! A few functions (gcd, lcm, ror, rol) use 64-bit integers.

Display precision and output format

The maximum display precision is 15,000 digits to the left of the decimal point and 15,000 digits to the right. You can alter the default decimal precision with the OPTION command, the @EVAL Precision configuration options, and with the SETDOS /F command. You can change the decimal separator with the decimal character configuration option or the SETDOS /G command.

You can alter the display format for the current instance of @EVAL by specifying ***displayformat***.

Scientific notation display format

If ***displayformat*** is **E**, output will be in scientific notation. For example:

```
echo %@eval[1.4567e+4*7.6541e+2=E]
```

You can combine =E with a display precision (see below):

```
echo %@eval[1.4567e+4*7.6541e+2=E1.15]
```

Hexadecimal display format

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If ***displayformat*** is the letter **H**, output will be hexadecimal. If ***displayformat*** is **X,** the output will be hexadecimal with a leading **0x**.

Binary display format

If ***displayformat*** is the letter **B**, output will be binary.

Explicit precision

If ***displayformat*** is ***i.a***, then:

- ***i*** must be a number which specifies the minimum decimal precision (the minimum number of decimal places displayed);
- ***a*** must be a number which sets the maximum decimal precision.
- the character separating ***i*** and ***a*** may be the comma if it is your decimal separator

You may specify either or both parameters ***i*** and ***a***. If ***i >a***, or if only ***i*** is specified, ***i*** is used as both the minimum and maximum precision, *e.g.* both **=2** and **=2.1** are equivalent to **=2.2.**

If the last character of the *displayformat* is **+**, @EVAL will prefix positive numbers with a **+**.

Examples:

Expression	***Value***
`@eval[3 / 6=2.4]`	`0.50`
`@eval[3 / 6=4.4]`	`0.5000`
`@eval[3 / 7]`	`0.4285714286`
`@eval[3 / 7=.4]`	`0.4286`
`@eval[3 / 7=2.2]`	`0.42`
`@eval[3 / 7=2]`	`0.42`
`@eval[3 / 7=2+]`	`+0.42`

See also: @DEC and @INC.

4.4.5.98 @EVERYTHING

@EVERYTHING[*[range...] filename[,cdfpw[,n]][,[{+|-}]rhsadecijopt***]** : Call Everything Search to return all matching filenames / directories (space delimited). The options are:

The ***range*** and attribute parameters, if included, define properties of the files that will be included in the result as specified in File Selection. Multiple ***range*** parameters may be included, but not more than one each of description range, size range, date range, and time range. ***Range*** parameters must precede ***filename***. Exclusion ranges are not supported.

filename	the name to search for. If filename begins with a "::", the filename is treated as a regular expression
c	case sensitive search
d	only search for directories
f	only search for files
p	match path names
w	match whole word
n	maximum number of matches to return

Filename must be in quotes if it contains white space or special characters.

Examples:

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```
echo %@everything[tcc.exe,f]
```

See also: EVERYTHING.

4.4.5.99 @EXEC

@EXEC[*command***]** : Execute ***command*** and return its numeric exit code.

Command can be an alias, internal command, external command, *.BTM*, *.BAT*, or *.CMD* file.

By default, @EXEC returns the result code from ***command*** (see the ? and _? variables). However, if in ***command*** you preface the command name with @ then @EXEC returns an empty string.

Example:

```
PROMPT=%@exec[@color 15 on %@if[%@removable[%_disk] eq 0,2,4] & echos [%_cwd
%] & color 11 on 0]$s
```

See also: @EXECSTR.

4.4.5.100 @EXECARRAY

@EXECARRAY[*array,command*] : Execute the specified command and store the resulting lines in the specified array variable. The array must be one-dimensional.

You must define the array before running @EXECARRAY. For example:

```
setarray aresult[10]
echo %@execarray[aresult,dir /u] >& nul
```

@EXECARRAY will read the number of lines specified in the array size definition, or the number of lines in the command output (whichever is less). @EXECARRAY returns the return value of the command.

The number of lines stored in the array is saved in the _EXECARRAY internal variable.

4.4.5.101 @EXECSTR

@EXECSTR[*[n,]command***]** : Runs the specified ***command*** and returns line *n* (or the first line if *n* is not specified) written to stdout by ***command***. For example, to return the third line returned by VER /R:

```
echo %@execstr[2,ver /r]
```

If *n* is negative, @EXECSTR starts at the last line and counts backwards.

@EXECSTR is useful for retrieving a result from an external utility. For example, if you have an external utility called **NETTIME.EXE** which retrieves the time of day from your network server and writes it to standard output, you could save it in an environment variable using a command like this:

```
set server_time=%@execstr[d:\path\nettime.exe]
```

If the same utility returned a result properly formatted for the TIME command, you could also use it to set the time on your system:

```
time %@execstr[d:\path\nettime.exe]
```

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@EXECSTR can also be used with internal commands:

```
echo Newest file is: %@execstr[*dir /a:-d /h /o:-d /f]
```

@EXECSTR involves several extensive internal processing stages. You might be able to use more complex command sequences (pipes, command groups, etc.) as its parameter, but always *test* carefully first as the results may not always be what you expect. We recommend that you only use a single command (internal, external, batch file, etc.) parameter.

See also: @EXEC and @EXECARRAY.

4.4.5.102 @EXETYPE

@EXETYPE[*filename***]**: Returns the application type for an executable file:

Code	*Application type*
0	Unknown
1	DOS app
2	PIF file
3	Win16
4	Win 3.x VxD
5	OS/2
6	Win32 GUI
7	Win32 console
8	Posix
9	Windows x64 GUI
10	Windows x64 console
11	EFI
12	EFI boot driver
13	EFI runtime driver
14	EFI ROM
15	XBox
16	Windows boot application

Examples:

```
echo %@exetype["dc:\windows\explorer.exe"]
6

echo %@exetype["%comspec"]
7
```

4.4.5.103 @EXPAND

@EXPAND[*[range...] filename[,[{+|-}]rhsadecijopt***]** **:** Returns (in a single line), the names of all files and directories that are within the specified ***range[s]***, AND match ***filename***, AND have the specified attributes. ***Filename*** may contain wildcards and include lists. Returns an empty string if no files match. Each returned filename which contains white space or other special characters will be delimited by double quotes.

Filename must be in double quotes if it contains white space or special characters.

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The ***range*** and attribute parameters, if included, define properties of the files that will be included in the result as specified in File Selection. Multiple ***range*** parameters may be included, but not more than one each of description range, size range, date range, and time range. ***Range*** parameters must precede ***filename***.

Examples:

```
echo %@expand[/[s2k,3k] *.txt]
```

displays all files with extension **txt** in the current directory with size at least 2000 bytes and at most 3000 bytes

```
echo %@expand[*,d]
```

displays all subdirectories

```
echo %@expand[/[d-365] %windir\w*.exe;w*.dll]
```

displays all files at most 365 days old in the Windows directory, with extension *EXE* or *DLL*, and name beginning with **W**.

4.4.5.104 @EXT

@EXT[*filename***]** : Returns the extension from ***filename***, without a leading period. On volumes which support long file names, the extension can be up to 255 characters long. On FAT drives it can be up to 3 characters long. ***filename*** must be quoted if it contains white space or special characters.

On an LFN drive, the returned extension may contain white space or special characters. To avoid problems which could be caused by these characters, quote the returned extension before you pass it to other commands.

Examples:

```
set COMSPEC="c:\program files\jpsoft\tcmd28\tcc.exe"
echo %@ext[%comspec]
exe

echo %@ext["LFN Names may have.very long extensions"]
very long extensions
```

4.4.5.105 @FIELD

@FIELD[*["sep_list",]n,string***]** : Returns the ***n***th field in ***string***. The first field is numbered **0**. If ***n*** is negative, fields are counted backwards from the end of ***string***. You can specify the rightmost field by setting ***n*** to **-0**.

You can specify a range of fields to return with the syntax:

```
@FIELD[["sep_list",]start[-end | +range],string]
```

Specify an inclusive range with a **-**. For example:

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`%@FIELD[2-4,A B C D E F G]` will return "C D E". (Note that you cannot use inclusive ranges when starting from the end.)

You can specify a relative range with a **+**. For example:

`%@FIELD[2+1,A B C D E F G]` will return "C D".

The default list of separators for @FIELD, @FIELDS, @WORD and @WORDS consists of space, tab, and comma. You can use the optional first parameter, ***sep_list***, to specify the separators that you wish to use. If you want to use a double quote as a separator, prefix it with an escape character, e.g., **^"**. Alphabetic characters in ***sep_list*** are case sensitive. If you do not specify a separator list, @FIELD will skip any leading separators.

@FIELD and @FIELDS differ from @WORD and @WORDS in how multiple consecutive separators are counted. @WORD and @WORDS consider a sequence as a single separator, and ignore separators at either end of string. In contrast, @FIELD and @FIELDS count each occurrence of a separator individually, including those at either end of string.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). To use hexadecimal form for a negative ***n***, remember to use 32-bit 2's complement arithmetic, e.g., **0xFFFFFFFF** for **-1**. There is no hexadecimal form to specify field `-0` (the rightmost field).

If ***string*** is double quoted, you must specify ***sep_list***.

See also: @WORD, @WORDS, @FIELDS.

Examples:

function	***value***
`%@field[2,zero,one,two,three]`	`two`
`%@field[2,zero,,two,three]`	`two`
`%@field["\",2,C:\Program Files\My Dir\myapp.exe]`	`My Dir`
`%@field[-2,zero,one,two,three]`	`one`

4.4.5.106 @FIELDS

@FIELDS[*["sep_list",]string***]** : Returns the number of fields in ***string***.

The default list of separators for @FIELD, @FIELDS, @WORD and @WORDS consists of space, tab, and comma. You can use the optional first parameter, ***sep_list***, to specify the separators that you wish to use. If you want to use a quote mark as a separator, prefix it with an escape character, e.g., **^"**. Alphabetic characters in ***sep_list*** are case sensitive. If you do not specify a separator list, @FIELD will skip any leading separators.

@FIELD and @FIELDS differ from @WORD and @WORDS in how multiple consecutive separators are counted. @WORD and @WORDS consider a sequence as a single separator, and ignore separators at either end of string. In contrast, @FIELD and @FIELDS count each occurrence of a separator individually, including those at either end of string.

If ***string*** is double quoted, you must specify ***sep_list***.

Example:

```
echo %@fields[" ,",Now is the time]
4
```

See also: @WORD, @WORDS, @FIELD.

4.4.5.107 @FILEAGE

@FILEAGE[*filename[,a|c|w[u]]***]** : Returns the date and time of the file as an age.

Filename must be in quotes if it contains white space or special characters. The optional second parameter selects which date field is returned for files on a VFAT or NTFS drive: ***a*** means the last access date, ***c*** means the creation date, and ***w*** means the last modification (write) date. The default is ***w***.

If you append a *u* to the second argument, @FILEAGE will display the age in UTC.

Examples:

```
echo %@fileage["c:\windows\explorer.exe]
129801709001110605

echo %@fileage["%comspec",c]
129801709001110605
```

See also: Time Stamps, @AGEDATE and @MAKEAGE.

4.4.5.108 @FILEARRAY

@FILEARRAY[*array,filename*] : Read the specified file and store the resulting lines in the specified array variable (one line per element). The array must be one-dimensional.

You must define the array before running @FILEARRAY. For example:

```
setarray aresult[10]
echo %@filearray[aresult,test.dat]
```

@FILEARRAY will read the number of lines specified in the array size definition, or the number of lines in the files (whichever is less).

@FILEARRAY will return the number of lines read.

4.4.5.109 @FILECLOSE

@FILECLOSE[*n***]** : Closes the file whose handle is ***n***. Returns **0** if the file was successfully closed, or **-1** if an error occurred.

This function should only be used with file handles returned by @FILEOPEN! If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

See also the related handle-based functions:

@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle

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@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

Examples:

```
set h=%@fileopen["d:\path\myfile.txt",write]
echo writing %@filewrite[%h,this is a test] bytes
echo closing handle #%h: %@fileclose[%h]
```

4.4.5.110 @FILEDATE

@FILEDATE[*filename[,a|c|w[u,d]]***]** : Returns the date a file was last modified, in the default country format (mm-dd-yy for the US), or as explicitly specified by the optional third parameter ***d*** (see Date Display Formats). ***Filename*** must be in quotes if it contains white space or special characters. The optional second parameter selects which date field is returned for files on an LFN drive: ***a*** means the last access date, ***c*** means the creation date, and ***w*** means the last modification (write) date, which is the default.

If you append a *u* to the second argument, @FILEDATE will display the date in UTC.

Example:

```
echo %@filedate["%comspec",c,4]
2012-04-29
```

See Time Stamps, @FILETIME, @FILEAGE.

4.4.5.111 @FILEHANDLE

@FILEHANDLE[*handle*] : Returns the filename for the specified file handle (opened with @FILEOPEN).

Example:

```
set h=%@fileopen["d:\path\myfile.txt",r]
echo handle %h is : %@filehandle[%h]
handle 756 is : d:\path\myfile.txt
```

4.4.5.112 @FILELOCK

@FILELOCK[*filename*] : Returns the PIDs of the processes with a lock on the specified file.

Example:

```
echo %@filelock[d:\path\myfile.txt]
```

4.4.5.113 @FILENAME

@FILENAME[*filename***]** : Returns the name and extension of a file, without a path.

The ***filename*** must be in quotes if it contains white space or special characters. On an LFN drive, the returned filename may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands.

Examples:

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```
echo %@filename["D:\my path\myfile.exe"]
myfile.exe

echo %@filename["%comspec"]
tcc.exe
```

4.4.5.114 @FILEOPEN

@FILEOPEN[*filename,r[ead]|w[rite]|a[ppend][,b|t]***]** : Opens the file in the specified mode and returns the file handle as an integer. The optional third parameter controls whether the file is opened in binary or text mode. Text mode (the default) should be used to read text using @FILEREAD without a ***length***, and to write text using @FILEWRITE. Binary mode should be used to read binary data with @FILEREAD with a ***length***, and to write binary data with @FILEWRITEB. Returns -1 if the file cannot be opened.

Filename must be in quotes if it contains white space or special characters. To read from standard input, use **CON:** for the filename.

To open a file for both reading and writing, open it in append mode, then use @FILESEEK to position to the start of the file (or any other desired location) before performing additional operations.

@FILEOPEN can also open named pipes. The pipe name must begin with **\\.\pipe**. @FILEOPEN first tries to open an existing pipe; if that fails it tries to create a new pipe. Pipes are opened in blocking mode, duplex access, byte-read mode, and are inheritable. @FILEOPEN will not return until another process connects to the pipe. For more information on named pipes see your Windows documentation.

@FILEOPEN can open file streams on NTFS drives if the stream name is specified. See NTFS File Streams for additional details on file streams.

You must reference the file exclusively using the returned file handle, and you must close the file using the file handle. This is especially important when you are debugging a batch program which uses @FILEOPEN. If you suspect that file handles have been opened and not closed, you should restart ***TCC***.

Examples:

```
set h=%@fileopen["d:\path\myfile.txt",write]
echo writing %@filewrite[%h,this is a test] bytes
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.115 @FILEREAD

@FILEREAD[*n[,length]***]** : Reads data from the file whose handle is ***n***. Returns the string ****EOF**** if you attempt to read past the end of the file. If ***length*** is not specified, **@FILEREAD** will read until the next CR

or LF (end of line) character. If ***length*** is specified, @FILEREAD will read ***length*** bytes regardless of any end of line characters.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN. If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

Beware of characters with special meaning to ***Take Command***, such as redirection and piping symbols, within the file. Use SETDOS /X with appropriate codes as needed.

Example:

```
set h=%@fileopen["d:\path\myfile.txt",r]
echo reading %@fileread[%h,32]
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.116 @FILEREADB

@FILEREADB[*n,length[,h x]***]** : Reads ***length*** bytes of data from the file whose handle is ***n***. Returns the string ****EOF**** if you attempt to read past the end of the file. The data will be returned as a string of space-separated numeric digits representing the ASCII value of each character.

The optional third parameter (**h** or **x**) species the output format:

h Output is 2-digit hex (00 - FF)
x Output is 0x00 - 0xFF)

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN. If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

Beware of characters with special meaning to ***TCC***, such as redirection and piping symbols, within the file. Use SETDOS /X with appropriate codes as needed.

Example:

```
set h=%@fileopen["d:\path\myfile.txt",r]
echo reading %@filereadb[%h,32]
echo closing handle #%h: %@fileclose[%h]
```

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See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.117 @FILES

@FILES[*[/S[[+]n]] [range...][/H] filename[,[{+|-}]rhsadecijopt]***]** : Returns the number of files within ***range*** that match ***filename*** and have the specified attributes. ***Filename*** may contain wildcards and include lists. Returns 0 if no files match. To check files in multiple directories use @FILES once for each, and add the results with @EVAL.

Filename must be in double quotes if it contains white space or special characters.

The ***range*** and attribute parameters, if included, define properties of the files that will be included in the result as specified in File Selection. Multiple ***range*** parameters may be included, but not more than one each of description range, size range, date range, and time range. ***Range*** parameters must precede ***filename***. Exclusion ranges are not supported.

If you include the optional ***/S*** argument, @FILES will search the current directory and all of its subdirectories for matching files. If you specify a number after the /S, @FILES will limit the subdirectory recursion to that number. (For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.)

If you specify a **+** followed by a number after the /S, @FILES will not count any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not count anything in *\a* or *\a\b*.

If you include the optional **/H** argument, @FILES will not include the "." and ".." directory entries in the count.

Examples:

```
echo %@files[/[s2k,3k] *.txt]
```
number of files with extension **txt** in the current directory with size at least 2000 bytes and at most 3000 bytes

```
echo %@files[*,d]
```
number of subdirectories

```
echo %@files[/[d-365] %windir\w*.exe;w*.dll]
```
number of files at most 365 days old in the Windows directory, with extension *EXE* or *DLL*, and name beginning with ***w***

4.4.5.118 @FILESEEK

@FILESEEK[*n,offset,start***]** Moves the file pointer of the file whose handle is ***n*** by ***offset*** bytes from the reference location specified via ***start*** (see the table below). The return value of @FILESEEK is the offset of the file pointer from the beginning of the file after the specified move. If ***offset*** is negative, the file pointer

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is moved from the reference location toward the beginning of the file. If ***offset*** is positive, the file pointer is moved from the reference location toward the end of the file. If ***offset*** is `0`, the pointer is moved to the reference location.

If the function fails, the return value is **-1**.

start	*reference location*
0	beginning of file
1	current file pointer
2	end of file

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN. If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

Useful special cases

If you set ***offset*** to **0** :

- `@FILESEEK[n,0,0]` moves the file pointer to the beginning of file
- `@FILESEEK[n,0,1]` returns the current location of the file pointer without moving it.
- `@FILESEEK[n,0,2]` moves the file pointer to the end of file, and returns the current file size.

Example:

```
set h=%@fileopen["d:\path\myfile.txt",rw]
echo file size = %@fileseek[%h,0,2]
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.119 @FILESEEKL

@FILESEEKL[*n,line[,1]***]** : Moves the file pointer to the specified ***line*** in the open file whose handle is ***n***. The first line in the file is numbered **0**. Returns the new position of the pointer, in bytes from the start of the file. The third parameter is optional, and determines the starting point for the seek. If not specified, or set to a value other than `1`, @FILESEEKL starts at the beginning of the file. If set to **1**, @FILESEEKL will start from the current position in the file.

If the function fails, the return value is **-1**.

@FILESEEKL must read each line of the file up to the target line in order to position the pointer, and can therefore cause significant delays if used in a loop or on a large file.

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Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN. If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

Example:

```
set h=%@fileopen["d:\path\myfile.txt",rw]
echo file line 10 = %@fileseekl[%h,10,2]
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.120 @FILESIZE

@FILESIZE[*[/S[[+]n]] [range...] filename[,[scale[c][,a]]]***]** : Returns the size of a file, or **-1** if the file does not exist. If ***filename*** includes wildcards or an include list, it returns the combined size of all matching files. The optional third parameter ***a*** tells @FILESIZE to return the amount of space allocated for the file(s) on the disk. (Network drives and compressed drives may not always report allocated sizes accurately, depending on the way the network or disk compression software is implemented.)

Filename must be in quotes if it contains white space or special characters.

The second parameter specifies the reporting scale (see Memory Size / Disk Space / File Size Units and Report Format). Adding the letter ***c*** requests the result be formatted using the thousands separator.

The optional ***range*** parameter defines properties of the files that will be included in the result as specified in File Selection. Multiple ***range*** parameters may be included, but not more than one each of description range, size range, date range, and time range. ***Range*** parameters must precede ***filename***. Exclusion ranges are not supported.

If you include the optional ***/S*** argument, @FILESIZE will search the current directory and all of its subdirectories for matching files. If you specify a number after the /S, @FILES will limit the subdirectory recursion to that number. For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.

If you specify a **+** followed by a number after the /S, @FILESIZE will not count any file sizes until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not count anything in *\a* or *\a\b*.

@FILESIZE supports returning the size of file streams. @FILESIZE also supports retrieving sizes for HTTP and HTTPS files. (Note that due to HTTP protocol limitations, you cannot use wildcards or scan subdirectories.)

Examples:

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```
echo %@filesize[d:\path\myfile.ext]
417

echo %@filesize["%comspec",bc]
359,400

echo %@filesize["%comspec",bc,a]
360,448
```

4.4.5.121 @FILETIME

@FILETIME[*filename[,[a|c|w[u]][,s]]***]** : Returns the time of day a file was last modified, in hh:mm format. ***Filename*** must be in quotes if it contains white space or special characters. The optional second parameter selects which time field is returned for files on an LFN drive: ***a*** means the last access time, ***c*** means the creation time, and ***w*** means the last modification (write) time, which is the default. Times are normally returned with hours and minutes only. To retrieve seconds as well, add ***s*** as the optional third parameter. On non-NTFS drives, the last access time is always returned as 00:00, and without a seconds field (see Time Stamp for additional details).

If you append a *u* to the second argument, @FILETIME will display the time in UTC.

Examples:

```
echo %@filetime["D:\my path\myfile.exe"]
16:40

echo %@filetime["%comspec",c,s]
11:01:40
```

See also: @FILEDATE, @FILEAGE.

4.4.5.122 @FILETYPE

@FILETYPE[filename] - returns the encoding type of the file.

You must enable UTF8 input for TCC to recognize UTF8 files; see OPTION / Setup.

The possible return values are:

ASCII
UTF8
UTF16

4.4.5.123 @FILEWRITE

@FILEWRITE[*n,text***]**: Writes a line to the file whose handle is ***n***. Returns the number of characters written, or **-1** if an error occurred. A CR/LF will be appended to *text*.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

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Beware of characters with special meaning to ***TCC***, such as redirection and piping symbols, within the file. Use SETDOS /X with appropriate codes as needed.

Example:

```
set h=%@fileopen["d:\path\myfile.txt",w]
echo writing %@filewrite[%h,32]
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITEB	Write data to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer.

4.4.5.124 @FILEWRITEB

@FILEWRITEB[*n,length,string***]** : Writes the specified number of bytes from the ***string*** to the file whose handle is ***n***. Returns the number of bytes written, or **-1** if an error occurred.

Note: Writes ASCII output when passed a Unicode string. Note that if you're trying to write non-English (>128) characters with @FILEWRITEB, the output will probably not match the input.

If the *length* argument is -1, @FILEWRITEB will read the string argument as a series of ASCII values in decimal or hex to write to the file. For example:

```
echo %@filewriteb[%file,-1,0xe0 0xF2 0xA9]
```

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

This function should only be used with file handles returned by @FILEOPEN! If you use it with any other number you may damage other files opened by ***TCC*** (or by the program which started ***TCC***).

Beware of characters with special meaning to ***TCC***, such as redirection and piping symbols, within the file. Use SETDOS /X with appropriate codes as needed.

Example:

```
set h=%@fileopen["d:\path\myfile.txt",r]
echo writing %@filewriteb[%h,10,Write some characters from this string]
echo closing handle #%h: %@fileclose[%h]
```

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer

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@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@TRUNCATE	Truncate the file at the current position of the file handle pointer

4.4.5.125 @FILTER

@FILTER[*chars,string*] : Removes any characters in "string" that aren't in "chars".

Example:

To remove all non-numeric characters from a variable:

```
set var=abc1234
echo %@filter[0123456789,%var]
1234
```

4.4.5.126 @FINDCLOSE

@FINDCLOSE[*filename***]**: Signals the end of a @FINDFIRST ... @FINDNEXT sequence. You must use this function to release the directory search handle. ***Filename*** is unnecessary, this function can be simply called as %@FINDCLOSE[] without parameters. @FINDCLOSE returns 0 if a @FINDFIRST ...@FINDNEXT sequence is in effect, a non-zero value otherwise.

Examples:

```
echo %@findfirst[*.exe]
echo %@findclose[]
```

4.4.5.127 @FINDFIRST

@FINDFIRST[*[range...] filename[,[+|-]rhsadecijopt]***]** : Returns the name of the first file that matches ***filename***, which may include wildcards and/or an include list, and which file has the properties specified in the optional range and attribute parameters.

Filename must be in quotes if it contains white space or special characters.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

The ***range*** and attribute parameters, if included, define properties of the files that will be included in the search as specified in File Selection Multiple ***range*** parameters may be included, but not more than one each of size, date, time, and file exclusion. ***Range*** parameters must precede ***filename***. Each ***range*** parameter is of the form

```
/[a...]
```

where ***a*** is one of ***d***, ***s***, ***t***, and/or ***!***, followed by the range parameters **.**

On an LFN drive, the returned filename may contain white space or other special characters. Unlike @EXPAND[], no double quotes are added by this function. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

@FINDFIRST[] locates the *first* file matching the requirements. To find more matching files, you must use @FINDNEXT[], and terminate the search with @FINDCLOSE[].

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Warning: @FINDFIRST searches may not be nested*!*

Examples:

```
%@findfirst[/[d-30] *]
```
locate files created no more than 30 days ago

```
%@findfirst[/[s2k,3k] "%windir\*.exe",a]
```
locate files with the extension **exe**, the archive flag set, and at least 2,000 bytes but not more than 3,000 bytes long, in the Windows directory.

4.4.5.128 @FINDNEXT

@FINDNEXT[*[filename[,[ ][-]rhsadecijopt]]***]**: Returns the name of the next file that matches the filename(s) in the previous @FINDFIRST call. Returns an empty string when no more files match. @FINDNEXT should only be used after a successful call to @FINDFIRST.

You do not need to include the ***filename*** parameter, because it must be the same as the one used in the previous @FINDFIRST call, unless you want to change the file attributes for @FINDNEXT. ***Filename***, if used, must be in quotes if it contains white space or special characters.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

The attribute parameter, if included, defines the attributes of the files that will be included in the search as specified in Attribute Switches.

Range parameters may not be used in this function. The ***range*** parameters specified in the preceding @FINDFIRST call remain effective.

If you don't need to change the attribute parameters established by the preceding @FINDFIRST, you can simply use this function as %@FINDNEXT**[]** without parameters.

On an LFN drive, the returned filename may contain white space or other special characters. Unlike @EXPAND[], no double quotes are added by this function. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

@FINDFIRST[] locates the first file matching the requirements. To find more matching files, you must use @FINDNEXT[], and terminate the search with @FINDCLOSE[].

Examples:

```
echo %@findfirst[*]
echo %@findnext[]
echo %@findnext[*,d]
echo %@findclose[]
```

4.4.5.129 @FLOOR

@FLOOR[*n***]**: Returns the largest integer that is not greater than ***n***. @FLOOR will perform an implicit @EVAL on its argument, so you can enter an arithmetic expression.

Examples:

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```
echo %@floor[3.14]
3

echo %@floor[-3.14]
-4

echo %@floor[0]
0

echo %@floor[123]
123
```

See also: @CEILING.

4.4.5.130 @FOLDERS

@FOLDERS[*[/S[[+]n]] [range...] dirname[,[{+|-}]rhsadecijopt]***]** : Returns the number of folders (subdirectories) within ***range*** that match ***dirname*** and have the specified attributes. ***Dirname*** may contain wildcards and include lists. Returns 0 if no folders match. To check folders in multiple source directories use @FOLDERS once for each, and add the results with @EVAL.

Dirname must be in double quotes if it contains white space or special characters.

The ***range*** and attribute parameters, if included, define properties of the folders that will be included in the result as specified in File Selection. Multiple ***range*** parameters may be included, but not more than one each of description range, date range, and time range. ***Range*** parameters must precede ***dirname***. Exclusion ranges are not supported.

If you include the optional ***/S*** argument, @FOLDERS will search the current directory and all of its subdirectories for matching folders. If you specify a number after the /S, @FOLDERS will limit the subdirectory recursion to that number. (For example, if you have a directory tree "\a\b\c\d\e", /S2 will only affect the "a", "b", and "c" directories.)

If you specify a **+** followed by a number after the /S, @FOLDERS will not count any files until it gets to that depth in the subdirectory tree. For example, if you have a directory tree *\a\b\c\d\e*, /S+2 will not count anything in *\a* or *\a\b*.

If you are searching for subdirectories (i.e., by specifying "d" in the attribute argument), @FOLDERS will not count the "." and ".." directory entries.

Example:

```
echo %@folders[c:\windows]
58

echo %@folders[/s,c:\windows]
17728
```

4.4.5.131 @FONT

@FONT[*n***]** : Returns console font information. *n* is the type of information requested*:*

0 - font name (Windows usually returns an empty string unless you've previously set the font)
1 - font width
2 - font height
3 - font weight
4 - font family
5 - font index in console font table

Examples:

```
echo %@font[0]
Consolas

echo %@font[1]
6

echo %@font[2]
12

echo %@font[3]
700

echo %@font[4]
54

echo %@font[5]
6
```

4.4.5.132 @FORMAT

@FORMAT[*format,string***]** : Reformats ***string***, truncating it or padding it with spaces or zeros as necessary. ***format*** is of the format **[-]i.a**. If the optional minus sign is present, the result is left justified; otherwise it is right justified. If ***i*** is specified, and its first digit is **0**, the padding character will will be **0**, otherwise it will be a space. ***i*** is the minimum number of characters in the result, ***a*** is the maximum number of characters. If ***a*** is less than ***i***, it will be ignored.

If ***string*** doesn't exist, @FORMAT treats it as an empty string and pads the output accordingly.

Examples*:*

function	value
"%@format[7,Hello]"	" Hello"
"%@format[.3,Hello]"	"Hel"
"%@format[4,5]"	" 5"
"%@format[04,5]"	"0005"
"%@format[-04,5]"	"5000"

See also: @COMMA, @CONVERT, @FORMATN.

4.4.5.133 @FORMATN

@FORMATN[*[-]width[.precision],value***]** : Formats a numeric value. ***Width*** is a nonnegative integer specifying the minimum number of characters printed. If ***Width*** has a leading **0**, the number will be left-padded with zeros. If the number of characters in the output value is less than the specified width, blanks are added to the left or the right of the values depending on whether the "**-**" flag (for left alignment) is

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specified, until the minimum width is reached. ***Precision*** specifies the number of digits after the decimal point. The ***value*** is rounded to the appropriate number of digits.

If you don't specify a precision, @FORMATN will default to 16 decimal places, and may not round the number appropriately. (For example, @FORMATN[3,3.4] will produce "3.3999999999999999".)

@FORMATN will use the decimal character for the default locale.

Examples:

```
echo %@formatn[5.10,%@eval[2300*4.7]]
10810.0000000000

echo %@formatn[010.3,5]
000005.000
```

See also: @COMMA, @CONVERT, @FORMAT, @FORMATNC.

4.4.5.134 @FORMATNC

@FORMATNC[*[-]width[.precision],value***]** : Formats a numeric value and automatically inserts the thousands separator. ***Width*** is a nonnegative integer specifying the minimum number of characters printed. If ***Width*** has a leading **0**, the number will be left-padded with zeros. If the number of characters in the output value is less than the specified width, blanks are added to the left or the right of the values depending on whether the "**-**" flag (for left alignment) is specified, until the minimum width is reached. ***Precision*** specifies the number of digits after the decimal point. The ***value*** is rounded to the appropriate number of digits.

Examples:

```
echo %@formatnc[5.10,%@eval[2300*4.7]]
10,810.0000000000

echo %@formatnc[010.3,5]
000005.000
```

See also: @COMMA, @CONVERT, @FORMAT, @FORMATN.

4.4.5.135 @FSTYPE

@FSTYPE[d:**]** : Returns the file system type for the specified drive or sharename. @FSTYPE returns **NTFS** for a drive that uses the Windows NTFS file system. It returns **FAT32** for FAT32 drives, and **FAT** for FAT12, FAT16, and VFAT drives.

You can specify either a drive name or a UNC name.

If the argument is a partial filename without a drive, @FSTYPE will expand the filename to get the drive.

Examples:

```
echo %@fstype[c:]
NTFS

echo %@fstype[e:]
FAT32
```

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```
echo %@fstype[\\Music\iTunes]
NTFS
```

4.4.5.136 @FTYPE

@FTYPE[*xxx[,u]*] : Returns the open command string for the specified file type. @FTYPE looks first in ...\SHELL\OPEN2\COMMAND, then (if no match was found) in ...\SHELL\OPEN\COMMAND. If the optional second argument ***u*** is specified, @FTYPE will look in HKCU\SOFTWARE\CLASSES.

Example:

```
echo %@ftype[Word.Document.8]
"C:\Program Files\Microsoft Office\Office14\WINWORD.EXE" /n ""
```

See also @ASSOC and FTYPE.

4.4.5.137 @FULL

@FULL[*filename[,path]***]** : Returns the full path and filename of a file. ***Filename*** must be in quotes if it contains white space or special characters. On an LFN drive, the returned filename may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

The optional *path* argument specifies the path name to use to create the name. The path can include relative path operators like "...\".

Note: The @FULL function makes no assumption about the existence of a file or directory. The ***filename*** parameter can be any string and the function will attempt to turn it into a fully qualified "volume + path + name" specification, whether that full reference exists or not.

Examples:

```
cdd c:\windows
echo %@full[explorer.exe]
C:\Windows\explorer.exe

echo "%@full[.]"
"C:\Windows"

echo "%@full["\Program Files"]"
"C:\Program Files"
```

4.4.5.138 @FUNCTION

@FUNCTION[*name***]** : Returns the definition of the specified user-defined function ***name*** as a string, or a null string if the function doesn't exist. When manipulating strings returned by @FUNCTION you may need to disable certain special characters with SETDOS /X. Otherwise, command separators, redirection characters, and other similar punctuation in the function may be interpreted as part of the current command, rather than part of a simple text string.

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Example:

```
echo %@function[myfunction]
```

See the FUNCTION command.

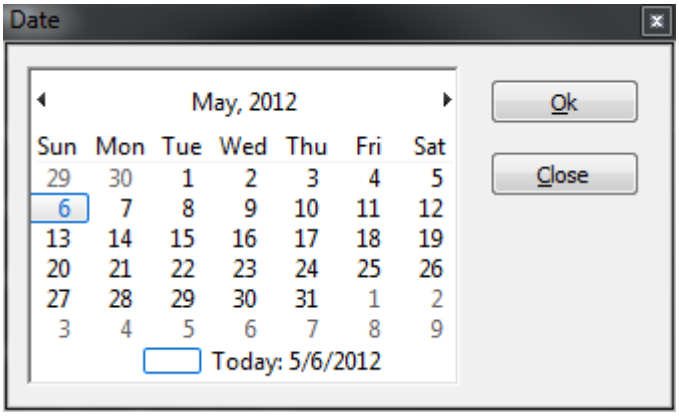
4.4.5.139 @GETDATE

@GETDATE[*[date]***]** : Display a calendar dialog and returns the selected date in *yyyy-mm-dd* format.

You can optionally pass a default date (also in *yyyy-mm-dd* format). If you do not specify a default date, **@GETDATE** will use the current date.

Example:

```
echo %@getdate[]
```



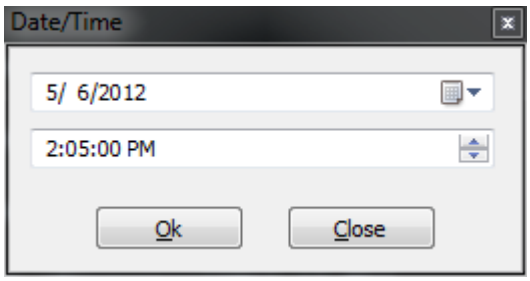
4.4.5.140 @GETDATETIME

@GETDATETIME[*[date time]***]** :Display a date/time picker dialog and returns the selected date in *yyyy-mm-dd hh:mm:ss* format.

You can optionally pass a default date and time (also in *yyyy-mm-dd hh:mm:ss* format). If you do not specify a default date, **@GETDATETIME** will use the current date and time.

Example:

```
echo %@getdatetime[]
```



4.4.5.141 @GETDIR

@GETDIR[*d:\path[,title]***]** : Pops up a dialog box to select a directory. ***d:\path*** specifies the initial directory; if it is not specified, @GETDIR defaults to the current directory. Returns the chosen directory as a string, or an empty string if the user selects "Cancel" or presses Esc.

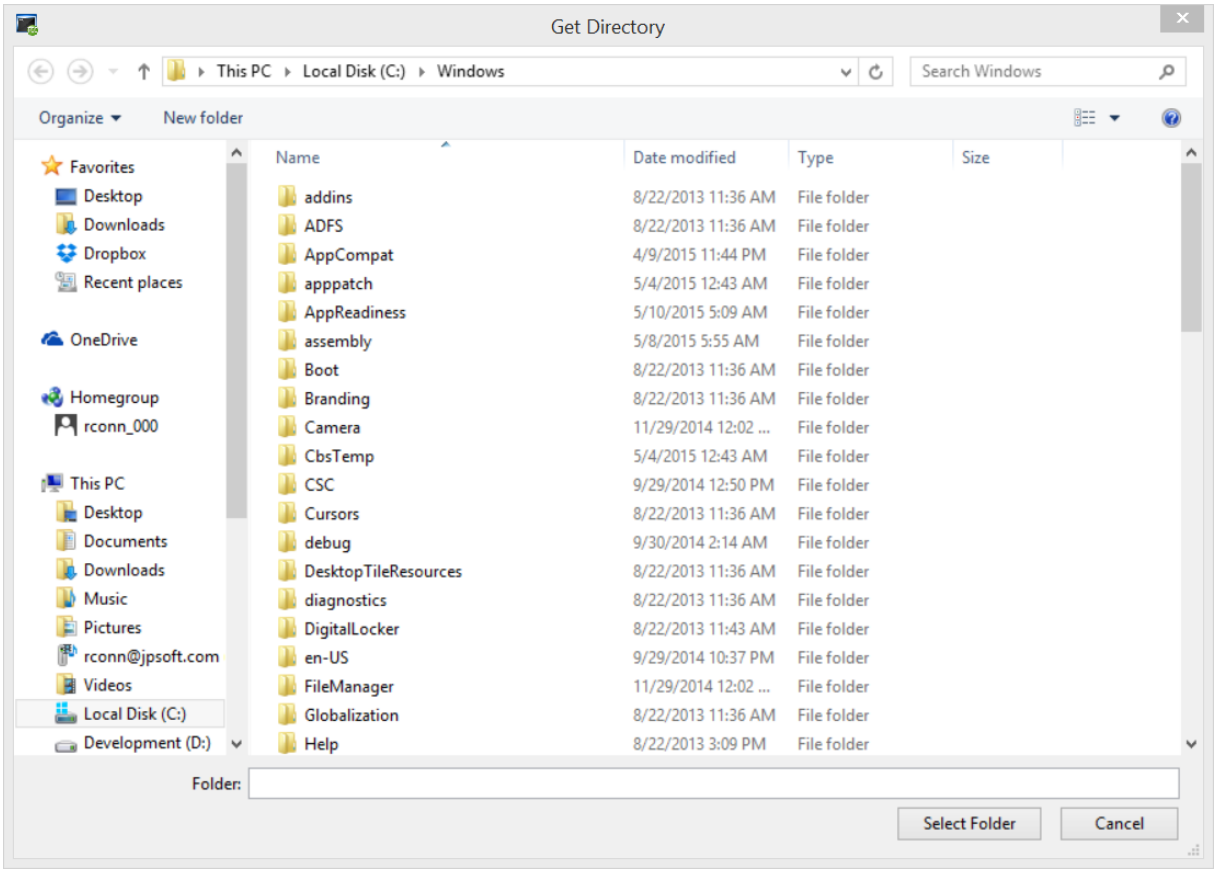
d:\path must be in quotes if it contains white space or special characters. On an LFN drive, the returned path may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned path before you pass it to other commands. See the notes under Variable Functions for additional details.

If ***path*** is quoted, the returned filename will also be quoted (if necessary).

@GETDIR accepts an optional second parameter to set the title of the dialog box.

Example:

```
cdd %@getdir["C:\windows"]
```



Note: @GETDIR deals with directories. All directories are folders, but not all folders are directories. To select a symbolic folder, see @GETFOLDER.

4.4.5.142 @GETFILE

@GETFILE[*d:\path\filename[,filter[,title]]***]**: Pops up a dialog box to select a file. ***d:\path\filename*** specifies the initial directory and filename shown in the dialog, and may include wildcards. Returns the full path and name of the selected file or an empty string if the user selects "Cancel" or presses Esc. The optional

second parameter specifies the file extension to use. You can specify multiple extensions by separating them with semicolons. For example, **%@getfile[c:\windows,*.exe;*.btm]** lets the user select from *.EXE* and *.BTM* files only.

The parameters must be in quotes if they contain white space or special characters. On an LFN drive, the returned filename may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

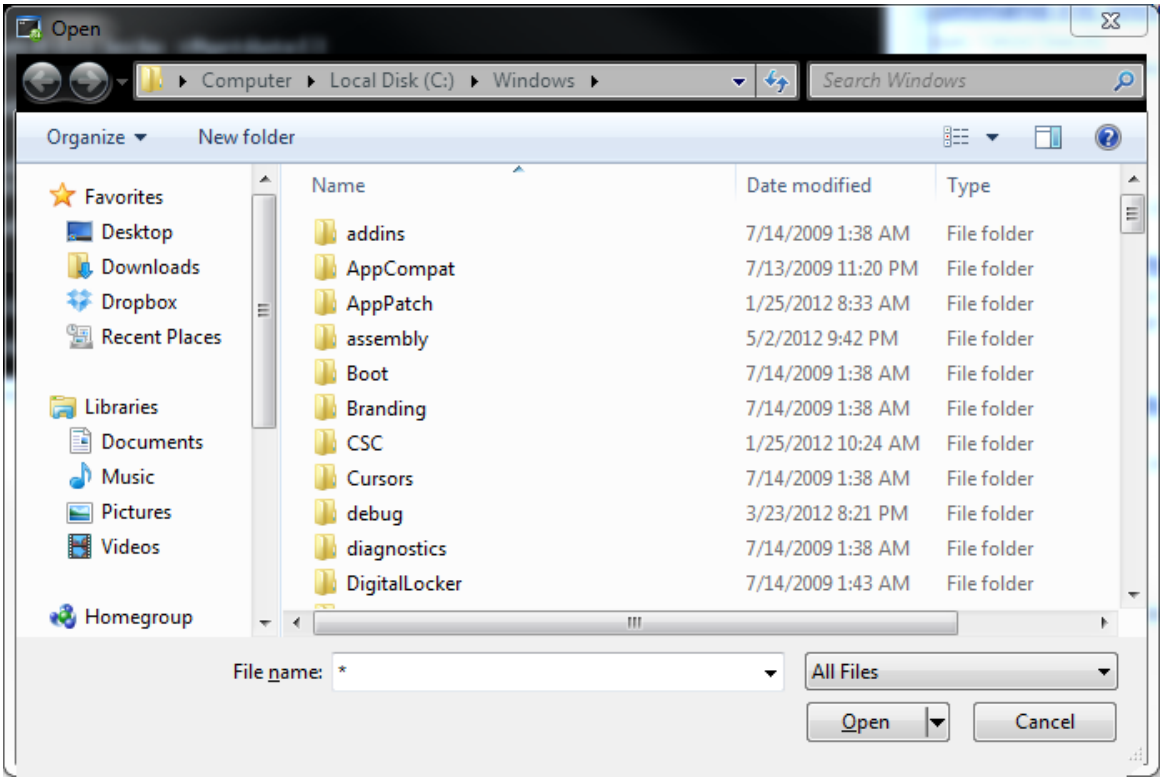
If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

@GETFILE accepts an optional third parameter to set the title of the dialog box.

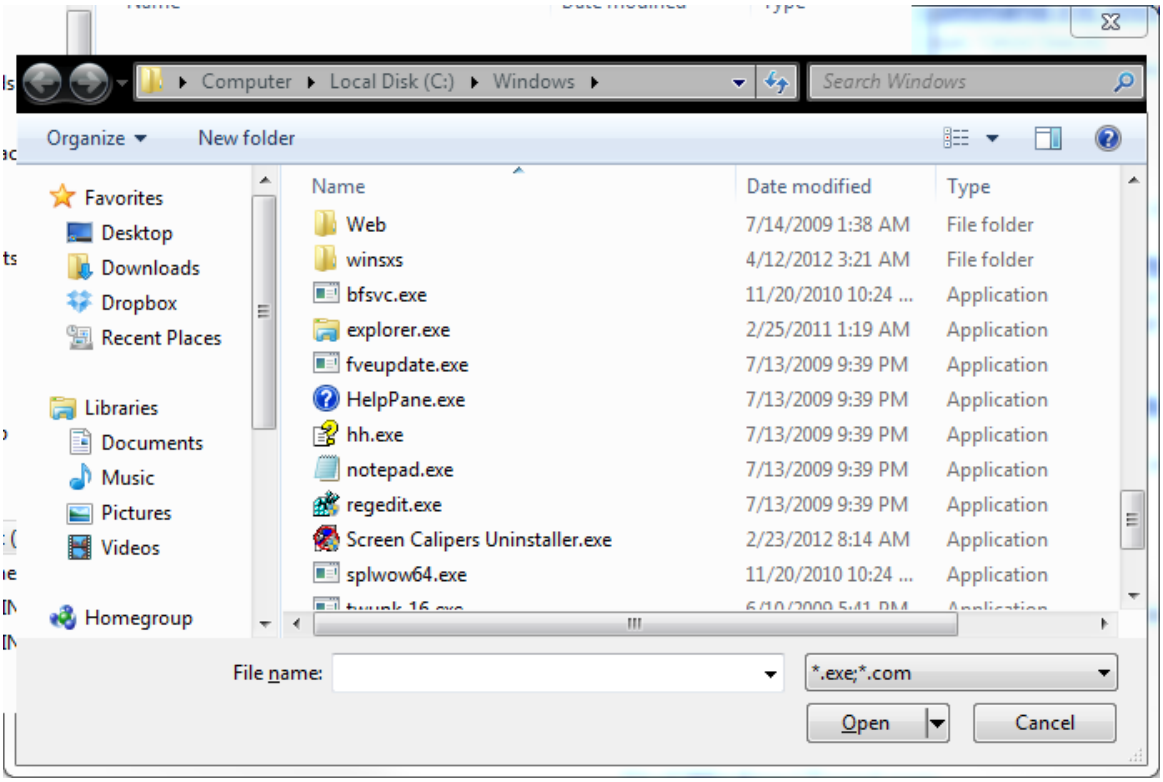
If you're looking for directories, use @GETFOLDER.

Examples:

```
echo %@getfile[*]
```




```
echo %@getfile["%windir",*.exe]
```



4.4.5.143 @GETFOLDER

@GETFOLDER[*startdir[,title]***]** : Returns a folder selected from a tree view of available symbolic folders. If you don't specify a start folder, @GETFOLDER starts at **My Computer** or the equivalent symbolic folder in your Windows configuration.

The optional second argument sets the text to display above the tree view.

If ***startdir*** is quoted, the returned folder name will also be quoted (if necessary).

Examples:

```
echo %@getfolder[]
```

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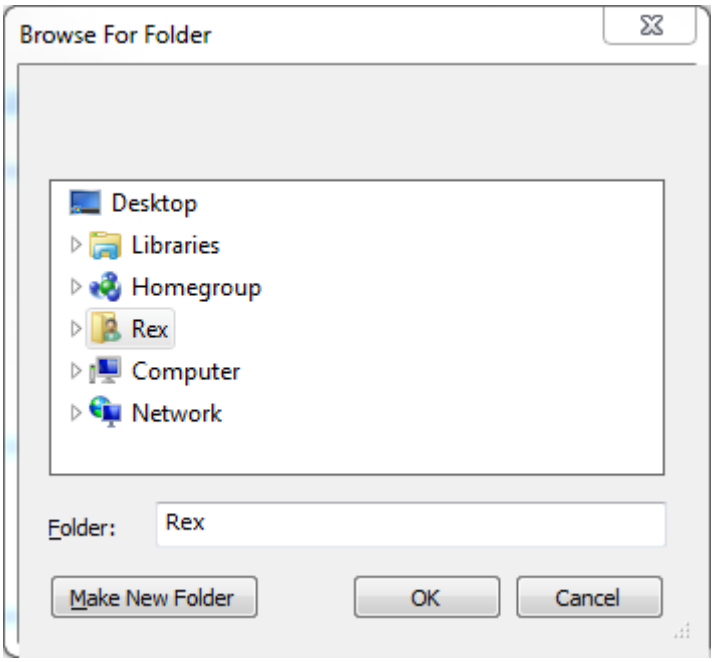
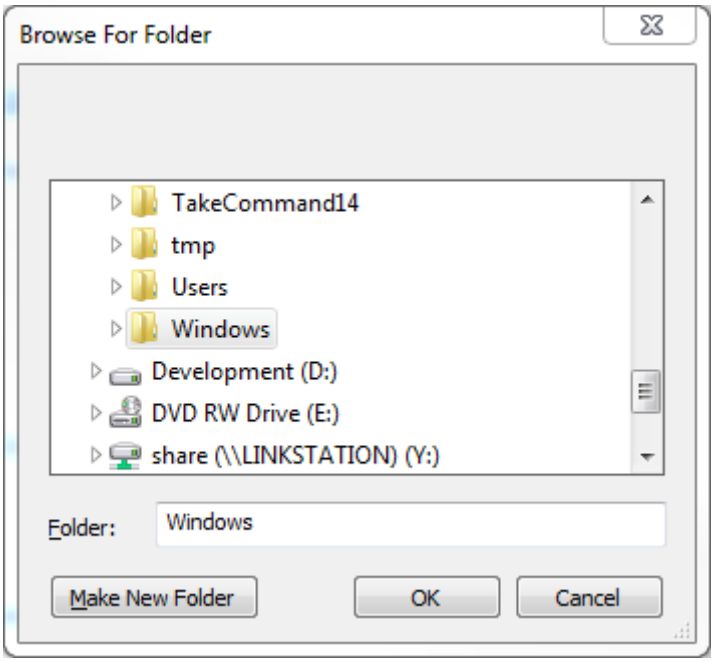



```
echo %@getfolder["c:\windows"]
```



Note: @GETFOLDER deals with folders. All directories are folders, but not all folders are directories. To select a directory, see @GETDIR.

4.4.5.144 @GROUP

@GROUP[*server,group,user***]** : Returns 1 if ***user*** is a member of the specified ***group***. ***server*** specifies the DNS or NetBIOS name of the computer on which the function is to execute.

4.4.5.145 @HEXDECODE

@HEXDECODE[s,*string***]** : Create a text string from a hexadecimal input string. Returns the text string.
@HEXDECODE[*inputfile,outputfile***]** : Decode a hex encoded file. Returns 0 if the output file was successfully written.

Example:

```
echo %@hexdecode[s,656e636f6465207468697320737472696e67]
encode this string
```

4.4.5.146 @HEXENCODE

@HEXENCODE[s,*string***]** : Create a hexadecimal string from a text input string. Returns the hex string.
@HEXENCODE[*inputfile,outputfile***]** : Encode a text file as a hex encoded file. Returns 0 if the output file was successfully written.

Example:

```
echo %@hexencode[s,encode this string]
656e636f6465207468697320737472696e67
```

4.4.5.147 @HISTORY

@HISTORY[*x[,y[,L|G]]***]** : Returns a line or word from the command history. (This function will prove most useful in keystroke aliases). ***x*** is the line to retrieve (current line = 0), and ***y*** is the specific word (first word = 0) desired within that line. If ***y*** is omitted, @HISTORY returns the entire line.

@HISTORY has an optional third argument specifying whether you want the local history list (**L**) or the global history list (**G**). @HISTORY will default to the local history list if it exists; otherwise @HISTORY will use the global history list. If you want to specify the history list to use, but not the optional second argument word to return, set ***y*** to -1.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

4.4.5.148 @HTMLDECODE

@HTMLDECODE[*string***]** : Decode an HTML string. The HTML escaped characters (i.e., **>**) are replaced with their original values.

Example:

```
echo "%@htmldecode[This is &amp; a string]"
"This is & a string"
```

See also TPIPE.

4.4.5.149 @HTMLENCODE

@HTMLENCODE[*string***]** : Encode a string for HTML, replacing characters like **> < &** with the HTML escaped characters (i.e., **>** for **>**).

Example:

```
echo "%@htmlencode[This is & a string]"
"This is &amp; a string"
```

See also TPIPE.

4.4.5.150 @IDOW

@IDOW[*date[,format]***]** : Returns the 3-character abbreviation for the day of the week for the specified date, in the current locale language. See date formats for information on date formats.

@IDOW accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)

Examples:

```
echo %@idow[01-01-1980]
Tue

echo %@idow[%_date]
Sun
```

See also: @DOW.

4.4.5.151 @IDOWF

@IDOWF[*date[,format]***]** : Returns the full name for the day of the week for the specified date, in the current locale language. See date formats for information on date formats.

@IDOWF accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)

Examples:

```
echo %@idowf[01-01-2010]
Tuesday

echo %@idowf[%_date]
Sunday
```

See also: @DOWF.

4.4.5.152 @IF

@IF[*condition,string1,string2***]**: Evaluates ***condition*** according to the rules described in Conditional Expressions, and if **true**, it returns ***string1***, otherwise it returns ***string2***. Leading and trailing white space in ***string1*** and ***string2*** is retained. Either string may be empty or contain white space only. **WARNING*:*** Both ***string1*** and ***string2*** are evaluated whether or not used. Do not use @IF if evaluating either one of the strings may fail; use the **IF** or **IFF** command instead.

Examples

1) The expression

```
%@IF[2 == 2,Correct!,Oops!]
```

returns **Correct!**

2) The command

```
echo Good %@if[%_hour ge 12,evening,morning]!
```

displays **Good morning!** in the AM hours and **Good evening!** in the PM hours.

3) Assuming ***A*** and ***C*** are files in the current directory, but ***B*** is a subdirectory, the command:

```
for %x in (A B C) echo "%x" is %@if[isfile "%x",   ,not] a file
```

will display

```
"A" is     a file
"B" is not a file
"C" is     a file
```

4.4.5.153 @INC

@INC[*string***]** returns

- `1` if ***string*** is empty
- otherwise the same value as @EVAL[***string*** + 1]

If ***string*** is the name of an environment variable, its value is used whether or not it is preceded by a percent mark `%` without modifying the value of the variable. To actually increment the value of the variable ***var*** use

```
set var=%@inc[%var]
```

Example:

```
set start=5
set result=%@inc[start]
echo %result
6
```

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4.4.5.154 @INDEX

@INDEX[*string1,string2[,n]***]**: Returns the offset of ***string2*** within ***string1***, or `-1` if ***string2*** is not found or if ***string1*** is empty. The first or leftmost position in ***string1*** is numbered **0**. The optional third parameter ***n*** has three different interpretations:

If ***n*** > 0, it specifies that the ***n***th match from left to right is desired.
If ***n*** < 0 or it is prefixed with the minus sign `-`, it specifies that the `-`***n***th match from right to left is desired.
If ***n***=0, the total number of matches is desired.

When ***n*** is omitted, the value returned is the offset of the *first* (leftmost) match.

Tips

- searching for a **comma** :

1. quote ***string1*** (to prevent the expected comma making it appear as more than one parameter)
2. use escape character in ***string2*** to escape the comma

```
echo %@index["TCC, Take Command, TCCLE",^,,2]
```

- searching for a **double quote** :

1. use escape character in ***string2*** to escape the double quote
2. use the special form **^q** to represent it in ***string2***:

```
echo %@index[contains a "quoted" word,^q,0]
```

See Codes for Escapable Characters for details.

Examples:

In all examples below

- ***string1***: `This is a fine help file`
- ***string2:*** `h`

n	*result*	*purpose*
omitted	1	locate leftmost
0	2	count occurrences
1	1	locate leftmost
2	15	locate second leftmost
3	-1	locate third leftmost
-1	15	locate rightmost
-2	1	locate second rightmost
-3	-1	locate third rightmost

4.4.5.155 @INIREAD

@INIREAD[*file,section,entry***]**: Returns the value of the first matching ***entry*** from the specified ***file***, or an empty string if either ***file*** or the entry in ***file*** does not exist. If ***file*** contains more than one section named ***section***, only the first one is searched for ***entry***.

File, section, and ***entry*** must be in quotes if they contain white space or special characters.

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File selection

Both the name and extension of ***file*** must be specified. This function does not apply a default extension. If ***file*** does not explicitly include a path, @INIREAD uses *%Windir*, the Windows installation directory. To use the current directory, you must explicitly specify it, e.g., using `.\` as the path.

Example

```
%@iniread[c:\tcmd\tcmd.ini,TakeCommand,history]

returns the size of the command history if it is specified in TCMD.INI.
```

4.4.5.156 @INIWRITE

@INIWRITE[*file,section,entry,string***]**: Creates, updates, or deletes an entry in the specified ***file***. If ***file*** does not exist, it will be created. @INIWRITE returns **0** for success or **-1** for failure.

File, section, and ***entry*** must be in quotes if they contain white space or special characters.

File selection

Both the name and extension of ***file*** must be specified. This function does not apply a default extension. If ***file*** does not explicitly include a path, @INIWRITE uses *%Windir*, the Windows installation directory. To use the current directory, you must explicitly specify it, e.g., using `.\` as the path.

Action

If ***file*** does not exist, it will be created. If ***string*** is empty, ***file*** will be empty, otherwise a section line and a directive line will be created.

The remaining descriptions relate to the case when ***file*** exists.

If more than one match for ***section*** exists in ***file***, only the first one is searched for ***entry***. If more than one match exists for ***section*** and ***entry***, only the first match is one is affected. Searching starts at the beginning of the file, and stops on the first match.

If ***string*** is empty, the matching ***entry***, if any, is deleted. If ***string*** is not empty, and there is a matching ***section*** and ***entry***, it is modified. If ***string*** is not empty, and there is no matching ***section*** and ***entry***, it is created.

If ***entry*** is empty, the matching ***section*** (if any) is deleted.

Examples

```
echo %@iniwrite[c:\tcmd\tcmd.ini,TakeCommand,history,8192]
```

will set the size of the command history to 8,192 bytes.

```
echo %@iniwrite[c:\tcmd\tcmd.ini,TakeCommand,history,]
```

will remove the ***history*** entry from the file.

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4.4.5.157 @INODE

@INODE[*filename*] : Returns the inode (in hex) for the specified file.

When files are hard-linked to one another (see MKLNK), they share the same inode.

@INODE may not work for remote files (depending on your network redirector and the type of server you are querying).

Example:

```
echo %@inode[c:\windows\explorer.exe]

00040000:000199D3
```

4.4.5.158 @INSERT

@INSERT[*offset,string1,string2***]** : Inserts ***string1*** into ***string2*** starting at ***offset***. The first offset in ***string2*** is **0**. If ***offset*** is greater than the length of ***string2***, ***string1*** will be appended to the end of ***string2***. If ***offset*** is negative, its value is used to count backward form the end of ***string2*** (but not past its beginning). Setting ***offset*** to **-0** is the same as setting it to **0**, i.e., ***string1*** will precede ***string2*** in the result. To include a comma in ***string1***, precede it with your escape character.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). To use hexadecimal form for a negative ***offset***, remember to use 32-bit 2's complement arithmetic.

Examples:

function	***value***
%@insert[1,arm,wing]	warming
%@insert[8,very ,this is useful]	this is very useful
%@insert[255,^, very!,this is useful]	this is useful, very!
%@insert[-9,very ,this is useful]	this very is useful
%@insert[0,abcde,xyz]	abcdexyz

4.4.5.159 @INSTR

@INSTR[*start,[length],string***]** : Returns a substring, beginning at offset ***start*** and continuing for ***length*** characters. If ***length*** is positive or it is omitted, the offset is measured from the beginning (i.e., left end) of the string. If ***length*** is omitted, all of the ***string*** beginning at offset ***start*** is returned. If ***length*** is negative, the offset is measured leftward from the right end of the string, and its length is specified by the value of ***length*** without the minus sign. @SUBSTR is an older version of the same function.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). To use hexadecimal form for a negative ***length***, remember to use 32-bit 2's complement arithmetic.

Examples:

function	***value***
=%@instr[8,3,this is useful]=	=use=
=%@instr[8,,this is useful]=	=useful=
=%@instr[8,-4,this is useful]=	=is u=

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=%@instr[8,,commas, they don't matter]=	=they don't matter=

4.4.5.160 @INT

@INT[*n*]: Returns the integer part of the number ***n***. @INT will perform an implicit @EVAL on its argument, so you can use an arithmetic expression for ***n.***

Examples:

```
echo %@int[1234]
1234

echo %@int[1.234]
1

echo %@int[12.34]
12
```

4.4.5.161 @IPADDRESS

@IPADDRESS[hostname]: Returns the numeric IP address for the specified hostname. The result is displayed in the standard format nnn.nnn.nnn.nnn. An invalid or unknown hostname will return an error (see @ERRTEXT to decipher the error number if necessary).

See also @IPNAME.

Example:

```
echo %@ipaddress[jpsoft.com]

141.101.124.120
```

4.4.5.162 @IPADDRESSN

@IPADDRESSN[*n*]: Returns the IP address of the adapter at index *n*

Example:

```
echo %@ipaddressn[0]
192.168.1.25
```

4.4.5.163 @IPALIASES

@IPALIASES[*name*]: Returns the other names (if any) corresponding to the host with the specified name.

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4.4.5.164 @IPBROADCAST

@IPBROADCAST[*adapter*] : The broadcast address of the specified network adapter.

adapter - The index of the adapter

4.4.5.165 @IPDESC

@IPDESC[*n*]: Returns the description for the adapter at index *n*

Example:

```
echo %@ipdesc[0]
NETGEAR WNA3100 N300 Wireless USB Adapter
```

4.4.5.166 @IPDHCP

@IPDHCP[*n*]: Returns the DHCP server for the adapter at index *n*

Example:

```
echo %@ipdhcp[0]
192.168.1.254
```

4.4.5.167 @IPDHCPENABLED

@IPDHCPENABLED[*adapter*] - Returns 1 if the specified network adapter has DHCP enabled

adapter - The index of the adapter

4.4.5.168 @IPEXPIRES

@IPEXPIRES[*adapter*] : The expiration date and time of the lease obtained by the specified network adapter.

adapter - the index of the adapter

4.4.5.169 @IPGATEWAY

@IPGATEWAY[*n*]: Returns the gateway for the adapter at index *n*

Example:

```
echo %@ipgateway[0]
192.168.1.1
```

4.4.5.170 @IPIPV6LL

@IPIPV6LL[*adapter*] : The IPv6 link local address of the specified network adapter.

adapter - the index of the adapter

4.4.5.171 @IPIPV6N

@IPIPV6N[*n*]: Returns the IPv6 address of the adapter at index *n*

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Example:

```
echo %@ipipv6n[0]
fe80::e432:b8ae:c538:4191
```

4.4.5.172 @IPNAME

@IPNAME[*numeric_IP***]** : Returns the host name for the specified ***numeric_IP*** address. An IP address **0** returns the name of the current local host (usually the computer name). The IP address can be expressed in the common format **nnn.nnn.nnn.nnn** or as a packed decimal. An invalid or unknown IP address returns an error (see @ERRTEXT to decipher the error number if necessary).

See also: @IPADDRESS.

Examples:

```
echo %@ipname[173.194.43.40]
lga15s35-in-f8.1e100.net

echo %@ipname[0]
ASUS-PC
```

4.4.5.173 @IPNAMEN

@IPNAMEN[*n***]**: Returns the name of the adapter at index *n*

Example:

```
echo %@ipnamen[0]
{E80FB8C8-0218-3B34-1188-528293717098}
```

4.4.5.174 @IPOBTAINED

@IPOBTAINED[*adapter*] : The date and time of when the current lease was obtained by the network adapter.

adapter - the index of the adapter

4.4.5.175 @IPOTHER

@IPOTHER[name, address] : Returns a space-delimited list of alternate addresses for the specified host (if any).

name - the host name
address - the host address

Most hosts have only one IP interface; this function is for querying multihomed hosts (hosts with more than one interface).

4.4.5.176 @IPOTHERL

@IPOTHERL[*adapter*] : Returns a space-delimited list of any other IP addresses leased by the specified network adapter.

adapter - the index of the adapter

4.4.5.177 @IPPHYSICAL

@IPPHYSICAL[*n*]: Returns the physical address of the adapter at index *n*

Example:

```
echo %@ipphysical[0]
30-4a-92-3e-66-1b
```

4.4.5.178 @IPPORT

@IPPORT[*service*] : Returns the port number for the specified service.

4.4.5.179 @IPSERVICEALIASES

@IPSERVICEALIASES[*service*] : Returns the aliases for the specified service.

4.4.5.180 @IPSTATUS

@IPSTATUS[*adapter*] : Returns the current status of the specified network adapter.

adapter - the index of the adapter

Possible return values are:

Up
Down
Testing
Unknown
Dormant
NotPresent
LowerLayerDown

Examples:

```
echo %@ipstatus[0]
down

echo %@ipstatus[3]
up
```

4.4.5.181 @IPSUBNET

@IPSUBNET[*n*] : Returns the subnet mask of the adapter at index *n*.

Example:

```
echo %@ipsubnet[0]
255.255.255.0
```

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4.4.5.182 @IPTYPE

@IPTYPE[*n*] : Returns the type of the adapter at index *n*. Possible values include:

OTHER
WIRELESS
ETHERNET
TOKENRING
FDDI
PPP
LOOPBACK
SLIP

Example:

```
echo %@iptype[0]
WIRELESS

echo %@iptype[1]
ETHERNET
```

4.4.5.183 @IPWINS

@IPWINS[*n*] : Returns 1 if the adapter at index *n* uses WINS.

Example:

```
echo %@ipwins[0]
0
```

4.4.5.184 @IPWINSSERVER

@IPWINS[*n*] : Returns 1 if the adapter at index *n* uses WINS.

Example:

```
echo %@ipwins[0]
0
```

4.4.5.185 @IPWINSSERVER2

@IPWINSSERVER2[*adapter*] : Returns the secondary WINS server for the specified network adapter.

adapter - the index of the adapter

4.4.5.186 @IPZONEID

@IPZONEID[*n*] : Returns the IPv6 Zone ID (also known as a scope ID) for the adapter at index *n*. The values of the Zone ID are defined relative to the sending host

Example:

```
echo %@ipzoneid[0]
```

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4.4.5.187 @ISALNUM

@ISALNUM[*string***]**: Returns **1** if ***string*** is entirely composed of alphabetic (a-z, A-Z) and/or numeric (0 - 9) characters; **0** otherwise.

See also: @ISALPHA, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@isalnum[123abc]
1

echo %@isalnum[123 abc]
0

echo %@isalnum[123.456]
0
```

4.4.5.188 @ISALPHA

@ISALPHA[*string***]**: Returns **1** if ***string*** is entirely composed of alphabetic (a-z, A-Z) characters; **0** otherwise.

See also: @ISALNUM, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@isalpha[abc]
1

echo %@isalpha[ABC]
1

echo %@isalpha[A B C]
0
```

4.4.5.189 @ISASCII

@ISASCII[*string***]**: Returns **1** if ***string*** is entirely composed of 7-bit ASCII characters (0x00 - 0x7F); **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@isascii[abc]
1
```

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```
echo %@isascii[abc 123]
1

echo %@isascii["abc"a]
0
```

4.4.5.190 @ISCNTRL

@ISCNTRL[*string***]**: Returns **1** if ***string*** is entirely composed of ASCII control characters (0x00 - 0x1F or 0x7F); **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@iscntrl[abc]
0

set var=^r^n
echo %@iscntrl[%var]
1
```

4.4.5.191 @ISDIGIT

@ISDIGIT[*string***]** : Returns **1** if ***string*** is entirely composed of decimal digits (0- 9); **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISCNTRL, @ISPRINT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@isdigit[0]
1

echo %@isdigit[123.456]
0

echo %@isdigit[-123]
0
```

4.4.5.192 @ISFLOAT

@ISFLOAT[*string*] : Returns 1 if *string* is composed only of numeric characters, a decimal separator, and an optional sign and/or thousands separator(s). The decimal separator and thousands separator are determined by your default country settings.

Examples:

```
echo %@isfloat[1234]
0
```

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```
echo %@isfloat[1234.5]
1
```

4.4.5.193 @ISLOWER

@ISLOWER[*string*] - returns 1 if *string* is composed only of lower case letters.

Examples:

```
echo %@islower[hello]
1

echo %@islower[Hello]
0
```

4.4.5.194 @ISODOWI

@ISODOWI[*date*] : Returns the ISO 8601 numeric day of the week (Monday=1, Sunday=7).

Examples:

```
echo %@isodowi[%_date]
7

echo %@isodowi[2012-01-02]
1
```

4.4.5.195 @ISOWEEK

@ISOWEEK[*date*] : Returns the ISO8601 numeric week of year.

Examples:

```
echo %@isoweek[%_date]
23

echo %@isoweek[2012-23-02]
1
```

4.4.5.196 @ISOWYEAR

@ISOWYEAR[*date*] : Returns the ISO8601 numeric week date year.

Example:

```
echo %@isowyear[%_date]
2021
```

4.4.5.197 @ISPRIME

@ISPRIME[*n*] : Returns 1 if the (64-bit integer) *n* is a prime number.

Examples:

```
echo %@isprime[7]
```

```
1

echo %@isprime[22]
0

echo %@isprime[30181]
1
```

4.4.5.198 @ISPRINT

@ISPRINT[*string***]**: Returns **1** if ***string*** is entirely composed of printable characters; **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPUNCT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@isprint[abc]
1

set var=abc^ndef
echo %@isprint[%var]
0
```

4.4.5.199 @ISPROC

@ISPROC[*pid***]** : Returns 1 if the specified process ID is an active process, or 0 if it is not.

Examples:

```
echo %@pid[tcc.exe]
447988

echo %@isproc[447988]
1
```

4.4.5.200 @ISPUNCT

@ISPUNCT[*string***]**: Returns **1** if ***string*** is entirely composed of punctuation characters, i.e. printable characters which are not alphanumeric or space; **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISSPACE, @ISXDIGIT.

Examples:

```
echo %@ispunct[.]
1

echo %@ispunct[+]
1
```

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```
echo %@ispunct[:-)]
1

echo %@ispunct[.,a]
0
```

4.4.5.201 @ISSPACE

@ISSPACE[*string***]**: Returns **1** if ***string*** is entirely composed of white space characters (0x09 - 0x0D or 0x20); **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISXDIGIT.

Example:

```
echo %@isspace[ ]
1

echo %@isspace[hello world]
0
```

4.4.5.202 @ISUPPER

@ISUPPER[*string*] : Returns 1 if *string* is composed only of upper case letters.

Example:

```
echo %@isupper[HELLO]
1

echo %@isupper[Hello]
0
```

4.4.5.203 @ISXDIGIT

@ISXDIGIT[*string***]**: Returns **1** if ***string*** is entirely composed of hexadecimal digits (0- 9,A-F, a-f); **0** otherwise.

See also: @ISALNUM, @ISALPHA, @ISASCII, @ISCNTRL, @ISDIGIT, @ISPRINT, @ISPUNCT, @ISSPACE.

Example:

```
echo %@isxdigit[0]
0

echo %@isxdigit[7F]
1

echo %@isxdigit[0x7F]
1
```

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4.4.5.204 @JSONCLOSE

@JSONCLOSE[] : Close a JSON file opened by @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and exits:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

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4.4.5.205 @JSONCREATE

@JSONCREATE[*filename*] : Create a JSON file for writing by other JSON variable functions (for example, @JSONSTARTOBJECT, @JSONPUTPROPERTY, etc.).

If a JSON file is already open it will be closed before the new file is created. If the file already exists, @JSONCREATE will return an error.

Returns 0 on success, or a JSON error code on failure.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath

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208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.206 @JSONENDARRAY

@JSONENDARRAY[] : Write the closing bracket of a JSON array.

Returns 0 on success, or a JSON error code on failure.

See also @JSONSTARTARRAY.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, creates an array, writes two values into the array, closes the array, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonPutName["previousOwners"]
echo %@jsonStartArray[]
echo %@jsonPutValue["Steve Widgetson",2]
echo %@jsonPutValue["Wanda Widgetson", 2]
echo %@jsonEndarray[]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido","previousOwners":["Steve Widgetson","Wanda Widgetson"]}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag

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202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

```
echo %@jsoninput[]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonPutName["previousOwners"]
echo %@jsonStartArray[]
echo %@jsonPutValue["Steve Widgetson",2]
echo %@jsonPutValue["Wanda Widgetson", 2]
echo %@jsonPutValue["Randy Cooper", 2]
echo %@jsonPutValue["Linda Glover", 2]
echo %@jsonEndarray[]
echo %@jsonPutProperty["weightUnit","lbs",2]
echo %@jsonPutProperty["weight","62",3]
echo %@jsonEndObject[];
echo %@jsonsave[d:\\fido.json,1]
echo %@jsonFlush[]
```

4.4.5.207 @JSONENDOBJECT

@JSONENDOBJECT[] : Write the closing brace of a JSON object.

Returns 0 on success, or a JSON error code on failure.

See also @JSONSTARTOBJECT.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.208 @JSONFLUSH

@JSONFLUSH[] : Flush the JSON parser buffers.

@JSONFLUSH will write the current JSON buffer to disk if it has changed.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.209 @JSONHASXPATH

@JSONHASXPATH[*["filename",]xpath*] : Returns 1 if the specified *xpath* exists in the JSON file, or 0 if it doesn't.

The *xpath* always begins with /json.

If you do not specify a filename, @JSONHASXPATH will use the file previously opened by @JSONOPEN.

Example:

For example, with this JSON file:

```
{
  "firstlevel": {
    "one": "value",
```

```
    "two": ["first", "second"],
    "three": "value three"
  }
}

echo %@jsonnasxpath["test.json",/json/firstlevel/one/]
1
```

JSON Errors

10231 Unbalanced element tag.
10232 Invalid JSON markup.
10233 Invalid XPath.
10234 DOM tree unavailable (set BuildDOM to true and reparse).

XMLp Errors

101 Invalid attribute index.
102 No attributes available.
103 Invalid namespace index.
104 No namespaces available.
105 Invalid element index.
106 No elements available.
107 Attribute does not exist.
201 Unbalanced element tag.
202 Unknown element prefix (can't find namespace).
203 Unknown attribute prefix (can't find namespace).
204 Invalid XML markup.
205 Invalid end state for parser.
206 Document contains unbalanced elements.
207 Invalid XPath.
208 No such child.
209 Top element does not match start of path.
210 DOM tree unavailable
302 Can't open file.

4.4.5.210 @JSONINPUT

@JSONINPUT[*inputdata*] : Parse an input string as JSON data. (Use this instead of @JSONOPEN if you don't have an input file.)

@JSONINPUT will parse the input string and create an internal JSON document. You can modify the document with the other @JSONxxx commands (such as @JSONINSERTVALUE) and then save the document to disk with @JSONSAVE and @JSONCLOSE.

Returns 0 on success, or a JSON error code on failure.

Example:

Pass a JSON string to @JSONINPUT, and write it to the file *d:\json* :

```
echo %@jsoninput[{"name":"fido"}]
echo %@jsonsave[d:\fido.json]
echo %@jsonclose[]
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.211 @JSONINSERTPROPERTY

@JSONINSERTPROPERTY[xpath,name,*value,type,position*] : Writes a value of a property.

Name specifies the name of the property.

Value specifies the new value.

Type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)

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- 6 (Raw)

The *Position* parameter specifies the position of Value relative to the element specified by *XPath*. Possible values are:

- 0 (Before the current element)
- 1 (After the current element)
- 2 (The first child of the current element)
- 3 (The last child of the current element)

The JSON file must have been opened with a previous call to @JSONOPEN.

Example:

If you have a JSON file like this:

```
{
  "store": {
    "books": [
      {
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
      },
      {
        "category": "fiction",
        "author": "Evelyn Waugh",
        "title": "Sword of Honour",
      }
    ]
  }
}
```

To insert a new property "price" for each book:

```
echo %@jsoninsertproperty[/json/store/books/[1],"price","8.95",3,3]
echo %@jsoninsertproperty[/json/store/books/[1],"price","12.99",3,3]
```

This will produce the JSON:

```
{
  "store": {
    "books": [
      {
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
        "price": 8.95
      },
```

```
        {
          "category": "fiction",
          "author": "Evelyn Waugh",
          "title": "Sword of Honour",
          "price": 12.99
        }
      ]
    }
  }
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.212 @JSONINSERTVALUE

@JSONINSERTVALUE[xpath,*value,type,position*] : Inserts the specified value at the selected position.

Value specifies the new value.

Type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

The *Position* parameter specifies the position of Value relative to the element specified by *XPath*. Possible values are:

- 0 (Before the current element)
- 1 (After the current element)
- 2 (The first child of the current element)
- 3 (The last child of the current element)

The JSON file must have been opened with a previous call to @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

For example, if you have a JSON file like this:

```
{
  "store": {
    "books": [
      {
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
      },
      {
        "category": "fiction",
        "author": "Evelyn Waugh",
        "title": "Sword of Honour",
      }
    ]
  }
}
```

To add a new book to the array:

```
echo %@jsoninsertvalue[/json/store/books,"",0,3]
echo %@jsoninsertproperty[/json/store/books/[3],"category","fiction",2,3]
echo %@jsoninsertproperty[/json/store/books/[3],"author","Herman
Melville",2,3]
```

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```
echo %@jsoninsertproperty[/json/store/books/[3],"title","Moby Dick",2,3]
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.213 @JSONNODES

@JSONNODES[["*filename",]path*] : Returns the number of nodes (children) for the specified path in a JSON file.

If you do not specify a filename, @JSONNODES will use the file previously opened by @JSONOPEN.

Example:

For example, with this JSON file:

```
{
  "firstlevel": {
    "one": "value",
    "two": ["first", "second"],
    "three": "value three"
  }
}
```

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```
echo %@jsonnodes["test.json",/json/firstlevel/]
"value"
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.214 @JSONOPEN

@JSONOPEN[*filename*] : Open a JSON file for use by other JSON variable functions (for example, @JSONXPATH, @JSONNODES, @JSONINPUTVALUE, etc.).

Returns 0 on success, or a JSON error code on failure.

Example:

For example, with this JSON file *level.json* :

```
{
  "firstlevel": {
    "one": "value",
    "two": ["first", "second"],
    "three": "value three"
  }
}
```

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```
echo %@jsonopen[level.json]
echo %@jsonxpath[/json/firstlevel/one/]
"value"

echo %@jsonxpath[/json/firstlevel/two/[2]/]
"second"
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.215 @JSONOUTPUT

@JSONOUTPUT[*inputdata*] : Output JSON to a string after processing. (Use this instead of @JSONSAVE if you don't want to create a file.)

Returns 0 on success, or a JSON error code on failure.

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.216 @JSONPUTNAME

@JSONPUTNAME[*name*] : Writes the name of a property to a JSON file.

The file must have been opened with a previous @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)

203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.217 @JSONPUTPROPERTY

@JSONPUTPROPERTY[*name,value,type*] : Writes the name of a property and its value to a JSON file.

The file must have been opened with a previous @JSONOPEN.

The *name* parameter specifies the name of the property.

The *value* parameter specifies the value of the property.

The *type* parameter specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

Returns 0 on success, or a JSON error code on failure.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.218 @JSONPUTRAW

@JSONPUTRAW[*text*] : Writes a raw JSON fragment to a JSON file.

The file must have been opened with a previous @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index

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106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.219 @JSONPUTVALUE

@JSONPUTVALUE[*value,type*] : Writes the value of a property to a JSON file.

Value specifies the new value.

ValueType specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

The file must have been opened with a previous @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, creates an array, writes two values into the array, closes the array, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonPutName["previousOwners"]
echo %@jsonStartArray[]
echo %@jsonPutValue["Steve Widgetson",2]
echo %@jsonPutValue["Wanda Widgetson", 2]
echo %@jsonEndarray[]
echo %@jsonEndObject[]
```

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```
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido","previousOwners":["Steve Widgetson","Wanda Widgetson"]}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.220 @JSONREMOVE

@JSONREMOVE[*xpath*] : Removes the element or value set in XPath. The file must have been opened with a previous @JSONOPEN.

If *xpath* is not specified, @JSONREMOVE will use the current XPath.

Returns 0 on success, or a JSON error code on failure.

Example:

With this JSON file:

```
{
  "store": {
    "books": [
      {
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
      },
      {
        "category": "fiction",
        "author": "Evelyn Waugh",
        "title": "Sword of Honour",
      }
    ]
  }
}
```

To remove the "category" properties from each book:

```
%@jsonremove[/json/store/books/[1]/category]
%@jsonremove[/json/store/books/[2]/category]
```

To remove the first book:

```
%@jsonremove[/json/store/books/[1]]
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element

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207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.221 @JSONRESET

@JSONRESET[] : Flush the JSON parser buffers, and initialize the parser to its default state.

Returns 0 on success, or a JSON error code on failure.

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.222 @JSONSAVE

@JSONSAVE[*outputfile[,overwrite]*] : Saves the modified JSON document to the specified output file.

If the optional *overwrite* argument is 1, @JSONSAVE will overwrite an existing file. Otherwise, @JSONSAVE will display an error.

@JSONSAVE would normally be used when you are creating a document using @JSONINPUT.

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@JSONSAVE returns 0 on success, or an error code on failure.

Example:

Pass a JSON string to @JSONINPUT, and write it to the file *d:\json* :

```
echo %@jsoninput[{"name":"fido"}]
echo %@jsonsave[d:\fido.json]
echo %@jsonclose
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors @JSONCREATE

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.223 @JSONSETNAME

@JSONSETNAME[*[xpath,]name*] : Sets a new name for the element specified by XPath. The file must have been opened with a previous @JSONOPEN.

If *xpath* is not specified, @JSONSETNAME will default to the current *xpath*.

Returns 0 on success, or a JSON error code on failure.

Example:

With this JSON file:

```
{
  "store": {
    "books": [
      {
        "tags": ["trilogy", "war"],
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
      },
      {
        "tags": ["classic", "whales"],
        "category": "fiction",
        "author": "Evelyn Waugh",
        "title": "Sword of Honour",
      }
    ]
  }
}
```

To rename "tags" to meta:

```
%@jsonsetname[/json/store/books/[1]/tags,meta]
%@jsonsetname[/json/store/books/[2]/tags,meta]
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath

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208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.224 @JSONSETVALUE

@JSONSETVALUE[*[xpath,]value,type*] : Sets a new value for the element specified by XPath. The file must have been opened with a previous @JSONOPEN.

If *xpath* is not specified, @JSONSETVALUE will default to the current *xpath*.

value specifies the new value.

type specifies the type of the value. Possible values are:

- 0 (Object)
- 1 (Array)
- 2 (String)
- 3 (Number)
- 4 (Bool)
- 5 (Null)
- 6 (Raw)

Returns 0 on success, or a JSON error code on failure.

Example:

With this JSON file:

```
{
  "store": {
    "books": [
      {
        "tags": ["trilogy", "war"],
        "category": "reference",
        "author": "Nigel Rees",
        "title": "Sayings of the Century",
        "price": 12.99
      },
      {
        "tags": ["classic", "whales"],
        "category": "fiction",
        "author": "Evelyn Waugh",
        "title": "Sword of Honour",
        "price": 10.99
      }
    ]
  }
```

```
}
```

To update the price:

```
%@jsonsetvalue[/json/store/books/[1]/price,13.99,3]
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.225 @JSONSTARTARRAY

@JSONSTARTARRAY[] : Writes the opening bracket of a JSON array. The file must have been opened with a previous @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

See also @JSONENDARRAY;

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, creates an array, writes two values into the array, closes the array, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
```

```
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonPutName["previousOwners"]
echo %@jsonStartArray[]
echo %@jsonPutValue["Steve Widgetson",2]
echo %@jsonPutValue["Wanda Widgetson", 2]
echo %@jsonEndarray[]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido","previousOwners":["Steve Widgetson","Wanda Widgetson"]}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.226 @JSONSTARTOBJECT

@JSONSTARTOBJECT[] : Writes the opening brace of a JSON object. The file must have been opened with a previous @JSONOPEN.

Returns 0 on success, or a JSON error code on failure.

See also @JSONENDOBJECT.

Example:

This batch file creates a JSON file named *d:\fido.json*, writes the opening brace, writes a property, writes the closing brace, and closes the file:

```
echo %@jsoncreate[d:\fido.json]
echo %@jsonStartObject[]
echo %@jsonPutProperty["name", "fido", 2]
echo %@jsonEndObject[]
echo %@jsonFlush[]
echo %@jsonclose[]
```

The resulting file *d:\json* looks like this:

```
{"name":"fido"}
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

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4.4.5.227 @JSONXPATH

@JSONXPATH[*["filename",]path*] : JSON XPath query.

If *filename* is not specified, @JSONXPATH will use the current JSON file opened by @JSONOPEN.

The *path* is a series of one or more element accessors separated by '/'. The path can be absolute (starting with '/') or relative to the current XPath location. Note: When using XPath notation the root element is always referred to as "json". This means all paths will begin with "/json".

The following are possible values for an element accessor:

name	A particular element name.
[i]	The i-th subelement of the current element.
..	the parent of the current element.

Example:

For example, with this JSON file:

```
{
  "firstlevel": {
    "one": "value",
    "two": ["first", "second"],
    "three": "value three"
  }
}

echo %@jsonxpath["test.json",/json/firstlevel/one/]
"value"

echo %@jsonxpath["test.json",/json/firstlevel/two/[2]/]
"second"
```

JSON Errors

10231 Unbalanced element tag
10232 Invalid JSON markup
10233 Invalid XPath
10234 DOM tree unavailable

XMLp Errors

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist

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201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced element
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file.

4.4.5.228 @JUNCTION

@JUNCTION[*dir***]** : Returns the directory referenced by the specified junction.

Example:

```
mklink /j test2 test
Junction created for test2 <<===>> test

echo %@junction[test2]
test
```

4.4.5.229 @LABEL

@LABEL[*d:***]**: Returns the volume label of the specified disk drive. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @LABEL will expand the filename to get the drive.

Examples:

```
echo %@label[C:]
Windows10

echo %@label[%_disk:]
Development
```

See also: VOL.

4.4.5.230 @LCS

@LCS[*string1,string2***]** : Returns a pointer to the Longest Common Subsequence in ***string1*** and ***string2***.

Example:

```
echo %@lcs[First string,second string]
rst
```

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4.4.5.231 @LEFT

@LEFT[*n,string***]** : If ***n*** is positive, it returns the leftmost ***n*** characters of ***string.*** If ***n*** is greater than the length of ***string***, it returns the entire ***string***. If ***n*** is negative, it returns ***string*** after dropping its rightmost ***n*** characters, unless ***-n*** is greater than the length of ***string***, in which case it returns an empty string.

Examples:

```
echo %@LEFT[2,jpsoft]
jp

echo %@LEFT[22,jpsoft]
jpsoft

echo %@LEFT[-2,jpsoft]
jpso

echo "%@LEFT[-22,jpsoft]"
""
```

4.4.5.232 @LEN

@LEN[*string***]** : Returns the length of ***string***.

Examples:

```
echo %@len[this is a test]
14

echo %@len[%comspec]
41
```

4.4.5.233 @LFN

@LFN[*filename***]**: Returns the long filename for a short ("8.3") ***filename***. The ***filename*** may contain any valid filename element including drive letter, path, filename and extension; the entire name including all intermediate paths will be returned in long name format. If ***filename*** does not refer to an actual file, the results are unpredictable.

On an LFN drive, the returned name may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

Example:

```
echo "%@lfn[c:\progra~1]"
"C:\Program Files"
```

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4.4.5.234 @LINE

@LINE[*filename,n***]**: Returns line ***n*** from the specified file. The first line in the file is numbered 0. ****EOF**** is returned for all line numbers beyond the end of the file.

The ***filename*** must be in quotes if it contains white space or special characters.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

The @LINE function must read each line of the file to find the line you request, and will therefore cause significant delays if used in a long loop or on a large file. For a more effective method of processing each line of a file in sequence use the DO command, or @FILEOPEN and a sequence of @FILEREADs.

You can retrieve input from standard input if you specify **CON** as the filename. If you are redirecting input to @LINE using this feature, you must use command grouping or the redirection will not work properly (you can pipe to @LINE without a command group; this restriction applies only to input redirection). For example:

```
(echo %@line[con,0]) < myfile.dat
```

@LINE can retrieve data from file streams on NTFS drives if the stream name is specified. See NTFS File Streams for additional details on file streams.

Beware of characters with special meaning to ***TCC***, such as redirection and piping symbols, within the file. Use SETDOS /X with appropriate codes as needed.

4.4.5.235 @LINES

@LINES[*filename***]**: Returns the line number of the last line in the file, or "-1" if the file is empty. The first line in the file is numbered 0, so (for example) @LINES will return 0 for a file containing one line. To get the actual number of lines, use %@INC[%@LINES[filename]].

The ***filename*** must be in quotes if it contains white space or special characters.

@LINES must read each line of the file in order to count it, and will therefore cause significant delays if used on a large file.

@LINES can count lines in file streams on NTFS drives if the stream name is specified. See NTFS File Streams for additional details on file streams.

@LINES also sets two variables:

%_LINES_MAXLEN	The length of the longest line (in characters)
%_LINES_MAXLOC	The line number (base 0) of the longest line

Example:

```
echo %@lines[readme.txt]
170
```

4.4.5.236 @LINKS

@LINKS[*filename*] : Returns the number of hard links for the specified file (NTFS only).

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@LINKS may not work for remote files (depending on your network redirector and the type of server you are querying).

See also MKLNK.

Example:

```
echo %@links[c:\windows\explorer.exe]
2
```

4.4.5.237 @LOWER

@LOWER[*string***]** : Returns the ***string*** converted to lower case.

Examples:

```
echo %@lower[ThiS iSS aTeSt]
this is a test

echo %@lower[%path]
c:\windows\system32
```

4.4.5.238 @LTRIM

@LTRIM[*string1,string2***]** : Returns ***string2*** with all the leading characters in ***string1*** removed. ***String1*** must be enclosed in double quotes if it contains any spaces, tabs, or commas.

Examples:

```
echo "%@ltrim[JP,JP Software]"
" Software"
```

4.4.5.239 @LUA

@LUA[*expression***]** : Execute a Lua expression.

Examples:

```
echo %@lua[print 'foo']
foo
```

4.4.5.240 @MACADDRESS

@MACADDRESS[*IPaddress***]**: Returns the unique Media Access Control (MAC) address of the network interface at *IPAddress*. An invalid or unknown address will return an error (see @ERRTEXT to decipher the error number if necessary).

See also @IPADDRESS.

Example:

```
echo %@macaddress[192.168.1.2]
00-7e-18-d5-2d-09
```

4.4.5.241 @MAKEAGE

@MAKEAGE[*date[,time[,format]]***]** : Converts ***date*** and ***time*** (if included) to an age, a single value in the same format as @FILEAGE.

@MAKEAGE accepts an optional third parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 (yyyy-Www-d)
6 ISO 8601 (yyyy-ddd)

@MAKEAGE can be used to compare the time stamp of a file with a specific date and time, for example:

```
if %@fileage[myfile] lt %@makeage[1/1/85] echo OLD!
```

@AGEDATE is the inverse of this function.

Examples:

```
echo %@makeage[%_date]
129807360000000000

echo %@makeage[%_date,%_time]
129808104040000000
```

See also: Time Stamps, @FILEAGE, @AGEDATE.

4.4.5.242 @MAKEDATE

@MAKEDATE[*n[,d]***]**: Returns a date, formatted according to the current country settings, or as explicitly specified by ***d*** (see Date Display Formats). ***n*** is interpreted as the number of days since 1980-01-01, and must be in the range **0** to **43829** (corresponding to the date **2099-12-31**). This is function is the inverse of @DATE. The optional second parameter specifies the date format:

0 system default
1 USA (mm/dd/yy)
2 European (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO 8601 (yyyy-mm-dd)
5 ISO 8601 (yyyy-Www-d)
6 ISO 8601 (yyyy-ddd)

Examples:

```
echo %@makedate[7924]
```

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```
09/11/01

echo %@makedate[7924,4]
2001-09-11
```

4.4.5.243 @MAKETIME

@MAKETIME[*n*] : Returns a time (formatted using the Time Separator specified in Regional Settings). ***n*** is interpreted as the number of seconds since midnight, and must not exceed 86399. This function is the inverse of @TIME.

Examples:

```
echo %@maketime[45240]
12:34:00

echo %@maketime[79244]
22:00:44
```

4.4.5.244 @MAX

@MAX[*a,b,c,...*]: Returns the largest in the list of parameters. All parameters must be integers in the range **-2147483647** `to` **2147483647** and must be separated either by whitespace or by commas.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Example*:*

```
echo %@max[1,5,2,0,-1]
5
```

4.4.5.245 @MD5

String mode: **@MD5[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@MD5[***[f,]filename[,start*[,*length*]]**]**
Binary mode: **@MD5[***[b,]handle[,start*[,*length*]]**]**

Returns the 32 hexadecimal digit MD5 hash of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer.

If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included.

Filename may be specified with or without an optional ***f***. @MD5 returns **-1** if the file does not exist, or it cannot be read.

If the first parameter is ***b*** for a binary buffer, ***handle*** is the handle returned by @BALLOC.

The optional ***start*** parameter specifies the starting position in the binary buffer or file (in bytes, defaulting to 0).

The optional ***length*** parameter specifies the length of the buffer to hash (in bytes, defaulting to 0).

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Since ***Take Command*** handles all internal strings as Unicode, @MD5 will return different results for a string and the identical string in an ASCII file.

See also: @SHA256, @SHA384, @SHA512, and @CRC32.

Example:

```
echo %@md5[s,this is a string]
93D64091ADF43E8FC0B74257AFD82FC3
```

4.4.5.246 @MIN

@MIN[*a,b,c,...***]** : Returns the smallest in the list of parameters. All parameters must be integers in the range **-2147483647** `to` **2147483647** and must be separated either by whitespace or by commas.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Example*:*

```
echo %@min[1,5,2,0,-1]
-1
```

4.4.5.247 @MONTH

@MONTH[*date[,format]***]** : Returns the month number for the specified date (1-12). See date formats for information on acceptable date formats.

@MONTH accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Examples:

```
echo %@month[2018-01-01]
1

echo %@month[%_date]
5
```

4.4.5.248 @MX

@MX[*address*] : Returns the email server for the specified user address.

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Example:

```
echo %@mx[support@jpsoft.com]
direct-connect.jpsoft.com
```

4.4.5.249 @NAME

@NAME[*filename***]**: Returns the base name of a file, without the path or extension.

The ***filename*** must be in quotes if it contains white space or special characters. On an LFN drive, the returned filename may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

Note: The @NAME function makes no assumption about the existence of a file or directory. Its ***filename*** parameter can be any string and the function will attempt to extract from it a base name.

Examples:

```
echo %@name[xyz.abc]
xyz

echo "%@name[%_comspec]"
"tcc"
```

4.4.5.250 @NUMERIC

@NUMERIC[*[+|-]string***]** : Returns **1** if ***string*** is numeric, and **0** otherwise.

To be numeric, the following must be true:

1. The first character may be a + or – sign,
2. The next character must be a decimal digit (0 to 9) or the decimal separator.
3. The remainder of ***string*** must be composed entirely of decimal digits (0 to 9), the thousands separator, and no more than a single decimal separator, with no thousands separators following the decimal separator.

Examples:

function	*value*
%@numeric[12345]	1
%@numeric[-12345]	1
%@numeric[.12345]	1
%@numeric[$12.34]	0
%@numeric[5.00.125]	0
%@numeric[+5.00.125,5]	0
%@numeric[.00.125]	0
%@numeric[-5,.00.125]	0

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4.4.5.251 @OPTION

@OPTION[*directive***]** : Returns the current value of the requested configuration option. All directives which can be altered dynamically are supported. If ***directive*** is not supported, an error is returned.

For configuration directives, the current value returned may not match that stored in the *.INI* file.

For color directives, the current value is returned as a single number (0-255) combining foreground and background specifications. See Colors, Color Names & Codes for details.

Examples:

```
echo %@option[passiveftp]
Yes

echo %@option[stdcolors]
0
```

4.4.5.252 @OWNER

@OWNER[*filename***]**: Returns the owner of the specified file (if any).

Examples:

```
echo %@owner[c:\windows\explorer.exe]
NT SERVICE\TrustedInstaller

echo %@owner[v.exe]
ASUS-PC\Rex
```

4.4.5.253 @PARSE

@PARSE[*line*,*switches*[,*arg*]] : Parse the command line for switches, returning an OR'd value for matching switches or optionally the argument(s) following the switch.

line - The (double quoted) command line to parse. If line is ".", ***TCC*** will substitute the command line for the current batch file.

switches - One or more switch arguments (for example, /RST will match either an /R, and /S, or a /T on the command line.

arg - An optional integer value for the argument(s) following the switch to return. A 0 will return the switch, 1 the first argument following the switch. A * will return the remainder of the command line following the switch.

4.4.5.254 @PATH

@PATH[*filename***]**: Returns the path portion of ***filename***, if present, including the drive letter and a trailing backslash but not including the base name or extension. If the ***filename*** parameter doesn't contain path information, you may expand it first with the @FULL function.

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The ***filename*** must be in quotes if it contains white space or special characters. On an LFN or NTFS drive, the returned filename may contain white space or other special characters. To avoid problems which could be caused by these characters, quote the returned name before you pass it to other commands. See the notes under Variable Functions for additional details.

Note: The @PATH function makes no assumption about the existence of a file or directory. Its ***filename*** parameter can be any string, and the function will attempt to remove from it a "base name".

Examples:

```
echo "%@path["c:\program files\xyz.abc"]
"c:\program files\"

echo "%@path[xyz.abc]"
""
```

4.4.5.255 @PERL

@PERL[*expression***]** : Executes the specified Perl expression. @PERL requires PerlScript, the WSH COM interface to Perl. PerlScript is available with Active State Perl (from www.activestate.com).

Example:

4.4.5.256 @PID

@PID[*filename[,+]*] : Returns the PID for specified name (or 0 if no match). If you have multiple copies of the same executable running, **@PID** will return the first one it finds. The *filename* argument supports wildcards.

If you specify the optional second argument **+**, @PID will return all PID's that match the first argument.

```
@pid[firefox.*,+]
```

See also: @PPID, @PIDCOMMAND, @PIDUSER.

Example:

```
echo %@pid[tcc.exe]
22420

echo %@pid[firefox.exe,+]
11317 9466 12440
```

4.4.5.257 @PIDCOMMAND

@PIDCOMMAND[*pid*] : Returns the startup command line for the specified process ID.

Example:

```
set pid=%@pid[tcc.exe]
echo %@pidcommand[%pid]
"C:\Program Files\JPSoft\TCMD28\TCC.EXE"
```

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4.4.5.258 @PIDUSER

@PIDUSER[*pid*] : Returns the user name that owns the specified process ID.

System processes return an empty string.

Example:

```
echo %@piduser[2190]
rconn
```

4.4.5.259 @PING

@PING[*host[,timeout[,packetsize[,ttl[,type]]]]***] :** Returns the response time in milliseconds for the specified host.

host is the IP address or name.
timeout is the maximum number of seconds to wait (default is 60).
packetsize (optional) is the size of the data packet sent to the host in the ping request (default is 64). The minimum packet size is 12 bytes, and the maximum is 65520 bytes.
ttl (optional) is the time to live (default is the TTL value of the underlying TCP/IP subsystem).
type (optional) is the ICMP service type (default is 8).

@PING supports either IPv4 or IPv6 addresses. IPv6 requires an elevated session.

A negative value indicates an error. If the request times out, @PING returns **-1**. An unreachable host returns **-2**. An invalid address returns **-3**.

Examples:

```
echo %@ping[microsoft.com]
echo %@ping[microsoft.com,10]
echo %@ping[microsoft.com,,16]
echo %@ping[192.168.1.100,2,512]
```

4.4.5.260 @PLUGIN

@PLUGIN[*module***] :** Returns the full pathname for the specified plugin name.

Example:

```
echo %@plugin[plugin]
D:\TakeCommand28\x64\Debug\PlugIns\plugin.dll
```

4.4.5.261 @PLUGINVER

@PLUGINVER[*plugin***] :** Returns the version number (major.minor.build) for the specified plugin.

Example:

```
echo %@pluginver[plugin]
1.0.1
```

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4.4.5.262 @PPID

@PPID[*name*] : Returns the PID for the parent process of the specified name (or 0 if no match). If you have multiple copies of the same executable running, **@PPID** will return the parent PID for the first one it finds.

If the *name* argument begins with a **=**, it is assumed to be a PID instead of a process name.

Example:

```
echo %@ppid[tcc.exe]
21960
```

4.4.5.263 @PRIME

@PRIME[*n*] : Returns the first prime number >= *n* (a 64-bit integer).

Example:

```
echo %@prime[13798225]
13798247
```

4.4.5.264 @PRIORITY

@PRIORITY[*pid*] : Returns the priority class for the specified process ID. The return values are (in hex):

8000	Above normal
4000	Below normal
100	Realtime
80	High
40	Idle
20	Normal

Example:

```
echo %@priority[33900]
20
```

4.4.5.265 @PROCESSIO

@PROCESSIO[*pid, option***]** : Returns the I/O information for a process.

pid - The Process ID

option - The requested info:

0 - The number of read operations performed
1 - The number of write operations performed
2 - The number of I/O operations performed, other than read and write operations
3 - The number of bytes read
4 - The number of bytes written
5 - The number of bytes transferred during operations other than read and write operations

Examples:

```
echo %_pid
```

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```
33472

echo %@processio[33472,0]
187

echo %@processio[33472,1]
767

echo %@processio[33472,4]
188229
```

4.4.5.266 @PROCESSTIME

@PROCESSTIME[*pid,n***] :** Return the process time as a fileage. *n* is the time to return:

0 - Start time
1 - End time
2 - Kernel mode time
3 - User mode time

Example:

```
echo %@processtime[33900]
129811263230521496
```

4.4.5.267 @PSHELL

@PSHELL[*expression***]** : Executes the specified PowerShell expression.

4.4.5.268 @PUNYDECODE

@PUNYDECODE[s,*string*] : Decode a Punycode string.
@PUNYDECODE[*inputfile*,*outputfile*] : Decode a Punycode file.

4.4.5.269 @PUNYENCODE

@PUNYENCODE[s,*string*] : Encode a Punycode string.
@PUNYENCODE[*inputfile*,*outputfile*] : Encode a Punycode file.

4.4.5.270 @PYTHON

@PYTHON[*expression***]** : Executes the specified Python expression.

The Python interpreter in ***TCC*** is persistent, so if you want to reset it pass an empty string to **@PYTHON**.

Example:

```
echo %@python[print("Printing from Python")]
Printing from Python
0
```

4.4.5.271 @QPDECODE

@QPDECODE[s,*string*] : Decode a string using the Quote-Printable MIME format (using only special characters).
@QPDECODE[*inputfile*,*outputfile*] : Decode a file using the Quote-Printable MIME format (using only special characters).

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4.4.5.272 @QPENCODE

@QPENCODE[s,*string*] : Encode a string using the Quote-Printable MIME format (using only special characters).
@QPENCODE[*inputfile*,*outputfile*] : Encode a file using the Quote-Printable MIME format (using only special characters).

4.4.5.273 @QUOTE

@QUOTE[*string***]** : Returns a double quoted argument if it contains any whitespace characters.

Examples:

```
echo %@quote[Now is the time]
"Now is the time"

echo %@quote[Nowisthetime]
Nowisthetime
```

4.4.5.274 @RANDOM

@RANDOM[*min, max***]**: Returns a pseudo random integer value between ***min*** and ***max***, inclusive. The random number generator is initialized from the system clock the first time it is used after ***TCC*** starts and will therefore produce a different sequence of numbers each time you use it. The maximum range between **min** and **max** is a signed 64-bit integer.

Examples:

```
echo %@random[0,1]
0

echo %@random[-10,10]
7

echo %@random[-10,10]
9

echo %@random[-10,10]
-6
```

4.4.5.275 @READSCR

@READSCR[*row,col,length***]**: Returns the text displayed in the ***TCC*** window at the specified location. The upper left corner of the window is location 0,0. The ***row*** and ***column*** can be specified as an offset from the current cursor location by preceding either value with a [**+**] or [**-**]. For example:

```
%@readscr[-2,+2,10]
```

returns 10 characters from the screen, starting 2 rows above and 2 columns to the right of the current cursor position.

4.4.5.276 @READY

@READY[*d:***]**: Returns **1** if the specified drive is ready; otherwise returns **0**. The drive letter must be followed by a colon.

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If the argument is a partial filename without a drive, @READY will expand the filename to get the drive.

@READY does not support UNC names.

Examples:

```
echo %@ready[E:]
0

echo %@ready[%_boot:]
1
```

4.4.5.277 @REGBREAD

@REGBREAD[*HKEY...\subkey\value,handle,length***]:** Read a value from the registry to a binary buffer.

handle : A buffer previously created with @BALLOC.
length : The length (in bytes) to write to the registry key.

If @REGBREAD succeeds, it returns "0", otherwise it returns the Windows error number.

If the key name begins with *machinename*, @REGBREAD opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: Remember to use quotes around any entry containing spaces or commas!

See @REGBWRITE and @BALLOC.

4.4.5.278 @REGBWRITE

@REGBWRITE[*HKEY...\subkey\value,type,handle,length***]:** Write a value from a binary buffer to the registry.

type : The type of key. @REGBWRITE supports keys of type REG_BINARY and REG_NONE.
handle : A buffer previously created with @BALLOC.
length : The length (in bytes) to write to the registry key.

If @REGBWRITE succeeds, it returns "0", otherwise it returns the Windows error number.

If the key name begins with *machinename*, @REGBWRITE opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)

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HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: Remember to use quotes around any entry containing spaces or commas!

See @REGBREAD and @BALLOC.

4.4.5.279 @REGCOPYKEY

@REGCOPYKEY[*HKEY...\key, targetkey***]** : Recursively copy the specified key and all of its subkeys to the target key. Returns **1** if the key was copied, **0** otherwise. The key names must be enclosed in double quotes if they contain any separator characters (space, comma, or tab).

Both keys must be in the same root (HKCR, HKCU, HKLM, HKU, or HKCC).

If the key name begins with *machinename*, @REGCOPYKEY opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: If you are copying a very large tree, this function can take several minutes to finish. (This is a Windows issue, not ***TCC***.)

See @REGCREATE for information on the format of the key name.

4.4.5.280 @REGCREATE

@REGCREATE[*HKEY...\subkey***]**: Create a new registry subkey. The parameter starts with the root key, which can be abbreviated:

Full root key	Short
HKEY_CLASSES_ROOT	HKCR
HKEY_CURRENT_USER	HKCU
HKEY_LOCAL_MACHINE	HKLM
HKEY_USERS	HKU
HKEY_CURRENT_CONFIG	HKCC

The remainder of the parameter (after the backslash) specifies the new subkey. The entire name must be quoted if it contains any white space or special characters, for example:

```
@REGCREATE["HKLM\Software\My Company\My Product\User"]
```

REGCREATE will create any intermediate keys necessary. For example, `@REGCREATE[HKCU\key1\key2\key3]` will create all three keys (if they do not already exist). REGCREATE returns **0** if the subkey was created or the Windows error number if an error occurred.

If the key name begins with *machinename*, @REGCREATE opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

See also: @REGQUERY (read a value), @REGSET (write a value), and @REGSETENV (write and broadcast a value).

4.4.5.281 @REGDELKEY

@REGDELKEY[*HKEY...\key***]** : Deletes the specified key and all of its subkeys. Returns **1** if the key was deleted, **0** otherwise. The expression must be enclosed in double quotes if it contains any separator characters (space, comma, or tab).

If the key name begins with *machinename*, @REGDELKEY opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: use EXTREME caution with this function. It has the potential for causing irreparable damage to your registry and can even prevent Windows from booting!

See @REGCREATE for information on the format of the key name.

Example:

```
echo %@regcreate["HKEY_CURRENT_USER\Software\JP Software\Take Command
28\foo"]
echo %@regdelkey["HKEY_CURRENT_USER\Software\JP Software\Take Command
28\foo"]
1
```

4.4.5.282 @REGEX

@REGEX[*expression,string***]** : Returns **1** if the ***expression*** was found and **0** if it was not. The expression must be enclosed in double quotes if it contains any separator characters (space, comma, or tab). See Regular Expression Syntax for supported expressions.

Examples:

```
echo %@regex[\d,1234]
1

echo %@regex[\d,abcd]
0
```

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```
echo %@regex[[b-chm-pP]at|ot,Pat]
1
```

4.4.5.283 @REGEXINDEX

@REGEXINDEX[*expression,string***]** : Returns the offset of the first match. The ***expression*** must be enclosed in double quotes if it contains any separator characters (space, comma, or tab). See Regular Expression Syntax for supported expressions. (This function is basically a wildcard-enabled @INDEX.)

Examples:

```
echo %@regexindex[def,abcdefgh]
3

echo %@regexindex[\d,abcd1234]
4
```

4.4.5.284 @REGEXIST

@REGEXIST[*HKEY...\key***]** : Returns **1** if the specified key exists, **0** otherwise

The expression must be enclosed in double quotes if it contains any separator characters (space, comma, or tab).

If the key name begins with *machinename*, @REGEXIST opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

See @REGCREATE for information on the format of the key name.

Example:

```
echo %@regexist["HKEY_CURRENT_USER\Software\JP Software\Take Command 28"]
1
```

4.4.5.285 @REGEXSUB

@REGEXSUB[*n,expression,string*] - returns the "nth" matching group in the string. (If you don't specify a group in ***expression***, @REGEXSUB will return an empty string.) The expression must be enclosed in double quotes if it contains any separator characters (space, comma, or tab). See Regular Expression Syntax for supported expressions.

Examples:

```
echo %@regexsub[2,(\w+)\s(\1)\W,"She said that that was not correct."]
that

echo %@regexsub[0,(\w+\.)+\w+,"users.mail.com"]
```

```
users.mail.com

echo %@regexsub[1,(\w+\.)+\w+,"users.mail.com"]
mail.
```

4.4.5.286 @REGQUERY

@REGQUERY[*HKEY...\subkey\value***]:** Read a value from the registry. REGQUERY supports keys of type REG_DWORD, REG_QWORD, REG_EXPAND_SZ, REG_SZ, REG_DWORD_LITTLE_ENDIAN , and REG_QWORD_LITTLE_ENDIAN. If the key is of type REG_EXPAND_SZ, the value is returned without further expansion. If the value name does not exist, the function returns **-1**. If the value name is not supplied, REGQUERY returns the unnamed value for the specified key (the first value with a NULL name). To retrieve an unnamed value, add a trailing \ to the name.

If the key name begins with *machinename*, @REGQUERY opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: Remember to use quotes around any entry containing spaces or commas!

See @REGCREATE (create a subkey) for information on the format of the key name. See also: @REGSET (write a value) and @REGSETENV (write and broadcast a value).

Example:

```
echo %@regquery["HKCU\Software\JP Software\Take Command 28\Version"]
28.0.1.0
```

4.4.5.287 @REGSET

@REGSET[*HKEY...\subkey\value,type,data***]:** Write a value to the registry. REGSET supports keys of type REG_DWORD, REG_SZ, REG_EXPAND_SZ, REG_MULTI_SZ, and REG_DWORD_LITTLE_ENDIAN. ***Type*** is the value type (REG_DWORD, REG_EXPAND_SZ, or REG_SZ). ***Data*** is the data to set. If this parameter is not supplied, @REGSET will remove the value. REGSET returns **0** if the value was written or the Windows error number if an error occurred.

If you're setting REG_MULTI_SZ values, separate each *data* argument with a comma.

If the key name begins with *machinename*, @REGSET opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)

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HKEY_USERS (or HKU)

Note: Remember to use quotes around any entry containing spaces or commas!

See @REGCREATE for information on the format of the key name. See also: @REGQUERY (read a value) and @REGSETENV (write and broadcast a value).

Example:

```
echo %@regset["HKCU\Software\JP Software\Take Command
28\MyVersion",REG_SZ,9999]
echo %@regquery["HKCU\Software\JP Software\Take Command 28\MyVersion"]
9999
```

4.4.5.288 @REGSETENV

@REGSETENV[*HKEY...\subkey\value,type,data***]** : The same as @REGSET, but a broadcast message is sent to all applications when the change is made, so that any application monitoring such messages can respond to the change immediately if it is designed to do so. @REGSETENV returns **0** if the value was written or the Windows error number if an error occurred.

If the key name begins with *machinename*, @REGSETENV opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Note: Remember to use quotes around any entry containing spaces or commas!

See @REGCREATE for information on the format of the key name. See also: @REGQUERY (read a value) and @REGSET (write a value).

Example:

```
echo %@regsetenv["HKCU\Software\JP Software\Take Command
28\MyVersion",REG_SZ,9999]
echo %@regquery["HKCU\Software\JP Software\Take Command 28\MyVersion"]
9999
```

4.4.5.289 @REGTYPE

@REGTYPE[*HKEY...\key***]** : Returns the registry variable type. The possible values are:

0 - REG_NONE (No value type)
1 - REG_SZ (Unicode null terminated string)
2 - REG_EXPAND_SZ (Unicode null terminated string with environment variable references)
3 - REG_BINARY (Free form binary)
4 - REG_DWORD (32-bit number)
5 - REG_DWORD_BIG_ENDIAN (32-bit number)
6 - REG_LINK (Symbolic Link)

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7 - REG_MULTI_SZ (Multiple Unicode strings)
8 - REG_RESOURCE_LIST (Resource list in the resource map)
9 - REG_FULL_RESOURCE_DESCRIPTOR (Resource list in the hardware description)
10 - REG_RESOURCE_REQUIREMENTS_LIST
11 - REG_QWORD (64-bit number)

If the key name begins with *machinename*, @REGTYPE opens the registry on a remote machine. The remote registry service must be running on the remote machine, and you must have access and permissions. The HKEY parameter can be one of the following keys:

HKEY_CLASSES_ROOT (or HKCR)
HKEY_CURRENT_CONFIG (or HKCC)
HKEY_CURRENT_USER (or HKCU)
HKEY_LOCAL_MACHINE (or HKLM)
HKEY_PERFORMANCE_DATA (or HKPD)
HKEY_USERS (or HKU)

Example:

```
echo %@regset["HKCU\Software\JP Software\Take Command
28\MyVersion",REG_SZ,9999]
echo %@regtype["HKCU\Software\JP Software\Take Command 28\MyVersion"]
1
```

4.4.5.290 @REMOTE

@REMOTE[*d:***]**: Returns **1** if the specified drive is a remote (network) drive; otherwise returns **0**. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @REMOTE will expand the filename to get the drive.

Examples:

```
echo %@remote[e:]
1

echo %@remote[%_disk]
0
```

4.4.5.291 @REMOVABLE

@REMOVABLE[*d:***]**: Returns **1** if the specified drive is removable (e.*g.* floppy disk, removable hard disk, USB storage device, etc.), **0** otherwise. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @REMOVABLE will expand the filename to get the drive.

Examples:

```
echo %@removable[e:]
1

echo %@removable[%_disk]
0
```

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4.4.5.292 @REPEAT

@REPEAT[*char,count***]** : Returns the character ***char*** repeated ***count*** times.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Examples:

function	value
%@repeat[%@char[95],10]	_____
7%@repeat[,7]spaces	7 spaces
%@repeat[x,10]	xxxxxxxxxx

4.4.5.293 @REPLACE

@REPLACE[*string1, string2, text***]**: Replaces all occurrences of ***string1*** in the ***text*** string with ***string2***. For example, **%@replace[w,ch,warming]** returns the string "charming".

The search is case sensitive.

Examples:

```
echo %@replace[\,/,"ftp:\\server\etc"]
"ftp://server/etc"

echo %@replace[^,,,A better, command processor]
A better command processor
```

4.4.5.294 @REREPLACE

@REREPLACE[*source_re,target_re,source***]** - Regular expression back reference replacement.

source_re - Regular expression to apply to the source

target_re - Regular expression for back reference

source - Source string

Example:

To replace the input string "a1.txt" with "1a.txt":

```
@REREPLACE[(.)(.)\.txt,\2\1.txt,a1.txt]
```

4.4.5.295 @REVERSE

@REVERSE[*string***]** : Reverses the order of the characters in ***string***.

Example:

```
echo %@reverse[Now is the time for all good men]
nem doog lla rof emit eht si woN
```

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4.4.5.296 @REXX

@REXX[*[=]expr***]**: Calls the REXX interpreter to execute the expression. Returns the numeric code or string result from REXX. Console output from the REXX interpreter is suppressed while executing the expression. Note that ***TCC*** expands variables and functions before passing ***expr*** to REXX.

If you want to return the result of the REXX expression, prefix the expression with a **=** or **return**. Otherwise, REXX will pass the result back to TCC for evaluation.

Examples:

```
echo %@rexx[= 3 * 4]
set myprog=d:\path\xyz.exe
echo %@rexx[address(%@name[%myprog]); return address()]
```

Note: This function requires that an ooREXX (Object REXX) or Regina REXX interpreter be installed and properly configured. See REXX Support for more information on the REXX language.

4.4.5.297 @RIGHT

@RIGHT[*n,string***]** : If ***n*** is positive, it returns the rightmost ***n*** characters of ***string*.** If ***n*** is greater than the length of ***string***, it returns the entire ***string***. If ***n*** is negative, it returns ***string*** after dropping its leftmost ***n*** characters, unless ***n*** is greater than the length of ***string***, in which case it returns an empty string.

Examples:

function	***value***
%@RIGHT[2,jpsoft]	ft
%@RIGHT[22,jpsoft]	jpsoft
%@RIGHT[-2,jpsoft]	soft
%@RIGHT[-22,jpsoft]	empty string

4.4.5.298 @RTRIM

@RTRIM[*string1,string2***]**: - Returns ***string2*** with any characters in ***string1*** removed from the right side of ***string2***. ***String1*** must be enclosed in double quotes if it contains any spaces, tabs, or commas.

Example:

```
echo "%@rtrim[98XP,Windows XP]"
"Windows "
```

4.4.5.299 @RUBY

@RUBY[*expression***]** : Returns the string result of the Ruby expression. Note that the Ruby environment is persistent within a ***TCC*** tab window, so you can do things like:

```
%@ruby[b = 42]
%@ruby[p b]
```

which will print "42". The value returned by @RUBY is the value returned by the RUBY API rb_eval_string.

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You can query the type of the value returned by the last @RUBY call with the RUBYTYPE internal variable, and the value returned by the last @RUBY call with the RUBYVALUE internal variable.

4.4.5.300 @SCRIPT

@SCRIPT[*engine,expression***]** : Returns the integer result of expression in the specified active scripting engine.

For example:

```
%@script[PerlScript,print "This message is from Perl!"]
```

See also the SCRIPT command.

4.4.5.301 @SEARCH

@SEARCH[*program[,path[,n]]***]** : Searches for ***program*** using the specified ***path***, or, if not specified, the **PATH** environment variable, appending an extension if one isn't specified. (See Executable Files and File Searches for details on the default extensions used when searching **PATH**, the order in which the search proceeds, and the search of the ***\WINDOWS*** and ***\WINDOWS\SYSTEM*** directories.) Returns the fully expanded name of ***program***, including drive, path, base name, and extension, or an empty string if a match is not found. If wildcards are used in the ***program***, @SEARCH will search for the first program file that matches the wildcard specification, and returns the drive and path for that file plus the wildcard filename (*e.g.*, *E:\UTIL*.EXE*).

@SEARCH supports regular expressions in ***program***.

Program and each directory specification in ***path*** must be in quotes if they contain white space or special characters. @SEARCH will add double quotes to the result if it contains whitespace or special characters.

@SEARCH accepts an optional third parameter specifying whether to search the current directory. If ***n*** is 0, @SEARCH will not look for the file in the current directory. If ***n*** is 1 (the default), @SEARCH will look in the current directory before searching the path.

Examples:

```
echo %@search[notepad]
"C:\Windows\system32\notepad.exe"

echo %@search[msv*.dll,"d:\my dir\"]
"D:\my dir\test\msvc.dll"
```

4.4.5.302 @SELECT

@SELECT[*filename,top,left,bottom,right,title[,sort[,startline[,keymask]]]***]**: Pops up a selection window with the lines from the specified file, allowing you to display menus or other selection lists from within a batch file. You can move through the selection window with standard popup window navigation keystrokes, including string matching with wildcards or regular expressions (see Popup Windows for details; to change the navigation keys see Key Mapping directives).

Filename must be in quotes if it contains white space or special characters. The file size is limited only by available memory. To select from lines passed through input redirection or a pipe, use **CON:** as ***filename***. To select from lines in the Windows clipboard, use **CLIP:** as ***filename***.

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If the specified width is < 150, the ***top, left, bottom, right*** parameters are assumed to be rows/columns relative to the ***TCC*** window. If the width is >= 150, the parameters are assumed to be screen coordinates (in pixels).

If you set the optional 7th parameter *sort* to **1**, the list will be sorted alphabetically. If you set *sort* to -1, the list will be sorted in reverse alphabetic order.

The optional 8th parameter *startline* specifies the line @SELECT should highlight at startup. (The first line is 1.) If you specify *startline*, you must also specify the *sort* parameter.

If you specify the optional 9th argument *keymask,* the searching is disabled, and TCC will check input keystrokes for a match against the key mask. If a match is found, @SELECT will return the current line and set the _SELECT_KEY environment variable to the input key value. The key mask is in the same format as INKEY /K.

The selected line number will be returned in the SELECT_LINE environment variable (the first line is 1).

Return value:

- the text of the line the scrollbar is on if you press ***Enter***
- an empty string if you press ***Esc***.

Example:

```
call %@select["d:\path\my menu.txt",50,100,175,400,Select an option]
```

4.4.5.303 @SELECTARRAY

@SELECTARRAY[*array,top,left,bottom,right,title[,sort[,startline[,keymask]]]***]**: Pops up a selection window with the elements of the specified 1-dimensional array variable, allowing you to display menus or other selection lists from within a batch file. You can move through the selection window with standard popup window navigation keystrokes, including string matching with wildcards or regular expressions (see Popup Windows for details; to change the navigation keys see Key Mapping directives).

If the specified width is < 150, the ***top, left, bottom, right*** parameters are assumed to be rows/columns relative to the ***TCC*** window. If the width is >= 150, the parameters are assumed to be screen coordinates (in pixels).

If you set the optional 7th parameter *sorted* to **1**, the list will be sorted alphabetically.

The optional 8th parameter *startline* specifies the line @SELECT should highlight at startup. (The first line is 1.) If you specify *startline*, you must also specify the *sort* parameter.

If you specify the optional 9th argument *keymask,* the searching is disabled, and TCC will check input keystrokes for a match against the key mask. If a match is found, @SELECT will return the current line and set the _SELECT_KEY environment variable to the input key value. The key mask is in the same format as INKEY /K.

The selected line number will be returned in the SELECT_LINE environment variable (the first line is 1).

Return value:

- the text of the line the scrollbar is on if you press ***Enter***
- an empty string if you press ***Esc***.

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See also @SELECT.

4.4.5.304 @SERIAL

@SERIAL[*d:*]: Returns the serial number of the specified disk drive (in hex, i.e.: ABCD:0123). The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @SERIAL will expand the filename to get the drive.

Examples:

```
echo %@serial[C:]
1B:EB6D

echo %@serial[%_disk:]
F82B:746
```

See also: @LABEL.

4.4.5.305 @SERIALHW

@SERIALHW[*d:*]: Returns the hardware serial number of the specified disk drive. The drive letter must be followed by a colon.

If the argument is a partial filename without a drive, @SERIALFW will expand the filename to get the drive.

Examples:

```
echo %@serial[D:]
WD-WCC6Y4FTRH82
```

See also: @SERIAL and @LABEL.

4.4.5.306 @SERIALPORTCLOSE

@SERIALPORTCLOSE[*n*]: Close the serial port. *n* is the handle returned by a previous call to @SERIALPORTOPEN. Returns 0 if the close was successful, or 0 if it failed.

Example:

```
set port=%@serialportopen[com1,9600]
set string=%@serialportread[%port]
echo %@serialportwrite[%port,Goodbye!"
echo %@serialportflush[%port]
echo %@serialportclose[%port]
```

4.4.5.307 @SERIALPORTFLUSH

@SERIALPORTFLUSH[*n*]: Flush the contents of the serial port buffer. *n* is the handle returned by a previous call to @SERIALPORTOPEN. Returns 1 if the flush succeeded, or 0 if it failed.

Example:

```
set port=%@serialportopen[com1,9600]
set string=%@serialportread[%port]
echo %@serialportwrite[%port,Goodbye!"
```

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```
echo %@serialportflush[%port]
echo %@serialportclose[%port]
```

4.4.5.308 @SERIALPORTOPEN

@SERIALPORTOPEN[*COMn*[, *baud*[, *parity*[, *bits*[, stopbits[, *flow*]]]]]] - Open a serial port for read & write. The parameters are:

COMn - The COM port to open (COM1 - COM9)

baud - The baud rate (110 - 256000)

parity - The parity scheme to use. This can be one of the following values:
no
odd
even
mark
space

bits - The number of bits in the bytes to transmit & receive

stopbits - The number of stop bits to be used. This can be one of the following values:

1
1.5
2

flow - The type of flow control to use. This can be one of the following values:
no
CtsRts
CtsDtr
DsrRts
DsrDtr
XonXoff

@SERIALPORTOPEN returns a handle to the serial port, which must be passed to the other serial port functions.

See also: @SERIALPORTCLOSE, @SERIALPORTFLUSH, @SERIALPORTREAD, @SERIALPORTWRITE.

Example:

```
set port=%@serialportopen[com1,9600]
set string=%@serialportread[%port]
echo %@serialportwrite[%port,Goodbye!"
echo %@serialportflush[%port]
echo %@serialportclose[%port]
```

4.4.5.309 @SERIALPORTREAD

@SERIALPORTREAD[*n*]: Return the contents of the serial port buffer. *n* is the handle returned by a previous call to @SERIALPORTOPEN.

Example:

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```
set port=%@serialportopen[com1,9600]
set string=%@serialportread[%port]
echo %@serialportwrite[%port,Goodbye!"
echo %@serialportflush[%port]
echo %@serialportclose[%port]
```

4.4.5.310 @SERIALPORTWRITE

@SERIALPORTWRITE[*n,text***]**: Writes a string to the serial port. *n* is the handle returned by a previous call to @SERIALPORTOPEN. Returns 1 if the write succeeded, or 0 if it failed.

Example:

```
set port=%@serialportopen[com1,9600]
set string=%@serialportread[%port]
echo %@serialportwrite[%port,Goodbye!"
echo %@serialportflush[%port]
echo %@serialportclose[%port]
```

4.4.5.311 @SERVER

@SERVER[*machinename,info***]** : Returns information about the specified server ***machinename,*** where ***info*** is the type of information you want. The types are:

Name - return the server name

Comment - return the server comment

Version - the OS version (major version + minor version).

Users - the number of users who can attempt to log on the server.

Disconnect - the auto-disconnect time, in minutes.

Hidden - returns 1 if the server is hidden, 0 if it is visible

UserPath - the path to user directories

Type - return the type of the server. This is a combination of the following hex flags (you can use the .AND. operator in IF / IFF to test individual flags):

1	A LAN Manager workstation
2	A LAN Manager server
4	Any server running with Microsoft SQL Server
8	Primary domain controller
0x10	Backup domain controller
0x20	Server running the Timesource service
0x40	Apple File Protocol server
0x80	Novell server
0x100	LAN Manager 2.x domain member
0x200	Server sharing print queue
0x400	Server running dial-in service
0x800	Unix/Linux server
0x1000	Windows Server 2003, Windows XP, Windows 2000, or Windows NT
0x2000	Server running Windows for Workgroups

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0x4000	Microsoft File and Print for NetWare
0x8000	Windows server that is not a domain controller
0x10000	Server that can run the browser service
0x20000	Server running a browser service as backup
0x40000	Server running the master browser service
0x80000	Server running the domain master browser
0x400000	Windows 95/98/Me
0x1000000	Server clusters available in the domain
0x2000000	Terminal Server
0x4000000	Cluster virtual servers available in the domain
0x40000000	Servers maintained by the browser
0x80000000	Primary domain

4.4.5.312 @SERVICE

@SERVICE[*service,info***]** : Returns information about the specified service.

service - The service name to query. If the service doesn't exist, @SERVICE will return -1.

info - The information you want:

1 The type of service. This will return one or more of the following values:

1	Device driver
2	File system driver
16	The service runs in its own process
32	The service shares a process with other services
256	The service can interact with the desktop

2 The current state of the service. This will return one of the following values:

1	The service is not running
2	The service is starting
3	The service is stopping
4	The service is running
5	The service continue is pending
6	The service pause is pending
7	The service is paused

3 Returns the check-point value the service increments to report its progress during a lengthy start, stop, pause, or continue operation. This value will be 0 if there is no pending operation.

4 The control codes the service accepts and processes in its handler function. This will return a combination of the following values (you can check the return value with the @EVAL OR test):

1	The service can be stopped
2	The service can be paused and continued
4	The service is notified when system shutdown occurs
8	The service can reread its startup parameters without being stopped and restarted
16	The service is a network component that can accept changes in its binding without being stopped and restarted
32	The service is notified when the computer's hardware profile has changed
64	The service is notified when the computer's power status has changed
128	The service is notified when the computer's session status has changed
256	The service can perform pre-shutdown tasks

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5 Returns the estimated time required for a pending start, stop, pause, or continue operation (in milliseconds).

Examples:

```
echo %@service[audiosrv,1]
16

echo %@service[audiosrv,2]
4

echo %@service[audiosrv,3]
0

echo %@service[audiosrv,4]
193
```

4.4.5.313 @SFN

@SFN[*filename***]**: Returns the fully expanded short ("8.3") filename for a long ***filename***. The ***filename*** may contain any valid filename element including drive letter, path, filename and extension. The entire name including all intermediate paths will be returned in short name format. If ***filename*** does not refer to an actual file, the results are unpredictable.

Example:

```
echo %@sfn[%comspec]
C:\PROGRA~1\JPSoft\TCMD28~1\TCC.EXE
```

4.4.5.314 @SHA1

String mode: **@SHA1[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@SHA1[***[f,]filename[,start*[,*length*]]**]**
Binary mode: **@SHA1[***[b,]handle[,start*[,*length*]]**]**

Returns the SHA1 checksum of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer. If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included. If the first argument is a ***b***, the ***filename*** argument should be the handle returned by @BALLOC.

The first parameter determines whether the output is in upper or lower case:

s or **f** or **b** lower case
S or **F** or **B** upper case

The optional ***start*** parameter specifies the starting position in the binary buffer or file (in bytes, defaulting to 0).

The optional ***length*** parameter specifies the length of the buffer to hash (in bytes, defaulting to 0).

Example:

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```
echo %@sha1[c:\windows\notepad.exe]
7EB0139D2175739B3CCB0D1110067820BE6ABD29
```

See also @SHA256, @SHA384, @SHA512, @MD5, and @CRC32.

4.4.5.315 @SHA256

String mode: **@SHA256[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@SHA256[***[f,]filename[,start*[,*length*]]**]**
Binary mode: **@SHA256[***[b,]handle[,start*[,*length*]]**]**

Returns the SHA-256 checksum of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer. If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included. If the first argument is a ***b***, the ***filename*** argument should be the handle returned by @BALLOC.

The first parameter determines whether the output is in upper or lower case:

s or **f** or **b**	lower case
S or **F** or **B**	upper case

The optional ***start*** parameter specifies the starting position in the binary buffer or file (in bytes, defaulting to 0).

The optional ***length*** parameter specifies the length of the buffer to hash (in bytes, defaulting to 0).

Example:

```
echo %@sha256[c:\windows\notepad.exe]
142E1D688EF0568370C37187FD9F2351D7DDEDA574F8BFA9B0FA4EF42DB85AA2
```

See also @SHA384, @SHA512, @MD5, and @CRC32.

4.4.5.316 @SHA384

String mode: **@SHA384[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@SHA384[***[f,]filename[,start*[,*length*]]**]**
Binary mode: **@SHA384[***[b,]handle[,start*[,*length*]]**]**

Returns the SHA-384 checksum of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer. If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included. If the first argument is a ***b***, the ***filename*** argument should be the handle returned by @BALLOC.

The first parameter determines whether the output is in upper or lower case:

s or **f** or **b**	lower case
S or **F** or **B**	upper case

The optional ***start*** parameter specifies the starting position in the binary buffer or file (in bytes, defaulting to 0).

The optional ***length*** parameter specifies the length of the buffer to hash (in bytes, defaulting to 0).

Example:

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```
echo %@sha384[c:\windows\notepad.exe]
04BA669372BD3CBC40CAA9E44DE7C2760DBC27D68A79F7B0DC24048D6FF7A883CC2F0A6AB80A
E6F4CD3E45045273873E
```

See also @SHA256, @SHA512, @MD5, and @CRC32.

4.4.5.317 @SHA512

String mode: **@SHA512[***s[a|8],string[,start*[,*length*]]**]**
File mode: **@SHA512[***[f,]filename[,start*[,*length*]]**]**
Binary mode: **@SHA512[***[b,]handle[,start*[,*length*]]**]**

Returns the SHA-512 checksum of the characters in ***string***, the contents of the file ***filename***, or the contents of the binary buffer. If the first parameter is ***s*** for a Unicode UTF16 string, ***sa*** for an ASCII string, or ***s8*** for a UTF8 string, any leading or trailing whitespace characters in ***string*** are included. If the first argument is a ***b***, the ***filename*** argument should be the handle returned by @BALLOC.

The first parameter determines whether the output is in upper or lower case:

s or **f** or **b** lower case
S or **F** or **B** upper case

The optional ***start*** parameter specifies the starting position in the binary buffer or file (in bytes, defaulting to 0).

The optional ***length*** parameter specifies the length of the buffer to hash (in bytes, defaulting to 0).

Example:

```
echo %@sha512[c:\windows\notepad.exe]
2F37A2E503CFFBD7C05C7D8A125B55368CE11AAD5B62F17AAAC7AAF3391A6886FA6A0FD73223
E9F30072419BF5762A8AF7958E805A52D788BA41F61EB084BFE8
```

See also @SHA256, @SHA384, @MD5, and @CRC32.

4.4.5.318 @SHFOLDER

@SHFOLDER[*n***]** : Returns the full pathname for the specified Windows folder (which vary in different versions of Windows and if the user has altered the defaults).

n is a number from 0 to 59 that returns the following values:

0 - Desktop
2 - Start Menu\Programs
5 - My Documents
6 - <user name>\Favorites
7 - Start Menu\Programs\Startup
8 - <user name>\Recent
9 - <user name>\SendTo
11 - <user name>\Start Menu
13 - "My Music" folder
14 - "My Videos" folder
16 - <user name>\Desktop
19 - <user name>\nethood
20 - windows\fonts
21 - templates

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22 - All Users\Start Menu
23 - All Users\Start Menu\Programs
24 - All Users\Startup
25 - All Users\Desktop
26 - <user name>\Application Data
27 - <user name>\PrintHood
28 - <user name>\Local Settings\Application Data (non roaming)
29 - non localized startup
30 - non localized common startup
31 - common favorites
32 - Internet cache
33 - cookies
34 - history
35 - All Users\Application Data
36 - Windows directory
37 - Windows system directory
38 - Program Files
39 - <user name>\My Pictures
40 - USERPROFILE
41 - X86 system directory on x64
42 - x86 c:\Program Files on x64
43 - c:\Program Files\Common
44 - x86 Program Files\Common on x64
45 - All Users\Templates
46 - All Users\Documents
47 - All Users\Start Menu\Programs\Administrative Tools
48 - <user name>\Start Menu\Programs\Administrative Tools
53 - All Users\My Music
54 - All Users\My Pictures
55 - All Users\My Video
56 - Resource Directory
59 - USERPROFILE\Local Settings\Application Data\Microsoft\CD Burning

Examples:

```
echo %@shfolder[42]
C:\Program Files (x86)

echo %@shfolder[22]
C:\ProgramData\Microsoft\Windows\Start Menu
```

4.4.5.319 @SIMILAR

@SIMILAR[*string1,string2***]** : Returns a value (0 - 100) reflecting the similarity between the two strings. **0** means the two strings have nothing in common; **100** means the strings are identical. Using the longer string as the first parameter usually results in lower similarity values and using the shorter results in higher values.

Example:

```
echo %@similar[now is the time,then was the time]
75
```

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4.4.5.320 @SMCLOSE

@SMCLOSE[*handle* **]** - Close a handle to shared memory.

handle - The handle returned by @SMOPEN

4.4.5.321 @SMOPEN

@SMOPEN[*size, name* **]** - Open and return a handle to shared memory.

size - The size of shared memory (in bytes)

name - The name of the shared memory. The name can have a "Global\" or "Local\" prefix to create the object in the global or session namespace. If the name is "Global\", then only an elevated session can open the shared memory.

4.4.5.322 @SMPEEK

@SMPEEK[*handle,offset,size*] : Read a value from shared memory.

handle - a handle from @SMOPEN

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value to read (in bytes):

1 - character
2 - short
4 - int
8 - int64

4.4.5.323 @SMPOKE

@SMPOKE[*handle,offset,size,value*] : Write a value to shared memory

handle - a handle from @SMOPEN

offset - the byte offset in the buffer (decimal or hex)

size - the size of the value (in bytes):

1 - character
2 - short
4 - int
8 - int64

value - the value to poke

@SMPOKE returns 0 on success.

4.4.5.324 @SMREAD

@SMREAD[*n,offset,type,length* **]** - Read a string to shared memory

n - The shared memory handle returned by @SMOPEN

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offset - The offset (in bytes) from the beginning of the shared memory buffer.

type - Either **a** to read the string as ASCII or **u** to read it as Unicode.

length - The length to read (in characters).

4.4.5.325 @SMWRITE

@SMWRITE[*n,offset,type,string***]** : Write a string to shared memory

n - The shared memory handle returned by @SMOPEN

offset - The offset (in bytes) from the beginning of the shared memory buffer.

type - Either **a** to write the string as ASCII or **u** to write it as Unicode.

string - The string to write.

4.4.5.326 @SNAPSHOT

@SNAPSHOT[*DESKTOP* | *window[,n]]* : Save the desktop or a specific window to the clipboard as a BMP. The window argument can be either **DESKTOP** or a window title (which can include wildcards).

If the window argument is **DESKTOP**, the optional second argument specifies either which monitor (1 - ***n***) whose desktop you want to save.

If the window argument is a window title, the optional second argument specifies whether you want the client area (0, the default) or the entire window (1) to be saved.

If the window argument begins with a **=**, it is assumed to be a PID instead of a window title.

@SNAPSHOT returns **0** if successful.

4.4.5.327 @STRIP

@STRIP[*chars,string***]** : Removes the characters in ***chars*** from the ***string*** and returns the result.

For example:

```
%@STRIP[AaEe,All Good Men]
```

returns "`ll Good Mn`".

The test is case sensitive.

To include a comma in the ***chars*** string, enclose the entire first parameter in quotes. @STRIP will remove the quotes before processing the ***string***.

4.4.5.328 @SUBSTR

@SUBSTR[*string,start,length***]** : An older version of @INSTR. If the ***length*** is omitted, it will default to the remainder of ***string***. If ***string*** includes commas, it must be quoted with double quotes ["] or back-quotes [`], or each comma must be preceded by an Escape character The quotes count in calculating the position of the substring. @INSTR, which has ***string*** as its last parameter, does not have this restriction.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

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Examples:

```
echo %@substr[this is useful,8]
useful

echo %@substr[this is useful,8,-2]
is

echo %@substr["commas, they DO matter",9]
they DO matter"

echo %@substr[commas^, they DO matter,9]
they DO matter
```

See also: @INSTR.

4.4.5.329 @SUBST

@SUBST[*n, string1, string2***]**: Substitutes ***string1*** starting at position ***n*** in ***string2***.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

4.4.5.330 @SUMMARY

@SUMMARY[*file,property[,value]***]** : Read or set NTFS SummaryInformation data for the specified file. If it is a compound file, @SUMMARY will retrieve the data from the compound file object; otherwise @SUMMARY will retrieve the data from the SummaryInformation stream attached to the file. The valid SummaryInformation fields are:

Title
Subject
Author
Keywords
Comments
Template
LastAuthor
Revision Number
Edit Time
Last printed
Created
Last Saved
Page Count
Word Count
Char Count
AppName

Note that most files won't have any of these fields; the ones that do will usually only have some, not all.

To set SummaryInformation data, specify the value in the optional third parameter.

For example, to set the **Title**:

```
@summary[foo.txt,Title,This is the Foo File]
```

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4.4.5.331 @SYMLINK

@SYMLINK[*link***]** : Returns the target referenced by the specified symbolic link.

Example:

```
mklink test2 test
Symbolic link created for test2 <<===>> test
echo %@symlink[test2]
test
```

4.4.5.332 @SYSTEMTIME

@SYSTEMTIME[*n***] :** Return the system time as a fileage. *n* is the time to return:

0 - The time that the system has been idle
1 - The time that the system has spent executing in Kernel mode (all threads in all processes, on all processors)
2 - The time that the system has spent executing in User mode (all threads in all processes, on all processors)

See also: Time Stamps.

Examples:

```
echo %@systemtime[0]
39709212923676

echo %@systemtime[1]
39709212923676

echo %@systemtime[2]
39709212923676
```

4.4.5.333 @TALNUM

@TALNUM[*string***]**: Returns the number of alphabetic (a-z, A-Z) and/or numeric (0 - 9) characters in ***string***.

See also: @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Example:

```
echo %@talnum[123abc]
6

echo %@talnum[123 abc]
6

echo %@talnum[1-2-3]
3
```

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4.4.5.334 @TALPHA

@TALPHA[*string*]: Returns the number of alphabetic (a-z, A-Z) characters in ***string***.

See also: @TALNUM, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Example:

```
echo %@talpha[abc123]
3

echo %@talpha[A B C]
3
```

4.4.5.335 @TARCOUNT

@TARCOUNT[*tararchive*]: Returns the number of files in a .tar archive.

See also TAR and UNTAR.

Example:

```
tar tcc *.cpp *.h
echo %@tarcount[tcc.tar]
147
```

4.4.5.336 @TARCFILE

@TARCFILE[*tararchive,n*]: Returns the compressed name of file *n* in a .tar archive.

See also TAR and UNTAR.

Example:

```
tar tcc *.cpp
echo %@tarcfile[tcc.tar,1]
stdafx.cpp
```

4.4.5.337 @TARDFILE

@TARDFILE[*tararchive,n*]: Returns the decompressed name of file *n* in a .tar archive.

See also TAR and UNTAR.

Example:

```
tar /R tcc test\
echo %@tardfile[tcc.tar,4]
test\ntinit.cpp
```

4.4.5.338 @TARFILEDATE

@TARFILEDATE[*tararchive,n*]: Returns the date and time of file *n* in a .tar archive.

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See also TAR and UNTAR.

```
tar tcc *.cpp
echo %@tarfiledate[tcc.tar,0]
2021-06-15 13:16:12
```

4.4.5.339 @TARFILESIZE

@TARFILESIZE[*tararchive,n***]**: Returns the size of file *n* in a .tar archive.

See also TAR and UNTAR.

```
tar tcc *.cpp
echo %@tarfilesize[tcc.tar,0]
46868
```

4.4.5.340 @TASCII

@TASCII[*string***]**: Returns the number of 7-bit ASCII characters (0x00 - 0x7F) in ***string***.

See also: @TALNUM, @TALPHA, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Examples:

```
echo %@tascii[abc]
3

echo %@tascii[abc 123]
7

echo %@tascii["abc"a]
5
```

4.4.5.341 @TCL

@TCL[*expression***]** : Returns the string result of the Tcl expression. (You cannot run a Tk script in @TCL, because there is no Tk event loop. If you want to run a Tk script, you need to execute it from the command line as you would a Tcl script, or with the @TK function.)

The Tcl interpreter in ***TCC*** is persistent, so if you want to reset it pass an empty string to @TCL.

See also @TK.

4.4.5.342 @TCNTRL

@TCNTRL[*string***]**: Returns the number of ASCII control characters (0x00 - 0x1F or 0x7F) in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Examples:

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```
echo %@tcntrl[abc]
0

set var=^r^n
echo %@tcntrl[%var]
2
```

4.4.5.343 @TDIGIT

@TDIGIT[*string***]** : Returns the number of digits (0-9) in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Example:

```
echo %@tdigit[0]
1

echo %@tdigit[123.456]
6

echo %@tdigit[-123]
3
```

4.4.5.344 @TIME

@TIME[*hh:mm:ss[am|pm]***]** : Returns the number of seconds since midnight for the specified time. We recommend that you use a 24-hour time format for compatibility with all locales. If "am" or "pm" are specified @TIME will use a 12-hour format. Any non-numeric character, except a right bracket `]` can be used to separate the hour, minute and second subfields.

Examples:

```
echo %@time[12:34:56]
45296

echo %@time[%_time]
81579
```

4.4.5.345 @TIMER

@TIMER[*n[,precision]***]** : Returns the current split time for a stopwatch started with the TIMER command. The value of ***n*** specifies the timer to read and can be 1 to 10.

The default @TIMER resolution is milliseconds (.001 seconds).

@TIMER accepts an optional second argument to return the timer split as a floating-point numeric value suitable for arithmetic. The possible values are:

ns split time in nanoseconds

us	split time in microseconds
ms	split time in milliseconds
s	split time in seconds (3 digit decimal precision)
m	split time in minutes (5 digit decimal precision)
h	split time in hours (6 digit decimal precision)

Examples:

```
timer /1 on
echo %@timer[1]
0:00:.02.025

echo %@timer[1,h]
0.01468
```

4.4.5.346 @TK

@TK[*expression***]** : Returns the string result of the Tk expression. For example, this will execute the Tk script *test.tcl*:

```
echo %@tk[source test.tcl]
```

Because of the way the Tk interpreter works, it is not possible for ***TCC*** to maintain a persistent interpreter after executing a Tk script. ***TCC*** will close the current Tcl/tk interpreter and create a new one the next time @TCL is executed.

See also @TCL.

4.4.5.347 @TLOWER

@TLOWER[*string*] : Returns the number of lower case letters in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TPRINT, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Example:

```
echo %@tlower[hello]
5

echo %@tlower[Hello]
4
```

4.4.5.348 @TPRINT

@TPRINT[*string***]**: Returns the number of printable characters in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPUNCT, @TSPACE, @TUPPER, and @TXDIGIT.

Examples:

```
echo %@tprint[abc]
3
```

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```
set var=abc^ndef
echo %@tprint[%var]
6
```

4.4.5.349 @TPUNCT

@TPUNCT[*string***]**: Returns the number of punctuation characters in ***string***, i.e. printable characters which are not alphanumeric or space.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TSPACE, @TUPPER, and @TXDIGIT.

Examples:

```
echo %@tpunct[.]
1

echo %@tpunct[+]
1

echo %@tpunct[:-)]
3

echo %@tpunct[.,a]
2
```

4.4.5.350 @TRIM

@TRIM[*string***]** : Returns the string with the leading and trailing white space (space and tab characters) removed.

Example:

```
echo %@trim[  this is a test string       ]
this is a test string
```

4.4.5.351 @TRIMALL

@TRIMALL[*string***]** : Returns the string with the leading and trailing white space (space and tab characters), and any extra internal white space removed.

Example:

```
echo %@trimall[  this is a          test                  string       ]
this is a test string
```

4.4.5.352 @TRUENAME

@TRUENAME[*filename***]** : Returns the true, fully-expanded name for a file. @TRUENAME will "see through" junctions, symbolic links, a SUBST or network mapping. Wildcards cannot be used in the filename.

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A leading ~\ or ~/ will be interpreted as the current user's home directory.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

Note: The @TRUENAME function makes no assumption about the existence of a file or directory. Its ***filename*** parameter can be any string and the function will attempt to turn it into a fully qualified "volume + path + name" specification, whether that full reference exists or not.

filename must be in quotes if it contains white space or special characters.

4.4.5.353 @TRUNCATE

@TRUNCATE[*handle***]** : Truncate the file opened for write access by @FILEOPEN at the current position of the file pointer, where ***handle*** is the value returned by @FILEOPEN.

See also the related handle-based functions:

@FILECLOSE	Close a file handle
@FILEOPEN	Open a file handle
@FILEREAD	Read next line from a file handle
@FILESEEK	Move a file handle pointer
@FILESEEKL	Move a file handle pointer to a specified line
@FILEWRITE	Write next line to a file handle
@FILEWRITEB	Write data to a file handle

4.4.5.354 @TSPACE

@TSPACE[*string***]**: Returns the number of white space characters (0x09 - 0x0D or 0x20) in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TUPPER, and @TXDIGIT.

Example:

```
echo %@tspace[ ]
3

echo %@tspace[hello world]
1
```

4.4.5.355 @TUPPER

@TUPPER[*string*] : Returns the number of upper case letters in ***string***.

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, and @TXDIGIT.

Example:

```
echo %@tupper[hello]
0

echo %@tupper[Hello]
```

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```
1
```

4.4.5.356 @TXDIGIT

@TXDIGIT[*string***]**: Returns the number of characters in ***string*** that are hexadecimal digits (0-9 and A-F or a-f).

See also: @TALNUM, @TALPHA, @TASCII, @TCNTRL, @TDIGIT, @TLOWER, @TPRINT, @TPUNCT, @TSPACE, and @TUPPER.

Example:

```
echo %@txdigit[123abc]
6

echo %@txdigit[123 ttt]
3
```

4.4.5.357 @UNC

@UNC[*filename***]** : Returns the UNC name for the specified file (or an error if the file has no UNC, e.g., a local file).

Example:

4.4.5.358 @UNICODE

@UNICODE[*string***]** : Returns the space separated list of the Unicode values of the characters in ***string***. You can use the Escape character before a special character (i.e., a quote or greater than (>) sign) in ***string***.

See also: @ASCII.

Examples:

function	***value***
%@unicode[a]	97
%@unicode[A]	65
%@unicode[^`]	96
%@unicode[abc]	97 98 99

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4.4.5.359 @UNIQUE

@UNIQUE[*path[,prefix]***]** : Creates a zero-length file with a unique name in the specified directory, and returns its full name and path. If no ***path*** is specified, the file will be created in the current directory. The file name will be FAT-compatible regardless of the type of drive on which the file is created. This function allows you to create a temporary file without overwriting an existing file.

The ***path*** must be in quotes if it contains white space or special characters.

If ***path*** is quoted, the returned filename will also be quoted (if necessary).

If ***prefix*** is specified, @UNIQUE will use the first three characters as the first three characters of the unique filename.

Because the file is created, if the Protect Redirected Output File configuration option is set, you must use the style >! redirection to avoid errors.

Rapid, repeated, consecutive invocations of @UNIQUE may occasionally return a non-unique file name (the same name twice, for example), due to a long-standing timing bug in Windows. If you experience this problem you may need to use DELAY, DELAY /M, or BEEP (with a frequency less than 20 Hz) to provide a short delay between invocations. You may also be able to work around the problem by performing some disk I/O activity between invocations, as this can force physical creation of the file on the disk before @UNIQUE is invoked again.

Examples:

```
echo %@unique[d:\takecommand28]
D:\takecommand28\UNIE810.tmp

echo %@unique[d:\takecommand28,tc]
D:\takecommand28\tc725F.tmp
```

4.4.5.360 @UNQCLOSE

@UNQCLOSE[*filename***]** : Close a UnQlite database.

filename Database opened with @UNQOPEN

Returns 0 if successful, or the error text if it fails.

Example:

```
set db=test.db
set result=%@unqopen[rwc,%db]
rem do some DB processing here ...
set result=%@unqclose[%db]
```

4.4.5.361 @UNQDELETE

@UNQDELETE[[*u*,]*filename,key*] : Delete a key/value pair from a UnQlite database.

u Optional flag that the key is Unicode (UTF16)
filename Database opened with @UNQOPEN
key Key to delete

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Returns 0 if successful, or the error text if not.

Example:

```
echo Testing database delete
echo %@unqopen[rwc,test.db]
echo %@unqdelete[test.db,"key1"]
echo %@unqclose[test.db]
```

4.4.5.362 @UNQKVB

@UNQKVB[[*u*,]*filename,"key",bhandle[,length]*] : Add a key / binary blob value pair to a UnQlite database.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to add or replace
bhandle	Binary handle returned by @BALLOC
length	Optional length (in bytes) to write (if -1 or nor specified, write the entire buffer)

Returns 0 if successful, or the error text if not.

Example:

This example opens a database named "test.db", then allocates a binary buffer, writes it to the database, and then reads it back.

```
echo %@unqopen[rwc,test.db]
set handle=%@balloc[4096]
echo %@unqkvb[test.db,"bbb",%handle,-1]
echo %@unqreadb[test.db,"bbb",%handle,-1]
echo %@unqclose[test.db]
```

See also: @UNQOPEN, @UNQCLOSE, @UNQKVBA.

4.4.5.363 @UNQKVBA

@UNQKVBA[[*u*,]*filename,"key",bhandle[,length]*] : Append a binary blob to the value of an existing UnQlite key/value pair.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to update
bhandle	Binary handle returned by @BALLOC
length	Optional length (in bytes) to write (if -1 or nor specified, write the entire buffer)

Returns 0 if successful, or the error text if not.

See also: @UNQOPEN, @UNQCLOSE, @UNQKVB.

Example:

```
echo %@unqopen[rwc,test.db]
set handle=%@balloc[4096]
rem write something to the binary buffer
```

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```
echo %@unqkvba[test.db,"bbb",%handle,-1]
echo %@unqclose[test.db]
```

4.4.5.364 @UNQKVF

@UNQKVF[[*u*,]*filename,"key","value"[,length]*] : Add a key / file value pair to a UnQlite database.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to add or replace
filename	Store the contents of the file *filename* in the value
length	Optional length (in bytes) to write (if -1 or nor specified, write the entire file)

The maximum file size is dependent on the amount of RAM and disk space available.

Returns 0 if successful, or the error text if not.

Example:

This example opens a database named "test.db", writes a key/file to the database, and then reads it back, saving it in a new file.

```
echo Testing file write and read
echo This is a test file > testfile.txt
echo %@unqopen[rwc,test.db]
echo %@unqkvf[test.db,"aaa",testfile.txt]
echo %@unqreadf[test.db,"aaa",newtestfile.txt]
echo %@unqclose[test.db]
```

See also: @UNQOPEN, @UNQCLOSE, @UNQKVFA.

4.4.5.365 @UNQKVFA

@UNQKVFA[[*u*,]*filename,"key",filename[,length]*] : Append the contents of a file to the value of an existing UnQlite key/value pair.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to update
filename	File to append to the existing value
length	Optional length (in bytes) to write (if -1 or nor specified, write the entire file)

The maximum file size is dependent on the amount of RAM and disk space available.

Returns 0 if successful, or the error text if not.

See also @UNQKVF.

Example:

This example opens a database named "test.db", and appends the file *testfile.txt* to the value of key *aaa.*

```
echo Testing file write and read
echo This is a test file > testfile.txt
```

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```
echo %@unqopen[rwc,test.db]
echo %@unqkvfa[test.db,"aaa",testfile.txt]
echo %@unqclose[test.db]
```

4.4.5.366 @UNQKVS

@UNQKVS[[*u*,]*filename,"key","value"*] : Add a key value pair to a UnQlite database.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to add or replace
value	Value to add

Returns 0 if successful, or the error text if not.

Example:

This example opens a database named "test.db", writes a key and value to the database, and then reads it back.

```
echo Testing file write and read
echo %@unqopen[rwc,test.db]
echo %@unqkvs[test.db,"key1","This is the value for our first key"]
echo %@unqreads[test.db,"key1"]
echo %@unqclose[test.db]
```

See also: @UNQOPEN, @UNQCLOSE, @UNQKVSA.

4.4.5.367 @UNQKVSA

@UNQKVSA[[*u*,]*filename,"key","value"*] : Append to the value of an existing UnQlite key/value pair.

u	Optional flag that the key and value are Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to update
value	Value to append to the existing value

Returns 0 if successful, or the error text if not.

Example:

This example opens a database named "test.db", appends a string to an existing value, and then reads it back.

```
echo Testing file write and read
echo %@unqopen[rwc,test.db]
echo %@unqkvs[test.db,"key1","Append this to the first value"]
echo %@unqreads[test.db,"key1"]
echo %@unqclose[test.db]
```

4.4.5.368 @UNQOPEN

@UNQOPEN[*mode,filename*] : Open an UnQLite database. Use the same database name for the other @UNQ... functions.

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The possible values for *mode* are:

RWC Open a database with read+write privileges. The database is created if it doesn't exist.

RW Open the database with read+write privileges. If the database does not exist, an error is returned.

RO Open the database in read-only mode. If the database does not exist, an error is returned.

MM A read-only memory-mapped view of the database.

If *filename* is ":mem:", then a private in-memory database is created. The in-memory database will be discarded when the database is closed.

If the specified database is already opened, @UNQOPEN will not open a new instance. So you cannot have the same database open with different read/write modes.

@UNQOPEN returns 0 if the database was successfully opened (or is already open), or non-zero on an error.

Example:

Open the database "test.db" :

```
set db=test.db
set result=%@unqopen[rwc,%db]
```

4.4.5.369 @UNQREADB

@UNQREADB[[*u*,]*filename,"key",handle[,length]*]: Read a binary value from an existing key in an UnQlite database.

u Optional flag that the key is Unicode (UTF16)
filename Database opened by @UNQOPEN
key Key to read
handle A binary handle returned by @BALLOC
length Number of bytes to read. If not specified, read the entire binary buffer.

Returns 0 if successful, or an error if not.

Example:

Open the database "test.db", read the key "btest", and save the binary value to a binary buffer :

```
set db=test.db
set key=btest
set result=%@unqopen[rwc,%db]
REM Size unknown - let unqreadb expand buffer
set bhandle=%@balloc[1]
set result=%@unqreadb[%db,%key,%bhandle]
```

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4.4.5.370 @UNQREADF

@UNQREADF[[*u*,]*filename,"key",outputname[,length]*] : Read a value from an existing key in a UnQLite database and save it to a file.

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to read
outputname	Output file that will contain the value
length	Optional length (in bytes) to read. If not specified, @UNQREADF will read the entire file.

Returns 0 if successful, or an error if not.

Example:

Open the database "test.db", read the key "btest", and save the value to the file "d:\temp\btest.value" :

```
set db=test.db
set key=btest
set result=%@unqopen[rwc,%db]
set result=%@unqreadf[%db,%key,"d:\temp\btest.value"]
```

4.4.5.371 @UNQREADS

@UNQREADS[[*u*,]*filename,"key"*] : Read a value from an existing key in an UnQlite database.

u	Optional flag that the key is Unicode (UTF16)
filename	Database opened with @UNQOPEN
key	Key to read

Returns the value as a string, or the error text. If the key doesn't exist (or doesn't have a value) **@UNQREADS** will not display anything.

Example:

Open the database "test.db", read the key "btest", and save the value to "result":

```
set db=test.db
set key=btest
set result=%@unqopen[rwc,%db]
set result=%@unqreads[%db,%key]
```

4.4.5.372 @UNQUOTE

@UNQUOTE[*string***]** : Returns the argument with all double quotes removed.

See also: @UNQUOTES

Example:

```
echo %@unquote["This is a """heavily" quoted" string"]
This is a heavily quoted string
```

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4.4.5.373 @UNQUOTES

@UNQUOTES[*string***]** : Returns the argument with leading and trailing double quotes removed.

See also: @UNQUOTE

Example:

```
echo %@unquotes["This is a """heavily" quoted" string"]
This is a ""heavily" quoted" string
```

4.4.5.374 @UPPER

@UPPER[*string***]** : Returns ***string*** converted to upper case.

Example:

```
echo %@upper[this is a string]
THIS IS A STRING
```

4.4.5.375 @URLDECODE

@URLDECODE[*string***]** : Decode an URL encoded string, replacing %xx with the original characters.

4.4.5.376 @URLENCODE

@URLENCODE[*string***]** : Encode a string for Internet transmission, replacing non-alphanumeric characters with their %xx hex representation.

4.4.5.377 @USB

@USB[*d:***]** : Returns 1 if the specified drive letter is a USB drive.

Examples:

```
echo %@usb[d:]
0

echo %@usb[h:]
1
```

4.4.5.378 @UTF8DECODE

@UTF8DECODE[s,*string***]** : Create a text string (using the current code page) from a UTF8 input string. Returns the text string.
@UTF8DECODE[*inputfile,outputfile***]** : Decode a UTF8 encoded file. Returns 0 if the output file was successfully written.

4.4.5.379 @UTF8ENCODE

@UTF8ENCODE[s,*string***]** : Create a text string (using the current code page) from a UTF8 input string. Returns the text string.
@UTF8ENCODE[*inputfile,outputfile***]** : Encode a file from the current code page to UTF8. Returns 0 if the output file was successfully written.

Example:

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```
echo %@utf8encode[s,This is a UTF8 string]
This is a UTF8 string
```

4.4.5.380 @UUDECODE

@UUDECODE[*inputfile,outputfile***]** : Decode a UU encoded file. Returns 0 if the output file was successfully written.

See also: @UUENCODE

4.4.5.381 @UUENCODE

@UUENCODE[*inputfile,outputfile***]** : Encode a UU encoded file. (3 bytes are encoded into 4 readable characters.) Returns 0 if the output file was successfully written.

See also: @UUDECODE

4.4.5.382 @UUID

@UUID[*n***]** : Returns a UUID (same as a GUID in Windows). *n* can be:

0 - returns the UUID with lower case alphabetic characters and embedded hyphens
1 - returns the UUID with upper case alphabetic characters and embedded hyphens
2 - returns the UUID with lower case alphabetic characters and no hyphens
3 - returns the UUID with upper chase alphabetic characters and no hyphens

Examples:

```
echo %@uuid[0]
2a1f64b4-d2cd-4e1b-accf-60effe6065f2

echo %@uuid[1]
94D8C597-5DD9-4947-95B5-B80B9EA223A0

echo %@uuid[2]
d9ccee3db2ad408fadea484cf8bdc977

echo %@uuid[3]
8A0EC71BD8ED4D1B986D071DF96426AE
```

4.4.5.383 @VARTYPE

@VARTYPE[*var*] : Returns the type (if any) for the specified variable name. The possible values are:

0 No type
1 Integer (0-9)
2 Decimal (0-9, the decimal character, and the thousands separator)
3 Hex (0-9, A-F)
4 Boolean (0 or 1)
5 Alphabetic (A-Z and a-z)
6 Alphanumeric (A-Z, a-z, and 0-9)
7 Regular expression

Variable types are set with the SET /T:*type* option.

Example:

```
set /t:2 tempvar=42
echo %@vartype[tempvar]
2
```

4.4.5.384 @VERINFO

@VERINFO[*filename[,info[,language]]***]**: Returns the version information for the specified file. The optional second parameter specifies the desired information and defaults to **FileVersion**. The optional third parameter specifies the language/codepage pair (in hex). If that parameter is omitted, the code page for the default user language is assumed. If the requested information field is not provided in the specified file, returns a null string.

For example, **TCMD.EXE** returns values for:

```
CompanyName
FileDescription
FileVersion
InternalName
LegalCopyright
LegalTrademarks
OriginalFilename
ProductName
ProductVersion
Build
```

Note: Most, but not all, executables under Windows contain a **FileVersion** field. The number, names and contents of the specific information fields and language/codepage pairs provided within a given application can potentially be anything the programmer decided to use.

Examples:

```
echo %@verinfo[tcmd.exe,companyname,040904E4]
JP Software

echo %@verinfo[tcmd.exe,fileversion]
28.0.1
```

4.4.5.385 @VERSION

@VERSION[*filename[,separator[,start[,force][,prefix]]]***]** : Returns a serially "versioned" replacement for the file name. If the file doesn't exist, and *force* isn't set, @VERSION returns *filename*.

If ***filename*** is quoted, the returned filename will also be quoted (if necessary).

This is distinct from the function of @UNIQUE[] in that it retains the entire filename and only appends a version separator character and an ascending version number to the filename. @VERSION does not create the file; it just returns the next available version name.

@VERSION has four arguments:

filename The filename to "versionize" (required)

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separator The version separation character (optional, defaults to ';'). Note that the ***TCC*** include list character is **;**, so if you want to use **;** in a filename, you will need to double quote the filename.

start The starting version number (if necessary to add a version number; optional, defaults to '1')

force The flag to force versioning, even if the file doesn't exist (optional, defaults to 0 or FALSE).

prefix If *prefix* **is 0,** @VERSION will append the version number to the end of the extension. If *prefix* **is 1,** @VERSION will prefix the version number to the extension. (Optional, defaults to 0).

Examples:

```
echo %@version[myfile.txt]
myfile.txt;1

echo %@version[myfile.txt]
myfile.txt;2
```

4.4.5.386 @WATTRIB

@WATTRIB[*filename[,-attributes[,p]]***]**: If you do not specify any attributes, @WATTRIB returns the attributes of the specified file in the format **RHSADECIJNOFTVPU**, rather than **0** or **1**. If two or more parameters are specified, @WATTRIB returns a **1** if the specified file has the matching attribute(s); otherwise it returns a **0**. If the optional third argument **,p** is included (partial match), then @WATTRIB will return **1** if any of the attributes match

This function is similar to @ATTRIB, but supports file selection based on the following extended attributes available on NTFS volumes.

E Encrypted
N Normal
T Temporary
F Sparse file
J Junction or symbolic links
L Junction or symbolic links
C Compressed
O Offline
I Not content-indexed
V Virtualized
P Pinned
U Unpinned

Attributes which are not set will be replaced with an underscore. For example, if *SECURE.DAT* has the read-only, hidden, and archive attributes set, **%@WATTRIB[SECURE.DAT]** would return `RH_A_____`. If the file does not exist, @WATTRIB returns an empty string.

The attributes (other than **N**) can be combined (for example %@ATTRIB[MYFILE,HS]). For example, **%@WATTRIB[MYFILE,HS,p]** will return **1** if *MYFILE* has the hidden, system, or both attributes. Without **,p** the function will return **1** only if *MYFILE* has both attributes (and no extended attributes).

Filename must be in quotes if it contains white space or special characters.

See also: Attributes Switches and the ATTRIB command.

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Examples:

```
echo %@wattrib[tcmd.exe]
___A_____________

echo %@wattrib[tcmd.exe,r]
0

echo %@wattrib[tcmd.exe,a]
1
```

4.4.5.387 @WILD

@WILD[*string1,string2***]** : Compares two strings and returns **1** if they match or **0** if they don't match. This function determines whether or not ***string1*** matches the pattern specified in ***string2***, which may contain wildcards or extended wildcards. No wildcards are permitted in ***string1***. The test is not case sensitive.

Examples

The examples below assume that the **PATH** variable contains:

```
c:\windows;c:\windows\system32;"c:\program files\util";d:\jpsoft
```

string1	*string2*	*match condition*	*result*
%path	*\UTIL*	string **\util** anywhere	1
%path	*c	string ending with **c**	0
%path	*t	string ending with **t**	1
%path	c*	string starting with **c**	1
%path	t*	string starting with **t**	0
%path	*c*	string containing **c**	1
%path	*t*	string containing **t**	1
%path	*b*	string containing **b**	0
xyz	?	one character long string	0
x	?	one character long string	1
%path	c?*	leading **c**, followed by any one character, followed by 0 or more characters	1
%path	c*?	leading **c**, followed by zero or more characters, followed by any one character	1

4.4.5.388 @WINAPI

@WINAPI[module,function[,integer | PINT=n | PLONG=n | PDWORD=n | NULL | BUFFER | "string"]**]** : Returns the result of calling a Windows API function. The arguments are:

module - name of the DLL containing the function

function - function name (case sensitive)

integer - an integer value to pass to the function

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PINT - a pointer to the integer ***n***

PLONG - a pointer to the long integer ***n***

PDWORD - a pointer to the DWORD ***n***

NULL - a null pointer (0)

BUFFER - @WINAPI will pass an address for an internal buffer for the API to return a Unicode string value.

aBUFFER - @WINAPI will pass an address for an internal buffer for the API to return an ASCII string value.

"**string**" - text argument (this must be enclosed in double quotes). If the argument is preceded by an 'a' (i.e., a"Argument") then it is converted from Unicode to ASCII before calling the API. (Some Windows APIs only accept ASCII arguments.)

@WINAPI supports a maximum of 8 arguments. The return value is either a string value returned by the API (if BUFFER or aBUFFER is specified), or the integer value returned by the API. The function must be defined as WINAPI (__stdcall). If @WINAPI can't find the specified function, it will append a "W" (for the Unicode version) to the function name and try again.

See also @CAPI.

4.4.5.389 @WINCLASS

@WINCLASS[*classname***] :** Returns the window title of the first window with the specified class name, or an empty string if no windows match.

Example:

```
echo %@winclass[consolewindowclass]
TCC Prompt
```

4.4.5.390 @WINCLIENTSIZE

@WINCLIENTSIZE[*title*] : Returns the client window size in the format *height,width*

If the *title* argument begins with a **=**, it is assumed to be a PID instead of a window title.

Example:

```
echo %@winclientsize[tc 28*]
1027,1634
```

4.4.5.391 @WINEXENAME

@WINEXENAME[*title***]**: Returns the executable name for the first window matching ***title*** (which can include wildcards), or an empty string if none.

If the *title* argument begins with a **=**, it is assumed to be a PID instead of a window title.

Example:

```
echo %@winexename[tc 28*]
C:\Program Files\JPSoft\TCMD28\tcmd.exe
```

4.4.5.392 @WININFO

@WININFO[*n*]: Returns information about the current system. ***n*** is a number specifying what information to return:

n	*Information returned*
1	Processor architecture 0 INTEL 6 IA64 9 x64 (AMD or Intel)
2	Processor bit mask (set of configured processors)
3	Number of processors
4	Type of processor **586** Pentium: **2200** Intel IA64 **8664** AMD or Intel x64
5	Processor level
6	Processor revision
7	page size, bytes
8	virtual memory allocation granularity, bytes

Examples:

```
echo @WININFO[1]
9

echo @WININFO[2]
255

echo @WININFO[3]
8

echo @WININFO[4]
8664

echo @WININFO[5]
6

echo @WININFO[6]
24067

echo @WININFO[7]
4096

echo @WININFO[8]
65536
```

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4.4.5.393 @WINMEMORY

@WINMEMORY[*n*] : Returns the requested Windows memory information. All values except memory load are returned in bytes. ***n*** is a number specifying what to return:

n	*Information returned*
0	Memory load, %
1	Total physical RAM
2	Available physical RAM
3	Total that can be stored in the page file
4	Available page file
5	Total virtual memory for process
6	Total free virtual memory for process

Examples:

```
echo %@winmemory[0]
51

echo %@winmemory[1]
34303373312

echo %@winmemory[2]
16620326912

echo %@winmemory[3]
75105562624

echo %@winmemory[4]
37333237760

echo %@winmemory[5]
140737488224256

echo %@winmemory[6]
138533536821248
```

4.4.5.394 @WINMETRICS

@WINMETRICS[*n*] : Returns the requested Windows system metric. All screen dimension metrics are returned in pixels. ***n*** is a number determining which metric to return.

Note: This function provides direct access to the **GetSystemMetrics** API. Not all available parameters are listed here and your Windows configuration may support additional parameters. See your Windows technical documentation for details.

n	*Information returned*
0	Width of screen on primary display monitor
1	Height of screen on primary display monitor

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2	Width of the vertical scroll bar
3	Height of the horizontal scroll bar
4	Height of title bar
5	Width of window border
6	Height of window border
7	Width of dialog box border
8	Height of dialog box border
9	Height of thumb box on vertical scroll bar
10	Width of thumb box on horizontal scroll bar
11	Width of icon
12	Height of icon
13	Width of cursor
14	Height of cursor
15	Height of single line menu bar
16	Width of client area for full-screen window on primary display monitor
17	Height of client area for full-screen window on primary display monitor
18	Height of Kanji window
19	Mouse present flag 0 no 1 yes
20	Height of arrow bitmap on vertical scroll bar
21	Width of arrow bitmap on horizontal scroll bar
22	Debug version of Windows 0 no 1 yes
23	Left and right mouse buttons swapped 0 no 1 yes
28	Minimum width of a window
29	Minimum height of a window
30	Width of bitmaps in title bar
31	Height of bitmaps in title bar
32	Width of window frame that can be sized
33	Height of window frame that can be sized
34	Minimum tracking width of window
35	Minimum tracking height of window
41	Is Pen Windows installed? 0 no 1 yes
42	Is DBCS version of USER.EXE installed? 0 no 1 yes
43	Number of buttons on mouse
70	Windows will display visual info in place of audible info 0 no 1 yes
73	Computer has a slow processor 0 no 1 yes
74	Is Windows set up for Arabic/Hebrew? 0 no 1 yes

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75	Mouse has a wheel 0 no 1 yes
76	Coordinate of left side of virtual screen
77	Coordinate of top of virtual screen
78	Width in pixels of virtual screen
79	Height in pixels of virtual screen
80	Number of monitors on desktop

4.4.5.395 @WINPATH

@WINPATH[*filename*] **:** Convert a WSL filename format to Windows format. For example:

```
echo %@winpath[//mnt/c/windows/system32/notepad.exe]
c:\windows\system32\notepad.exe
```

4.4.5.396 @WINPID

@WINPID[*title*] : Returns the process ID for the window with the specified title, or -1 if no match is found.

Example:

```
echo %@winpid[TCC Prompt]
438636
```

4.4.5.397 @WINPOS

@WINPOS[*title***]**: Returns the screen coordinates of the window with the specified title, in the format "*top,left,bottom,right*".

If the *title* argument begins with a **=**, it is assumed to be a PID instead of a window title.

Example:

```
echo %@winpos[TCC Prompt]
25,25,367,702
```

4.4.5.398 @WINSIZE

@WINSIZE[*title*] : Returns the window size in the format *height,width*

If the *title* argument begins with a **=**, it is assumed to be a PID instead of a window title.

Example:

```
echo %@winsize[TCC Prompt]
342,677
```

4.4.5.399 @WINSTATE

@WINSTATE[*title***]** : Returns the window state of the first window matching ***title*** (which can include wildcards). The return values are:

Value	*Window state*

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0	Hidden
1	Normal
2	Minimized
3	Maximized

If the *title* argument begins with a **=**, it is assumed to be a PID instead of a window title.

4.4.5.400 @WINSYSTEM

@WINSYSTEM[*n[,v]***]**: Sets or returns the value of the requested Windows system-wide parameters.

To retrieve a parameter, the format is **%@winsystem[n]** where ***n*** is the appropriate **GET** number from the table below.

To set a parameter, the format is **%@winsystem[n,v]** where ***n*** is the appropriate **SET** number from the table below and ***v*** is the desired new value for that parameter.

Where the selection is a state, the legal values are **0** for off/disabled, and **1** for on/enabled.

Where the selection is a width or height, the values are in pixels.

Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits).

Note: This function provides direct access to the **SystemParametersInfo** API. Not all available parameters are listed here. See your Windows technical documentation for details, and use with caution.

GET	*SET*	*Parameter to GET or SET*
1	2	Beep state
5	6	Border width
10	11	Keyboard repeat speed (0 to 31)
13	13	Width of an icon cell
14	15	Screen saver time-out (seconds)
16	17	Screen saver state
22	23	Keyboard repeat delay setting (0-3).
24	24	Height of an icon cell
25	26	Icon title wrapping state
27	28	Pop-up menu alignment
37	38	Full-window dragging state
56	57	Show Sounds accessibility flag
68	69	Keyboard preference state (0=mouse, 1=keyboard)
70	71	Screen reviewer utility state
74	75	Font smoothing feature state
79	81	Time-out for the low-power phase of screen saving (seconds)
80	82	Time-out value for the power-off phase of screen saving (seconds)
83	85	Low-power phase of screen saving state
84	86	Power-off phase of screen saving state
89	90	Locale identifier for the system default input language.
93	94	Mouse Trails feature state. (0 or 1= disabled, >1= number of cursors in the trail)
95	95	Snap-to-default-button feature state
98	99	Width of the mouse pointer WM_MOUSEHOVER message trigger rectangle
100	101	Height of the mouse pointer WM_MOUSEHOVER message trigger rectangle

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102	103	Time in the hover rectangle for the mouse pointer to trigger a WM_MOUSEHOVER message (milliseconds)
104	105	Number of lines to scroll when the mouse wheel is rotated
106	107	Time that the system waits before displaying a shortcut menu when the mouse cursor is over a submenu item (milliseconds)
110	111	IME status window state - per user (0=invisible, 1=visible)
112	113	Current mouse speed (1 to 20).
4096	4097	Active window tracking state
4098	4099	Menu animation feature state.
4100	4101	Combo box animation state.
4102	4103	List box smooth-scrolling effect state.
4104	4105	Gradient effect for window title bars.
4106	4107	Menu access keys underline state.
4108	4109	Active window tracking Z-order state.
4110	4111	Hot-tracking state.
4114	4115	Menu fade animation state.
4116	4117	Selection fade effect state.
4118	4119	ToolTip animation state.
4120	4121	Type of ToolTip animation (1 for fade, 0 for slide)
4122	4123	Cursor shadow state.
4124	4125	State of the Mouse Sonar feature
4126	4127	Mouse clicklock state
4128	4129	Mouse vanish feature state
4130	4131	Whether native User menus have flat menu appearance.
4132	4133	Drop shadow effect state.
4158	4159	State of all UI effects.
8192	8193	Time following user input during which the system will not allow applications to force themselves into the foreground (milliseconds)
8194	8195	Active window tracking delay (milliseconds)
8196	8197	The number of times SetForegroundWindow will flash the taskbar button when rejecting a foreground switch request.
8198	8199	Caret width in edit controls
8200	8201	Time delay before the primary mouse button is locked.
8202	8203	Type of font smoothing (32769=standard anti-aliasing, 32770=ClearType).
8204	8205	Contrast value used in ClearType smoothing (1000-2200)
8206	8207	Width of the left and right edges of the focus rectangle
8208	8209	Height of the top and bottom edges of the focus rectangle

.

GET	SET	Parameter to GET or SET

4.4.5.401 @WINTITLE

@WINTITLE[*pid*]: Returns the window title of the process with the specified process ID.

Example:

```
echo %@wintitle[15380]
TCC Prompt
```

4.4.5.402 @WMI

@WMI[*namespace,"wql search"[,enum]***]**: Returns the result of the WMI query.

The optional ***enum*** parameter specifies the property instance to return for classes that return multiple properties. You can omit the ***enum*** parameter if you're querying a single property and instance.

For details on what information is available, see the WMI and WQL documentation on MSDN (msdn.microsoft.com).

See also WMIQUERY.

Examples:

```
%@wmi[root\cimv2,"SELECT name FROM Win32_Processor"]

%@wmi[root\cimv2,"SELECT name, state FROM Win32_service",4]
```

4.4.5.403 @WORD

@WORD[*["sep_list",]n,string***]** : Returns the ***n***th word in ***string***. The first (leftmost) word is numbered `0`. If ***n*** is negative, words are counted backwards from the end of ***string***, and the absolute value of ***n*** is used. You can specify the rightmost word by setting ***n*** to **-0**.

You can specify a range of words to return with the syntax:

```
@WORD[["sep_list",]start[-end | +range],string]
```

Specify an inclusive range with a **-**. For example:

`%@word[2-4,A B C D E F G]` will return "C D E". (Note that you cannot use inclusive ranges when starting from the end.)

You can specify a relative range with a **+**. For example:

`%@word[2+1,A B C D E F G]` will return "C D".

If you use a **-** and don't specify an end, @WORD will return all words from the *nth* one to the end of the line. For example:

`%@word[2-,A B C D E F G]` will return "C D E F G".

The default list of separators for @FIELD, @FIELDS, @WORD and @WORDS consists of space, tab, and comma. You can use the optional first parameter, *sep_list*, to specify the separators that you wish to use. If you want to use a quote mark as a separator, prefix it with an Escape character. Alphabetic characters in *sep_list* are case sensitive.

@FIELD and @FIELDS differ from @WORD and @WORDS in how multiple consecutive separators are counted. @WORD and @WORDS consider a sequence as a single separator, and ignore separators at either end of string. In contrast, @FIELD and @FIELDS count each occurrence of a separator individually, including those at either end of string.

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Numeric input may be entered in either decimal format (a sequence of 0-9 digits) or in hexadecimal format ("0x" followed by a sequence of 0-F hex digits). To use hexadecimal form for a negative ***n***, remember to use 32-bit 2's complement arithmetic, e.g., **0xFFFFFFFF** for **-1**.

See also: @WORDS, @FIELD, @FIELDS.

Examples:

function	***value***
%@WORD[2,NOW, , , IS THE TIME]	THE
%@WORD[-0,NOW IS THE TIME]	TIME
%@WORD[-2,NOW IS THE TIME]	IS
%@WORD["=",1,2 + 2=4]	4

4.4.5.404 @WORDS

@WORDS[*"sep_list",]string***]**: Returns the number of words in ***string***.

The default list of separators for @FIELD, @FIELDS, @WORD and @WORDS consists of space, tab, and comma. You can use the optional first parameter, ***sep_list***, to specify the separators that you wish to use. If you want to use a quote mark as a separator, prefix it with an Escape character. Alphabetic characters in ***sep_list*** are case sensitive.

@FIELD and @FIELDS differ from @WORD and @WORDS in how multiple consecutive separators are counted. @WORD and @WORDS consider a sequence as a single separator, and ignore separators at either end of ***string***. In contrast, @FIELD and @FIELDS count each occurrence of a separator individually, including those at either end of ***string***.

If ***string*** is double quoted, you must specify ***sep_list***.

See also: @WORD, @FIELD, @FIELDS.

Examples:

```
echo %@words[How many words in this list?]
6

echo %@words[How.many.words.in.this.list?]
1

echo %@words[".",How.many.words.in.this.list?]
6
```

4.4.5.405 @WORKGROUP

@WORKGROUP[*name***]:** Returns the workgroup of the computer specified by the DNS or NetBios ***name***. If ***name*** is not specified, @WORKGROUP returns the workgroup of the local computer. (To query a remote computer, you must be an authenticated user on that computer.)

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4.4.5.406 @WSLPATH

@WSLPATH[*filename***] :** Convert from the Windows filename format to WSL format. For example:

```
echo %@wslpath[c:\windows\system32\notepad.exe]
//mnt/c/windows/system32/notepad.exe
```

4.4.5.407 @XMLCLOSE

@XMLCLOSE[] : Close an XML file previously opened by @XMLOPEN.

@XMLCLOSE returns 0 on success, or an XML error if it fails.

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Bookstore.btm:

```
@ECHO OFF
SET a=%@XMLOPEN[bookstore.xml]
SET b=%@XMLNODES[/bookstore]
DO i = 1 to %b
        SET Title= %@XMLXPATH[/bookstore/book[%i]/title]
        SET Price= %@XMLXPATH[/bookstore/book[%i]/price]
        ECHO %Title ` costs only ` %Price
ENDDO
SET c=%@XMLCLOSE[]
```

Running bookstore.btm outputs:

```
Harry Potter  costs only   29.99
```

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```
Learning XML  costs only   39.95
Day Watch  costs only   14.99
Winston Churchill: An Autobiography  costs only   49.99
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.408 @XMLCREATE

@XMLCREATE[*filename*] : Create an XML file for use by other XML variable functions.

If an XML file is already open it will be closed before the new file is created. If the file already exists, @XMLCREATE will return an error.

Returns 0 on success, or an XML error code on failure.

Example:

To create this XML named *books.xml*:

```
<book xmlns='urn:loc.gov:books' xmlns:isbn='urn:ISBN:0-395-36341-6'>
<title>Cheaper by the Dozen</title>
<isbn:number>1568491379</isbn:number>
</book>
```

Use the code:

```
echo %@xmlcreate[books.xml]
echo %@xmlstartelement[book,urn:loc.gov:books]
echo %@xmlputattr[xmlns:isbn,"",urn:ISBN:0-395-36341-6]
echo %@xmlputelement[title,urn:loc.gov:books,Cheaper by the Dozen]
echo %@xmlputelement[isbn:number,urn:ISBN:0-395-36341-6,1568491379);
echo %@xmlendelement[]
```

```
echo %@xmlclose[]
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.409 @XMLENDELEMENT

@XMLENDELEMENT[] : Writes the closing tab of an XML element opened using @XMLSTARTELEMENT.

If no elements are open, @XMLENDELEMENT returns an error; if successful it returns 0.

Example:

To create this XML named *books.xml*:

```
<book xmlns='urn:loc.gov:books' xmlns:isbn='urn:ISBN:0-395-36341-6'>
<title>Cheaper by the Dozen</title>
<isbn:number>1568491379</isbn:number>
</book>
```

Use the code:

```
echo %@xmlcreate[books.xml]
echo %@xmlstartelement[book,urn:loc.gov:books]
echo %@xmlputattr[xmlns:isbn,"",urn:ISBN:0-395-36341-6]
echo %@xmlputelement[title,urn:loc.gov:books,Cheaper by the Dozen]
echo %@xmlputelement[isbn:number,urn:ISBN:0-395-36341-6,1568491379);
echo %@xmlendelement[]
echo %@xmlclose[]
```

XML Errors:

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101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.410 @XMLFLUSH

@XMLFLUSH[] : Flushes the XML parser buffers, and checks its end state.

@XMLFLUSH returns 0 on success, or an XML error if it fails.

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.411 @XMLGETATTR

@XMLGETATTR[*["filename",],attributename*] : Returns the value of the specified attribute.

If you do not specify a filename, @XMLGETATTR will use the file previously opened by @XMLOPEN.

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You must set the XPath before calling @XMLGETATTR.

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Bookstore.btm:

```
@ECHO OFF
SET a=%@XMLOPEN[bookstore.xml]
SET b=%@XMLNODES[/bookstore]
DO i = 1 to %b
        SET Title=%@XMLXPATH[/bookstore/book[%i]/title]
        SET Language=%@XMLGETATTR[lang]
        SET Price=%@XMLXPATH[/bookstore/book[%i]/price]
        ECHO %Title (in %Language) costs only %Price
ENDDO
SET c=%@XMLCLOSE[]
```

Running bookstore.btm outputs:

```
Harry Potter (in jap) costs only 29.99
Learning XML (in eng) costs only 39.95
Day Watch (in ger) costs only 14.99
Winston Churchill: An Autobiography (in eng) costs only 49.99
```

XML Errors:

101 Invalid attribute index
102 No attributes available

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103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.412 @XMLHASXPATH

@XMLHASXPATH[*["filename",],xpath*] : Returns 1 if the *xpath* exists in the XML file, or 0 if it doesn't.

If you do not specify a filename, @XMLHASXPATH will use the file previously opened by @XMLOPEN.

@XMLHASXPATH may be used to check if an *xpath* exists before setting it via @XMLXPATH.

The XML parser in ***TCC*** implements a subset of the XML XPath specification, allowing you to point to specific elements in the XML documents. The *xpath* is a series of one or more element accessors separated by '/'. The path can be absolute (starting with '/') or relative to the current XPath location.

The following are possible values for an element accessor:

'name'	A particular element name
name[i]	The i-th subelement of the current element with the given name
[i]	The i-th subelement of the current element
[last()]	The last subelement of the current element
[last()-i]	The subelement located at the last location minus i in the current element
name[@attrname="attrvalue"]	The subelement containing a particular value for a given attribute (supports single AND double quotes)
..	The parent of the current element

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
```

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```
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Return 1 if the XPath exists:

```
ECHO %@XMLHASXPATH["bookstore.xml",/bookstore]
1
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.413 @XMLINPUT

@XMLINPUT[*inputdata*] : Parse an input string as XML data. (Use this instead of @XMLOPEN if you don't have an input file.)

Returns 0 on success, or an XML error code on failure.

***Examples*:**

```
echo %@xmlinput[<test>]
```

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```
0

echo %@xmlinput[><><]
204
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.414 @XMLNODES

@XMLNODES[*["filename"],path***]** : Return the number of nodes (children) for the specified path in an XML file. The arguments are:

filename - name of XML file
path - one or more element accessors separated by a /.

If you don't specify a filename (which *must* be in double quotes), @XMLXPATH will use the XML file previously opened by @XMLOPEN.

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
```

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```
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Bookstore.btm:

```
@ECHO OFF
SET a=%@XMLOPEN[bookstore.xml]
SET b=%@XMLNODES[/bookstore]
ECHO Total Nodes = %b
DO i = 1 to %b
        SET Title= %@XMLXPATH[/bookstore/book[%i]/title]
        SET Price= %@XMLXPATH[/bookstore/book[%i]/price]
        ECHO %Title ` costs only ` %Price
ENDDO
SET c=%@XMLCLOSE[]
```

Running bookstore.btm outputs:

```
Total Nodes = 4
Harry Potter  costs only   29.99
Learning XML  costs only   39.95
Day Watch  costs only   14.99
Winston Churchill: An Autobiography  costs only   49.99
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file

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401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.415 @XMLOPEN

@XMLOPEN[*filename*] - open an XML file for use by @XMLXPATH and/or @XMLNODES.

Returns 0 on success, or an XML error on failure;

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Bookstore.btm:

```
@ECHO OFF
SET a=%@XMLOPEN[bookstore.xml]
SET b=%@XMLNODES[/bookstore]
DO i = 1 to %b
    SET Title= %@XMLXPATH[/bookstore/book[%i]/title]
    SET Price= %@XMLXPATH[/bookstore/book[%i]/price]
    ECHO %Title ` costs only ` %Price
ENDDO
SET c=%@XMLCLOSE[]
```

Running bookstore.btm outputs:

```
Harry Potter  costs only   29.99
Learning XML  costs only   39.95
Day Watch  costs only   14.99
Winston Churchill: An Autobiography  costs only   49.99
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.416 @XMLOUTPUT

@XMLOUTPUT[*inputdata*] : Output XML to a string after processing.

Use this instead of @XMLSAVE if you created input with @XMLINPUT and you don't want to create a file.

Returns 0 on success, or an XML error on failure;

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

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4.4.5.417 @XMLPUTATTR

@XMLPUTATTR[*name,namespaceURI,value*] : Writes an XML attribute

@XMLPUTATTR writes an XML attribute on the currently opened XML element. It must be called right after calling @XMLSTARTELEMENT and before any calls to @XMLPUTSTRING, @XMLPUTCOMMENT, or @XMLPUTRAW. The file must have been opened with a previous @XMLOPEN.

If *name* is a local name without a prefix, the class will automatically introduce a new xmlns="NamespaceURI" attribute if necessary.

If *name* is in the form prefix:local, then class will automatically introduce a new xmlns:prefix="NamespaceURI" as necessary.

Certain attribute names will be handled in special ways by this method. If *name* is "xmlns" or uses the "xmlns" prefix, the attribute will be interpreted as a namespace declaration, regardless of the value of NamespaceURI. Similarly, any attribute using the "xml" prefix will be interpreted as a special attribute (like "xml:lang") and NamespaceURI will be ignored.

Returns 0 on success, or an XML error on failure.

Example:

To create this XML named *books.xml*:

```
<book xmlns='urn:loc.gov:books' xmlns:isbn='urn:ISBN:0-395-36341-6'>
<title>Cheaper by the Dozen</title>
<isbn:number>1568491379</isbn:number>
</book>
```

Use the code:

```
echo %@xmlcreate[books.xml]
echo %@xmlstartelement[book,urn:loc.gov:books]
echo %@xmlputattr[xmlns:isbn,"",urn:ISBN:0-395-36341-6]
echo %@xmlputelement[title,urn:loc.gov:books,Cheaper by the Dozen]
echo %@xmlputelement[isbn:number,urn:ISBN:0-395-36341-6,1568491379);
echo %@xmlendelement[]
echo %@xmlclose[]
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)

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204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.418 @XMLPUTCDATA

@XMLPUTCDATA[*text*] : Writes an XML CDATA block.

The file must have been opened with a previous @XMLOPEN.

Returns 0 on success, or an XML error on failure;

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.419 @XMLPUTCOMMENT

@XMLPUTCOMMENT[*text*] : Writes an XML comment block.

The file must have been opened with a previous @XMLOPEN.

Returns 0 on success, or an XML error on failure;

XML Errors:

101 Invalid attribute index
102 No attributes available

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103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.420 @XMLPUTELEMENT

@XMLPUTELEMENT[*name,namespaceURI, value*] : Writes a simple XML element with no attributes and the specified value between the opening and closing tags.

If *name* is a local name without a prefix, ***TCC*** will automatically introduce a new xmlns="NamespaceURI" attribute if necessary.

If *name* is in the form prefix:local, then ***TCC*** will automatically introduce a new xmlns:prefix="NamespaceURI" as necessary.

When calling @XMLPutElement or @XMLStartElement, if a *namespaceURI* is not specified an empty namespace will be defined for the element. If a namespace should be associated with the element, a *namespaceURI* value must be provided. When creating the XML, ***TCC*** will determine if the namespace already exists to avoid duplicate definitions of the same namespace.

Returns 0 on success, or an XML error on failure;

Example:

To create this XML:

```
<book xmlns='urn:loc.gov:books' xmlns:isbn='urn:ISBN:0-395-36341-6'>
<title>Cheaper by the Dozen</title>
<isbn:number>1568491379</isbn:number>
</book>
```

Use the code:

```
echo %@xmlstartelement[book,urn:loc.gov:books]
echo %@xmlputattr[xmlns:isbn,"",urn:ISBN:0-395-36341-6]
echo %@xmlputelement[title,urn:loc.gov:books,Cheaper by the Dozen]
echo %@xmlputelement[isbn:number,urn:ISBN:0-395-36341-6,1568491379);
```

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```
echo %@xmlendelement[]
echo %@xmlclose[]
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.421 @XMLPUTSTRING

@XMLPUTSTRING[*text*] : Writes text inside an XML element.

The XML file must have been opened with a previous @XMLOPEN.

Returns 0 on success, or an XML error on failure;

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file

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401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.422 @XMLREMOVECHILDREN

@XMLREMOVECHILDREN[*[path]*] : Removes the children of the element at the specified (or current) XPath. The element itself remains.

If *xpath* is not specified, the current XPath is used.

Returns 0 on success, or an XML error on failure;

Example:

Starting with this XML:

```
<food>
    <fruits>
          <apple>
                <color:red</color.
          </apple>
          <banana>
                <color>yellow</color>
          </banana>
    </fruits>
</food>
```

To remove the children of the ***apple*** element while leaving ***apple*** in place:

```
echo %@xmlremovechildren[/food/fruits/apple]
0
```

The XML now looks like this:

```
<food>
    <fruits>
          <apple>
          </apple>
          <banana>
                <color>yellow</color>
          </banana>
    </fruits>
</food>
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available

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107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.423 @XMLREMOVEELEMENT

@XMLREMOVEELEMENT[*[xpath]*] : Removes the element and its children at *xpath*.

If *xpath* is not specified, the current XPath is used.

Returns 0 on success, or an XML error on failure;

Example:

Starting with this XML:

```
<food>
    <fruits>
          <apple>
                <color:red</color>
          </apple>
          <banana>
                <color>yellow</color>
          </banana>
    </fruits>
</food>
```

To remove the ***apple*** element and all of its children:

```
echo %@xmlremoveelement[/food/fruits/apple]
0
```

The XML now looks like this:

```
<food>
    <fruits>
          <banana>
                <color>yellow</color>
          </banana>
    </fruits>
</food>
```

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XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.424 @XMLRESET

@XMLRESET[] : Flushes the XML parser buffers, and initializes the parser to its default state.

Returns 0 on success, or an XML error on failure;

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

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4.4.5.425 @XMLSAVE

@XMLSAVE[*outputfile*] : Saves the modified XML document to the specified output file.

@XMLSAVE would normally be used when you are creating a document using @XMLINPUT.

Returns 0 on success, or an XML error on failure.

***Example*:**

```
echo %@xmlinput[<test>]
echo %@xmlsave[testfile.json]
echo %@xmlclose[]
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.426 @XMLSTARTELEMENT

@XMLSTARTELEMENT[*name,namespaceURI*] : Writes the opening tag of a new XML element.

Writes the opening tag of a new XML element. If an XML element is already opened, then this element is written as a child.

If *name* is a local name without a prefix, the class will automatically introduce a new xmlns="NamespaceURI" attribute if necessary.

If *name* is in the form prefix:local, then class will automatically introduce a new xmlns:prefix="NamespaceURI" as necessary.

When calling @XMLPutElement or @XMLStartElement, if a NamespaceURI is not specified an empty namespace will be defined for the element. If a namespace should be associated with the element, a

NamespaceURI value must be provided. When creating the XML, the class will determine if the namespace already exists to avoid duplicate definitions of the same namespace.

Returns 0 on success, or an XML error on failure;

Example:

To create this XML named *books.xml*:

```
<book xmlns='urn:loc.gov:books' xmlns:isbn='urn:ISBN:0-395-36341-6'>
<title>Cheaper by the Dozen</title>
<isbn:number>1568491379</isbn:number>
</book>
```

Use the code:

```
echo %@xmlcreate[books.xml]
echo %@xmlstartelement[book,urn:loc.gov:books]
echo %@xmlputattr[xmlns:isbn,"",urn:ISBN:0-395-36341-6]
echo %@xmlputelement[title,urn:loc.gov:books,Cheaper by the Dozen]
echo %@xmlputelement[isbn:number,urn:ISBN:0-395-36341-6,1568491379);
echo %@xmlclose[]
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.427 @XMLXPATH

@XMLXPATH[*["filename"],path***]** : XML XPath query. The arguments are:

filename - name of XML file
path - one or more element accessors separated by a /.

If you don't specify a filename (which *must* be in double quotes), @XMLXPATH will use the XML file previously opened by @XMLOPEN.

To return an attribute, preface the attribute name with an @.

The path is a series of one or more element accessors separated by '/'. The path can be absolute (starting with '/') or relative to the current XPath location. The following are possible values for an element accessor:

'name'	A particular element name
name[i]	The i-th subelement of the current element with the given name
[i]	The i-th subelement of the current element
[last()]	The last subelement of the current element
[last()-i]	The subelement located at the last location minus i in the current element
name[@attrname="attrvalue"]	The subelement containing a particular value for a given attribute (supports single AND double quotes)
..	The parent of the current element

Example:

Bookstore.xml :

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book>
    <title lang="jap">Harry Potter</title>
    <price>29.99</price>
</book>
<book>
    <title lang="eng">Learning XML</title>
    <price>39.95</price>
</book>
<book>
    <title lang="ger">Day Watch</title>
    <price>14.99</price>
</book>
<book>
    <title lang="eng">Winston Churchill: An Autobiography</title>
    <price>49.99</price>
</book>
</bookstore>
```

Bookstore.btm:

```
@ECHO OFF
SET a=%@XMLOPEN[bookstore.xml]
SET b=%@XMLNODES[/bookstore]
DO i = 1 to %b
        SET Title= %@XMLXPATH[/bookstore/book[%i]/title]
```

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```
        SET Price= %@XMLXPATH[/bookstore/book[%i]/price]
        ECHO %Title ` costs only ` %Price
ENDDO
SET c=%@XMLCLOSE[]
```

Running bookstore.btm outputs:

```
Harry Potter  costs only   29.99
Learning XML  costs only   39.95
Day Watch  costs only   14.99
Winston Churchill: An Autobiography  costs only   49.99
```

XML Errors:

101 Invalid attribute index
102 No attributes available
103 Invalid namespace index
104 No namespaces available
105 Invalid element index
106 No elements available
107 Attribute does not exist
201 Unbalanced element tag
202 Unknown element prefix (can't find namespace)
203 Unknown attribute prefix (can't find namespace)
204 Invalid XML markup
205 Invalid end state for parser
206 Document contains unbalanced elements
207 Invalid XPath
208 No such child
209 Top element does not match start of path
210 DOM tree unavailable
302 Can't open file
401 Invalid XML would be generated
402 An invalid XML name has been specified

4.4.5.428 @YEAR

@YEAR[*date[,format]***]**: Returns the year for the specified date. See date formats for valid formats.

@YEAR accepts an optional second parameter specifying the date format:

0 default
1 USA (mm/dd/yy)
2 Europe (dd/mm/yy)
3 Japan (yy/mm/dd)
4 ISO (yyyy-mm-dd)
5 ISO 8601 yyyy-Www-d
6 ISO 8601 yyyy-ddd

Example:

```
echo %@year[5-5-2012,1]
2012
```

4.4.5.429 @YDECODE

@YDECODE[s,*string*] : Create a text string from a hexadecimal input string. Returns the text string.
@YDECODE[*inputfile,outputfile*] : Decode a hex encoded file. Returns 0 if the output file was successfully written.

Y Encoding is similar to Base64, but uses 8-bit encoding to reduce the amount of data being sent and received.

4.4.5.430 @YENCODE

@YENCODE[s,*string*] : Create a text string from a hexadecimal input string. Returns the text string.
@YENCODE[*inputfile,outputfile*] : Encode a file. Returns 0 if the output file was successfully written.

Y Encoding is similar to Base64, but uses 8-bit encoding to reduce the amount of data being sent and received.

Example:

```
echo %@yencode[data.file,data.file.yenc]

echo %@yencode[s,Please encode this string]
```

4.4.5.431 @ZIPCFILE

@ZIPCFILE[*ziparchive,n*]: Returns the compressed name of file *n* in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip tcc *.cpp
echo %@zipcfile[tcc.zip,1]
stdafx.cpp
```

4.4.5.432 @ZIPCFILESIZE

@ZIPCFILESIZE[*ziparchive,n*]: Returns the compressed size of file *n* in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip tcc *.cpp
echo %@zipcfile[tcc.zip,0]
14341
```

4.4.5.433 @ZIPCOMMENT

@ZIPCOMMENT[*ziparchive*]: Returns the comment (if any) for a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip /z"TCC source files" tcc *.cpp
```

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```
echo %@zipcomment[tcc.zip]
TCC source files
```

4.4.5.434 @ZIPCOUNT

@ZIPCOUNT[*ziparchive***]**: Returns the number of files in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip /z"TCC source files" tcc *.cpp *.h
echo %@zipcount[tcc.zip]
147
```

4.4.5.435 @ZIPDFILE

@ZIPDFILE[*ziparchive,n***]**: Returns the decompressed name of file *n* in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip /R tcc test\
echo %@zipdfile[tcc.zip,4]
test\ntinit.cpp
```

4.4.5.436 @ZIPDFILESIZE

@ZIPDFILESIZE[*ziparchive,n***]**: Returns the decompressed size of file *n* in a .zip archive.

See also ZIP and UNZIP

Example:

```
zip tcc *.cpp
echo %@zipdfilesize[tcc.zip,0]
46868.
```

4.4.5.437 @ZIPFILECRC

@ZIPFILECRC[*ziparchive,n***]**: Returns the CRC of file *n* in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip tcc *.cpp
echo %@zipfilecrc[tcc.zip,0]
244B89DE
```

4.4.5.438 @ZIPFILECOMMENT

@ZIPFILECOMMENT[*ziparchive,n***]**: Returns the comment (description) of file *n* in a .zip archive.

See also ZIP and UNZIP.

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Example:

```
describe ntinit.cpp "TCC startup source code"
zip /i tcc *.cpp
echo %@zipfilecomment[tcc.zip,0]
TCC startup source code
```

4.4.5.439 @ZIPFILEDATE

@ZIPFILEDATE[*ziparchive,n***]**: Returns the date and time of file *n* in a .zip archive.

See also ZIP and UNZIP.

Example:

```
zip tcc *.cpp
echo %@zipfiledate[tcc.zip,0]
2021-06-15 13:16:12
```

4.5 Command Line

A ***TCC*** window displays a prompt when it is waiting for you to enter a command. The actual text depends on the current drive and directory as well as your PROMPT settings. (The default will look something like **[c:\]**). This is called the command line and the prompt is asking you to enter a command.

This section explains the features that will help you while you are entering commands, how keystrokes are interpreted when you enter them at the command line, and how to transfer text between ***TCC*** and other applications.

The keystrokes discussed here are the ones normally used by ***TCC***. If you prefer using different keystrokes to perform these functions, you can assign new ones with key mapping directives.

Some of the command line features documented in this section are:

- Command Line Editing
- Syntax Coloring
- Command History and Recall
- Command History Window
- Local and Global History Lists
- Command Names and Parameters
- Conditional Expressions
- Filename Completion
- Customizing Filename Completion
- Directory History Window
- Filename Completion Window
- Variable Completion
- Automatic Directory Changes
- Directory History Window
- Multiple Commands
- Expanding and Disabling Aliases
- Command Line Length Limits
- Command Grouping
- Starting Applications
- Command Parsing

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- Date Formats

Additional command line features are documented under File Selection and under Directory Navigation.

4.5.1 Command Line Editing

The command line works like a single-line word processor, allowing you to edit any part of the command at any time before you press Enter to execute it (or Esc to erase it).

The command line as typed (before alias and variable expansion) can contain up to a maximum of 65,535 characters. See Command Line Length Limits.

You can use the following editing keys (among others) when you are typing a command (the words **Ctrl** and **Shift** mean to press the *Ctrl* or *Shift* key together with the other key named). The keystrokes listed here are the default values; the keys can be edited with the OPTION / Keyboard dialog.

Cursor Movement Keys:

Directive	Default	Description
Left	Left	Move the cursor left one character on the input line
Right	Right	Move the cursor right one character on the input line
WordLeft	Ctrl-Left	Move the cursor left one word
WordRight	Ctrl-Right	Move the cursor right one word
BeginLine	Home	Move the cursor to the start of the line
EndLine	End	Move the cursor to the end of the line
ArgLeft	Alt-Shift-Left	Move the cursor left to the previous argument
ArgRight	Alt-Shift-Right	Move the cursor right to the next argument

Insert and Delete Keys:

Directive	Default	Description
Ins	Ins	Toggle insert / overstrike mode
Del	Del	Delete the character at the cursor
Backspace	Backspace	Delete the character to the left of the cursor
DelWordLeft	Ctrl-L	Delete the word to the left of the cursor
DelWordRight	Ctrl-R	Delete the word to the right of the cursor
DelArgLeft	Ctrl-Alt-L	Delete the argument to the left of the cursor
DelArgRight	Ctrl-Alt-R	Delete the argument to the right of the cursor
DelToBeginning	Ctrl-Home	Delete from the cursor to the start of the line
DelToEnd	Ctrl-End	Delete from the cursor to the end of the line
EraseLine	Esc	Delete the entire line
Paste	Ctrl-V or Shift-Ins	Paste line from clipboard
	Ctrl-Shift-V	Insert a " & " between lines of a multiline paste
Argument0	Ctrl-0	Get argument 0 from previous command line
Argument1	Ctrl-1	Get argument 1 from previous command line
Argument2	Ctrl-2	Get argument 2 from previous command line
Argument3	Ctrl-3	Get argument 3 from previous command line
Argument4	Ctrl-4	Get argument 4 from previous command line
Argument5	Ctrl-5	Get argument 5 from previous command line
Argument6	Ctrl-6	Get argument 6 from previous command line
Argument7	Ctrl-7	Get argument 7 from previous command line
Argument8	Ctrl-8	Get argument 8 from previous command line
Argument9	Ctrl-9	Get argument 9 from previous command line
Redo	Alt-Y	Redo the last Undo

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Undo	Alt-Z	Undo the last edit
PrevArgument	Ctrl-B	Recall the last argument from the previous command line

Highlighting:

Directive	Default	Description
SelectFromHome	Shift-Home	Mark from the beginning of the line to the cursor
SelectLeft	Shift-Left	Add the character on the left to the selection
SelectRight	Shift-Right	Add the character on the right to the selection
SelectToEnd	Shift-End	Mark from the cursor to the end of the line
SelectWordLeft	Ctrl-Shift-Left	Add the word on the left to the selection)
SelectWordRight	Ctrl-Shift-Right	Add the word on the right to the selection
Copy	Ctrl-Y	Copy the highlighted text to the clipboard
	Ctrl-C	Copy the highlighted text to the clipboard (if anything is highlighted); otherwise cancel the command

Execution:

Directive	Default	Description
ExecLine	Enter	Execute or accept a line
LineToEnd	Ctrl-Enter	Copy the current command line to the end of the history list, then execute it
	Ctrl-C or Ctrl-Break	Cancel the command line without saving it in the history list

Tab Completion:

Directive	Default	Description
NextFile	Tab or F9	Get the next matching filename during tab completion
AddFile	F10	Keep tab completion entry and add another
DirectoryCompletion	Shift-F6	Toggle between the default files + directories filename completion, and directories only
FileBrowse	F5	Display the Windows file browse dialog
FolderBrowse	Alt-F5	Display the Windows folder browse dialog
LFNToggle	Ctrl-A	Toggle tab completion between long filename and short filename modes on LFN drives
OriginalFile	Alt-F9	Restore the original filename
PATHCompletion	Ctrl-F6	Toggle between completing files found in the local directory, and completing them in the local directory + all of the directories in PATH
PopFile	F7 or Ctrl-Tab	Open the tab completion window
PrevFile	F8 or Shift-Tab	Get the previous matching filename
RepeatFile	F12	Repeat the previous matching filename

Command and Directory History:

Directive	Default	Description
HistWinOpen	PgUp	Open the command history popup window
DirWinOpen	F6	Open the directory history popup window
EndHistory	Ctrl-E	Display the last entry in the history list
LastHistory	F3	Return the last history entry

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DelHistory	Ctrl-D	Delete the current history list entry and display the previous entry
SaveHistory	Ctrl-K	Save the command line in the command history list without executing it
NextHistory	Down	Get the next command from the command history
NextDirHistory	Shift-PgDn	Get the next directory from the directory history
PrevDirHistory	Shift-PgUp	Get the previous directory from the directory history
PrevHistory	Up	Get the previous command from the command history
PrintHistory	Ctrl-P	Print the command history

Miscellaneous:

Directive	Default	Description
Help	F1	Display the Help topic for the current command
HelpWord	Ctrl-F1	Display the Help topic for the word at the cursor
ParentDirectory	Ctrl-Shift-Up	Change to the parent directory
AliasExpand	Ctrl-W	Expand all aliases on the command line
VariableExpand	Ctrl-X	Expand variables on the entire command line
VariableExpandWord	Ctrl-Shift-X	Expand variables for the current word
CommandDialog	Alt-F2	Display the command dialog for the first argument on the command line
CommandEscape	Alt-255	Do not interpret the next keystroke as a command line editing key
Regex	Ctrl-F7	Display the regular expression analyzer dialog
SingleStep	Ctrl-F5	Toggle batch debugger single-stepping
FontMax	Ctrl-Plus	Increase the console font size
FontMin	Ctrl-Minus	Reduce the console font size
ConsoleHeightMax	Ctrl-Alt-Shift-Down	Increase the console window height
ConsoleHeightMax	Ctrl-Alt-Shift-Up	Decrease the console window height
ConsoleWidthMax	Ctrl-Alt-Shift-Right	Increase the console window width
ConsoleWidthMin	Ctrl-Alt-Shift-Left	Reduce the console window width
MoveConsoleDown	Alt-Win-Down	Move the console window down
MoveConsoleUp	Alt-Win-Up	Move the console window up
MoveConsoleLeft	Alt-Win-Left	Move the console window left
MoveConsoleRight	Alt-Win-Right	Move the console window right
RepeatArgument	Shift-F12	Repeat the previous command line argument

To highlight text on the command line use the mouse or hold down the **Shift** key and use any of the cursor movement keys listed above. You can select a complete word by placing the cursor anywhere in the word and double-clicking with the mouse. Once you have selected or highlighted text on the command line, any new text you type will replace the highlighted text. If you press **Bksp** or **Del** while there is text highlighted on the command line, the highlighted text will be deleted.

TCC does not turn off the selection if you use the left or right cursor keys (or Shift-Left, Shift-Right, Shift-Ctrl-Left, or Shift-Ctrl-Right). So selection (marking) from the keyboard (Shift-Left / Shift-Right) allows you to go back to the selection (inside the selection or immediately before or after) and resize it with Shift-Left / Shift-Right) again.

While you are working at the prompt you can use the clipboard to copy text between ***TCC*** and other applications (see Highlighting and Copying Text for additional details). You can also use Drag and Drop to paste a filename from another application onto the command line.

Most of the command line editing capabilities are also available when you are prompted for a line of input. For example, you can use the command line editing keys when DESCRIBE prompts for a file description, when INPUT prompts for input from an alias or batch file, or when LIST prompts you for a search string.

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If you want your input at the command line to be in a different color, see the Windows tab of the configuration dialogs.

TCC will prompt for additional command line text when you include the escape character as the very last character of a typed command line. (The default escape character is the caret **"^".**) For example:

```
echo The quick brown fox jumped over the lazy ^
More? sleeping dog. > alphabet
```

Sometimes you may want to enter one of the command line editing keystrokes on the command line instead of performing the key's usual action. For example, suppose you have a program that requires a Ctrl-R character on its command line. Normally you couldn't type this keystroke at the prompt, because it would be interpreted as a "Delete word right" command. To get around this problem, use the special keystroke Alt-255. You enter **Alt-255** by holding down the **Alt** key while you type 0255 on the numeric keypad, then releasing the **Alt** key. This forces ***TCC*** to interpret the next keystroke literally and place it on the command line, ignoring any special meaning it would normally have as a command line editing or history keystroke. You can use **Alt-255** to suppress the normal meaning of command line editing keystrokes even if they have been reassigned with key mapping directives, and **Alt-255** itself can be reassigned with the CommandEscape configuration option.

Alternative Keyboard Input Method:

The method mentioned above for **Alt-255** can be used to generate other characters. You must use the number keys on the numeric keypad, not the row of keys at the top of your keyboard. When this **Alt + keypad** approach is used in a Unicode environment, ***TCC*** will assume that a 3-digit decimal value means an ASCII character, while a 4-digit decimal value mean a Unicode glyph. Make sure that your hardware, character set, code page and font all support the desired combination. Use caution with this method if you plan on manipulating the generated character in other Windows components. See the section on ASCII, Key Codes and ANSI X3.64 Commands for some additional information.

4.5.2 Syntax Coloring

TCC supports syntax coloring on the command line (similar to the syntax coloring in the IDE / batch debugger). You set the option and the colors to use in the OPTION / Windows dialog. You can define both foreground and background using any of the 16 Windows console colors. TCC will colorize:

- Default - any text that doesn't match a syntax option
- Commands - internal TCC commands
- Aliases - command aliases defined with the TCC ALIAS command.
- Comments - lines beginning with **rem** or **::**
- Labels - labels for a GOTO or GOSUB
- Operators - | < > && || etc.
- Batch / Local Vars - %1 - %n, %*, %~... etc.
- Environment Vars - environment variables
- Internal Vars - internal TCC variables and variable functions
- Regexes - regular expressions

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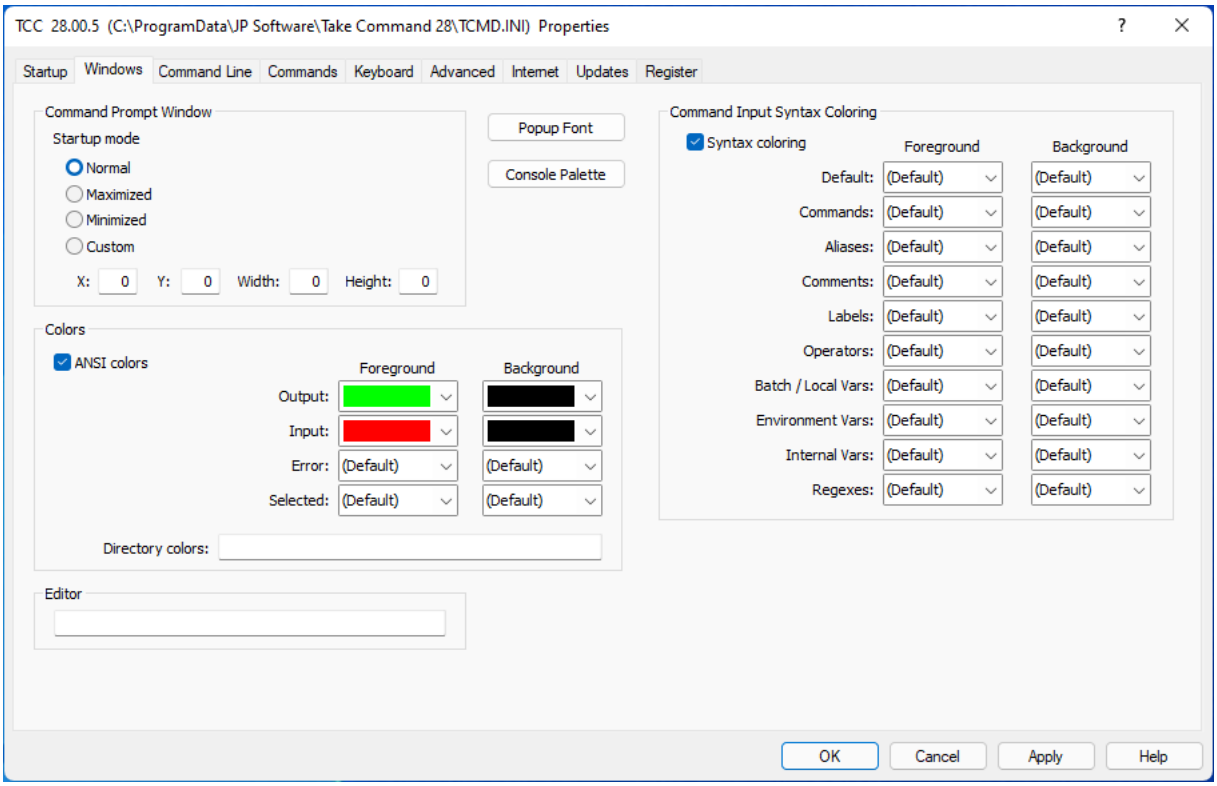

4.5.3 Command History and Recall

Each time you execute a command, the entire command line is saved in a command history list. You can display the saved commands, search the list, modify commands, and rerun commands. The command history is available at the command prompt and in a special command history window. You can choose to use either a local or global command history.

Command History Keys:

Up	Recall the previous (or most recent) command, or the most recent command that matches a partial command line.
Down	Recall the next (or oldest) command, or the oldest command that matches a partial command line.
PgUp	Display a popup window of the command history (or all entries matching a partial command line).
F3	Fill in the rest of the command line from the previous command, beginning at the current cursor position.
Ctrl-D	Delete the currently displayed history list entry, erase the command line, and display the previous (matching) history list entry.
Ctrl-E	Display the last entry in the history list.
Ctrl-K	Save the current command line in the history list without executing it, and then clear the command line.
Ctrl-Enter	Copy the current command line to the end of the history list even if it has not been altered, then execute it.
@	As the first character in a line: Do not save the current line in the history list when it is executed, nor store it in the CMDLINE environment variable.

Note: The keystrokes shown above are the default values. See Key Mapping Directives for details on how to assign different keystrokes.

The simplest use of the command history list is to repeat a command exactly. For example, you might enter the command

```
dir a:*.wks;*.doc
```

to see some of the files on drive A. You might move some new files to drive A and then want to repeat the DIR command. Just press **Up** repeatedly to scan back through the history list. When the DIR command appears, press **Enter** to execute it again. You can also view the command history in a window.

After you have found a command, you can edit it before pressing **Enter**. You will appreciate this feature when you have to execute a series of commands that differ only slightly from each other. You can also view and manage the command history list with the HISTORY command.

The history list is normally "circular". If you move to the latest command in the list and then press **Up** once more, you'll see the oldest command in the list. Similarly, if you move to the first command in the list and then press **Up** once more, you'll see the last command in the list. You can disable this feature and make command history recall stop at the beginning or end of the list by turning off History Wrap on the "History" tab of the configuration dialog.

You can search the command history list to find a previous command quickly using command completion. Just enter the first few characters of the command you want to find and press **Up**. You only need to enter enough characters to identify the command that you want to find. For example, to find a DIR command, enter DI and then press **Up**. If you press **Up** a second time, you will see the previous command that matches. The system will beep if there are no matching commands. The search process stops as soon as you type one of the editing keys, whether or not the line is changed. At that point, the line you're viewing becomes the new line to match if you press **Up** again.

The command history search supports wildcards. For example, you can search for a previous command that contained the string **foo** by typing ***foo*** on the command line and pressing the up or down keys.

You can specify the size of the command history list on the **Command Line** tab of the configuration dialog. When the list is full, the oldest commands are discarded to make room for new ones. You can also use the **Minimum Length** option to enable or disable history saves and to specify the shortest command line that will be saved.

You can prevent any command line from being saved in the history by beginning it with an at sign (`@`) or by including it in the contents of the HistoryExclude variable.

When you execute a command from the history, that command remains in the history list in its original position. The command is not copied to the end of the list (unless you modify it). If you want each command to be copied or moved to the end of the list when it is reexecuted, select Copy to End or Move to End on the "History" tab of the configuration dialogs. If you select either of these options, the list entry identified as "current" (the entry from which commands are retrieved when you press **Ctrl-Up**) is also adjusted to refer to the end of the history list after each recalled command is executed.

Use **F3** when your new command is different from your previous one by just a character or two at the beginning. For example, suppose you want to execute a `DIR` on several file names then use `DEL` to delete those same files. After the `DIR` is complete type `DEL` and press **F3**; the rest of the command line will be completed for you. Check that it's correct, and then press **Enter** to delete the files. **F3** also retrieves the entire previous command (like **Up***)* if nothing has been typed on the line.

Use **Ctrl-E** to "get your bearings" by returning to the end of the list if you've scrolled around so much that you aren't sure where you are any more.

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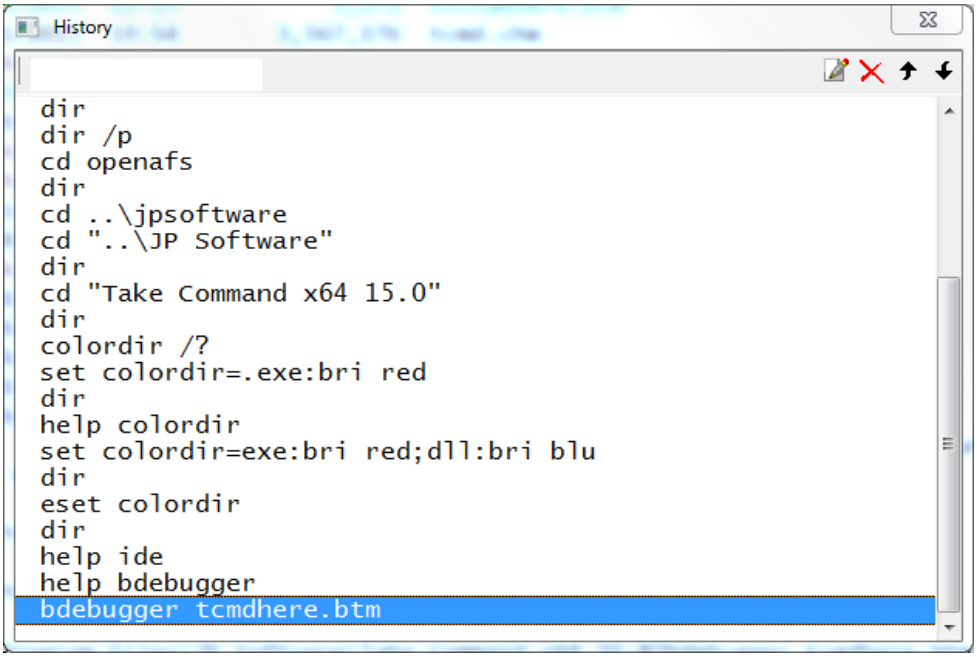
Use **Ctrl-K** to save some work when you've typed a long command and then realize that you weren't quite ready. For example, if you forget to change directories and notice it after a command is typed or mostly typed, but before you press **Enter**, just press **Ctrl-K** to save the command without executing it. Use the `CD` or `CDD` command to change to the right directory, press **Up** twice to retrieve the command you saved, make any final changes to it, and press **Enter** to execute it.

Use **Ctrl-Enter** to organize the history list for repetitive tasks. Instead of searching through the command history for the next command in a sequence, you can place all of the necessary commands next to each other and make them easier to repeat.

4.5.4 Command History Window



You can view the command history in a scrollable popup window, and select the command to re-execute or modify from those displayed in the window. The directory history window includes a toolbar with buttons for editing, deleting, and moving lines.

To activate the command history window press **PgUp** or **PgDn** at the command line. A popup window will appear, with the command you most recently executed marked with a highlight. (If you just finished re-executing a command from the history, then the next command in sequence will be highlighted.)

You can view a "filtered" history window by typing some characters on the command line, then pressing **PgUp** or **PgDn**. Only those commands matching the typed characters will be displayed in the window.

You can search for a specific command by entering a string (including wildcards or regular expressions) in the edit window on the title bar. ***TCC*** will remove non-matching lines from the window. See Popup Windows for details.

Command History Window Keys:

Up	Scroll the display up one line.
Down	Scroll the display down one line.
Left	Scroll the display left 4 columns.
Right	Scroll the display right 4 columns.

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PgUp	Scroll the display up one page.
PgDn	Scroll the display down one page.
Home	Go to the beginning of the list.
End	Go to the end of the list.
Ctrl-Enter	Move the selected line to the command line for editing
Enter	Execute the selected line
Ctrl-C	Copy the selected line to the clipboard
Ctrl-D or Del	Delete the selected line from the list
Ctrl-E	Edit the selected line in the history window
Ctrl-Up	Move the selected line up one row
Ctrl-Down	Move the selected line down one row
Esc	Close the window without making a selection.

Note: The keystrokes shown above are the default values. See Key Mapping Directives for details on how to assign different keystrokes.

Once you have selected a command in the history window, press **Enter** or double-click with the mouse to execute it immediately. Press **Ctrl-Enter** or hold down the Ctrl key while you double-click with the mouse to move the line to the prompt for editing.

You can move and/or resize the history window. ***TCC*** will save the changes and use the new position the next time the command history window is invoked. You can also change the keys used in the window with key mapping directives.

4.5.5 Local and Global History Lists

The command history and directory history can be stored in either local or global lists.

With a local list, any changes made to the history will only affect the current ***TCC*** tab window. They will not be visible in other tabs or other copies of ***TCC***.

With a global list, all ***TCC*** windows will share the same history, and any changes made to the history in one copy (e.g., by executing commands from the prompt) will affect all other copies. Global lists are the default.

You can control the type of history list with the Local History and Local Directory History options, and with the **/L**, **/LD** and **/LH** options of either the START command or ***TCC***.

If you select a global history list for ***TCC***, you can share the history among all ***TCC*** sessions running concurrently. When you close all of the ***TCC*** sessions, the memory for the global history list is released, and a new, empty history list is created the next time you start ***TCC***.

If you want the histories to be retained in memory even when no ***TCC*** session is running, see the SHRALIAS command, which retains the global alias, user-defined function, command history, and directory history lists. SHRALIAS retains the lists in memory, but cannot preserve it when Windows itself is shut down or the user logs out. To save your histories for the next restart of Windows, you must store them in a file and reload them after the system restarts. For details on how to do so, see the HISTORY and DIRHISTORY commands.

4.5.6 Command Names & Parameters

When you enter a command you type its name at the prompt, followed by a space and any parameters for the command. For example, all of these could be valid commands:

```
dir
copy file1 file2 d:\
```

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```
f:\util\mapmem /v
"c:\program files\JPSoft\tcmd28\tcc.exe" /LF
```

The last three commands above include both a command name, and one or more parameters. There are no spaces within the command name (except in quoted file names), but there is a space between the command name and any options or parameters, and there are spaces between the options and parameters.

Some commands may work when options or parameters are entered directly after the command (without an intervening space, *e.g.* `dir/p`), or when several options or parameters are entered without spaces between them (e.g. `dir /2/p`). A very few older programs may even require this approach. However, leaving out spaces this way is usually technically incorrect, and is not recommended as a general practice, as it may not work for all commands.

If the command name includes a path, the elements must be separated with backslashes (*e.g. F:\UTIL\MAPMEM*). If you are accustomed to Linux syntax where forward slashes are used in command paths, and want ***TCC*** to recognize this approach, you can set the Unix/Linux-style Paths option.

For more information on command entry see Multiple Commands and Command Line Length Limits. For details on how ***TCC*** handles the various elements it finds on the command line see Command Parsing..

4.5.7 Conditional Expressions

The commands DO (when used with the UNTIL or WHILE keyword), IF, IFF/ELSEIFF, and the variable function @IF evaluate a conditional expression, and perform a different action based on whether or not the expression is TRUE. The SWITCH command tests pairs of values for equality. Most of the examples below use the IF command, but conditional expressions could be used in the other cases above as well.

A conditional expression can be one of the following, as described below:

- relational expression
- status test
- logical expression

Relational Expression

A relational expression compares two character strings, using one of the relational operators in the table below. Each of these two character strings can contain literal text, environment and internal variables, and variable functions, including user defined ones, in any combination. Note that double quotes are significant.

Numeric and String Comparison

When comparing the two character strings, either a numeric or a string comparison will be used. A numeric comparison treats the strings as numeric values and tests them arithmetically. A string comparison treats the strings as text. The parser uses the rules described for the @NUMERIC function to determine whether or not the strings are numeric, and only if both are numeric is a numeric comparison performed. If either value is non-numeric, a string comparison is used. To force a string comparison when both values may be numeric, use double quotes around the values you are testing, as shown below. Because the quote mark is not a numeric character, string comparison is performed. Numeric comparison cannot be forced. To compare hexadecimal numbers numerically, you must convert them to decimal numbers using @CONVERT. This is not necessary if both are the same length - string comparison and numeric comparison yield the same result.

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The example below demonstrates the difference between numeric and string comparisons, as shown in the table below. Numerically, 2 is smaller, but as a string it is "larger" because its first digit is larger than the first digit of 19. So the first of these conditions will be true, and the second will be false:

expression	value	comparison type
`2 lt 19`	true	numeric
`"2" lt "19"`	false	string

Relational Expression Formats

The format of a relational expression is one of

num1 *relational operator* ***num2***
string1 *relational operator* ***string2***

> **Note:** The correct syntax requires a space both before and after ***operator*** to separate it from its operands. Commonly seen constructs such as **`%a==b`** may or may not work depending on the specific parameters, but they are *never* recommended.

Relational Operators

operator	numeric comparison: *expression* is **true** if	string comparison: *expression* is **true if,** when ignoring character case:
EQ or **==**	*num1* equals *num2*	*string1* equals *string2*
NE or **!=**	*num1* does not equal *num2*	*string1* does not equal *string2*
LT	*num1* is less than *num2*	*string1* alphabetically precedes *string2*
LE	*num1* is less than or is equal to *num2*	*string1* alphabetically precedes or is equal to *string2*
GE	*num1* is greater than or is equal to *num2*	*string1* alphabetically succeeds or is equal to *string2*
GT	*num1* is greater than *num2*	*string1* alphabetically succeeds *string2*
EQC	tested as strings ➔	*string1* is identical to *string2*, including character case
=~	regular expression test	*string1* matches the regular expression in *string2*
!~	regular expression test	*string1* doesn't match the regular expression in *string2*

Case differences are ignored in string comparisons (except by **EQC**). If two strings begin with the same text but one is shorter, the shorter string is considered to precede (be less than) the longer one. For example, "a" is less than "abc", and "hello_there" is greater than "hello".

When you compare text strings, you may need to enclose the parameters in double quotes in order to avoid syntax errors which can occur if one of the parameter values is empty (*e.g.*, due to an environment variable which has never been assigned a value). This technique will not work for numeric comparisons, as the quotes will force a string comparison, so with numeric tests you must be sure that all variables are assigned values before the test is done.

In order to maintain compatibility with CMD, ***TCC*** recognizes the following additional names for conditions:

CMD	***TCC***
EQL or **EQU**	**EQ**
NEQ	**NE**
LSS	**LT**
LEQ	**LE**

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GTR	GT
GEQ	GE

Internal variables and variable functions are very powerful when combined with string and numeric comparisons. They allow you to test the state of your system, the characteristics of a file, date and time information, or the result of a calculation. You may want to review the variables and variable functions when determining the best way to set up a condition test.

Status Test

These conditions test operating system, file system or ***TCC*** status. In addition to the tests below, there are many internal variables and variable functions which allow you to test the status of many other parts of the system.

In the descriptions below of the various status tests, the status tests are true if and only if the specified condition is true.

DEFINED *variable*

If variable exists in the environment, the expression is true. This is equivalent to testing whether or not variable is nonempty.

Note: GOSUB variables, array variables, and internal variables do not exist in the environment, so they always fail the DEFINED test.

ERRORLEVEL [relational operator] n

This test retrieves the exit code of the preceding external program. By convention, programs return an exit code of 0 when they are successful and a non-zero number to indicate an error. The relational operator may be any of those listed above (e.g., EQ, GT). If no operator is specified, the default is GE. The comparison is done numerically.

Not all programs return an explicit exit code. For programs which do not, the behavior of ERRORLEVEL is undefined.

EXIST *filename*

If filename matches a file which exists, the expression is true. You can use wildcards in filename, in which case the expression is true if any file matching the wildcard name exists. filename may include an absolute or relative path.

WARNING: In Windows the expression will be true if there is either a file or a directory named filename. Use ISFILE or ISDIR instead.

The special filename NUL is commonly used in CMD batch files to test the existence of a directory. The expression exist xxx\NUL is true only if xxx is a directory.

ISALIAS *aliasname*

If aliasname is defined as an alias, the expression is true.

ISAPP *appname*

If appname matches the name of an application which is currently running, the expression is true. To match a specific application, you must enter the full pathname of the application. Partial names and wildcards will yield undependable results. Both the short and long filename forms of the name will be checked (see LFN File Searches for details on the correspondence between short and long filenames). This test may require DEBUG privilege.

ISBATCH *filename*

If the specified filename is a batch file, the expression is true.

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ISDIR *path* **DIREXIST** *path*	If the directory specified by path exists, the expression is true. Path may be either absolute or relative. DIREXIST may be used as a synonym for ISDIR.
ISFILE *filename*	If filename matches a file which exists, the expression is true. You can use wildcards in the filename, in which case the expression is true if any file matching the wildcard name exists. ISFILE matches only files, not directories.
ISFUNCTION *name*	If the user-defined function name is loaded, the expression is true.
ISINTERNAL *command*	If command is an active internal command, the expression is true. Commands can be activated and deactivated with the SETDOS /I command.
ISLABEL *label*	If label exists in the current batch file, the expression is true. Labels may be one or more words long. Note that this test has nothing to do with disk partition labels.
ISLIBRARY *name*	If the name is a library function, the expression is true
ISPLUGIN *name*	If name is a plugin variable, function, or command, the expression is true.
ISREADABLE *filename*	If the filename is readable, the expression is true.
ISSYMLINK *filename*	If the file is a symbolic link, the expression is true.
ISVISIBLE *"title"*	If the specified window is visible, the expression is true. (This neans that Windows has set the visibility flag; it does not mean that the window is necessarily visible on the desktop.)
ISWRITEABLE *filename*	If the filename is writeable, the expression is true.
ISHUNG "title"	If the specified window is not responding, the expression is true.
PLUGIN *module*	If the plugin module is loaded, the expression is true. Do not include an extension (i.e., ".dll"), for the module name.

Logical Expressions

A logical expression is one of the following:

- a relational expression
- a status test
- the unary logical operator **NOT** (or **!**) followed by a logical expression
- two logical expressions connected by a binary logical operator

Logical operators

operator	type	usage	value is TRUE if
NOT	unary	**NOT** *cond*	*cond* is FALSE.
.AND.	binary	*cond1* **.AND.** *cond2*	both *cond1* and *cond2* are TRUE.
.OR.	binary	*cond1* **.OR.** *cond2*	at least one of *cond1* and *cond2* is TRUE.

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.XOR.	binary	*cond1* **.XOR.** *cond2*	one of *cond1* and *cond2* is TRUE, and the other one is FALSE.

This example runs a program called ***DATALOAD*** if today is Monday or Tuesday (enter this on one line):

```
if "%_dow" == "Mon" .or. "%_dow" == "Tue" dataload
```

Test conditions are always scanned from left to right -- there is no implied order of precedence, as there is in some programming languages. You can, however, force a specific order of testing by grouping conditions with parentheses, for example (enter this on one line):

```
if (%a == 1 .or. (%b == 2 .and. %c == 3)) echo something
```

Combining logical expressions

Parentheses can be used only when the portion of the ***expression*** inside the parentheses contains at least one of the binary logical operators **.and.**, **.or.**, or **.xor.**. Parentheses on a simple expression which does not combine two or more tests will be taken as part of the string to be tested, and will probably make the test fail. For example, the first of these tests is **FALSE**, the second is **TRUE**:

```
(a == a)
(a == a .and. b == b)
```

Parentheses may be nested.

Examples

This batch file fragment runs a program called *WEEKLY* if today is Monday:

```
if "%_dow" == "mon" weekly
```

This batch file fragment tests for a string value:

```
input "Enter your selection : " %%cmd
if "%cmd" == "WP" goto wordproc
if "%cmd" NE "GRAPHICS" goto badentry
```

This example calls *GO.BTM* if the first two characters in the file *MYFILE* are **GO**:

```
if "%@left[2,%@line[myfile,0]]" == "GO" call go.btm
```

The first batch file fragment below tests for the existence of *A:\JAN.DOC* before copying it to drive C (this avoids an error message if the file does not exist):

```
if isfile a:\jan.doc copy a:\jan.doc c:\
```

This example tests the exit code of the previous program and stops all batch file processing if an error occurred:

```
if errorlevel == 0 goto success
echo "External Error; Batch File Ends!"
cancel
```

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4.5.8 Filename Completion

Filename completion can help you by filling in a complete file name on the command line when you only remember or want to type part of it. Filename completion can be used at the command line, which is explained here, and in a filename completion window.

In addition to file names, you can optionally complete alias names and internal command names (see OPTION / Command Line / Filename Completion) when the argument is at the beginning of the command line.

Many internal ***TCC*** commands have a pre-defined filename completion syntax; see the ***File Completion Syntax*** section in the individual commands for details.

Filename Completion Keys:

F8 or **Shift-Tab**	Get the previous matching filename.
F9 or **Tab**	Get the next matching filename.
F10	Keep the current matching filename and display the next matching name immediately after the current one.
F12	Repeat the filename just returned from an F9 / Tab match.
Alt+F9	Restore the original filename mask after a previous F9 or Tab. (This will only work provided you haven't terminated the completion loop; i.e. by pressing anything other than Tab, Shift-Tab, F8, F9, F10, or F12.)
Ctrl+A	Toggle between long and short filename.
Shift+F6	Toggle between the default files + directories filename completion, and directories only. The default will be reset on a new command line.
Ctrl+F6	Toggle between completing files found in the local directory, and completing them in the local directory + all of the directories in PATH.

Note: The keystrokes shown above are the default values. See Key Mapping Directives for details on how to assign different keystrokes.

For example, if you know the name of a file begins *AU* but you can't remember the rest of the name, type:

```
copy au
```

and then press the **Tab** key or **F9** key. ***TCC*** will search the current directory for filenames that begin with *AU* and insert the first one onto the command line in place of the *AU* that you typed.

If this is the file that you want, simply complete the command. If ***TCC*** didn't find the file that you were looking for, press **Tab** or **F9** again to substitute the next filename that matches your pattern (in the above example, begins with *AU)*. When there are no more filenames that match your pattern, the system will beep each time you press **Tab** or **F9**.

If you go past the filename that you want, press **Shift-Tab** or **F8** to back up and return to the previous matching filename. After you back up to the first filename, the system will beep each time you press **Shift-Tab** or **F8**.

If you want to enter more than one matching filename on the same command line, press **F10** when each desired name appears. This will keep that name and place the next matching filename after it on the command line. You can then use **Tab** (or **F9**) and **Shift-Tab** (or **F8**) to move through the remaining matching files.

The pattern you use for matching may contain any valid filename characters, as well as wildcard characters and extended wildcards. For example, you can copy the first matching *.TXT* file by typing

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```
copy *.txt
```

and then pressing **Tab**.

If you don't specify part of a filename before pressing **Tab**, ***TCC*** will match all files. For example, if you enter the above command as "**COPY** ", without the **.TXT*, and then press **Tab**, the first filename in the current directory is displayed. Each time you press **Tab** or **F9** after that, another name from the current directory is displayed, until all filenames have been displayed. ***Note:*** you must terminate the command (e.g., by space) before file completion becomes available.

TCC will append ***** to the name on LFN drives, and ***.*** on drives which only support short file names. If you are typing a group of file names in an include list, the part of the include list at the cursor will be used as the pattern to match.

When filename completion is used at the start of the command line, it will only match directories, executable files, and files with executable extensions (and optionally aliases or internal commands, if you have set CompleteAliases and/or CompleteInternals), since these are the only file names that it makes sense to use at the start of a command. If a directory is found, a **** will be appended to it to enable an automatic directory change. If you need to complete the name of any other file at the start of the command line, press **Space** before starting to type the name. Filename completion will then match any name, not just directory and executable names. *Note* that you can also "execute" files whose extension has an association in the Windows Registry, but such files are not considered executable by ***TCC***, and only the method above using a space will work.

Filename completion occurs in the physical order in which matching filenames are stored in the directory, the same order in which DIR /O:U would list them. That order is determined by the underlying file system.

TCC will automatically expand variable names embedded in the filename being completed.

TCC also supports network server and sharename completion. If the filename begins with \\, the completion routines will enumerate the network resources for matching server and/or share names. You can control the way server name completion functions with the Server Completion configuration option.

Filename completion will search the PATH for an executable filename if you have set the**Search Path** option in the **Command Line** configuration tab, and you are :

(1) at the beginning of the command line, and
(2) there are no matching entries in the current directory, and
(3) the name you are attempting to match doesn't contain a full or partial path specification.

If all three conditions are met, filename completion will return the first matching executable found in the PATH.

If you are on an NTFS drive, you can also complete stream names. For example:

```
copy test:t
```

and then pressing **Tab** will search the file ***test*** for streams beginning with "t". Note that you cannot complete a filename and a stream name simultaneously (i.e., **t*:t***).

TCC file expansion supports "~\" (home directory) syntax. If the filename is ~, or begins with a **~\ (**or **~/)**, ***TCC*** will substitute to the user's home directory, as defined by the HOME environment variable. (If HOME doesn't exist, ***TCC*** will look for %HOMEDRIVE + HOMEPATH.) For example:

```
dir ~\
```

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```
copy foo ~\foofolder
```

TCC file expansion supports the predefined Windows folders. The syntax is **:foldername** where *foldername* can be:

AccountPictures
AdminTools
AppCaptures
ApplicationShortcuts
CameraRoll
CDBurning
CommonAdminTools
CommonOEMLinks
CommonPrograms
CommonStartMenu
CommonStartMenuPlaces
CommonStartup
CommonTemplates
Contacts
Cookies
Desktop
DeviceMetadataStore
Documents
DocumentsLibrary
Downloads
Favorites
Fonts
GameTasks
History
ImplicitAppShortcuts
InternetCache
Libraries
Links
LocalAppData
LocalAppDataLow
LocalDocuments
LocalDownloads
LocalizedResourcesDir
LocalMusic
LocalPictures
LocalVideos
Music
MusicLibrary
Nethood
OneDrive
OriginalImages
PhotoAlbums
PicturesLibrary
Pictures
Playlists
PrintHood
Profile
ProgramData
ProgramFiles
ProgramFilesX64
ProgramFilesX86

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ProgramFilesCommon
ProgramFilesCommonX64
ProgramFilesCommonX86
Programs
Public
PublicDesktop
PublicDocuments
PublicDownloads
PublicGameTasks
PublicLibraries
PublicMusic
PublicPictures
PublicRingtones
PublicUserTiles
PublicVideos
QuickLaunch
Recent
RecordedTVLibrary
ResourceDir
RetailDemo
Ringtones
RoamingAppData
RoamedTileImages
RoamingTiles
SampleMusic
SamplePictures
SamplePlayLists
SampleVideos
SavedGames
SavedPictures
SavedSearches
Screenshots
SearchHistory
SearchTemplates
SendTo
SidebarDefaultParts
SidebarParts
SkyDrive
SkyDriveCameraRoll
SkyDriveDocuments
SkyDrivePictures
StartMenu
Startup
System
SystemX86
Templates
UserPinned
UserProfiles
UserProgramFiles
UserProgramFilesCommon
Videos
VideosLibrary
Windows

For example:

```
dir :downloads
copy picture.jpg :pictures\myfolder1\
```

Programmable filename completion is supported using any scripting language supported by ***TCC*** (i.e., BTM/CMD, Lua, Python, REXX, Tcl, etc.). See TABCOMPLETE for details.

Several topics are related to filename completion. See:

- Converting Between Long and Short Filenames
- Appending Backslashes to Directory Names
- Customizing Filename Completion
- Filename Completion Window
- Variable Name Completion

4.5.9 Customizing Filename Completion

You can customize filename completion for any internal or external command or alias. This allows ***TCC*** to display filenames intelligently based on the command you are entering. For example, you might want to see only *.TXT* files when you use filename completion in the EDIT command. When you press the Tab (or F9) key, ***TCC*** will display a matching argument.

Programmable filename ("tab") completion is supported using any scripting language supported by ***TCC*** (i.e., BTM/CMD, Lua, Python, REXX, Tcl, etc.). See TABCOMPLETE for details.

To customize filename completion you can use the Filename Completion configuration options. You can also use the FILECOMPLETION environment variable. If you use both, the environment variable will override the configuration option. You may find it useful to use the environment variable for experimenting, then create permanent settings with the configuration dialog.

The format for both the environment variable and the directive is:

```
cmd1 [cmd2 ...]:[!]ext1 ext2 ...; cmd2: ...
```

where

cmd1 etc. are command names

ext1 etc. are file extensions (which may include wildcards) or one of the following file types:

DIRS	Directories
RDONLY	Read-only files
HIDDEN	Hidden files
SYSTEM	System files
ARCHIVE	Files modified since the last backup
FILES	Everything that's not a directory
NORMAL	No attributes are set

There are four types that can be used instead of an extension:

aliases	Aliases
variables	Environment variables
functions	User-defined variable functions
libraries	Library function names

Filename completion also supports a position syntax:

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[n] Only match the following extensions if the argument number is equal to *n*
[*n] Only match the following extensions if the argument number is less than or equal to *n*
[n*] Only match the following extensions if the argument number is greater than than or equal to *n*
[/x] Only match the specified switch. A matching switch argument will not increase the *argument* value.

For example, the default ZIP filename completion looks like this:

```
zip:[1] dirs zip [2*] *
```

This means that the first argument to a ZIP command will only match subdirectories or files with a **.zip** extension. Subsequent arguments will match any file or directory.

Note that if a file uses one of the reserved file type names shown above as its extension (e.g. *xyz.hidden*) , that file will be treated as if it were of that type.

Filename completion will be done in the order the extensions are specified. For example:

```
set filecompletion=myeditor:htm html css
```

will first try to match .htm files, then .html, and finally .css.

Setting options in OPTION / Filename Completion, or with the FILECOMPLETION environment variable, will override the default filename completion settings such as "complete hidden files / directories" options for that command. If you want to customize filename completion **and** search for hidden / system files, you will need to add the HIDDEN and/or SYSTEM extensions to that command's filename completion options.

You can exclude an extension by prefixing it with a **!**.

The command name is the internal command, alias, or executable file name (without a path). For example, to have file completion return only directories for the CD, CDD, and RD commands and only *.C* and *.ASM* files for a Windows editor called WinEdit, you would use this setting for filename completion in the configuration dialog:

```
cd cdd rd:dirs; winedit:c asm
```

To set the same results using the FILECOMPLETION environment variable:

```
set filecompletion=cd cdd rd:dirs; winedit:c asm
```

With this setting in effect, if you type "CD " and then pressed **Tab**, ***TCC*** returns only directories, not files. If you type **WINEDIT** and press **Tab**, you will see only names of *.C* and *.ASM* files.

When testing for a customized filename match, ***TCC*** checks the actual command line you type (but without expanding any aliases). For example, if you use the definition above and have "W" aliased to "WINEDIT" and then enter a "W" command, filename completion -- which refers only to "WINEDIT" -- will be ignored. To use customized filename completion for aliases you must enter the alias name:

```
FileCompletion=cd cdd rd:dirs; winedit:c asm; w:c asm
```

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4.5.10 Filename Completion Window

You can view matching filenames in a filename completion window. To activate the window, press **F7** or **Ctrl-Tab** at the command line. You will see a popup window, with a sorted list of files that match any partial filename you have entered on the command line. If you haven't yet entered a file name, the window will contain the name of all executable files (or files with an association; see ASSOC) in the current directory. You can search for a name by entering a string (including wildcards or regular expressions) in the edit window on the title bar. ***TCC*** will remove non-matching lines from the window. See Popup Windows for details.

Filename Completion Window Keys:

F7 or Ctrl-Tab	(from the command line) Open the window.
Up	Scroll the display up one line.
Down	Scroll the display down one line.
Left	Scroll the display left 4 columns.
Right	Scroll the display right 4 columns.
PgUp	Scroll the display up one page.
PgDn	Scroll the display down one page.
Home	Go to the beginning of the list.
End	Go to the end of the list.
Enter or Double Click	Insert the selected filename into the command line.

Note: The keystrokes shown above are the default values. See Key Mapping Directives for details on how to assign different keystrokes.

See also: Filename Completion

4.5.11 Converting Between Long & Short Filenames

On LFN drives, ***TCC*** will search for and display long filenames during filename completion. If you want to search for 8.3 short filenames (SFNs), press Ctrl-A before you start using filename completion. This allows you to use filename completion on LFN drives with applications that do not support long filenames. The LFNToggle directive can be used to change the keystroke assigned to this feature.

You can press **Ctrl-A** at any time prior to beginning filename completion. The switch to SFN format remains in effect for the remainder of the current command line. When ***TCC*** begins a new command line it returns to long filename format until you press **Ctrl-A** again.

You can also press **Ctrl-A** just after a filename is displayed, and the name will be converted to short filename format**.** However, this feature only affects the most recently entered file or directory name (the part between the cursor and the last backslash [\] on the command line), and any subsequent entries. It will not automatically convert all the parts of a previously entered path.

Ctrl-A toggles the filename completion mode, so you can switch back and forth between long and short filename displays by pressing **Ctrl-A** each time you want to change modes.

4.5.12 Appending Backslashes to Directory Names

If you set the **Add \ to Directories** option in the Command Line tab of the configuration dialogs, ***TCC*** will add a trailing backslash \ to directory names. The character appended is a slash **/** for directory names in FTP URLs or (if you have set the **UNIX/Linux-style Paths** option in the Startup tab) to all directory names.

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This feature can be especially handy if you use filename completion to specify files that are not in the current directory. A succession of **Tab** or **F9** and **F10** keystrokes can build a complete path to the file you want to work with.

The following example shows the use of this technique to edit the file *C:\DATA\FINANCE\MAPS.DAT*. The lines which include "<F9>" show where F9 (or Tab) is pressed; the other lines show how the command line appears after the previous F9 or Tab (the example is displayed on several lines here, but all appears at a single command prompt when you actually perform the steps):

```
1    edit \da <F9>
2    edit \data\
3    edit \data\f <F9>
4    edit \data\frank.doc <F9>
5    edit \data\finance\
6    edit \data\finance\map <F9>
7    edit \data\finance\maps.dat
```

Note that F9 was pressed twice in succession on lines 3 and 4, because the file name displayed on line 3 was not what was needed. We were looking for the *FINANCE* directory, which came up the second time F9 was pressed.

4.5.13 Extended Parent Directory Names

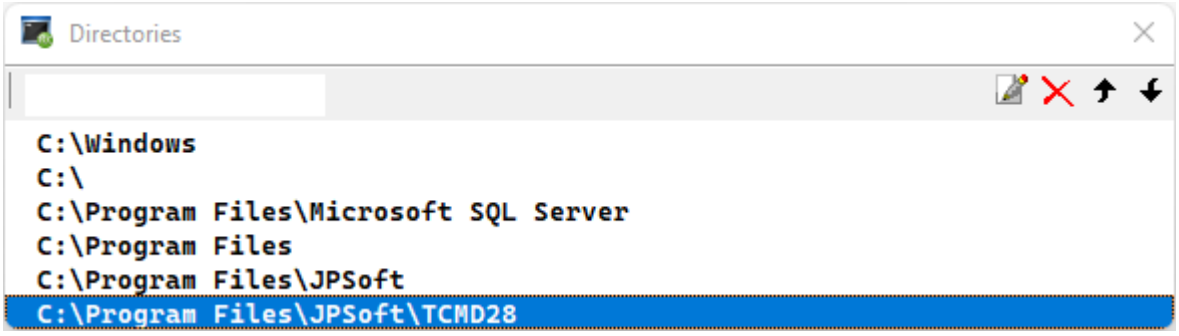
TCC has an extended syntax for referencing parent directories, by adding additional `.` characters. Each additional `.` represents an additional directory level above the current directory. For example, *.\FILE.DAT* refers to a file in the current directory, *..\FILE.DAT* refers to a file one level up, i.e., in the parent directory, and *...\FILE.DAT* refers to a file two levels up, i.e., in the parent of the parent directory. If your default directory is *C:\DATA\FINANCE\JANUARY*, you can copy the file *LETTERS.DAT* from directory *C:\DATA* to drive `A:` with the command

```
[C:\DATA\FINANCE\JANUARY] copy ...\LETTERS.DAT A:
```

Note: This extended notation may not be understood by external programs. Consider using the @FULL function to expand file and directory references when necessary:

```
[C:\DATA\FINANCE\JANUARY] myprog %@full[...\LETTERS.DAT]
```

4.5.14 Directory History Window



[The directory history window is part of a set of comprehensive directory navigation features built into ***TCC***. For a summary of these features, and more information on enhanced directory navigation features, see Directory Navigation.]

The directory history window includes a toolbar with buttons for editing, deleting, and moving lines.

You can search for a specific directory by entering a string (including wildcards or regular expressions) in the edit window on the title bar. ***TCC*** will remove non-matching lines from the window. See Popup Windows for details.

Directory History Window Keys:

F6 or Ctrl-PgUp	Open the window from the command line
Up	Scroll the display up one line.
Down	Scroll the display down one line.
Left	Scroll the display left 4 columns.
Right	Scroll the display right 4 columns.
PgUp	Scroll the display up one page.
PgDn	Scroll the display down one page.
Home	Go to the beginning of the list.
End	Go to the end of the list.
Ctrl-Enter	Move the selected line to the command line for editing
Enter	Change to the selected drive/directory
Ctrl-C	Copy the selected line to the clipboard
Ctrl-D or Del	Delete the selected line from the list
Ctrl-E	Edit the selected line in the directory history window
Ctrl-Up	Move the selected line up one row
Ctrl-Down	Move the selected line down one row
Esc	Close the window without making a selection.

Note: The keystrokes shown above are the default values. See Key Mapping Directives for details on how to assign different keystrokes.

The current directory is recorded automatically in the directory history list just before each change to a new directory or drive.

You can view the directory history from the scrollable directory history window and change to any drive and directory on the list. To activate the directory history window, press F6 at the command line. You can then select a new directory with the Enter key or by double-clicking with the mouse.

If the directory history list becomes full, old entries are deleted to make room for new ones. You can set the size of the list with the Command History Buffer Size configuration option. You can change the keys used in the window with key mapping directives.

In order to conserve space, each directory name is recorded just once in the directory history, even if you move into and out of that directory several times. The directory history can be stored in either a local or global list; see below for details.

When you switch directories, the original directory is saved in the directory history list, regardless of whether you change directories at the command line, from within a batch file, or from within an alias. However, directory changes made by external directory navigation utilities or other external programs are not recorded by ***TCC***.

You can also view and manage the directory history list with the DIRHISTORY command.

Local and Global Directory History

The directory history can be stored in either a local or global list. With a local directory history list, any changes made to the list will only be known only to the current copy of ***TCC***. They will not be visible in other sessions. Whenever you start another shell which uses a local history list, it inherits a copy of the

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directory history from the previous shell. However, any changes to the history made in the second shell will affect only that shell.

All copies of ***TCC*** using global directory history list will share a single copy of directory history. Any directory changes made in any of these copies of ***TCC*** will be recorded in that shared list, and be accessible by all of them. However, any additional copies of ***TCC*** which use local directory history will see their own local lists. Global lists are the default for ***TCC***.

You can control the type of history list with the Local Directory History configuration option, with the /L and /LD command line options, and with the /L and /LD options of the START command.

When you close all ***TCC*** sessions, the memory for the global directory history list is released, and a new, empty directory history list is created the next time you start ***TCC***. If you want the directory history list to be retained in memory even when no copy of ***TCC*** is running, you need to execute the SHRALIAS command, which performs this service for the global command history, directory history, user-defined functions, and aliases.

There is no fixed rule for deciding whether to use a local or global directory history list. Depending on your work style, you may find it most convenient to use one type, or a mixture of types in different sessions or shells. We recommend that you start with a global directory history, then modify it if you find a situation where the default is not convenient.

4.5.15 Variable Name Completion

Variable name completion works like filename completion. If the parameter begins with a %, the completion routines will scan the environment, internal variables, and variable functions for matching variable names. For example, if the PROMPT and PATH variables are in the environment, in that order, and no other variables start with p, the sequence below may be used to display the value of PATH:

```
echo %p<Tab>
echo %PROMPT<Tab>
echo %PATH<Enter>
```

4.5.16 Expanding and Disabling Aliases

A few command line options are specifically related to aliases, and are documented briefly here for completeness. If you are not familiar with aliases, see Aliases and the ALIAS command for complete details.

You can expand an alias on the command line and view or edit the results by pressing Ctrl-W before the command is executed. This is useful when you are developing and debugging a complex alias or if you want to make sure that an alias that you may have forgotten won't change the intent of your command.

At times, you may want to temporarily disable an alias that you have defined. To do so, precede the command with an asterisk (*). For example, if you have an alias for DIR which changes the display format, you can use the following command to bypass the alias and display the directory in the standard format:

```
*dir
```

Note: The leading asterisk is crucial in aliases that redefine existing commands, such as:

```
DIR=*dir /w
```

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Without the asterisk, you would trigger an **alias loop error** whenever you try to use that alias, since it will endlessly try to redefine itself.

4.5.17 Multiple Commands

You will often know the next two or three commands that you want to execute. Instead of waiting for each one to finish before you type the next, you can type them all on the same command line, separated by the command separator (by default, an ampersand **&**). For example, if you know you want to copy all of your *.TXT* files to **D:\TEXT** and then delete all of them beginning with 'A', you could enter the following command:

```
copy *.txt d:\text\ & del a*.txt
```

You may put as many commands on the command line as you wish.

You can use multiple commands in alias definitions and batch files as well as from the command line.

4.5.18 Conditional Commands

When an internal command or external program finishes, it returns a result called the exit code. Conditional commands allow you to perform tasks based upon the previous command's exit code. Many programs return `0` if they are successful and a non-zero value if they encounter an error.

AND operator &&

If you separate two commands by **&&** (AND), the second command will be executed only if the first command's exit code is `0`. For example, the following command will only erase files if the BACKUP operation succeeds:

```
backup c:\ a: && del c:\*.bak;*.lst
```

OR operator ||

If you separate two commands by || (OR), the second command will be executed only if the first command's exit code is non-zero. For example, if the following BACKUP operation fails, then ECHO will display a message:

```
backup c:\ a: || echo Error in the backup!
```

All internal commands return an exit code, but not all external programs do. Conditional commands will behave unpredictably if you use them with external programs which do not return an explicit exit code. To determine whether a particular external program returns a meaningful exit code use an ECHO %? command immediately after the program is finished. If the program's documentation does not discuss exit code, you may need to experiment with a variety of conditions to see how the exit code changes.

4.5.19 Command Grouping

Command grouping allows you to group a set of commands together logically by enclosing them in parentheses.

There are two primary uses for command grouping. One is to execute multiple commands in a place where normally only a single command is allowed. For example, suppose you wanted to execute two different REN commands in all subdirectories of your hard disk. You could do it like this:

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```
global ren *.wx1 *.wxo
global ren *.tx1 *.txo
```

But with command grouping you can do the same thing in one command:

```
global (ren *.wx1 *.wxo & ren *.tx1 *.txo)
```

The two REN commands enclosed in the parentheses appear to GLOBAL as if they were a single command, so both commands are executed for every directory, but the directories are only scanned once, not twice, typically saving time.

This kind of command grouping is most useful with the EXCEPT, FOR, GLOBAL, and IF commands. When you use this approach in a batch file, you must either place all of the commands in the group on one line, or place the opening parenthesis at the end of a line and place the commands on subsequent lines. Examples 1 and 2 below will work properly, but Example 3 will not:

Example 1 (correct):

```
for %f in (1 2 3) (echo hello %f & echo goodbye %f)
```

Example 2 (correct):

```
for %f in (1 2 3) (
  echo hello %f
  echo goodbye %f
)
```

Example 3 (incorrect):

```
for %f in (1 2 3) (echo hello %f
  echo goodbye %f)
```

If the above examples are typed at the command line, ***TCC*** will issue a **More?** prompt in response to each line until the command group is closed (i.e. the final parenthesis is recognized) as discussed below.

The second common use of command grouping is to redirect input or output for several commands without repeatedly using the redirection symbols. For example, consider the following batch file fragment which places some header lines (including today's date) and directory displays in an output file using redirection. The first ECHO command creates the file using >, and the other commands append to the file using >>:

```
echo Data files %_date > filelist
dir *.dat >> filelist
echo. >> filelist
echo Text files %_date >> filelist
dir *.txt >> filelist
```

Using command grouping, these commands can be written much more simply. Enter this example on one line:

```
(echo Data files %_date & dir *.dat & echo `` & echo Text files %_date & dir
*.txt) > filelist
```

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The redirection, which appears outside the parentheses, applies to all the commands within the parentheses. Because the redirection is performed only once, the commands will run slightly faster than if each command was entered separately. The same approach can be used for input redirection and piping.

You can also use command grouping in a batch file or at the prompt to split commands over several lines. This last example is like the redirection example above, but is entered at the prompt. Note the **More?** prompt after each incomplete line. None of the commands are executed until the command group is completed with the closing parenthesis. This example does not have to be entered on one line:

```
[c:\] (echo Data files %_date
More? dir *.dat
More? echo.
More? echo Text files %_date
More? dir *.txt) > filelist
[c:\]
```

Limitations

A group of commands in parentheses is like a long command line. The total length of the group is only limited by your available RAM.

You cannot use TEXT / ENDTEXT, or GOTO or GOSUB labels in a command group.

Each line you type at the normal prompt or the **More?** prompt, and each individual command within the line, must be within the usual command line length limit.

4.5.20 Starting Applications

TCC offers several ways to start applications.

First, you can simply type the name of any application at the prompt. As long as the application's executable file is in one of the standard search directories (see below), ***TCC*** will find it and start it. If you type the full path name of the executable file at the prompt the application will be started even if it is not in one of the standard search directories.

TCC offers two methods to simplify and speed up access to your applications. One is to create an alias, for example:

```
alias myapp d:\apps\myapp.exe
```

In ***Take Command*** you can also use the Tool Bar to start frequently used applications. For example, a tool bar button named **MyApp** which invokes the command *d:\apps\myapp.exe* would accomplish the same thing as the alias shown above. You can use these methods together. For example, if you define the alias shown above you can set up a tool bar button called **MyApp** and simply use the command **myapp** for the button, which would then invoke the previously-defined alias.

You can also start an application by typing the name of a data file associated with the application. ***TCC*** will examine the file's extension and run the appropriate application, based on executable extensions or Windows file associations.

For additional flexibility, you can also start applications with the START command. START provides a number of switches to customize the way an application is started.

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Searching for Applications

When you start an application without specifying a path, ***TCC*** searches for the application in the current directory, and then all directories on the PATH. ***TCC*** also searches the **Windows** and **Windows system** directories; see the PATH command for details. (If you do enter an explicit path, ***TCC*** will only look in the directory you specified.)

If you enter a file name with no extension, ***TCC*** will search each directory for a matching *.EXE*, *.BTM*, *.BAT*, or *.CMD* file (and *.REX* and/or *.REXX* if a REXX interpreter is loaded), then for a file matching a Windows file association or executable extension. That search order may be altered via the PathExt configuration option. If no such file is found, ***Take Command*** will move on to the next directory in the search sequence.

Take Command Application Windows

Take Command runs console (character mode) applications either in a tab window within ***Take Command*** or in their own console window. ***Take Command*** usually starts GUI applications in their own window, but you can also run simple GUI apps in a tab window (provided the application does not have multiple parent windows) with the Run dialog or the START /TAB option.

4.5.21 Waiting for Applications to Finish

When you start a Windows GUI application from the prompt, ***TCC*** does not normally wait for the application to finish before returning to the prompt This allows you to continue your work at the prompt while the application is running. You can force ***TCC*** to wait for applications to finish before continuing by selecting the Wait for External Apps configuration option, or with the START command's /WAIT switch (START can also control many other aspects of how your applications are started).

TCC always waits for applications that are run from transient shells (with a /C), or from batch files before continuing with subsequent commands in the batch file. To start an application from a transient shell or a batch file and continue without waiting for the application to finish, use the START command (without the /WAIT switch).

Due to the way Windows handles URLs, you cannot wait for the browser to finish when you enter an HTTP: URL at the prompt. In this situation, ***TCC*** always displays the next prompt immediately.

4.5.22 Escape Character

TCC recognizes a user-definable escape character. This character gives the character that follows a special meaning; it has a different purpose than the ASCII **ESC** that is often used in ANSI X3.64 and printer control sequences.

The default escape character is a caret (**^,** ASCII: 94).

Ten special characters are recognized when they are preceded by the escape character. The combination of the escape character and one of these characters is translated to a single character, as shown below. The special characters which can follow the escape character are:

Codes for Escape Characters

- **b** backspace
- **c** comma **,**
- **e** the ASCII **ESC** character (code 27)
- **f** form feed
- **k** back quote `

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n	line feed
q	double quote "
r	carriage return
s	space
t	horizontal tab character

If you follow the escape character with any other character, the escape character is removed and the second character is copied directly into the command line. This allows you to suppress the normal meaning of special characters (such as **? * / \ | " ` > <** and **&**). For example, to display a message containing a **>** symbol, which normally indicates redirection:

```
echo 2 is ^> 4
```

The escape character has an additional use when it is the last character on any line of a batch file. ***TCC*** recognizes this use of the escape character to signal line continuation: it removes the escape character and appends the next line to the current line before executing it.

WARNING: Escape characters are considered to be normal characters on the right side of a pipe.

Note: The term **escape character** has two additional usages not related to the above description, as detailed in the description of the PROMPT command and in ASCII, Key Codes and Key Names.

4.5.23 Command Parsing

Whenever you type something at the command line and press the Enter key, or include a command in a batch file, you pass a command to ***TCC***, which must determine how to execute it. If you understand the general process that is used, you will be able to make the best use of the commands. Understanding these steps can be especially helpful when working with complex aliases or batch file commands.

TCC goes through several steps when parsing a command line. Before it starts, it writes the entire command line (which may contain multiple commands) to the history log file if history logging has been enabled (with the LOG /H command) and the command did not come from a batch file. The first command is then isolated for processing. The following steps outline the basic processing required for each command. During that processing, additional parsing tasks may be triggered as noted and some steps may be repeated multiple times.

1. Separating the command from its tail

TCC begins by dividing the command into a command name and a command tail. The command name is the first word in the command, and the tail is everything that follows the command name. For example, in the command line

```
dir *.txt /2/p/v
```

The command name is **dir**, and the command tail is "***.txt /2/p/v**". In some instances, the parser will be able to understand incorrect syntax such as **dir/w**, but there should always be at least one space between the command name and its parameters.

2. Expanding aliases

Next, ***TCC*** tries to match the command name against its list of aliases. If it finds a match between the command name and one of the aliases you've defined, it replaces the command name with the contents of the alias. This substitution is done internally and is not normally visible to you; however, you can view a command line with aliases expanded by pressing Ctrl-W after entering the command at the prompt.

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If the alias included parameters (%1, %2, etc.), the parameter values are filled in from the text on the command line, and any parameters used in this process are removed from the command line. The process of replacing a command name that refers to an alias with the contents of the alias, and filling in the alias parameters, is called alias expansion.

This expansion of an alias creates a new command name: the first word of the alias. This new command name is again tested against the list of aliases, and if a match is found the contents of the new alias is expanded just like the first alias. This process, called nested alias expansion, continues until the command name no longer refers to an alias.

3. Expanding variables

The next step is to locate any batch file parameters, environment variables, internal variables, or variable functions in the command, and replace each one with its value (see "Environment: Variables and Functions"). This process is called variable expansion, and is not normally visible. However, you can view an expanded command line by pressing Ctrl-X after entering the command at the prompt.

The variable expansion process is modified for certain internal commands, such as EXCEPT, IF, and GLOBAL. These commands are always followed by another command, so variable expansion takes place separately for the original command and the command that follows it.

4. Identifying a plugin or internal command

Once it has finished variable expansion, ***TCC*** next tries to match the resulting command name with its list of library functions, plugin commands or internal commands. If it is unsuccessful, it knows that it will have to search for a batch file or external program to execute your command.

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. For example:

```
echo %_myplugin$variable
echo %@myplugin$func[abc]
myplugin$mycommand
```

5. Displaying the command

When all of the aliases and environment variables have been expanded, ***TCC*** will echo the complete command to the screen (if command line echo has been enabled) and write it to the log file (if command logging has been turned on).

6. Processing redirection and piping

Before it can actually execute your command, ***TCC*** must scan the command tail to see if it includes redirection or piping. If so, the proper internal switches are set to send output to an alternate device or to a file instead of to the screen. A second process is started at this point, if necessary, to receive any piped output.

7. Processing escape characters

At this stage, any remaining Escape Characters are processed. However, this might also already have taken place inside some of the variable functions (such as @IF) that are likely to pass escaped strings in their parameters. If you are referencing one of those in an ECHO or similar command, you need to escape twice ("^^") or use SETDOS /X to avoid premature evaluation. Carefully test those situations to make sure the results are as you intended.

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8. Executing the command

Finally, it is time to execute the command. ***TCC*** will first look for a matching plugin command name; if it doesn't exist then it tries to match an internal command. Otherwise, ***TCC*** searches for an executable (*.EXE*) file, a batch file, or a file with an executable extension that matches the command name (see the detailed description of this search in Executable Files and File Searches).

If the first argument on a command line is in the format "env_var=value command options" (and env_var=value doesn't match an external command) then TCC will set the specified environment variable to the value, execute the command, and then remove the variable.

9. Cleaning up

Once the internal command or external program has terminated, ***TCC*** saves the result or exit code that the command generated, cleans up any redirection that you specified, and then returns to the original command line to retrieve the next command. When all of the commands in a command line are finished, the next line is read from the current batch file, or if no batch file is active, the prompt is displayed.

Note: You can disable and reenable several parts of command parsing (for example alias expansion, variable expansion, and redirection) with the SETDOS /X command.

4.5.24 Command Line Length Limits

There is no limit to the size of a ***TCC*** command line (other than that imposed by Windows or the amount of RAM in the system).

4.5.25 Date Input Formats

Date Input Formats

Commands and functions which accept a date as a parameter expect the same field order displayed by the DIR command and functions returning a date without a format code specifier. The year can be entered as a 4-digit or 2-digit value. Two-digit years from 80 to 99 are interpreted as 1980...1999; values from 0 to 79 are interpreted as 2000...2079. Month and day may be entered without a leading zero. Most non-numeric printing characters are accepted as field separators. All three fields must be specified, except for the ISO day format (yyyy-ddd) which requires two fields.

4.5.26 Case Sensitivity

With the following exceptions, ***TCC*** treats upper case and lower case letters identically:

The relational operator **EQC** (in IF, IFF, DO, etc.)
The character manipulation functions **@ascii**, **@unicode**, **@repeat**, **@replace**, **@similar**, and **@strip**.

The codes used to specify units of storage size (**`kKmMgGtT`**) in:

- size ranges
- disk space and file size reporting functions

4.5.27 Directory Navigation

TCC remembers both a current or default drive for your system as a whole, and a current or default directory for every drive in your system. The current directory on the current drive is sometimes called the current working directory.

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With traditional command processors, you change the current drive by typing the new drive letter plus a colon at the prompt. You change the current working directory with the CD command. ***TCC*** supports these standard features, and offer a number of enhancements to make directory navigation much simpler and faster.

This section begins with a summary of all the ***TCC*** directory navigation features. It also provides detailed documentation on the enhanced directory search features: Extended Directory Searches and CDPATH.

The ***TCC*** directory navigation features are in three groups: features which help ***TCC*** find the directory you want, methods for initiating a directory change with a minimal amount of typing, and methods for returning easily to directories you've recently used. Each group is summarized below.

Finding Directories

Traditional command processors require you to explicitly type the name of the directory you want to change to. ***TCC*** supports this method, and also offers two significant enhancements:

- The CDPATH variable allows you to enter a specific list of directories to be searched, rather than searching a database. Use CDPATH instead of Extended Directory Searches if you find the extended searches too broad, or your hard drive has too many directories for an efficient search.

- Extended Directory Searches allows ***TCC*** to search a database of all the directories on your system to find the one you want.

Changing Directories

TCC supports the traditional methods of changing directories, and also offers several more flexible approaches:

- Automatic directory changes allow you to type a directory name at the prompt and switch to it automatically, without typing an explicit CD or similar command.

- The CD command can change directories on a single drive, and can return to the most recently used directory.

- The CDD command changes drive and directory at the same time, and can return to the most recently used drive and directory.

- The PUSHD command changes the drive and directory like CDD, and records the previous directory in a directory "stack." You can view the stack with the DIRS command or the @DIRSTACK function, and return to the directory on the top of the stack with POPD.

CDD, PUSHD, and automatic directory changes can also change to network drives and directories mapped to drive letters and to ones specified with UNC names (see File Systems for details).

Returning to a Previous Directory

CMD does not remember previously-used directories, and can only "return" to a directory by changing back to it with a standard drive change or CD command. ***TCC*** supports three additional, simpler methods for returning to a previous directory:

- The CD - and CDD - commands can be used to return to the previous working directory (the one you used immediately before the current directory). Use these commands if you are working in two directories and alternating between them.

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- The directory history window allows you to select one of several recently-used directories from a popup list and return to it immediately. The window displays the contents of the directory history list.

- The POPD command returns to the last directory saved by PUSHD. The directory stack holds 2048 characters, enough for 40 to 80 typical drive and directory entries.

4.5.27.1 CDPATH

When you change directories with an automatic directory change or the CD, CDD, or PUSHD command, ***TCC*** must find the directory you want to change to. If it cannot find an exact match of the directory path and name, ***TCC*** tries to find the directory you requested via the CDPATH, then via an Extended Directory Search.

Enabling both CDPATH and Extended Directory Searches can yield confusing results. If you prefer to explicitly specify where ***TCC*** should look for directories, use CDPATH. If you prefer to have ***TCC*** look at all of the directory names on your disk, use Extended Directory Searches.

CDPATH is an environment variable, and is similar to the PATH variable used to search for executable files: it contains an explicit list of directories to search when attempting to find a new directory. ***TCC*** appends the specified directory name to each directory in CDPATH and attempts to change to that drive and directory. It stops when it finds a match or when it reaches the end of the CDPATH list.

CDPATH is ignored if a complete directory name (one beginning with a backslash \) is specified, or if a drive letter is included in the name. It is only used when a name is given with neither drive letter nor leading backslash.

CDPATH provides a quick way to find commonly used subdirectories in an explicit list of locations. You can create CDPATH with the SET command. The format of CDPATH is similar to that of PATH: a list of directories separated by semicolons. For example, if you want the directory change commands to search the *C:\DATA* directory, the *D:\SOFTWARE* directory, and the root directory of drive ***E:*** for the subdirectories that you name, you should create CDPATH with this command:

```
set cdpath=c:\data;d:\software;e:\
```

Suppose you are currently in the directory *C:\WP\LETTERS\JANUARY*, and you'd like to change to *D:\SOFTWARE\UTIL*. You could change directories explicitly with the command:

```
[c:\wp\letters\january] cdd d:\software\util
```

However, because the *D:\SOFTWARE* directory is listed in your CDPATH variable as shown in the previous example (we'll assume it is the first directory in the list with a *UTIL* subdirectory), you can simply enter the command

```
[c:\wp\letters\january] cdd util
```

or, using an automatic directory change:

```
[c:\wp\letters\january] util\
```

to change to *D:\SOFTWARE\UTIL*.

TCC looks first in the current directory, and attempts to find the *C:\WP\LETTERS\JANUARY\UTIL* subdirectory. Then it looks at CDPATH, and appends *UTIL* to each entry in the CDPATH variable. In

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other words, it tries to change to *C:\DATA\UTIL*, then to *D:\SOFTWARE\UTIL*. Because this change succeeds, the search stops and the directory change is complete.

If you often switch between "sibling" directories, i.e., between subdirectories of a common parent directory. you can enter **..** as a search entry in your CDPATH. You can use **...** to find "uncles", i.e., a directory one level up (a sibling of the parent directory), thus a subdirectory of the directory 2 levels up.

4.5.27.2 Extended Directory Searches

When you change directories with an automatic directory change, CD, CDD, or PUSHD command, ***TCC*** must find the directory you want to change to. To do so, it first checks to see whether you have specified either the name of an existing subdirectory below the current directory, or the name of an existing directory with a relative or full path or a drive letter. If you have, ***TCC*** changes to that directory, and does no further searching.

This search method requires that you navigate manually through the directory tree, and type the entire name of each directory you want to change to. Extended Directory Searches speed up the navigation process dramatically by allowing ***TCC*** to find the directory you want, even if you only enter a small part of its name.

When the first search method fails, ***TCC*** tries to find the directory you requested via the CDPATH variable, then via an Extended Directory Search. This section covers only Extended Directory Searches, which are more flexible and more commonly used than CDPATH.

Extended Directory Searches use a database of directory names to facilitate changing to the correct directory. The database is used only if Extended Directory Searches are enabled, and if the explicit directory search and CDPATH search fail to find the directory you requested.

An extended directory search automatically finds the correct path to the requested directory and changes to it if that directory exists in your directory database. If more than one directory in the database matches the name you have typed, a popup window appears and you can choose the directory you want.

If the TCMD.INI directive EverythingSearch is set (OPTION / Startup / Everything Search), ***TCC*** will use **Everything Search** (http://www.voidtools.com) instead of its own database for fuzzy directory searches. **Everything Search** is faster, but will only work on local NTFS drives. Setting EverythingSearch is the equivalent of setting FuzzyCD=3 (***name***). The ***Take Command*** installer will install **Everything Search** automatically.

You can move and/or resize the directory search window. ***TCC*** will use the new position and size the next time the directory search window is invoked. You can also change the keys used in the popup window with key mapping directives.

To use extended directory searches, you must explicitly enable them (see below) and also create the directory database.

The Extended Search Database

To create or update the database of directory names, use the CDD /S command. When you create the database with CDD /S, you can specify which drives should be included. If you enable Extended Directory Searches and do not create the database, it will be created automatically the first time it is required, and will include all local hard drives.

The database is stored in the file *JPSTREE.IDX*. You can specify a location for this file on the Command Line tab of the configuration dialogs. If this option isn't set, ***TCC*** looks for an existing *JPSTREE.IDX* in the LOCALAPPDATA directory (an environment variable predefined by Windows). If the file doesn't exist, ***TCC*** will create it in the "C:\ProgramData\JP Software" directory.

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If you use an internal command to create or delete a directory, the directory database is automatically updated to reflect the change to your directory structure.

The TREEEXCLUDE variable can be used to specify which drives/directories should be excluded from inclusion in the directory database.

The internal commands which can modify the directory structure and cause automatic updates of the file are MD, RD, COPY /S, DEL /X, MOVE /S, and REN. The MD **/N** command can be used to create a directory without updating the directory database. This is useful when creating a temporary directory which you do not want to appear in the database.

Enabling Extended Searches

To enable extended directory searches and control their operation, you must set the Search Level on the Command Line tab of the configuration dialogs.

- If Search Level = 0, extended searches are disabled, the *JPSTREE.IDX* database is ignored, and CD, CDD, PUSHD and automatic directory changes search for directories using only explicit names and CDPATH. This is the default.
- If Search Level = 1 and an extended search is required, ***TCC*** will search the *JPSTREE.IDX* database for directory names which exactly match the name you specified.
- If Search Level = 2 and an extended search is required, ***TCC*** will search the database for exact matches first, just as when Search Level = 1. If the requested directory is not found, it will search the database a second time looking for directory names that begin with the name you specified.
- If Search Level = 3 and an extended search is required, ***TCC*** will search the database for exact matches first, just as when Search Level = 1. If the requested directory is not found, it will search the database a second time looking for directory names that contain the name you specified anywhere within them.

For example, suppose that you have a directory called `C:\DATA\MYDIR`, CDPATH is not set, and `C:\DATA` is not the current directory on drive C:. The following chart shows what CDD command you might use to change to this directory.

Search Level	**Type of extended search**	**Typical CDD Command**
0	CDPATH only (default)	cdd c:\data\mydir
1	CDPATH or exact match	cdd mydir
2	CDPATH or leading match	cdd myd
3	CDPATH or any match	cdd yd

An extended directory search is not used if you specify a full directory path (one beginning with a backslash \, or a drive letter and a backslash). If you use a name which begins with a drive letter (*e.g.* `C:MYDIR`), the extended search will examine only directories on that drive.

Forcing an Extended Search with Wildcards

Normally you type a specific directory name for ***TCC*** to locate, and the search proceeds as described in the preceding sections. However, you can also force ***TCC*** to perform an extended directory search by using wildcard characters in the directory name. If you use a wildcard, an extended search will occur whether or not extended searches have been enabled.

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When ***TCC*** is changing directories and it finds *wildcards* in the directory name, it skips the explicit search and CDPATH steps and goes directly to the extended search.

If a single match is found, the change is made immediately. If more than one match is found, a popup window is displayed with all matching directories.

Wildcards can only be used in the final directory name in the path (after the last backslash in the path name). For example you can find *COMM*A** (all directories whose parent directory is *COMM* and which have an ***A*** somewhere in their names), but you cannot find *CO?M*A** because it uses a wildcard before the last backslash.

If you use wildcards in the directory name as described here, and the extended directory search database does not exist, it will be built automatically the first time a wildcard is used. You can update the database at any time with CDD **/s**.

Internally, extended directory searches use wildcards to scan the directory database. If Search Level is set to 2, an extended search looks for the name you typed followed by an asterisk (*i.e. DIRNAME**). If Search Level is set to 3, it looks for the name preceded and followed by an asterisk (*i.e. *DIRNAME**).

These internal wildcards will be used in addition to any wildcards you use in the name. For example if you search for *ABC?DEF* (*ABC* followed by any character followed by *DEF*) and Search Level is set to 3, ***TCC***will search the directory database for **ABC?DEF**.

Disabling Extended Searches in Batch Files

When writing batch files you may want to use the CD or CDD command to switch directories without triggering an extended search. For example, you may need the search to fail (rather than search the extended search database) if a directory does not exist, or you may want to ensure that the extended search popup window does not appear in a batch file designed to run in unattended mode.

To disable extended searches, use the /N option of CD or CDD. When this option is used and a directory does not exist below the current directory or on the CDPATH, the command will fail with an error message, and will not search the extended search database. For example this command might trigger an extended search:

```
cdd testdir
```

but this one will not:

```
cdd /n testdir
```

Note that this option is not available for PUSHD. To perform the same function when using PUSHD, save the current directory with PUSHD (without parameters) and then use CDD /N to change directories, for example:

```
pushd
cdd /n testdir
```

4.5.27.3 Automatic Directory Changes

Automatic directory changes are part of the comprehensive directory navigation features built into ***TCC***. For a summary of these features, and more information on Extended Directory Searches and CDPATH, see Directory Navigation.

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Automatic directory changes let you change directories quickly from the command prompt, without entering an explicit CD or CDD command. Simply type the name of the directory you want to change to at the prompt, with a terminating backslash (\) (either entered manually, or automatically via the Add \ to Directories configuration option). For example:

```
[c:\] tcmd\
[c:\tcmd]
```

This can make directory changes very simple when it's combined with Extended Directory Searches or CDPATH. If you have enabled either of those features, ***TCC*** will use them in searching for a directory with an automatic directory change.

For example, suppose Extended Directory Searches are enabled, and the directory *WIN* exists on drive *E:*. You can change to this directory with a single word on the command line:

```
[c:\tcmd] win\
[e:\win]
```

This depends on the way Extended Directory Changes are configured, and the number of subdirectories on your disk whose names contain the string **WIN**, when you execute such a command you may see an immediate change as shown above, or a popup window which contains a list of subdirectories matching **WIN** to choose from.

The text before the backslash can include a drive letter, a full path, a partial path, or a UNC name (see File Systems for details on UNC names). Commands like "....\" can be used to move up the directory tree quickly (see Extended Parent Directory Names).

If you enter a directory name without the trailing backslash, the parser will change to that directory if no internal or external command of that name is found (and before the UNKNOWN_CMD alias is executed.)

All directory changes, including automatic ones, save the current directory so it can be recalled with a CDD - or CD - command.

For example, any of the following are valid automatic directory change entries:

```
[c:\] d:\data\finance\
[c:\] archives\
[c:\] ...\util\scanner\
[c:\] \\server\vol1\george\
```

The first and last examples change to the named directory. The second changes to the *ARCHIVES* subdirectory of the current directory, and the third changes to the *UTIL\SCANNER* subdirectory of the directory which is two levels up from the current directory in the tree.

4.5.27.4 Directory Aliases

Directory Aliases are a shorthand way of specifying pathnames. For example, if you define an alias:

```
alias pf:=c:\program files
```

You can then reference the files in **c:\program files\jpsoft** by entering **pf:\jpsoft**. Directory aliases work in places that accept filenames and directory names (internal command arguments or the first argument in a command line), including filename completion. You cannot use them in arguments to external applications, as ***TCC*** has no way of knowing what is a valid argument for external applications.

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Directory alias names can be either two or more alphanumeric characters followed by a colon, or a single digit followed by a colon.

Directory aliases support environment variable expansion.

4.6 Aliases & Batch Files

Whenever you have a command (internal or external) that you need to execute often, one that's too complex to be dependably typed manually at the Command Line, one that needs to be part of an exact sequence of other commands, one that you want to be able to easily repeat from another location or share with others, or you repeat very often and therefore want to have a very short name, you can store that command as part of a convenient ALIAS and/or batch file.

- Aliases
- Batch Files

4.6.1 Aliases

Much of the power of ***TCC*** comes together in **aliases**, which give you the ability to create your own commands. An alias is a name that you select for a command or group of commands. Simple aliases substitute a new name for an existing command. More complex aliases can redefine the default settings of internal or external commands, operate as very fast in-memory batch files, and perform commands based on the results of other commands. ***TCC*** also supports Directory Aliases, a shorthand way of specifying pathnames. ***TCC*** supports either a local alias list that is only visible to the current ***TCC*** session, or a global alias list that is shared among all ***TCC*** sessions.

This section shows you some examples of the power of aliases. See the ALIAS command for complete details about writing your own aliases.

The simplest type of alias gives a new name to an existing command. For example, you could create a command called ***R*** (for Root directory) to switch to the root directory this way:

```
alias r=cd \
```

After the alias has been defined this way, every time you type the command ***R***, you will actually execute the command CD \.

Aliases can also create customized versions of commands. For example, the DIR command can sort a directory in various ways. You can create an alias called ***DE*** that means "sort the directory by filename extension, and pause after each page while displaying it" like this:

```
alias de=dir /oe /p
```

Aliases can be used to execute sequences of commands as well. The following command creates an alias called *MUSIC* which saves the current drive and directory, changes to the *SOUNDS* directory on drive ***C***, runs the program *E:\MUSIC\PLAYER.EXE*, and, when the program terminates, returns to the original drive and directory (enter this on one line):

```
alias music=`pushd c:\sounds & e:\music\player.exe & popd`
```

This alias is enclosed in back-quotes because it contains multiple commands. You must use the back-quotes whenever an alias contains multiple commands, environment variables, parameters (see below), redirection, or piping. See the ALIAS command for full details.

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When an alias contains multiple commands, the commands are executed one after the other. However, if any of the commands runs an external Windows application (such as the fictitious *PLAYER.EXE* shown above), you must be sure the alias will wait for the application to finish before continuing with the other commands. See Waiting for Applications to Finish for additional details.

Aliases can be nested; that is, one alias can invoke another. For example, the alias above could also be written as:

```
alias play=e:\music\player.exe
alias music=`pushd c:\sounds & play & popd`
```

If you enter *MUSIC* as a command, ***TCC*** executes the PUSHD command, detects that the next command (**PLAY**) is another alias and executes the program *E:\MUSIC\PLAYER.EXE*, and, when that program exits, returns to the first alias, executes the POPD command, and returns to the prompt.

You can use aliases to change the default options for both internal commands and external commands. Suppose that you always want the DEL command to prompt before it erases a file:

```
alias del=*del /p
```

An asterisk ***** is used in front of the second DEL to tell ***TCC*** to use the original internal command, not an alias. See Temporarily Disabling Aliases for more information about this use of the asterisk.

You may have a program on your system that has the same name as an internal command. Normally, if you type the command name, you will start the internal command rather than the program you desire, unless you explicitly add the program's full path on the command line. For example, if you have a program named *DESCRIBE.EXE* in the ***C:\WUTIL*** directory, you could run it with the command *C:\WUTIL\DESCRIBE.EXE*. However, if you simply type DESCRIBE, the internal DESCRIBE command will be executed instead. Aliases give you two simple ways to get around this problem.

First, you could define an alias that runs the program in question, but using a different name:

```
alias desc=c:\winutil\describe.exe
```

Another approach is to use an alias to rename the internal command and use its original name for the external program. The following example creates the alias *FILEDESC* for the DESCRIBE command, and then uses a second alias to run *DESCRIBE.EXE* whenever you type DESCRIBE:

```
alias filedesc=*describe
alias describe=c:\winutil\describe.exe
```

You can also assign an alias to a key, so that every time you press the key, the command will be invoked. You do so by naming the alias with an at sign [@] followed by a key name. After you enter this next example, you will see a 2-column directory with paging whenever you press **Shift-F5** followed by **Enter**:

```
alias @Shift-F5=*dir /2/p
```

This alias will put the DIR command on the command line when you press **Shift-F5**, then wait for you to enter file names or additional switches. You must press Enter when you are ready to execute the command. To execute the command immediately, neither displaying it on the command line, nor waiting for you to press Enter, use two @ signs at the start of the alias name:

```
alias @@Shift-F5=*dir /2/p
```

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The next example clears the window whenever you press **Ctrl-F2**:

```
alias @@Ctrl-F2=cls
```

Aliases have many other capabilities as well. The next example creates a simple command line calculator. Once you have entered the example, you can type **CALC 4*19,** for example, and you will see the answer:

```
alias calc=`echo The answer is:  %@eval[%$]`
```

Our last example in this section creates an alias called **IN**. It temporarily changes directories, runs an internal or external command, and then returns to the current directory when that command is finished:

```
alias in=`pushd %1 & %2$ & popd`
```

Now if you type:

```
in c:\sounds play furelise.wav
```

you will change to the *C:\SOUNDS* subdirectory, execute the command **PLAY FURELISE.WAV,** and then return to the current directory.

Alias Parameters

The above example uses two parameters: **%1** means the first parameter on the command line, and **%2$** means the second and all subsequent parameters.

Aliases can use command line parameters or parameters like those in batch files. The command line parameters are numbered from %0 to %511. (%0 contains the alias name.) You can use double quotes to pass spaces, tabs, commas, and other special characters in an alias parameter; see Parameter Quoting for details. Alias examples in this section assume the ***TCC***default of ParameterChar=$.

Parameters that are referred to in an alias, but which are missing on the command line, appear as empty strings inside the alias. For example, if you only put two parameters on the command line, any reference in the alias to **%3** or any higher-numbered parameter will be interpreted as an empty string.

The parameter **%n$** has a special meaning. ***TCC*** interprets it to mean "the entire command line, from parameter ***n*** to the end." If ***n*** is not specified, it has a default value of **1**, so **%$** means "the entire command line after the alias name."

The parameter **%-n$** means "the command line from parameter 1 to ***n*** - 1".

The special parameter **%#** contains the number of command line parameters.

Aliases cannot use indirect access to command parameters, e.g., **%[%n]** (where ***n*** is a parameter number) does not return the selected parameter.

See the ALIAS and UNALIAS commands for more information and examples.

4.6.2 Batch Files

A batch file is a file that contains a list of commands to execute. ***TCC*** reads and interprets each line as if it had been typed at the keyboard. Like aliases, batch files are handy for automating computing tasks. Unlike aliases, batch files can be as long as you wish. Batch files take up separate disk space for each file, and can't usually execute quite as quickly as aliases, since they must be read from the disk.

Some of the topics included in this section are:

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- .BAT, .CMD, and .BTM
- Echoing in Batch Files
- Batch File Line Continuation
- Batch File Parameters
- Using Environment Variables
- Batch File Commands
- Interrupting a Batch File
- Automatic Batch Files
- Detecting TCC and Take Command
- Using Aliases in Batch Files
- Debugging Batch Files
- String Processing
- Batch File
- Lua Support
- Perl Support
- Python Support
- REXX Support
- Ruby Support
- Tcl/tk Support
- EXTPROC / Shebang Support

4.6.2.1 .BAT, .CMD & .BTM Files

A batch file can run in two different modes. In the first, traditional mode, each line of the batch file is read and executed individually, and the file is opened and closed to read each line. In the second mode the batch file is opened once, the entire file is read into memory, and the file is closed. Only the first mode can be used for self-modifying batch files (which are rare).

The batch file's extension determines its initial mode. Files with a *.BAT* or *.CMD* extension are run in the first mode. Files with a *.BTM* extension are run in the more efficient second mode. You can change the execution mode inside a batch file with the LOADBTM command.

4.6.2.2 Echoing in Batch Files

By default, each line in a batch file is displayed or "echoed" as it is executed. You can change this behavior, if you want, in several different ways:

- Any batch file line that begins with an `@` symbol will not be displayed.
- The display can be turned off and on within a batch file with the ECHO OFF and ECHO ON commands.
- The default setting can be changed with the SETDOS /V command, or the Default Batch Echo configuration option.

For example, the following line turns off echoing inside a batch file. The `@` symbol keeps the batch file from displaying the ECHO OFF command itself:

```
@echo off
```

TCC also has a command line echo that is unrelated to the batch file echo setting. See ECHO for details about both settings.

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4.6.2.3 Special syntax for CMD compatibility

For compatibility with CMD, ***TCC*** supports additional syntax to qualify references to parameters of batch files and the control variable of the FOR command when referenced by the ***command*** it executes. However, this syntax can usually be replaced by more flexible Variable Functions.

CMD syntax	Expands to	Suggested replacement
`%*`	All parameters	`%$`
`%~n`	unquoted (")	`%@replace[^",,%n]`
`%~fn`	Fully qualified name of `%n`	`%@full[%n]`
`%~dn`	Drive letter portion of `%n`	`%@left[2,%@full[%n]]`
`%~pn`	Full path (no drive letter) of `%n`	`%@right[-2,%@path[%@full[%n]]]`
`%~nn`	Root name (no extension) of `%n`	`%@name[%n]`
`%~xn`	File extension of `%n`	`.%@ext[%n]`
`%~sn`	Fully qualified short name of `%n`	`%@sfn[%n]`
`%~an`	File attributes of `%n`	`%@attrib[%n]`
`%~tn`	File date and time of `%n`	`%@filedate[%n] %@filetime[%n]`
`%~zn`	File size of `%n`, bytes	`%@filesize[%n]`
`%~$PATH:n`	Full name of the first match for %*n* in % PATH	`%@search[%n]`

Notes

In the special case where the parameter to a **%~** variable is **0**, e.g., **%~f0**, the returned file name will always include the extension, as it does under CMD.

%~$PATH:n returns an empty string if the file ***%n*** is not found in the path.

References qualified by the tilde ~ trigger an error message when used improperly, e.g. if attempting to display the size of a string parameter which is not the name of a file.

4.6.2.4 Batch File Line Continuation

TCC will combine multiple lines in the batch file into a single line for processing when the Escape Character is the last character of each line to be combined (except the last). For example:

```
c:\> echo The quick brown fox jumped over the ^
sleeping ^
dog. > alphabet
```

You cannot use this technique to extend a batch file line beyond the normal command line length limit.

4.6.2.5 Batch File Parameters

Like aliases, user-defined functions and application programs, batch files can examine the command line that is used to invoke them. The command tail (everything on the command line after the batch file or alias name) is separated into individual positional parameters (also called parameters or batch variables) by scanning for the spaces, tabs, commas, and equals signs (=) that separate them. (The = separator can be disabled by setting the "CMDBatchDelimiters=No" directive in your TCMD.INI.) For aliases and functions, a forward slash (**/**) triggers the beginning of a new parameter, e.g. the string **xyz/abc** is separated into parameters **foo** and **/abc**.

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These parameters are numbered from **%1** to **%4095**. **%1** refers to the first parameter on the command line, **%2** to the second, and so on. It is up to the batch file to determine the meaning of each parameter. You can use double quotes to pass spaces, tabs, commas, and other special characters in a batch file parameter; see Parameter Quoting for details.

Parameters that are referred to in a batch file, but which are missing on the command line, appear as empty strings inside the batch file. For example, if you start a batch file and put two parameters on the command line, any reference in the batch file to **%3**, or any higher-numbered parameter, will be interpreted as an empty string.

A batch file can use the special parameters shown in the table below:

parameter	value
%0	the name of the batch file as entered on the command line
%#	the number of command line parameters, modified by SHIFT
%n$	the command tail starting with parameter number ***n***, modified by SHIFT
%-n$	the command tail from parameter 1 to ***n*** - 1
%$	the complete command tail, modified by SHIFT
%*	the complete command tail, unmodified by SHIFT
%@	the batch file arguments (like %*), but they will all be double quoted

For example, **%3$** means the third and all subsequent parameters. The values of **%#**, **%n$, %-n$**, and **%$** will change if you use the SHIFT command. To emulate CMD, SHIFT does not affect the value of **%*.**

For example, if your batch file interprets the first parameter as a subdirectory name then the following line would move to the specified directory:

```
cd %1
```

A friendlier batch file would check to make sure the directory exists and take some special action if it doesn't:

```
iff isdir %1 then
   cd %1
else
   echo Subdirectory %1 does not exist!
   quit
endiff
```

(See the IF and IFF commands.)

Batch files can also use environment variables, internal variables, and variable functions.

Batch file parameters may also use the special CMD compatibility syntax.

4.6.2.5.1 Parameter Quoting

As ***TCC*** parses the command line, it looks for the command separator, conditional commands (**||** and **&&**), white space (spaces, tabs, and commas), percent signs **%** which indicate variables or batch file parameters to be expanded, and redirection and piping characters **>**, **<**, and **|**.

Normally, these special characters cannot be passed to a command as part of a parameter. However, you can include any of the special characters in a parameter by enclosing the entire parameter in single back

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quotes [`] or double quotes ["]. Although both back quotes and double quotes will let you build parameters that include special characters, they do not work the same way.

No alias or variable expansion is performed on a parameter enclosed in back quotes. Redirection symbols inside the back quotes are ignored. The back quotes are removed from the command line before the command is executed.

No alias expansion is performed when an expression is enclosed in double quotes. Redirection symbols inside double quotes are ignored. However, variable expansion **is** performed in expressions inside double quotes. The double quotes themselves will be passed to the command as part of the parameter.

For example, suppose you have a batch file *CHKNAME.BTM* which expects a name as its first parameter (%1). Normally the name is a single word. If you need to pass a two-word name with a space in it to this batch file you could use the command:

```
chkname `MY NAME`
```

Inside the batch file, %1 will have the value **MY NAME**, including the space. The back quotes caused ***TCC*** to pass the string to the batch file as a single parameter. The quotes keep characters together and reduce the number of parameters in the line.

For a more complex example, suppose the batch file *QUOTES.BAT* contains the following commands:

```
@echo off
echo Arg1 = %1
echo Arg2 = %2
echo Arg3 = %3
```

and that the environment variable FORVAR has been defined with this command:

```
set FORVAR=for
```

Now, if you enter the command

```
quotes `Now is the time %forvar` all good
```

The output from *QUOTES.BAT* will look like this:

```
Arg1 = Now is the time %forvar
Arg2 = all
Arg3 = good
```

But if you enter the command:

```
quotes "Now is the time %forvar" all good
```

The output from *QUOTES.BAT* will look like this:

```
Arg1 = "Now is the time for"
Arg2 = all
Arg3 = good
```

Notice that in both cases, the quotes keep characters together and reduce the number of parameters in the line.

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The following example has 7 command line parameters, while the examples above only have 3:

```
quotes Now is the time %%forvar all good
```

(The double percent signs are needed in each case because the parameter is parsed twice, once when passed to the batch file and again in the ECHO command.)

When an alias is defined in a batch file or from the command line, its parameter can be enclosed in back quotes to prevent the expansion of replaceable parameters, variables, and multiple commands until the alias is invoked. See ALIAS for details.

You can disable and reenable back quotes and double quotes with the SETDOS /X command.

4.6.2.6 Using Environment Variables

Batch files can use environment variables, internal variables, variable functions, or user-defined functions. You can use these variables and functions to determine system status (*e.g.*, the CPU type), resource levels (*e.g.*, the amount of free disk space), file information (*e.g.*, the date and time a file was last modified), and other information (*e.g.*, the current date and time). You can also perform arithmetic operations (including date and time arithmetic), manipulate strings and substrings, extract parts of a filename, and read and write files.

To create temporary variables for use inside a batch file, use the SET command to store the information you want in an environment variable. Pick a variable name that isn't likely to be in use by some other program (for example, PATH would be a bad choice), and use the UNSET command to remove these variables from the environment at the end of your batch file. You can use SETLOCAL and ENDLOCAL to create a "local" environment so that the original environment will be restored when your batch file is finished.

Environment variables used in a batch file may contain either numbers or text. It is up to you to keep track of what's in each variable and use it appropriately; if you don't (for example, if you use %@EVAL to add a number to a text string), you'll get an error message or a meaningless return value.

4.6.2.7 Batch File Commands

Some commands are particularly suited to batch file processing. Each command is explained in detail in the Command Reference. Here is a list of some of the commands you might find most useful:

Some commands are particularly suited to batch file processing. Each command is explained in detail in the Command Reference. Here is a list of some of the commands you might find most useful:

ACTIVATE	activates another window
BEEP	produces a sound of any pitch and duration through the computer's speaker
BREAKPOINT	set a breakpoint in the batch debugger
CALL	executes one batch file from within another
CANCEL	terminates all batch file processing
CLS	clears the ***TCC*** window
COLOR	sets the ***TCC*** display colors
DEBUGSTRING	send text to the debugger
DEFER	defers a command until the batch file ends
DO	starts a loop. The loop can be based on a counter, or on a conditional expression, strings, or files. ENDDO terminates the loop
DRAWBOX	draws a box on the screen
DRAWHLINE	draws horizontal lines on the screen
DRAWVLINE	draws vertical lines on the screen
ECHO	sends text to the standard output device

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ECHOS	sends text to the standard output device
ECHOERR	sends text to the standard error device
ECHOSERR	sends text to the standard error device
ENDLOCAL	restores the settings that were saved and allows specific variables to be exported (see SETLOCAL)
ENDTEXT	ends the block of text started with TEXT
EVENTLOG	writes a string to the Windows application event log
FOR	executes commands for each file that matches a set of wildcards, or each entry in a list
GOSUB	executes a subroutine inside a batch file (see RETURN).
GOTO	branches to a different location in the batch file
IF	execute commands based on a conditional expression
IFF	
INKEY	collects keyboard input and store it in environment variables
INPUT	collects keyboard input and store it in environment variables
JABBER	send an instant message (IM)
KEYSTACK	sends keystrokes to applications
LOADBTM	changes the batch file operating mode
LOCAL	define variables local to a library function or batch file
MSGBOX	displays a dialog box with standard buttons like Yes, No, OK, and Cancel, and returns the user's selection
ON	initializes error handling for Ctrl-C / Ctrl-Break, or for program and command errors
OSD	Display floating text on the desktop
PAUSE	displays a message and waits for the user to press a key
PDIR	creates a customized DIR-like display of directory contents
PLAYAVI	plays Windows .AVI files
PLAYSOUND	plays Windows sound files
POSTMSG	send a message to a window
QUERYBOX	displays a dialog box for text input
QUIT	ends the current batch file and optionally returns an exit code
REM	places a remark in a batch file
RETURN	terminates a subroutine (see GOSUB)
SCREEN	positions the cursor on the screen and optionally prints a message at the new location
SCRPUT	displays a message in color
SENDMAIL	sends an email message
SETLOCAL	saves the current disk drive, default directory, environment, alias list, and special character settings (see ENDLOCAL).
SHIFT	changes the numbering of the batch file parameters
SMPP	sends messages using the SMPP protocol
SNPP	sends a message to an alphanumeric pager
START	starts another session or window
SWITCH	selects a group of statements to execute based on the value of a variable
TEXT	displays a block of text (see ENDTEXT)
TIMER	starts or reads a stopwatch
TITLE	changes the window title
VSCRPUT	displays a vertical message in color
WMIQUERY	Query the Windows Management Instrumentation interface
WMIRUN	Run WMI methods on local or remote machines

These commands, along with the internal variables and variable functions, make the enhanced batch file language extremely powerful.

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4.6.2.8 Interrupting a Batch File

You can usually interrupt a batch file by pressing **Ctrl-C** or **Ctrl-Break**. Whether and when these keystrokes are recognized will depend on whether ***TCC*** or an application program is running, how the application, if any, was written, whether BREAK is ON or OFF, and whether the ON BREAK command is in use.

If ***TCC*** detects a **Ctrl-C** or **Ctrl-Break** when ON BREAK is not in use, it displays a prompt, for example:

```
Cancel batch job C:\CHARGE.BTM ? (Y/N/A) :
```

Enter **N** to continue, **Y** to terminate the current batch file and continue with any batch file which called it, or **A** to end all batch file processing regardless of the batch file nesting level. Answering **Y** is similar to the QUIT command; answering **A** is similar to the CANCEL command.

4.6.2.9 Detecting TCC and Take Command

From a batch file, you can determine if ***TCC*** is loaded by doing a numeric comparison:

```
if 01 == 1 echo Take Command is loaded!
```

In ***TCC***, this is a numeric comparison and true; in CMD it is a string comparison and false. Once you have established that the batch file is running in ***TCC***, you can use internal variables like _CMDPROC, _4VER, _DOS, _DOSVER, and _WIN to further determine the operating environment.

You can determine if ***TCC*** is running in a ***Take Command*** tab window with the internal variable _TCTAB:

```
if %_tctab == 1 echo TCC is running in a Take Command tab window!
```

You can prevent your batch file from running in CMD by giving it the .BTM extension. CMD doesn't recognize .BTM files as batch files.

4.6.2.10 Using Aliases in Batch Files

One way to simplify batch file programming is to use aliases to hide unnecessary detail inside a batch file. For example, suppose you want a batch file to check for certain errors, and display a message and exit if one is encountered. This example shows one way to do so:

```
setlocal
unalias *
alias error `echo. & echo ERROR: %$ & goto dispmenu`
alias fatalerror `echo. & echo FATAL ERROR: %$ & quit`
alias in `pushd %1 & %2$ & popd`
if not exist setup.btm fatalerror Missing setup file!
call setup.btm
cls
:dispmenu
text
      1. Word Processing
      2. Solitaire
      3. Internet
      4. Exit
endtext
echo.
```

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```
inkey Enter your choice:  %%userchoice
switch %userchoice
case 1
   input Enter the file name:  %%fname
   if not exist fname error File does not exist
   in d:\letters c:\windows\wordpad.exe
case 2
   in d:\finance c:\windows\sol.exe
case 3
   in d:\comm c:\windows\iexplore.exe
case 4
   goto done
default
  error Invalid choice, try again
endswitch
goto dispmenu
:done
endlocal
```

The first alias, ERROR, simply displays an error message and jumps to the label DISPMENU to redisplay the menu. The **%$** in the second ECHO command displays all the text passed to ERROR as the content of the message. The similar FATALERROR alias displays the message, then exits the batch file.

The last alias, IN, expects 2 or more command line parameters. It uses the first as a new working directory and changes to that directory with a PUSHD command. The rest of the command line is interpreted as another command plus possible command line parameters, which the alias executes. This alias is used here to switch to a directory, run an application, and switch back. It could also be used from the command line.

The following 9 lines print a menu on the screen and then get a keystroke from the user and store the keystroke in an environment variable called ***userchoice***. Then the SWITCH command is used to test the user's keystroke and to decide what action to take.

There's another side to aliases in batch files. If you're going to distribute your batch files to others, you need to remember that they may have aliases defined for the commands you're going to use. For example, if the user has aliased CD to CDD and you aren't expecting this, your file may not work as you intended. There are two ways to address this problem.

The simplest method is to use SETLOCAL, ENDLOCAL, and UNALIAS to clear out aliases before your batch file starts, and SETDOS to select the special characters you depend on, and restore them at the end, as we did in the previous example. Remember that SETLOCAL and ENDLOCAL will save and restore not only the aliases but also the environment, the current drive and directory, and various special characters.

If this method isn't appropriate or necessary for the batch file you're working on, you can also use an asterisk ***** before the name of any command. The asterisk means the command that follows it should not be interpreted as an alias. For example the following command redirects a list of file names to the file *FILELIST*:

```
dir /b > filelist
```

However, if the user has redefined DIR with an alias this command may not do what you want. To get around this just use:

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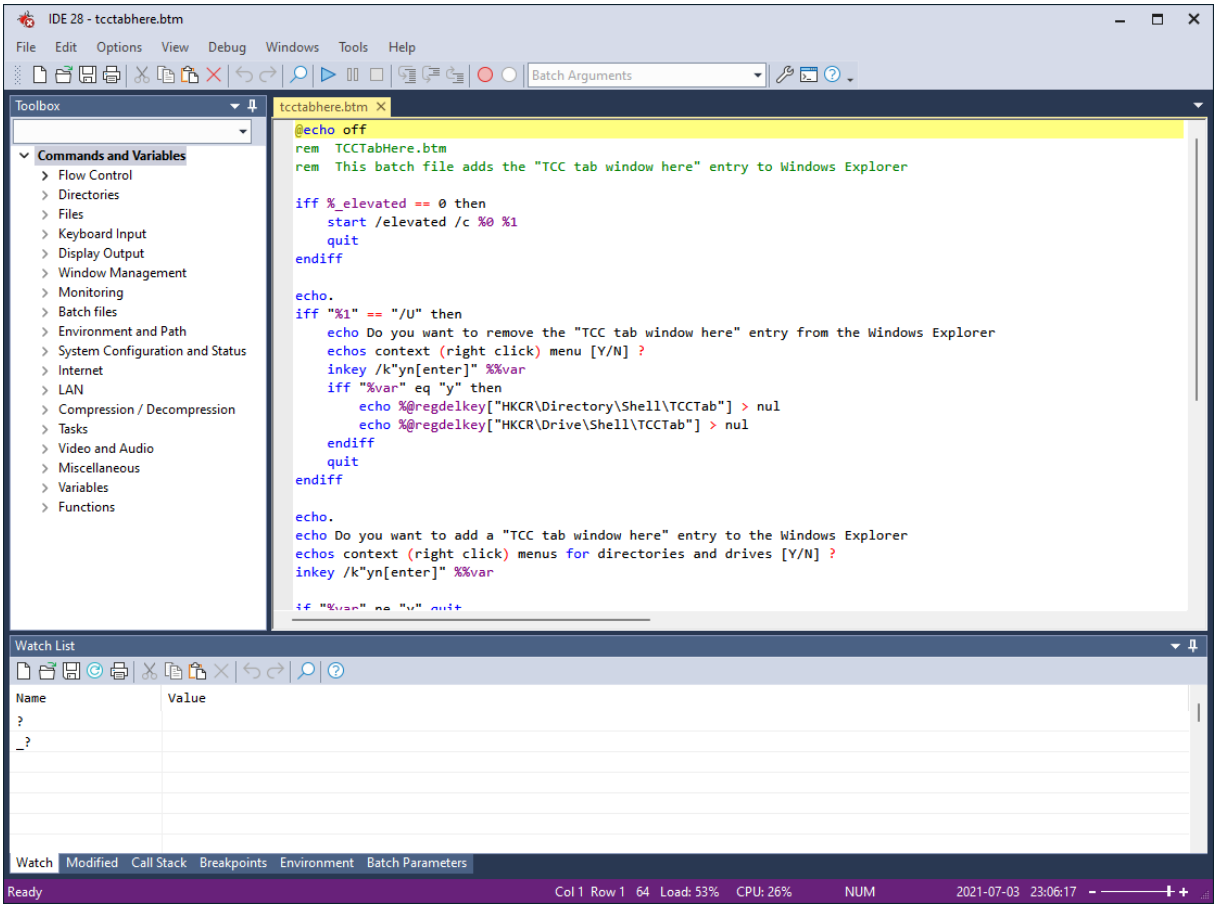
```
*dir /b > filelist
```

The same can be done for any command in your batch file. If you use the asterisk, it will disable alias processing, and the rest of the command will be processed normally as an internal command, external command, or batch file. Using an asterisk before a command will work whether or not there is actually an alias defined with the same name as the command. If there is no alias with that name, the asterisk will be ignored and the command will be processed as if the asterisk wasn't there.

4.6.2.11 Debugging Batch Files

Take Command includes a built-in full-featured batch file debugger invoked with the BDEBUGGER command. The debugger gives you a detailed, step-by-step view of batch file execution, and will help solve particularly difficult batch file problems.



4.6.2.12 String Processing

As you gain experience with batch files, you're likely to find that you need to manipulate text strings. You may need to prompt a user for a name or password, process a list of files, or find a name in a phone list. All of these are examples of string processing -- the manipulation of readable text.

TCC includes several features that make string processing easier. For example, you can use the INPUT, MSGBOX, and QUERYBOX commands for user input; the ECHO and ECHOERR, ECHOS and ECHOSERR, SCREEN, SCRPUT, and VSCRPUT commands for output; and the FOR command or the

@FILEREAD function to scan through the lines of a file. In addition, variable functions offer a wide range of strings and character handling capabilities.

For example, suppose you need a batch file that will prompt a user for a name, break the name into a first name and a last name, and then run a hypothetical LOGIN program. LOGIN expects the syntax **/F:first /L:last** with both the first and last names in upper case and neither name longer than 8 characters. Here is one way to write such a batch file:

```
@echo off
setlocal
unalias *
input Enter your name (no initials):  %%name

set first=%@word[0,%name]
set flen=%@len[%first]
set last=%@word[1,%name]
set llen=%@len[%last]

iff %flen gt 8 .or. %llen gt 8 then
   echo First or last name too long
   quit
endiff

login /F:%@upper[%first] /L:%@upper[%last]
endlocal
```

The SETLOCAL command at the beginning of this batch file saves the environment and aliases. Then the UNALIAS * command removes any existing aliases so they won't interfere with the behavior of the commands in the remainder of the batch file. The first block of lines ends with a INPUT command which asks the user to enter a name. The user's input is stored in the environment variable NAME.

The second block of lines extracts the user's first and last names from the NAME variable and calculates the length of each. It stores the first and last name, along with the length of each, in additional environment variables. Note that the @WORD function numbers the first word as 0, not as 1.

The IFF command in the third block of lines tests the length of both the first and last names. If either is longer than 8 characters, the batch file displays an error message and ends. (QUERYBOX can limit the length of input text more simply with its **/L** switch. We used a slightly more cumbersome method above in order to demonstrate the use of string functions in batch files.)

Finally, in the last block, the batch file executes the LOGIN program with the appropriate parameters, then uses the ENDLOCAL command to restore the original environment and alias list. At the same time, ENDLOCAL discards the temporary variables that the batch file used (NAME, FIRST, FLEN, etc.).

When you're processing strings, you also need to avoid some common traps. The biggest one is handling special characters.

Suppose you have a batch file with these two commands, which simply accept a string and display it:

```
input Enter a string:  %%str
echo %str
```

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Those lines look safe, but what happens if the user enters the string "some > none" (without the quotes). After the string is placed in the variable STR, the second line becomes

```
echo some > none
```

The ">" is a redirection symbol, so the line echoes the string "some" and redirects it to a file called NONE -- probably not what you expected. You could try using double quotes to avoid this kind of problem, but that won't quite work. If you use back-quotes (ECHO `%STR`), the command will echo the four-character string %STR. Environment variable names are not expanded when they are inside back-quotes.

If you use double quotes (ECHO "%STR"), the string entered by the user will be displayed properly, and so will the double quotes. With double quotes, the output would look like this:

```
"some > none"
```

As you can imagine, this kind of problem becomes much more difficult if you try to process text from a file. Special characters in the text can cause all kinds of confusion in your batch files. Text containing back-quotes, double quotes, or redirection symbols can be virtually impossible to handle correctly.

One way to overcome these potential problems is to use the SETDOS /X command to temporarily disable redirection symbols and other special characters. The two-line batch file above would be a lot more likely to produce the expected results if it were rewritten this way:

```
setdos /x-15678
input Enter a string:  %%str
echo %str
setdos /x0
```

The first line turns off alias processing and disables several special symbols, including the command separator and all redirection symbols. Once the string has been processed, the last line re-enables the features that were turned off in the first line.

If you need advanced string processing capabilities beyond those provided by ***TCC***, you may want to consider using the Lua, Perl, Python, REXX, or Ruby languages. Our products can execute Lua, Perl, Python, REXX, and Ruby programs internally, and also support evaluating individual Perl, Python, REXX, and Ruby expressions internally.

4.6.2.13 Batch File Compression

You can compress your *.BTM* files with BATCOMP. That command reduces the size of large batch files by at least a half and makes them unreadable with the LIST command and similar utilities. Compressed batch files run at approximately the same speed as uncompressed *.BTM* files.

You may want to consider compressing batch files if you need to distribute them to others and keep your original code secret or prevent your users from altering them. You may also want to consider compressing batch files to save some disk space on the systems where compressed files are used.

The full syntax for the batch compression command is

```
BATCOMP [/Q][/O] InputFile OutputFile
```

You must specify the full name of the input file and output files, including their extensions, on the BATCOMP command line. For example, to compress *MYBATCH.CMD* and save the result as *MYBATCH.BTM*, you use this command:

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```
batcomp mybatch.cmd mybatch.btm
```

If the output file (*MYBATCH.BTM* in the examples above) already exists, BATCOMP will prompt you before overwriting the file. You can disable the prompt by including **/O** on the BATCOMP command line immediately before the input file name. Even if you use the /O option, BATCOMP will not compress a file into itself.

The **/Q** ("quiet") option suppresses informational messages from BATCOMP.

JP Software does not provide a utility to decompress batch files. If you use BATCOMP, make sure that you also keep a copy of the original batch file for future inspection or modification.

4.6.2.14 Lua support

Lua is a powerful, fast, lightweight, embeddable scripting language. ***TCC*** includes internal support for Lua, both for executing Lua scripts and for executing individual Lua expressions. The version supplied with ***TCC*** is Lua 5.4.3. For more information on Lua, go to http://www.lua.org.

You must enable Lua support in the OPTION / Startup page. If it is enabled, ***TCC*** will automatically load LUA.DLL on your system. ***TCC*** checks to see if you are running a ***.LUA*** file. If so, ***TCC*** passes the file to the Lua interpreter for processing.

See also: the @LUA function.

4.6.2.15 Perl support

Perl is a powerful file and text processing language available on many platforms. Perl is a useful extension to the ***TCC*** batch language, especially if you need advanced string processing capabilities.

The Perl language is not built into ***TCC***, and must be obtained separately. The version supported by ***TCC*** is PerlScript (the WSH COM interface), which is included in Active State Perl (free from www.activestate.com).

You must enable Perl support in the OPTION / Startup page. If it is enabled, ***TCC*** will automatically load Perl on your system. If a suitable library is found, ***TCC*** checks to see if you are running a ***.PL*** file. If so, ***TCC*** passes the file to your Perl interpreter for processing.

See also: the @PERL, @PYTHON, @REXX and @RUBY functions.

4.6.2.16 Python support

Python is a powerful file and text processing language available on many platforms. Python is an ideal extension to the ***TCC*** batch language, especially if you need advanced string processing capabilities.

The Python language is not built into ***TCC***, and must be obtained separately. The version supported by ***TCC*** **is** from https://python.org. TCC supports version 3.9, 3.8, 3.7, 3.6, 3.5, 3.4, 3.3, 3.2, 3.1, 2.7, 2.6, and 2.5. (TCC will search for the Python dll's in that order.)

You must enable Python support in the OPTION / Startup page. If it is enabled, ***TCC*** will automatically load a Python interpreter when it starts. If a suitable library is found, ***TCC*** checks to see if you are running a ***.PY*** file. If so, ***TCC*** passes the file to your Python interpreter for processing.

See also: the @PYTHON, @LUA, @PERL, @REXX and @RUBY functions.

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4.6.2.17 REXX Support

REXX is a powerful file and text processing language developed by IBM, and available on many platforms. REXX is an ideal extension to the ***TCC*** batch language, especially if you need advanced string processing capabilities.

The REXX language is not built into ***TCC***, and must be obtained separately by downloading the free Regina REXX from http://regina-rexx.sourceforge.net/, or ooREXX (Open Object REXX) from http://www.oorexx.org.

You must enable REXX support in the OPTION / Startup page. If it is enabled, when ***TCC*** loads it asks Windows to locate specific REXX libraries associated with Regina or Open Object REXX. If a REXX library is found, ***TCC*** checks to see if you are running a *.REX* or *.REXX* file, or if the first two characters on the first line of a *.CMD* file are [**/***], the beginning of a REXX comment. If either of these tests succeeds, ***TCC*** passes the file to your REXX interpreter for processing.

When you send a command from a REXX program back to ***TCC*** to be executed (for example, if you execute a DIR command within a REXX script), the REXX software must use the correct address for ***TCC***. ***TCC*** uses the address **CMD** for compatibility with scripts written for CMD.

For details on communication between REXX and ***TCC***, or for more information on any aspect of REXX, see the Regina or ooREXX documentation.

See also: the @REXX, @PERL, @PYTHON, and @RUBY functions.

4.6.2.18 Ruby support

Ruby is a powerful object-oriented file and text processing language available on many platforms. Ruby is an ideal extension to the ***TCC*** batch language, especially if you need advanced string processing capabilities.

The Ruby language is not built into ***TCC***, and must be obtained separately. The versions supported by ***TCC*** are Ruby 1.8 and 1.9 (free from www.ruby-lang.org).

You must enable Ruby support in the OPTION / Startup page. If it is enabled, ***TCC*** will automatically load the Ruby library at startup. If a suitable library is found, ***TCC*** checks to see if you are running a ***.rb*** file. If so, ***TCC*** passes the file to your Ruby interpreter for processing.

See also: the @RUBY, @LUA, @PYTHON, @REXX and @PERL functions.

4.6.2.19 Tcl/tk Support

The Tcl/tk language is not built into ***TCC***, and must be obtained separately. The version supported by ***TCC*** is ActiveTcl 8.6 (free from www.activestate.com).

You must enable Tcl support in the OPTION / Startup page. If it is enabled, ***TCC*** will automatically load a Tcl interpreter when it starts. If a suitable library is found, ***TCC*** checks to see if you are running a ***.TCL*** file. If so, ***TCC*** passes the file to your Tcl interpreter for processing.

It's not possible for ***TCC*** to determine in advance whether you're running a Tcl or a Tk script. After executing the script, ***TCC*** checks if a Tk window is running. If so, it enters a Tk event loop and waits for the window to be closed. If not, ***TCC*** assumes it was a Tcl script and ***TCC*** returns immediately.

Because of the way the Tk interpreter works, it is not possible for ***TCC*** to maintain a persistent interpreter after executing a Tk script. ***TCC*** will close the current Tcl/tk interpreter and create a new one the next time a Tcl / tk script is executed.

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See also @TCL and @TK.

4.6.2.20 EXTPROC / SHEBANG Support

TCC offers an external processor option for batch files that lets you define an external program to process a particular *.CMD* file. To identify a *.CMD* file to be used with an external processor, place the string **EXTPROC** as the first word on the first line of the file, followed by the name of the external program that should be called. ***TCC*** will start the program and pass it the name of the *.CMD* file and any command line parameters that were entered.

For example, suppose *GETDATA.CMD* contains the following lines:

```
EXTPROC D:\DATAACQ\DATALOAD.EXE
OPEN PORT1
READ 4000
DISKWRITE D:\DATAACQ\PORT1\RAW
```

Then if you entered the command:

```
[d:\dataacq] getdata /p17
```

TCC would read the *GETDATA.CMD* file, determine that it began with an EXTPROC command, read the name of the processor program, and then execute the command:

```
D:\DATAACQ\DATALOAD.EXE D:\DATAACQ\GETDATA.CMD /p17
```

The hypothetical *DATALOAD.EXE* program would then be responsible for reopening the *GETDATA.CMD* file, ignoring the EXTPROC line at the start, and interpreting the other instructions in the file. It would also have to respond appropriately to the command line parameter entered (/p17).

Do not try to use ***TCC*** as the external processor named on the EXTPROC line in the *.CMD* file. It will interpret the EXTPROC line as a command to reopen itself. The result will be an infinite loop that will continue until the computer runs out of resources and locks up.

TCC also provides **SHEBANG** support. It works identically to **EXTPROC,** but the first line begins with a **#!** .

Note that **EXTPROC** and **SHEBANG** only work with files with a *.CMD* extension, not *.BTM* or *.BAT*.

4.7 File Selection

Most internal commands (like COPY, DIR, etc.) work on a file or a group of files. You can use several shorthand forms for naming or selecting files and the applications associated with them, or for accessing files on remote systems.

Most of the features explained in this section apply to ***TCC*** commands only, and generally cannot be used to pass file names to external programs (unless those programs were specifically written to support these features).

The features discussed in this section are:

- Wildcards
- Executable Extensions
- Using Internet URLs
- Using FTP and HTTP Servers

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- OpenAFS
- Ranges
- Attribute Switches
- Multiple Filenames
- Include Lists
- Delayed Variable Expansion
- Extended Parent Directory Names
- LFN File Searches
- @File Lists
- Command Switches for File Selection

4.7.1 Wildcards and Regular Expressions

Wildcards let you specify a file or group of files by typing a partial filename. The appropriate directory is scanned to find all of the files that match the partial name. You can also specify files with regular expressions.

Wildcards are usually used to specify which files should be processed by a command. If you need to specify which files should not be processed, see File Exclusion Ranges (for internal commands), or EXCEPT (for external commands).

Most internal commands accept filenames with wildcards anywhere that a full filename can be used. There are two wildcard characters, the asterisk * and the question mark ?. Additionally, you can specify a set of characters. Note the issues about matching short file names.

WARNING: When you use a wildcard search for files to process in a command like FOR or DO, and you create new filenames (whether by renaming existing files or by creating new files), the new filenames may match your selection wildcard, and cause you to process them again.

TCC also supports wildcards in the directory names (but not in the drive name). You can control the subdirectory recursion by specifying * or ** in the path. A * will match a single subdirectory level; a ** will match any all subdirectory levels for that pathname. Directory wildcards also support regular expressions. Directory wildcards cannot be used with the /O:... option (which sorts entries before executing the command). And think very carefully before using directory wildcards with a /S (recurse subdirectories) option, as this will almost certainly return unexpected results! There are a few commands which do not support directory wildcards, as they would be meaningless or destructive (for example, TREE, @FILEOPEN, @FILEDATE, etc.).

For example:

`del c:\test\test2\*\foobar`	Delete the file ***foobar*** in any subdirectory of ***c:\test\test2*** (but not in any of their subdirectories).
`del c:\test\**\*foo*\foobar`	Delete the file ***foobar*** in any subdirectory under ***c:\test*** (and all of their subdirectories) that has "foo" anywhere in the name.
`del c:\test\t*2\foobar`	Delete the file ***foobar*** in any subdirectory of ***c:\test*** that begins with a ***t*** and ends with a ***2.***

Asterisk * wildcard

An asterisk * in a file specification means "a set of any characters or no character in this position". For example, this command will display a list of all files (including directories, but excluding those files and directories with at least one of the attributes *hidden* and *system*) in the current directory:

```
dir *
```

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If you want to see all of the files with a *.TXT* extension:

```
dir *.txt
```

If you know that the file you are looking for has a base name that begins with *ST* and an extension that begins with *.D*, you can find it this way. Filenames such as *STATE.DAT*, *STEVEN.DOC,* and *ST.D* will all be displayed:

```
dir st*.d*
```

TCC also lets you also use the asterisk to match filenames with specific letters somewhere inside the name. The following example will display any file with a *.TXT* extension that has the letters ***AM*** together anywhere inside its base name. It will, for example, display *AMPLE.TXT*, *STAMP.TXT*, *CLAM.TXT*, and *AM.TXT*, but it will ignore *CLAIM.TXT*:

```
dir *am*.txt
```

Question mark ? wildcard

A question mark **?** matches any single filename character. You can put the question mark anywhere in a filename and use as many question marks as you need. The following example will display files with names like *LETTER.DOC*, *LATTER.DAT*, and *LITTER.DU*:

```
dir l?tter.d??
```

The use of an asterisk wildcard before other characters, and of the character ranges discussed below, are enhancements to the standard Microsoft wildcard syntax, and are not likely to work properly with software other than ***TCC***.

"Extra" question marks in your wildcard specification are ignored if the file name is shorter than the wildcard specification. For example, if you have files called *LETTER.DOC*, *LETTER1.DOC*, and *LETTERA.DOC*, this command will display all three names:

```
dir letter?.doc
```

The file *LETTER.DOC* is included in the display because the "extra" question mark at the end of **LETTER?** is ignored when matching the shorter name *LETTER*.

Specific character set

In some cases, the **?** wildcard may be too general. ***TCC*** also allows you to specify the exact set of what characters you want to accept (or exclude) in a particular position in the filename by using square brackets **[ ]**. Inside the brackets, you can put the individual acceptable characters or ranges of characters. For example, if you wanted to match *LETTER0.DOC* through *LETTER9.DOC*, you could use this command:

```
dir letter[0-9].doc
```

You could find all files that have a vowel as the second letter in their name this way. This example also demonstrates how to mix the wildcard characters:

```
dir ?[aeiouy]*
```

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You can exclude a group of characters or a range of characters by using an exclamation mark [!] as the first character inside the brackets. This example displays all filenames that are at least 2 characters long except those which have a vowel as the second letter in their names:

```
dir ?[!aeiouy]*
```

The next example, which selects files such as *AIP*, *BIP*, and *TIP* but not *NIP*, demonstrates how you can use multiple ranges inside the brackets. It will accept a file that begins with an *A*, *B*, *C*, *D*, *T*, *U*, or *V*:

```
dir [a-dt-v]ip
```

You may use a question mark character inside the brackets, but its meaning is slightly different than a normal (unbracketed) question mark wildcard. A normal question mark wildcard matches any character, but will be ignored when matching a name shorter than the wildcard specification, as described above. A question mark inside brackets will match any character, but will **not** be discarded when matching shorter filenames. For example:

```
dir letter[?].doc
```

will display *LETTER1.DOC* and *LETTERA.DOC*, but not *LETTER.DOC*.

You can repeat any of the wildcard characters in any combination you desire within a single file name. For example, the following command lists all files which have an ***A***, ***B***, or ***C*** as the third character, followed by zero or more additional characters, followed by a ***D***, ***E***, or ***F***, followed optionally by some additional characters, and with an extension beginning with ***P*** or ***Q***. You probably won't need to do anything this complex, but we've included it to show you the flexibility of extended wildcards:

```
dir ??[abc]*[def]*.[pq]*
```

You can also use the square bracket wildcard syntax to work around a conflict between long filenames containing semicolons [;], and the use of a semicolon to indicate an include list. For example, if you have a file on an LFN drive named *C:\DATA\LETTER1;V2* and you enter this command:

```
del \data\letter1;v2
```

you will not get the results you expect. Instead of deleting the named file, ***TCC*** will attempt to delete *LETTER1* and then *V2*, because the semicolon indicates an include list. However if you use square brackets around the semicolon it will be interpreted as a filename character, and not as an include list separator. For example, this command would delete the file named above:

```
del \data\letter1[;]v2
```

Matching short file names

If the Search for SFNs configuration option is set, wildcard searches accept a match on either the LFN or the SFN to match the behavior of CMD. This may cause some files to be found because of SFN match only. In most situations this is not actually desirable, and can be avoided by disabling the option (the default).

Note: The wildcard expansion process will attempt to allow both CMD-style "extension" matching (only one extension, at the end of the word) and the advanced ***TCC*** filename matching (allowing things like *.*.abc) when an asterisk is encountered in the destination of a COPY, MOVE or REN/RENAME command.

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Regular Expressions

You can also use regular expressions for file name tests. (The type of regular expressions to use is specified by the Regular Expressions Syntax option.)

The syntax is:

```
::regex
```

For example:

```
dir ::ca[td]
```

Note that using regular expressions will slow your directory searches -- since Windows doesn't support them, the parser has to convert the filename to *, retrieve all filenames, and then match them to the expression.

If you have any special characters (whitespace, redirection characters, escape characters, etc.) in your regular expression, you will need to enclose it in double quotes. For example:

```
dir "::^\w{1,8}\.btm$"
```

For more information on the syntax, see Regular Expression Syntax.

Take Command and ***TCC*** include a regular expression analyzer dialog (Ctrl-F7 from the ***TCC*** command line, or under the Tools menu in ***Take Command***.) There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.

You can choose the regular expression syntax you want to use (Perl, Ruby, Java, etc.). The analyzer will default to the current default for ***Take Command*** and ***TCC***.

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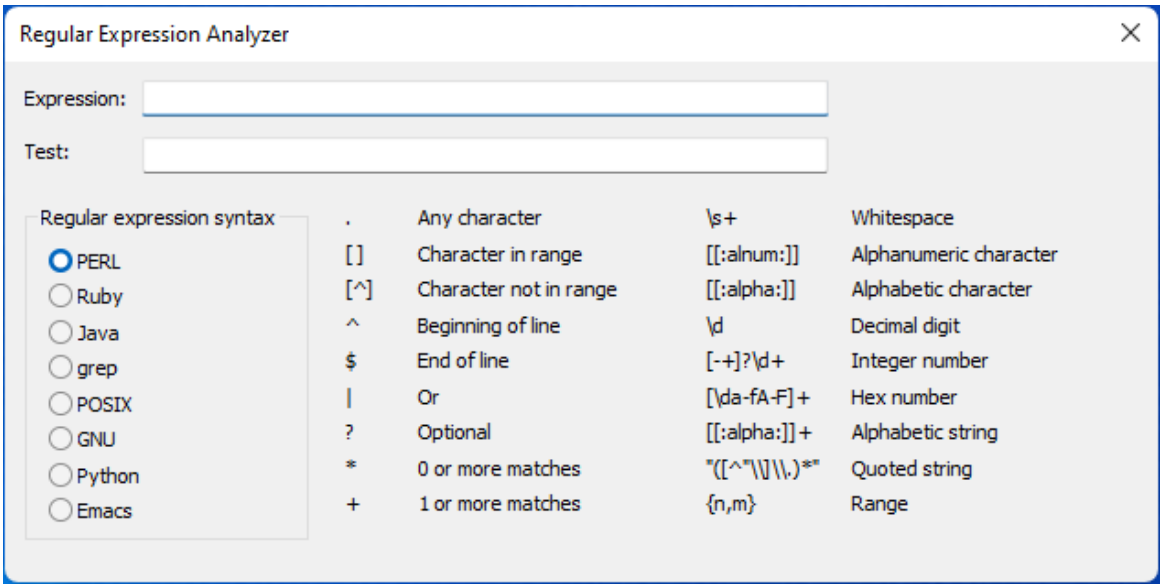

4.7.2 Executable Extensions

Normally, when you type a filename (as opposed to an alias or internal command name) as the first word on the command line, ***TCC*** looks for a file with that name to execute.

The file's extension may be *.EXE* to indicate that it contains a program; *.LNK* to indicate that it contains information on how to execute a program under Windows; or *.BTM*, *.BAT*, or *.CMD* to indicate a batch file.

You can add to the default list of extensions, and have ***TCC*** take the action you want with files that are not executable programs or batch files. The action taken is always based on the file's extension. For example, you could start your text editor whenever you type the name of a *.DOC* file, or start your database manager whenever you type the name of a *.DAT* file.

Windows also includes the ability to associate file extensions with specific applications. See Windows File Associations for details on this feature and its relationship to executable extensions. See also: Executable Files and File Searches.

You use environment variables to define the internal command, external program, batch file, or alias to run for each defined file extension. To create an executable extension for use only in ***TCC***, use the SET command to create a new environment variable. An environment variable is recognized as an executable extension if its name begins with a period.

The syntax for creating an executable extension is:

```
set .ext[;.ext[;...]]=command [options]
```

where *.EXT* is the executable file extension; ***command*** is the name of the internal command, alias, external program, or batch file to run; and **[options]** are any command line startup options you want to specify for the program, batch file, or alias. You can specify multiple extensions for a single command by separating them with semicolons.

For example, if you want to run a word processor called *EDITOR* whenever you type the name of a file that has an extension of *.EDT*, you could use this command:

```
set .edt=c:\edit\editor.exe
```

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If the command specified in an executable extension is a batch file or external program, ***TCC*** will search the PATH for it if necessary. However, you can make sure that the correct program or batch file is used, and speed up the executable extension, by specifying the full name including drive, path, filename, and extension. You can utilize other environment variables in the specification.

Once an executable extension is defined, any time you name a file with that extension as a command, it is equivalent to having typed the value of the extension variable, followed by the name of the file.

The next example defines *WORDPAD.EXE* (a Windows editor) as the processor for *.TXT* files:

```
set .txt="c:\program files\accessories\wordpad.exe"
```

Now, if you have a file called *HELLO.TXT* and enter the command

```
hello
```

TCC will execute the command:

```
"c:\program files\accessories\wordpad.exe" c:\source\hello.txt
```

Notice that the full pathname of *HELLO.TXT* is automatically included. If you enter parameters on the command line, they are appended to the end of the command. For example, if you changed the above entry to:

```
[c:\source] hello -w
```

TCC would execute the command:

```
"c:\program files\accessories\wordpad.exe" c:\source\hello.txt -w
```

In order for executable extensions to work, the command, program, batch file, or alias must be able to interpret the command line properly. For example, if a program you want to run doesn't accept a file name on its command line as shown in these examples, then executable extensions won't work with that program.

Executable extensions may include wildcards, so you could, for example, run your text editor for any file with an extension beginning with *T* by defining an executable extension called *.T**. Extended wildcards (*e.g.*, **DO[CT]** for *.DOC* and *.DOT* files) may also be used.

To remove an executable extension, use UNSET to remove the corresponding variable.

4.7.3 Using Internet URLs

If you type an Internet URL (Uniform Resource Locator) which begins with **http:** or **https:** at the prompt, ***TCC*** will pass the URL to Windows. Normally Windows will start your web browser, and request that the browser retrieve the page pointed to by the URL. This feature will only work if Windows can find the proper association between the **http:** or **https:** prefix and the browser software. While this association is standard for most browser installations, it may not be present on all systems.

The ability to "start" URLs in this way is restricted to those beginning with **http:** or **https:**. Other standard prefixes such as **ftp:**, **mail:**, and **news:** cannot be started directly from the prompt; you must enter these URLs directly into your browser.

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HTTP and HTTPS addresses in ***Take Command*** and ***TCC*** will have any embedded spaces converted to "%20" before sending the URL to the server.

See Waiting for Applications to Finish for information on problems with waiting for the browser to finish after starting a URL.

4.7.4 Using FTP and HTTP Servers

TCC allows direct access to remote servers from internal commands such as COPY, DEL, DIR, MOVE, MD, RD, REN, and SELECT via several protocols:

- FTP (basic FTP)
- TFTP (Trivial FTP)
- FTPS (SSL FTP)
- SFTP (SSH FTP)
- HTTP (basic Web access)
- HTTPS (SSL HTTP)

Note: Not all protocols are supported in every internal command. For example, DIR will not work with HTTP or HTTPS (because of limitations in the HTTP / HTTPS protocol).

- **FTP support:**

The basic filename syntax for anonymous connections is:

```
ftp://ftp.abc.com/...
```

For example, to get a directory of the Microsoft FTP site, you could use this command:

```
dir ftp://ftp.microsoft.com/*
```

If you don't specify a username and password, ***TCC*** will look for your FTP user names and passwords in the file *FTP.CFG* (which defaults to the ***Take Command*** directory). You can specify another directory with the FTP.CFG configuration option. You must add entries to the *FTP.CFG* file manually. The format for each line is:

```
url [(alias)] username password [directory template]
```

For example:

```
ftp://ftp.jpsoft.com fred secret
ftp://ftp.microsoft.com anyone mypassword
```

You can have multiple users for a single FTP site (for example, an admin user and and a normal user). You need to add an alias (enclosed in parentheses) following the name of the ftp site. For example:

```
ftp://ftp.jpsoft.com (jpadmin) Bob AdminPassword
ftp://ftp.jpsoft.com (jppublic) anonymous Bob@ftp.jpsoft.com
```

You can then access the server as ftp://jpadmin or ftp://jppublic.

We recommend you encrypt this file if you're using NTFS. If *FTP.CFG* doesn't exist the first time ***TCC*** looks for it, it will be created as an encrypted file (NTFS only). **Note**: If you are using FAT / VFAT, the file will not be encrypted and your user names and passwords will be unprotected in plain text.

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You can also specify an explicit username and password on the command line:

```
ftp://[username:password@]ftp.abc.com/...
```

If you specify a password of *, you will be prompted to enter the password (which will appear on the screen as asterisks). Depending on the type of operation you're doing, you may need to enter the password multiple times as ***TCC*** repeatedly connects and disconnects from the server. To avoid this, use IFTP (which will also be much faster).

If you have FTP permission on server ***ftp.abc.com*** and a subdirectory of the root directory on that server is called *mydir*, you can display the files with this command (enter this on one line):

```
dir ftp://username:password@ftp.abc.com/mydir/*
```

You can also use the internal IFTP command to start an FTP session with a server and then use a simplified syntax to manipulate files on the server.

TCC also supports symbolic hostnames (defined in \windows\system32\drivers\etc\hosts).

TCC normally connects to the FTP server on the default FTP port 21. If the FTP server you are connecting to uses a non-standard port, enter the port number (with a preceding colon) just after the server name, for example:

```
dir ftp://username:password@ftp.abc.com:8765/mydir/*
```

To log on to a server which supports "anonymous" logins, enter the required user name (usually "anonymous") and password (usually your email address) using the syntax shown above, for example:

```
dir ftp://anonymous:email@domain.com@ftp.microsoft.com/
```

TCC will distinguish between the @ in the email address and the @ before the server name in order to separate the parts of the URL properly.

If you use a partial file or path reference, such as

```
dir ftp:myfile.txt
```

TCC will attempt to build a fully qualified directory name in which to find the requested file or path, based on what the server reports as the current working directory. If an ftp file or path specification begins with a ~ (tilde, typically indicative of a path relative to the user's home directory), ***TCC*** will instead pass the exact string directly to the remote server.

TCC uses standard FTP commands to retrieve information about files and directories and manipulate those files and directories on FTP servers, and relies on the server's compliance with Internet FTP standards. If your server is not fully compliant, or does not operate in the manner that ***TCC*** expects, the results may not be what you intend. For example, if the FTP server you are connecting to is case-sensitive, you may have to use the stored case of file and directory names when you use FTP commands. (If you include wildcards in the filename, ***TCC*** will match filenames regardless of case.) We urge you to test each server you use with nondestructive commands like DIR before you try to copy or delete files, create or remove directories, etc.

Time-related operations (*e.g.* switches like COPY /C or /U) may not always work reliably on FTP and HTTP servers, due to differences in time zone and in the file time representations between your local system and the server. Be sure to experiment with the particular server in question before depending on commands which compare file times to yield the results you want.

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Note: If you use a partial reference such as ***ftp:mydir*** outside the scope of an IFTP command, ***TCC*** will attempt to re-establish the last connection, if any. That new connection may or may not be logged to the last used directory on that sever. We recommend you always use a full reference (including server name) unless you are specifically taking advantage of an active IFTP connection. You can determine if there is an active IFTP connection with the _iftp and _iftps variables.

Before you can use the built-in FTP support or the IFTP command, you must establish the necessary connection to the Internet. For example, if you use Windows Dial-Up Networking to connect to the Internet, you must start your dial up connection first. If you connect through a proxy server, you must set the Proxy configuration options.

TCC will try to preserve timestamps when transferring files. The MDTM command is used when downloading, and the MFTM command is used when uploading. If the FTP server doesn't support these commands, ***TCC*** will use the current date/time for the timestamp.

Non-standard FTP servers:

TCC supports directory formats for the following:

EPLF
WFTP
VMS (single-line filenames only)
NetPresenz (Macintosh)
Netware
All known UNIX and Linux formats
Windows FTP Server

If you have a non-standard FTP server that creates an unusual directory format, you can create an entry in your *FTP.CFG* file to allow ***TCC*** to parse the FTP server output. The format is described in the FTP.CFG following the host name, username, and password. The format characters are:

l"text"	Do a wildcard comparison of "text" and the directory line; if it matches, discard the entire line. (This is to allow you to skip header & footer lines that would otherwise return garbage.)
"text"	Compare (and skip) a literal string (does NOT support wildcard searches)
<space>	Skip whitespace (spaces, tabs)
!	Skip non-whitespace
-	Ignore a single character
F	Filename. If the F is followed by a . (i.e., "F."), the extension is the next non-whitespace string. The extension will be appended (preceded by a '.') to the filename.
S	Subdirectory flag. If the S is followed by a =, the next character is the character in a "raw" directory listing that denotes a directory. If you don't specify a =, 'D' is assumed.
T	Month as a string (i.e., "Jan", "Feb", etc.)
U	**Linux**-style year (2004) or time (18:30) in the same field.
Y	Year
M	Month

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D	Day
h	Hour
m	Minute
H	a or p (for am/pm)
Z	File size. If the Z is followed by a =, the number following that is the block size.

(Note that upper/lower case is significant for the format characters.)

For example, the FTP.CFG entry for JPSOFT.COM can be described as:

```
jpsoft.com anonymous JPUser@ S ! ! ! Z T D U F
```

- **TFTP ("trivial FTP") support:**

See the FTP section above for general notes and requirements.

TFTP is only available with COPY (and with MOVE when the source is a local file). The syntax is:

```
tftp://server[:port]/filename
```

For example:

```
copy update tftp://190.189.188.0/update
```

- **HTTP ("basic Web") support:**

See the FTP section above for general notes and requirements.

The **HTTP** syntax is:

```
http://[user:password@]server[:port]/filename
```

For example:

```
copy http://jpsoft.com/downloads/v28/tcmd.exe
```

TCC supports HTTP compression when receiving data.

- **FTPS ("SSL FTP") support:**

See the FTP section above for general notes and requirements.

The **FTPS** syntax is:

```
ftps://[user:password@]server[:port]/filename
```

For example:

```
copy ftps://bob:pass@ftp.myserver.com/tcmd/tcmd.exe
```

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TCC will detect if it is running detached or as a service before prompting for SSL authentication, and will provide an automatic **Y** (yes) input.

- **SFTP ("SSH FTP") support:**

See the FTP section above for general notes and requirements.

The S**FTP** syntax is:

```
sftp://[user:password@]server[:port]/filename
```

For example:

```
copy sftp://bob:pass@ftp.myserver.com/tcmd/tcmd.exe
```

TCC will detect if it is running detached or as a service before prompting for SSH authentication, and will provide an automatic **Y** (yes) input.

- **HTTPS ("SSL HTTP") support:**

See the FTP section above for general syntax and requirements.

The **HTTPS** syntax is:

```
https://[user:password@]server/filename
```

For example:

```
copy https://jpsoft.com/downloads/v28/tcmd.exe
```

TCC supports HTTP compression when receiving data.

4.7.5 OpenAFS

TCC has built-in support for OpenAFS. The parser will recognize Linux-style AFS names (i.e., **/afs/athena/user**) and convert them to Windows-compatible names (i.e., **\\afs\athena\user**). (It will also check for custom AFS mount points, and use that name instead of **afs**.)

See http://www.openafs.org for more information on OpenAFS.

4.7.6 Ranges

Most internal commands which accept wild cards also allow size, date, time, exclusion, description, and owner ranges to further define the files that you wish to work with. ***TCC*** will examine each file's properties to determine whether or not the file meets the range criteria that you have specified.

A size, date, time, or exclusion range specification begins with the switch character **/**, followed by a left square bracket **[** and a character that specifies the range type: **s** for size range, **d** for date range, **t** for time range, or **!** for exclusion range. The **s**, **d**, or **t** is followed by a start value, and an optional comma and end value. The range ends with a right square bracket **]**. For example, to select files between 100 and 200 bytes long you could use the range **/[s100,200]**.

A description range begins with **/l**. See Description Ranges for the full syntax.

If you use the syntax **/[=]**, TCC will display a dialog that allows you to select the ranges you want. For example:

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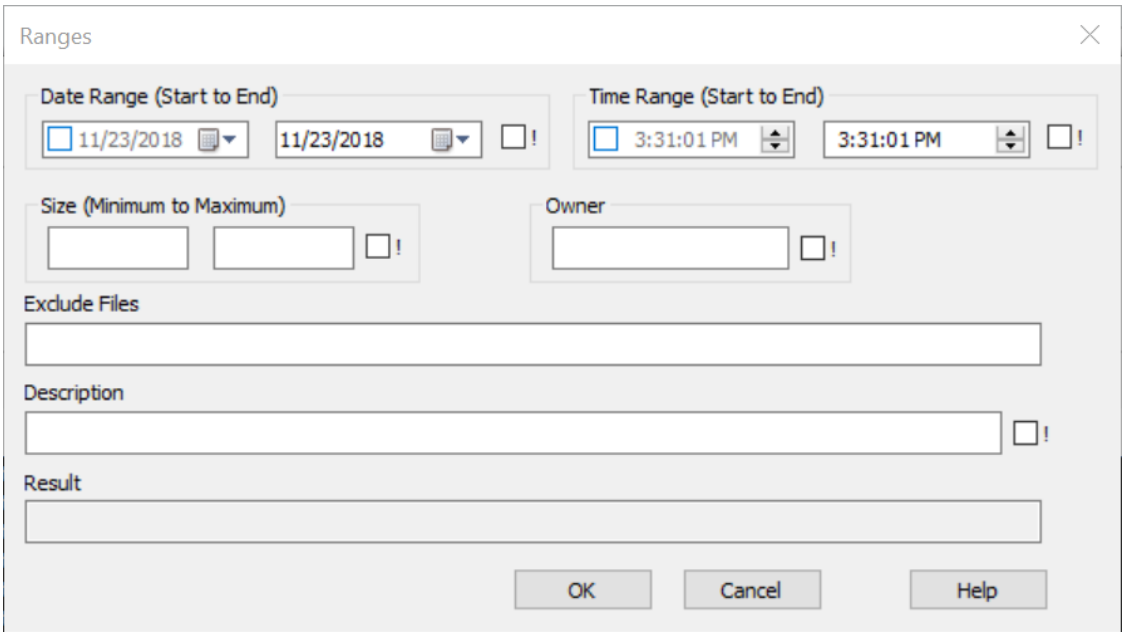
copy /[=] file1 file2



The Date, Time, Size, Owner, and Description ranges support the ! (NOT) operator to reverse the test.

General Rules

You can reverse the range test by preceding the range argument with the **!** character. For example, to select files that are less than 100 bytes or more than 1000 bytes:

```
/![s100,1000]
```

If you combine different types of ranges, a file must satisfy all range specifications to be included. For example,

```
/[d2018-2-8,2019-2-9] /[s1024,2048]
```

means files last modified between February 8, 2018 and February 9, 2019, which are also between 1,024 and 2,048 bytes long.

You may not repeat the same range type in a command.

When you use range specifications in a command, they should immediately follow the command name, so that any additional switches for the command are after any range(s) used. If the range is placed later in the command it may be ignored, or cause an error. Unlike some command switches which apply to only part of the command line, the range usually applies to all file names specified for the command. Any exceptions are noted in the descriptions of individual commands.

For example, to get a directory of all the **.C* files dated October 1, 2018, you could use this command:

```
dir /[d2018-10-1,+0] *.c
```

To delete all of the 0-byte files on your disk, you could use this command:

```
del /[s0,0] * /s
```

And to copy all of the non-zero byte files that you changed yesterday or today to your floppy disk, you can use this command:

```
copy /[d-1] /[s1] * a:
```

It can be tedious to type all of the elements of a range, especially when it involves multiple dates and times. In this case you may find it easier to use aliases for common operations. For example, if you often wish to select from *.DAT* files modified over the last three days and copy the selected files to another drive, you might define an alias like this:

```
alias workback=`select /[d-2] copy (*.dat) e:\datfiles\`
```

For more complex requirements, you may want to use internal variables (*e.g.* _DATE or _TIME) and built-in variable functions (*e.g.* @DATE, @TIME, @MAKEDATE, @MAKETIME, @FILEDATE, @FILETIME, or @EVAL). These variables and functions allow you to perform arithmetic and date / time calculations. You may also define your own variable functions, to perform more complex manipulations repetitively.

See the individual types for details on specifying ranges:

- Size Ranges
- Date Ranges
- Time Ranges
- Exclusion Ranges
- Owner Ranges
- Description Ranges

Ranges can be used with many commands, including ATTRIB, COPY, DEL, DESCRIBE, DIR, DO, EXCEPT, FFIND, FOR, HEAD, LIST, MOVE, PDIR, RD, REN, SELECT, TAIL, and TYPE

Ranges cannot be used with filename completion or in filename parameters for variable functions, except as described under the individual functions.

Do not use ranges with ***@file*** lists. See @file lists for details.

Date, Time, and Size Ranges

All ranges are inclusive. For example, a size range which selects files from 10,000 to 20,000 bytes long will match files that are exactly 10,000 bytes or 20,000 bytes long, as well as all sizes in between; a date range that selects files last modified between 2018-10-27 and 2010-18-30 will include files modified on each of those dates, and on the two days in between.

If you reverse range start and end values ***TCC*** will recognize the reversal, and will use the second (lower) value as the start point of the range and the first (higher) value as its end point. For example, to select files between 100 and 200 bytes long could also be entered as **/[s200,100]**.

4.7.6.1 Size Ranges

Size ranges select files whose size is between the inclusive limits specified. The second parameter of a size range is optional. If you use a single parameter, you will select all files of the specified size or larger. You can also precede the second parameter with a plus sign [**+**]; when you do, it is added to the first value to determine the largest file size to include in the search.

You can test the compressed file size (if you are using NTFS file compression) by appending a **C** to the **s** argument.

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You can exclude a size range by preceding the range with the **!** character.

When you use a size range in a command it should immediately follow the command name. See General Rules for Using Ranges for additional details.

Either or both values in a size range can be suffixed with a scale factor from the table below. Lower case letters denote a power of 1,000, upper case letters a power of 1,024 (2**10).

Code	Scale Factor		Code	Scale Factor		Unit Name
k	1,000	10**3	K	1,024	2**10	kilobyte
m	1,000,000	10**6	M	1,048,576	2**20	megabyte
g	1,000,000,000	10**9	G	1,073,741,824	2**30	gigabyte
t	1,000,000,000,000	10**12	T	1,099,511,627,776	2**40	terabyte
p	1,000,000,000,000,000	10**15	P	1,125,899,906,842,624	2**50	petabyte

Examples of size ranges:

Specification	Selects Files of Length
/[s0,0]	zero (empty)
/[s1M]	2**20 bytes or larger
/[s10k,+200]	between 10,000 and 10,200 bytes, inclusive
/[s10,153k]	between 10 and 153,000 bytes, inclusive
/![s1K,5K]	less than 1K or greater than 5K
/[sc10K,20K]	compressed file size is between 10K and 20K.

4.7.6.2 Date Ranges

Date ranges select files dated at any time of day between the inclusive limits specified. For example, **/[d2018-12-1,2018-12-5]** selects files that were last modified on *or* after December 1, 2018, but not modified *after* December 5, 2018. If you add a **U** after the **D**, the date range will use UTC times instead of local times.

When you use a date range in a command, only other range specifications may be between the command name and the date range. See General Rules for Using Ranges for additional details.

You can use hyphens, slashes, or periods to separate the month, day, and year. The year can be entered as a 2-digit or 4-digit value. Two-digit years between 80 and 99 are interpreted as 1980...1999; values between 00 and 79 are interpreted as 2000...2079. For example, **/[d2018-12-31,2018-1-1]** selects files modified between December 31, 2018 and January 1, 2019.

If either parameter begins with a four digit year (which must greater than 1900), it is assumed to be a date in the international format **yyyy-mm-dd**, otherwise it is assumed that the date elements are in the order appropriate for your locale. All non-ISO date examples in the HELP use the USA format: mm-dd-yy, unless otherwise stated explicitly.

The default time for the first date is the beginning of that day, and for the second date it is the end of that day. This is true even if the dates are in descending order, i.e., the first date is later than the second one. You can alter these defaults by including specific start and stop times inside the date range. The time is separated from the date with an at sign `@`. For example, the range **/[d2018-7-01@8:00a,2018-7-03@6:00p]** selects files that were modified at any time between 8:00:00 am on July 1, 2018 and 6:00:00 pm on July 3, 2018. If you prefer, you can specify the times in 24-hour format (*e.g.*, **@18:00** for the end time in the previous example).

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If you omit the second parameter in a date range, ***TCC*** substitutes the current date and time. For example, **/[d2018-10-1]** selects files dated between October 1, 2018 and the instant of command execution.

Instead of an explicit date, you may use an offset value for either the beginning or ending date, or both. An offset begins with a plus sign [**+**] or a minus sign [**-**] followed by an integer. If you use an offset for the second value, it is calculated relative to the first. If you use an offset for the first (or only) value, the current date is used as the basis for calculation. For example:

Specification	*Selects Files*
`/[d2018-1-27,+3]`	modified between January 27, 2018 and January 30, 2018
`/[d2018-1-27,-3]`	modified between January 24, 2018 and January 27, 2018
`/[d-0]`	modified today (from today minus zero days, to today)
`/[d-1]`	modified yesterday or today (from today minus one day, to today)
`/[d-1,+0]`	modified yesterday (from today minus one day, to zero days after that)

As a shorthand way of specifying files modified today, you can also use **/[d]**; this has the same effect as the **/[d-0]** example shown above.

Instead of a date, you can specify a file age for the first and/or second parameter. See Time Stamps, @AGEDATE and @MAKEAGE.

To select files last modified ***n*** days ago or earlier, use **/[d-n,1980-1-1]**. For example, to get a directory of all files last modified 3 days or more before today (*i.e.*, those files not modified within the last 3 days), you could use this command:

```
dir /[d-3,1980-1-1]
```

This reversed date range (with the later date given first) will be handled correctly by ***TCC***. It takes advantage of the facts that an offset in the start date is relative to today, and that the base or "zero" point for PC file dates is January 1, 1980 for FAT / VFAT, or January 1, 1601 for NTFS.

You cannot use offsets in the time portion of a date range (the part after an `@` sign), but you can combine a time with a date offset. For example, **/[d2018-12-08@12:00,+2@12:00]** selects files that were last modified between noon on December 8 and noon on December 10, 2018. Similarly, **/[d-2@15:00,+1]** selects files last modified between 3:00 pm the day before yesterday and the end of the day one day after that, *i.e.*, yesterday. The second time defaults to the end of the day because no time is specified.

You can exclude a date range by preceding the range with the **!** character.

Notes:

- If the second date is the termination date, and it includes an explicit termination time, it is considered an exact value. For example, in the last example the termination time was 6PM. Files with a timestamp of 6:00:01 PM or later are not included in the date range. This is different from the behavior of time ranges**.**
- If you include seconds in the times you specify, they will be silently ignored (no error or warning).
- If the first date is later than the second, any time of day modifiers for the first date are silently ignored.

Date types and selection

Windows file systems keep track of three dates for a file: when it was created, when it was last modified (written), and when it was last accessed. You specify which date and time is used in a date range by adding **a** (access), **c** (creation), or **w** (write) after the **d** in the range. For example, to select all files created

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between February 1, 2019 and February 7, 2019, inclusive, you would use **/[dc2019-02-1,2019-2-7]**. If you don't specify which date and time to use, ***TCC*** will use the date the file was last modified (written).

NOTE: On FAT32 drives which support long filenames, only the last access date is recorded; the last access time is always returned as 00:00. However, on NTFS drives, last access information includes both date and time.

Date and time ranges may not always work as you expect across a network, including on FTP or HTTP servers, due to differences in time zone and file time storage method between the local and remote systems. Be sure to do some non-destructive testing before depending on date or time ranges to yield the results you want on a remote system.

Defaults for Date Ranges

Start date:	Today
End date:	Today
Time of first parameter:	Beginning of the day (00:00:00)
Time of second parameter:	End of the day (23:59:59)
Missing second parameter:	Current date and time
Date type	Modification (write)

4.7.6.3 Time Ranges

Time ranges select files timed at any time between the two specified times of day. For example, to select files modified at or between noon and 2:00 PM on any day, use **/[t12:00p,2:00p]**. The times in a time range can either be in 12-hour format, with a trailing **a** for AM or **p** for PM, or in 24-hour format.

When you use a time range in a command it should immediately follow the command name. See General Rules for Using Ranges for additional details.

If you omit the second parameter in a time range, you will select files that were modified between the first time and the current time, on any date. You can also use offsets, beginning with a plus sign [**+**] or a minus sign [**-**] for either or both of the parameters in a time range. The offset values are interpreted as minutes. Some examples:

Specification	Selects Files
`/[t12:00p,+120]`	modified between noon and 2:00 PM on any date
`/[t-120,+120]`	modified between two hours ago and the current time on any date
`/[t0:00,11:59]`	modified in the morning on any date

The separator character used in the time may vary depending upon your country information.

You can exclude a time range by preceding the range with the **!** character.

Time types and selection

Windows keeps track of three times for a file: when it was created, when it was last modified (written), and when it was last accessed. You can specify which time is used in a time range by adding **a** (access), **c** (creation), or **w** (write) after the t in the range specification. For example, to select all files created between noon and 2:00 pm, you would use **/[tc12:00p,2:00p]**. If you don't specify which time to use, ***TCC*** will use the time the file was last modified (written).

If you add a **U** after the **T**, the time range will use UTC times instead of local times.

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NOTE: On FAT drives which support long filenames, only the last access date is recorded; the last access time is always returned as 00:00. However, on NTFS drives, last access information includes both date and time.

Time ranges may not always work as you expect across a network, including on FTP or HTTP servers, due to differences in time zone and file time storage method between the local and remote systems. Be sure to do some non-destructive testing before depending on time ranges to yield the results you want on a remote system.

When you use a time range in a command it should immediately follow the command name. See General Rules for Using Ranges for additional details.

Defaults

Start time:	Current time
End time:	Current time
Time type:	Modification (last write)

4.7.6.4 File Exclusion

Most internal commands which accept wildcards also accept file exclusion ranges to further define the files that you wish to work with. ***TCC*** examines each file name and excludes files that match the names you have specified in the exclusion range.

When you use an exclusion range in a command it should immediately follow the command name. See General Rules for Using Ranges for additional details.

A file exclusion range begins with the switch character (usually a slash), followed by a left square bracket and an exclamation mark **[!** The range ends with a right square bracket **]**. You can specify multiple file exclusions (useful if you have a alias that is defining an exclusion and you want to pass another one as an argument).

Inside the brackets, you can list one or more filenames to be excluded from the command. The filenames can include wildcards and extended wildcards, but may not include path names or drive letters. You can exclude directories by appending a \ to the name.

The following example will display all files in the current directory except backup files (files with the extension *.BAK* or *.BK*):

```
dir /[!*.bak *.bk] *
```

You can combine file exclusion ranges with date, time, and size ranges. This example displays all files that are 10K bytes or larger in size and that were created in the last 7 days, except *.C* and *.H* files:

```
dir /[s10k] /[d-7] /[!*.c *.h] *
```

File exclusion ranges, a unique feature of ***TCC***, work for internal commands. The EXCEPT command can also be used to exclude files from processing by any external or internal command which ignores files with the hidden attribute. You can utilize the file exclusion range with external commands utilizing the DO or FOR command; however, the performance will not be as good, since the external command is started separately for each match.

Note: File exclusion first checks to see if a file specification with embedded brackets exactly matches an existing file. If no such file is found, it interprets the brackets as wildcards.

See also: Include Lists.

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4.7.6.5 Owner Ranges

Most internal commands which accept wildcards also accept owner ranges to further define the files that you wish to work with. ***TCC*** examines each file or directory and excludes those whose owner doesn't match that in the exclusion range.

Owner ranges support wildcard comparisons. The value is the same as shown in DIR /Q or %@owner.

The syntax is:

```
/[O"owner"]
```

If you precede the **O** with a **!**, the result is reversed.

The following example will display all files in the current directory owned by Bob:

```
dir /[O"*\Bob"] *
```

The following example will display all files in the current directory **except** those owned by Bob:

```
dir /[!O"*\Bob"] *
```

4.7.6.6 Description Ranges

Most internal commands which accept wildcards also accept description ranges to further define the files that you wish to work with.

When you use a description range in a command it should immediately follow the command name. See General Rules for Using Ranges for additional details.

A description range is specified as **/I"*text*"** where ***text*** is the description to be matched. Wildcards are supported. For example, **/I"*agua*"** selects all files with the string **agua** somewhere in the file description. The search text must be enclosed in double quotes, and must immediately follow the **/I**, with no intervening spaces.

You can select all files that have a description with **/I"[?]*"** (the **[?]** requires that the description contain at least one character, and the ***** allows any text).

You can select all files that do not have a description with **/I"[]"** (the **[]** requires that the first character, and therefore the descriptor itself, does not exist).

You can also search descriptions using regular expressions with **/R"*text*".**

If you precede the **I** or **R** with a **!**, the result is reversed. For example, **/!I"*beta*"** will select all of the files that do **not** have the word ***beta*** in their description.

See DESCRIBE for details on file descriptions.

4.7.7 Attribute Switches

Most file commands in ***TCC*** include the **/A:** switch, which allows you to select files for the command to process based on their attributes. These switches all use the format **/A[:][-+]RHSAD**. The colon after /A is optional in DIR, FFIND, and SELECT, but is required in all other commands. The characters after the /A: specify which attributes to select, as follows:

R Read-only

- **H** Hidden
- **S** System
- **A** Archive
- **D** Directory

On NTFS volumes, the extended attributes below are also available.

- **E** Encrypted
- **C** Compressed
- **F** Sparse file
- **I** Not content-indexed
- **L** Symbolic link or Junction (reparse point)
- **N** Normal (cannot be used for file selection)
- **O** Offline
- **P** Pinned (Windows 10 OneDrive)
- **T** Temporary
- **U** Unpinned (Windows 10 OneDrive)
- **V** Integrity (Windows Server 2012R2+ ReFS only)
- **X** No scrub data (Windows Server 2012R2+ ReFS only)

The **N** (normal) attribute is not stored on disk. It is dynamically generated by the operating system if none of the other attributes is set. Its use for file selection is not supported in either commands or variable functions.

If no attributes are listed at all (*i.e.*, **/A:**), the command will process all files, and (where applicable) all subdirectories, including hidden and system files and directories.

If attributes are combined, all the specified attributes must match for a file to be selected. For example, **/A:RHS** will select only those files with all three attributes set.

If you precede an attribute with a hyphen **-**, files with that attribute will be excluded. For example, **/A:RH-S** selects files which have the read-only and hidden attributes set and which do not have the system attribute set.

If you precede an attribute with a plus **+**, files will be selected which have that attribute turned on or off. When multiple attributes are preceded by **+**, only files which have at least one of these attributes will be selected. For example, **/A:+H+S** will select files with the hidden or system attribute, or both, but will not select files which have neither attribute set. **/A:R+H+S** will select files which are read-only, and also have the hidden or system attribute, or both.

You can combine the plus sign, hyphen, and unmarked attributes to build a specification as complex as you need.

If you use the format **/A:=**, TCC will display a dialog that allows you to select the attributes you want:

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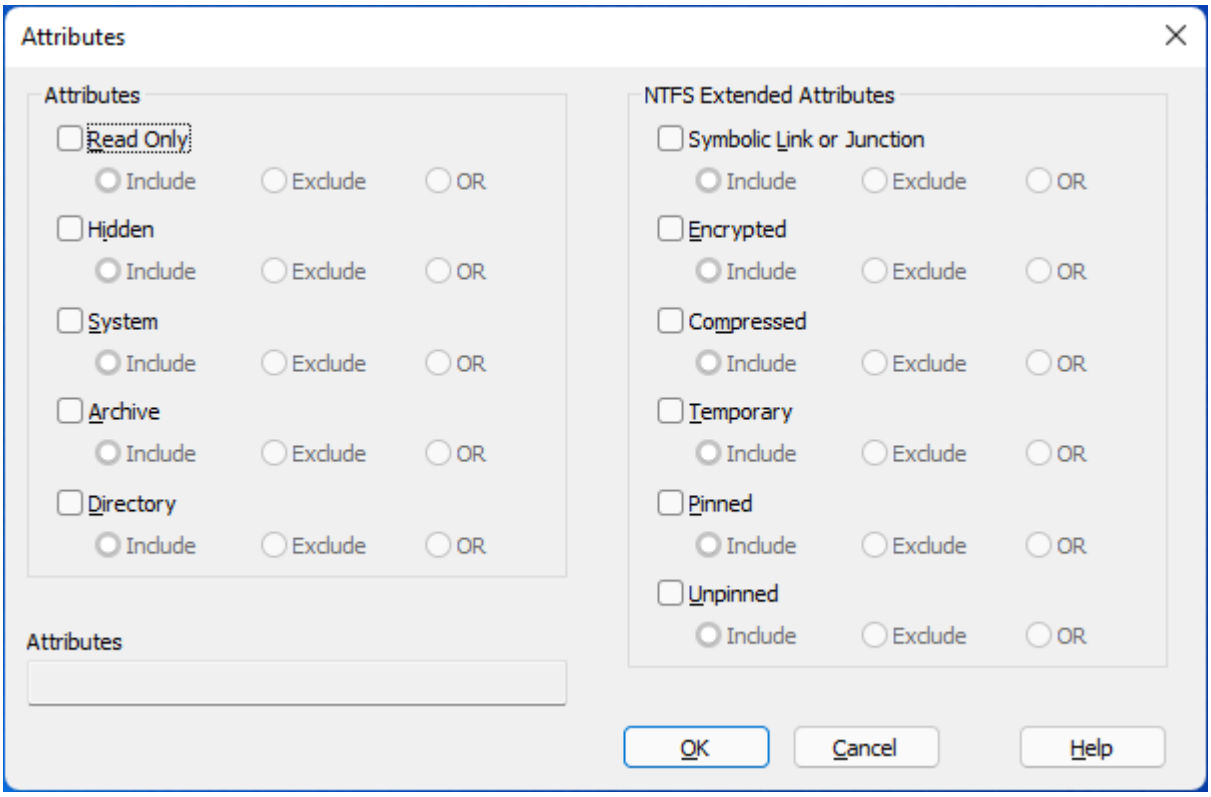

Example

The (dangerous!) command below will make all hidden, system, and/or read-only files in the default directory visible and writeable, but not modify the attributes of files which are neither hidden nor system nor read-only (thus not reporting files already in the desired state):

```
attrib /e /p /a:+r+h+s -r -h -s
```

4.7.8 Multiple Filenames

Most file processing commands can work with multiple files at one time. To use multiple file names, you simply list the files one after another on the command line, separated by spaces. You can use wildcards in any or all of the filenames. For example, to copy all *.TXT* and *.DOC* files from the current directory to drive **A**, you could use this command:

```
copy *.txt *.doc a:
```

If the files you want to work with are not in the default directory, you must include the full path with each filename:

```
copy a:\details\file1.txt a:\details\file1.doc c:
```

Multiple filenames are handy when you want to work with a group of files which cannot be defined with a single filename and wildcards. They let you be very specific about which files you want to work with in a command.

When you use multiple filenames with a command that expects both a source and a destination, like COPY or MOVE, be sure that you always include a specific destination on the command line. If you don't, the command will assume that the last filename is the destination and may overwrite important files.

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Like extended wildcards and include lists, multiple filenames will work with internal commands but not with external programs, unless those programs have been written to handle multiple file names on the command line.

If you have a list of files to process that's too long to put on the command line or too time-consuming to type, see @File Lists as well as the DO, FOR and SELECT commands for other ways of passing multiple file names to a command.

4.7.9 Include Lists

Any internal command that accepts multiple filenames will also accept one or more include lists. An include list is simply a group of filenames, with or without wildcards, separated by semicolons [;]. Only the first entry in each include list may specify a path. All files in an include list must be in the same directory. You may not add a space on either side of the semicolon. See the rule below to determine when a semicolon is part of a file name and when it is an include list separator.

For example, you can shorten this command which uses multiple file names:

```
copy a:\details\file1.txt a:\details\file1.doc c:
```

to this using an include list:

```
copy a:\details\file1.txt;file1.doc c:
```

Include lists are similar to multiple filenames, but have three important differences.

- First, you don't have to repeat the path to your files if you use an include list, because all of the included files must be in the same directory.

- Second, if you use include lists, you aren't as likely to accidentally overwrite files if you forget a destination path for commands like COPY, because the last name in the list will be part of the include list, and won't be seen as the destination file name. Include lists can only be used as the source parameter -- the location files are coming from -- for COPY and other similar commands. They cannot be used to specify a destination for files.

- Third, multiple filenames and include lists are processed differently by the DIR and SELECT commands. If you use multiple filenames, all of the files matching the first filename are processed, then all of the files matching the second name, and so on. When you use an include list, all files that match any entry in the include list are processed together, and will appear together in the directory display or SELECT list. You can see this difference clearly if you experiment with both techniques and the DIR command. For example,

  ```
  dir \doc\*.txt *.doc
  ```

  will list all the *.TXT* files in directory *\DOC* with a directory header, the file list, and a summary of the total number of files and bytes used. Then it will do the same for the *.DOC* files in the current directory. However,

  ```
  dir \doc\*.txt;*.doc
  ```

  will display all the *.TXT* and *.DOC* files in directory *\DOC* in one list.

Like extended wildcards and multiple filenames, include lists work with internal commands, but not with external programs (unless they have been programmed especially to support them).

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Semicolons in filenames

Since a semicolon (";") is a valid (albeit unfortunate) character in a file name, you must quote any such name if you don't want ***TCC*** to treat it as an include list.

If a filename parameter includes a semicolon, ***TCC*** first attempts to find a filename containing an embedded semicolon. If found, that filename is used. If no file is found, the semicolon is considered to be an include list separator.

See also: Exclusion Ranges.

4.7.10 @File Lists

Many internal commands allow you to specify a file containing a list of all of the files you want to process in the command line (instead of enumerating them individually). You specify that a file is a file list by prefixing its name with the @ sign, e.g., LIST @*XXX* specifies that LIST is to operate on the files listed in the file *XXX* instead of on *XXX* itself.

A file list is simply a standard text file containing the names of the files to process, one per line. This allows you to create a list of files for processing using output from DIR /B, DIR /F, or FFIND, a text editor, or any other method that produces a file in the proper format. Both absolute and relative paths may be included in the file, However, wildcards are ignored, and each line is processed literally, without any further checking. This means that if a command allows options to restrict operations based on age (/U, /C), ranges (/I..., /[d..., /[t...), attributes (/A:), or location (/S), those restrictions will be ignored when processing the ***@file*** contents.

Commands supporting the ***@File*** syntax include:

ATTRIB	FOR	TAIL
COPY	HEAD	TOUCH
DEL / ERASE	LIST	TYPE
DESCRIBE	MOVE	ZIP
DO	RD / RMDIR	
EXCEPT	REN / RENAME	

To use a file list, precede its name with an `@` sign in the command. For example, to copy all of the files listed in *`MYLIST.TXT`* to *`D:\SAVE\`*:

```
copy @mylist.txt d:\save\
```

If you use a drive and/or path specification the **@** sign can appear before the path or before the file name. For example, these are equivalent:

```
copy @e:\lists\mylist.txt d:\save\
copy e:\lists\@mylist.txt d:\save\
```

To use appropriately formatted data on the Windows clipboard as an catalog file use **@CLIP:** as the file name, for example:

```
copy @clip: d:\save\
```

@File **Lists and "@" Signs in File Names**

Note that the **@** sign is a rarely used, but legal filename character in Windows. If a file whose name begins with **@** exists and you attempt to use an @file list with the same name, the file whose name begins with **@** will take precedence. For example, if *c:* contains both a file named *@MYLIST.TXT* and another named *MYLIST.TXT*, this command:

```
[c:\] copy @mylist.txt d:\save\
```

will copy the single file *@MYLIST.TXT* to *D:\SAVE*, and will not process the list of files in *MYLIST.TXT*. To avoid this confusion, use a different name for one of the files.

4.7.11 Delayed Variable Expansion

Some of the internal commands (COPY, MOVE, PDIR, REN) support delayed variable expansion for the target filename. The function argument must be an asterisk **(*)**, which will be replaced by the name of each matching source file. The variable function name must be preceded by two %%'s; the first one will be removed before the command is called, and the second when the command calls the variable expansion routine. This allows much greater flexibility in building the target filenames.

For example, to copy all of your **.MP3* files, and append the string "_saved" to the filename part :

```
copy *.mp3 %%@name[*]_saved.mp3
```

4.7.12 Extended Parent Directory Names

TCC has an extended syntax for referencing parent directories, by adding additional **.** characters. Each additional **.** represents an additional directory level above the current directory. For example, *.\FILE.DAT* refers to a file in the current directory, *..\FILE.DAT* refers to a file one level up, i.e., in the parent directory, and *...\FILE.DAT* refers to a file two levels up, i.e., in the parent of the parent directory. If your default directory is *C:\DATA\FINANCE\JANUARY*, you can copy the file *LETTERS.DAT* from directory *C:\DATA* to drive *A:* with the command

```
[C:\DATA\FINANCE\JANUARY] copy ...\LETTERS.DAT A:
```

Note: This extended notation may not be understood by external programs. Consider using the @FULL function to expand file and directory references when necessary:

```
[C:\DATA\FINANCE\JANUARY] myprog %@full[...\LETTERS.DAT]
```

4.7.13 LFN File Searches

There are some special considerations applicable to volumes which support long file names (including VFAT, FAT32, and NTFS volumes). All files on such volumes have a short (FAT-compatible 8.3) file name (SFN). A file which was created (or renamed to) a name which contains lower case letters or other characters not compatible with SFNs, or a name longer than 8 characters, or an extension longer than 3 characters, or more than one period (**.**) in its name will have both the long file name (LFN) specified, and an SFN automatically generated by the file system. The SFN associated with an LFN may change when the file is moved or copied even when the LFN is not changed.

When CMD performs a wildcard search, it searches for both forms of each file name. The long filenames are checked first, followed by the short file names. Matching files which have only a short filename will be found during the first search, because in that case the file system treats the SFN name as if it were a LFN.

For example, suppose you have two files in a directory with these names:

Long Name	**Short Name**
Letter Home.DOC	*LETTER~1.DOC*

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Letter02.DOC *LETTER02.DOC*

A search for *LETTER??.DOC* will find both files. The second file (*Letter02.DOC*) will be found during the search of long filenames. The first file (*Letter Home.DOC*) will be found during the search of short filenames but will return LFN.

Because this dual search can result in some very unexpected or even disastrous results, ***TCC*** defaults to searching only for the LFN. You can change the default with the **Search for SFNs** option in the OPTION / Startup dialog.

Take extra care when you use wildcards to perform operations on LFN volumes if you have set **Search for SFNs**, because you may select more files than you intended. For example, Windows often generates short filenames that end with ***~1***, ***~2***, etc. If you use a command such as:

```
del *1.*
```

you will delete all such files, including most files with long filenames, which is probably not the result you intended!

4.7.14 Switches for File Selection

Many of the file processing commands (ATTRIB, COPY, DEL, DESCRIBE, HEAD, MOVE, REN, TAIL, TYPE, etc.) support several standard switches for selecting files to process. Be sure to see the individual commands for details on which switches are supported for each command and how they work, and for additional switches specific to each command. Make sure that any range selections precede the options below in the command line.

The common file selection switches include:

`/A:[[-+]rhsadecijlopt]`	Select files based on their attributes, for example **/A:RH** selects files which have the read-only and hidden attributes set. See Attribute Switches for details; see File Attributes for more information on attributes.
`/N`	Don't actually process any files. This allows you to test what the results of a command would be, without actually performing the operation.
`/P`	Prompt for confirmation of each file.
`/S[n]`	Process files in the current directory and all of its subdirectories.

4.8 Input / Output and Redirection

This section covers features to change how ***TCC*** and some application programs handle input and output.

Internal commands and some external programs get their input from the computer's standard input device and send their output to the standard output device. Some programs, including ***TCC,*** also send special messages to the standard error device. Normally, the keyboard is used for standard input and the video display for both standard output and standard error, but you can temporarily change these assignments for special tasks.

For example, suppose you want a printed list of the files in a directory. If you change the standard output to the printer and issue a DIR command, the task is easy. DIR's output goes to the standard output device, and you have redirected standard output to the printer, so the DIR command prints filenames instead of displaying them on the screen. You can just as easily send the output of DIR (or any other command) to a file or a serial port.

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We offer three methods of manipulating input and output: Redirection, Piping, and Keystack. All three are explained in this section. In addition, ***TCC*** supports a subset of ANSI X3.64 control sequences in displayed text. The last topic in this section explains ANSI X3.64 support in detail.

Redirection and piping affect the standard input, standard output, and standard error devices. They do not work with application programs which read the keyboard hardware directly, or which write directly to the display. Because most Windows applications fall into that category, you will find that redirection and piping are most useful when they are combined with internal commands.

The TEE and Y commands are "pipe fittings" which add more flexibility to pipes.

TCC's output is normally in ANSI. If you want to redirect output in Unicode, you need to either use the /U startup option in ***TCC***, or the Unicode Output option in TCMD.INI.

- Redirection and Piping
- ANSI X3.64 Support
- Keystack
- Page and File Prompts

4.8.1 Redirection and Pipes

This section covers redirection and pipes. You can use these features to change how ***TCC*** and some application programs handle input and output.

Internal commands and some external programs get their input from the computer's standard input device and send their output to the standard output device. Some programs also send special messages to the standard error device. Normally, the keyboard is used for standard input and the video screen for both standard output and standard error, but you can temporarily change these assignments for special tasks.

For example, suppose you want a printed list of the files in a directory. If you change the standard output to the printer and issue a DIR command, the task is easy. DIR's output goes to the standard output device, and you have redirected standard output to the printer, so the DIR command prints filenames instead of displaying them on the screen. You can just as easily send the output of DIR (or any other command) to a file or a serial port.

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The TEE and Y commands are "pipe fittings" which add more flexibility to pipes.

TCC's output is normally in ANSI. If you want to redirect output in Unicode, you need to either use the /U startup option in ***TCC***, or the Unicode Output option in TCMD.INI.

4.8.1.1 Redirection

Redirection can be used to reassign the standard input (stdin), standard output (stdout), and standard error (stderr) devices from their default settings (the keyboard and screen) to another device such as NUL or serial port, to a file, or to the Windows clipboard. You must use some discretion when you use redirection with a device.

Redirection always applies to a specific command, and lasts only for the duration of that command. When the command is finished, the assignments for standard input, standard output, and standard error revert to whatever they were before the command.

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TCC's output is normally in ANSI. If you want to redirect output in Unicode, you need to either use the /U startup option in ***TCC***, or the Unicode Output option in TCMD.INI.

In the descriptions below, ***filename*** means either the name of a file or of an appropriate device (**CON** for the keyboard and screen; **CLIP:** for the clipboard; **NUL** for the "null" device, etc.).

Here are the standard redirection options supported by ***TCC*** (see below for additional redirection options using numeric file handles):

- Input redirection
- Output redirection
- Special considerations for specific commands
- NoClobber
- Multiple redirections
- Creating an empty file
- Redirection by handle
- "Here-document" redirection
- "Here-string" redirection

Input redirection

`< filename` To get input from a file or device instead of from the keyboard.

Output redirection

	overwrite	*append*
standard output	`> filename`	`>> filename`
standard error	`>&> filename`	`>>&> filename`
merge standard output and standard error	`>& filename`	`>>& filename`

To use redirection, place the redirection symbol and ***filename*** at the end of the command line, after the command name and any parameters. For example, to redirect the output of the DIR command to a file called *DIRLIST*, you could use a command line like this:

```
dir /b *.dat > dirlist
```

You can use any combination of input and output redirection for the same command, as appropriate for your purpose. For example, this command sends input to the external program **SORT** from the file *DIRLIST*, and sends output from **SORT** to the file *DIRLIST.SRT*:

```
sort < dirlist > dirlist.srt
```

You can redirect text to or from the Windows clipboard by using the pseudo-device name **`CLIP:`** (the colon is required). Redirection to the clipboard is always done using UTF16 Unicode.

If you redirect the output of a single internal command like DIR, the redirection ends automatically when that command is done. If you start a batch file with redirection, all of the batch file's output is redirected, and redirection ends when the batch file is done. Similarly, if you use redirection after the closing parenthesis of a command group (e.g., ...) ***> report)***, all of the output from the command group is redirected, and redirection ends when the command group is done.

You can change the format of the redirected output. These options will override the UnicodeOutput and UTF8Output directives in TCMD.INI. Note: these options only work for redirecting output from TCC internal commands and batch files.

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`>:a`	Redirected output (STDOUT and/or STDERR) is ANSI (8 bit characters)
`>:u`	Redirected output is UTF16 Unicode
`>:8 or >:u8`	Redirected output is UTF8
`>>:a`	Appended redirected output (STDOUT and/or STDERR) is ANSI (8 bit characters)
`>>:u`	Appended redirected output is UTF16 Unicode
`>>:8 or >>:u8`	Appended redirected output is UTF8

Special considerations for specific commands

You cannot redirect all output from the execution of a DO loop due to the restriction that the DO command and its matching ENDDO may not be part of a command group.

To redirect the output of a TEXT command, append the redirection syntax to the TEXT command.

When you execute a FOR or GLOBAL command, redirection is separately performed for each iteration, based on the directory current for that iteration. This can result in repeated overwriting of the output file, or the creation of a separate output file in each directory. To generate a single, cumulative output file, use Command Grouping as in the example below:

```
( for /r %f in (*.btm) echo %@full[%f] ) > c:\temp\btmlst
```

NoClobber

When output is directed to a file with **>**, **>&**, or **>&>**, and that file already exists, it will be overwritten. You can protect existing files by using the SETDOS /N1 command, the **Protect redirected output files** setting on the Startup tab of the configuration dialogs, or the Protect redirected output file option.

When output is appended to a file with **>>**, **>>&**, or **>>&>**, the file will be created if it doesn't already exist. However, if the NoClobber mode is set as described above, append redirection will not create a new file; instead, if the output file does not exist a "File not found" or similar error will be displayed.

You can temporarily override the current setting of NoClobber by using an exclamation mark [**!**] after the redirection symbol. For example, to redirect the output of DIR to the file *DIROUT*, and allow overwriting of any existing file despite the NoClobber setting:

```
dir >! dirout
```

Multiple redirections

Redirection is fully nestable. For example, you can invoke a batch file and redirect all of its output to a file or device. Output redirection on a command within the batch file will take effect for that command only; when the command is completed, output will revert to the redirected output file or device in use for the batch file as a whole.

Creating an empty file

You can use redirection to create an empty (zero-byte) file. To do so, enter ***>filename*** as a command, with no actual command before the **>** character. If you have enabled Protect redirected output file, use ***>!filename***.

Redirection by handle

In addition to the redirection options above, ***TCC*** also supports the CMD syntax:

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n*>*file Redirect handle ***n*** to the named file
n*>&*m Redirect handle ***n*** to the same place as handle ***m***

Warning: You may not put any spaces between the ***n*** and the >, or between the >, **&**, and ***m*** in the second form. The values of ***n*** and ***m*** must be single decimal digits, and represent file handles. Windows defines **0**, **1**, and **2** as shown in the table below.

Handle	Assignment
0	standard input
1	standard output
2	standard error

The ***n*>*file*** syntax redirects output from handle ***n*** to ***file***. You can use this form to redirect two handles to different places. For example:

```
dir > outfile 2> errfile
```

sends normal output to a file called *OUTFILE* and any error messages to a file called *ERRFILE*.

The ***n*>&*m*** syntax redirects handle ***n*** to the same destination as the previously assigned handle ***m***. For example, to send standard error to the same file as standard output, you could use this command:

```
dir > outfile 2>&1
```

Notice that you can perform the same operations by using standard redirection features. The two examples above could be written as

```
dir > outfile >&> errfile
```

and

```
dir >& outfile
```

"Here-document" redirection

Wherever input redirection is supported, you can use a Linux-like "here-document" approach. The syntax is:

```
program << word
```

The current batch file is read up to the next occurrence of ***word***, and the resulting text becomes standard input to ***program***. For example:

```
c:\test\program.exe << endinput
input 1
input 2
input 3
endinput
echo This is the next line after "program.exe"
```

Special features of "here document":

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- If the << is followed by a hyphen (-), the leading white space on the following lines will be removed before passing them to ***program*** (i.e. they will be effectively left-justified).
- The parser will perform variable expansion on each line, unless the word following << is enclosed in double quotes.

"Here-string" redirection

The "here-string" lets you send string text directly to a program's input. The syntax is:

```
program <<< string
```

This is similar to using KEYSTACK, but easier to enter for text input. (If you need to send special keys or insert waits, you'll need to use KEYSTACK.) For example, to send a string to the standard input of program:

```
c:\test\program.exe <<< This is some input text.
```

4.8.1.2 Pipes

Piping is a special form of redirection, using an additional instance of ***TCC*** for each instance of the ***piping*** specified in the command line.

You can create a ***pipe*** to send the *standard output* of a command (***command1***) to the *standard input* of another command (***command2***), and optionally also send the *standard error* as well:

what is sent to pipe	command format
standard output only	***command1*** **|** ***command2***
merge standard output and standard error	***command1*** **|&** ***command2***

For example, to take the output of the ALIAS command (which displays a list of your aliases and their values) and pipe it to the external SORT utility to generate a sorted list, you would use the command:

```
alias | sort
```

To do the same thing and then pipe the sorted list to the internal VIEW command for viewing:

```
alias | sort | view /s
```

The TEE and Y commands are "pipe fittings" which add more flexibility to pipes.

TCC's output is normally in ANSI. If you want to redirect output in Unicode, you need to either use the /U startup option in ***TCC***, or the Unicode Output option in TCMD.INI.

Like redirection, pipes are fully nestable. For example, you can invoke a batch file and send all of its output to another command with a pipe. A pipe on a command within the batch file will take effect for that command only; when the command is completed, output will revert to the pipe in use for the batch file as a whole. You may also have 2 or more pipes operating simultaneously if, for example, you have the pipes running in different windows or processes.

Processing each line received from a pipe

To process each line of text sent by the left side of a pipe in ***TCC***, you may use the syntax below:

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```
dir | for %file in (@CON:) command %file
```

This example shows how to pass each line of piped data to a ***command***.

WARNINGS: ***TCC*** implements pipes by starting a new process for the receiving program. This process goes through the standard shell start-up procedure, including execution of the TCSTART file, for EACH receiving program. All of the sending and receiving programs run concurrently; the sending program writes to the pipe and the receiving program reads from the pipe. When the receiving program finds an End of File signal, it finishes reading and processing the piped data, and terminates. When you use pipes with ***TCC***, make sure you consider the possible consequences from using a separate process to run the receiving program, especially that it cannot create/modify/delete environment variables of the sending program, and inclusion of a command to change directories in the TCSTART file may cause the new process to execute in a different directory. When you use more than one pipe in a single command, e.g. the second example above with LIST, each pipe adds another instance of ***TCC***. If you need to execute the pipe in the same context, use in-process pipes (see below).

In-Process Pipes

In-process pipes work like the old-style DOS pipes, by creating a temporary output file, redirecting STDOUT to that file, and then redirecting the temp file to STDIN of the following command. The syntax is:

```
command1 |! command2
```

This the same as doing:

```
command1 > temp.dat & command2 < temp.dat
```

but is easier to type & to read.

The advantage of in-process pipes is that *command2* will be run in the same context as *command1*, so you can do things like modify environment variables without having them discarded when *command2* exits. There are also some disadvantages to using this type of "pseudo-pipe" -- it will usually be slower than a true pipe; it will use some disk space for its temp file; and *command2* will not be started until *command1* has exited.

ANSI, Unicode, and UTF-8 Output

You can change the format of output sent to a pipe. These options will override the UnicodeOutput and UTF8Output directives in TCMD.INI. The piped output options also work with in-process pipes (i.e., |!:u). Note: these options only work for redirecting output from TCC internal commands and batch files.

`|:a`	Piped output is ANSI
`|:u`	Piped output is UTF16 Unicode
`|:8 or I:u8`	Piped output is UTF8

4.8.2 ANSI X3.64 Support

There is no support for ANSI X3.64 in Windows. For this reason, ***TCC*** contains its own limited ANSI X3.64 support (key substitutions are not supported, nor are double-width or double-height characters, or blinking characters). ***TCC*** interprets only its own output, not the output of external commands. In some cases you can redirect the output of an application program to a temporary file, then send it through ***TCC*** ANSI X3.64 interpreter, e.g., by using the TYPE command. This will display ANSI X3.64 correctly, but will not work with an interactive application.

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To utilize the ***TCC*** built-in ANSI X3.64 support you must enable it from the Windows tab of the configuration dialogs, or with the SETDOS /A command. You can determine whether or not ANSI X3.64 support is enabled with the _ANSI internal variable.

Several commands in ***TCC*** provide alternatives for ANSI X3.64 commands. For example, there are commands to set the screen colors and display text in specific colors and locations. These commands are easier to understand and use than the ANSI X3.64 control sequences.

For information on the specific ANSI X3.64 commands supported by ***TCC*** see the ANSI X3.64 Command Reference.

4.8.3 Keystack

The KEYSTACK command overcomes two weaknesses of input redirection:

1) some programs ignore standard input and read the keyboard through Windows APIs, and

2) input redirection doesn't end until the program or command terminates. You can't, for example, use redirection to send the first few commands to a program and then type the rest of the commands yourself. But KEYSTACK lets you do exactly that.

KEYSTACK sends keystrokes to an application program. Once the KEYSTACK buffer is empty, the program will receive the rest of its input from the keyboard. KEYSTACK is useful when you want a program to take certain actions automatically when it starts. It is most often used in batch files and aliases.

To place the letters, digits, and punctuation marks you would normally type for your program into the KEYSTACK buffer, enclose them in double quotes:

```
keystack "myfile"
```

Many other keys can be entered into the Keystack using their names. This example puts the **F1** key followed by the **Enter** key in the KEYSTACK:

```
keystack F1 Enter
```

See Keys and Key names for details on how key names are entered. See the KEYSTACK command for information on using numeric key values along with or instead of key names, and other details about using the Keystack.

You must activate the window for the program that will receive the characters before you place them into the Keystack. See KEYSTACK for additional details; see ACTIVATE for information on activating a specific window.

4.8.4 Page and File Prompts

Page Prompts

Several ***TCC*** commands can generate prompts, which wait for you to press a key to view a new page or to perform a file activity. When ***TCC*** is displaying information in page mode, for example with a DIR /P or SET /P command, it displays the message

```
Press ESC to quit, A to turn off paging or another key to continue...
```

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At this prompt, you can press **Esc**, **Ctrl-C**, or **Ctrl- Break** if you want to quit the command. Pressing **A** will turn off the pause and prompt at the end of each page, and continue with the command. You can press almost any other key to continue with the command and see the next page of information.

File Prompts

During file processing, if you have activated prompting with a command such as DEL /P, you will see a prompt similar to the following before processing every file:

```
Y/N/A/R?
```

You can answer this prompt by pressing

Y	Yes	process this file
N	No	do not process this file
A	All	remaining files without further prompting
R	Remaining	files without further prompting

The **R** and **A** responses are equivalent; **A** was added for compatibility with CMD versions which display a **Yes/No/All** prompt . You can also press **Esc**, **Ctrl-C**, or **Ctrl-Break** at this prompt to cancel the remainder of the command.

If you press **Ctrl-C** or **Ctrl-Break** while a batch file is running, you will see a **Cancel batch job** prompt. For information on responses to this prompt see Interrupting a Batch File.

4.9 Configuration

TCC offers a wide range of configuration options, allowing you to customize their operation for your needs and preferences. The ***TCC*** OPTION command invokes the TCC Configuration Dialog.

We also discuss many ways of configuring ***TCC*** in other parts of the online help:

- With aliases and user-defined functions you can set default options for internal commands and create new commands (see Aliases and the ALIAS and FUNCTION commands).
- With executable extensions you can associate data files with the applications you use to open them.
- With the FILECOMPLETION environment variable or the Filename Completion Options configuration option, you can customize filename completion to match the command you are working with.
- With the COLORDIR environment variable or the Directory Colors configuration option you can set the colors used by the DIR command.
- With command line options you can specify where ***TCC*** looks for its startup files and how it operates for a specific instance.

4.9.1 Configuration Dialog

This dialog, available via the OPTION command, contains several "pages" or "tabs" of options that let you change the way ***TCC*** looks and works.

The configuration dialog displays the name of the active *TCMD.INI* file in the title bar.

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Unless you select the **Cancel** button, any changes you make will take effect immediately. If you select **Apply**, the settings will only apply for the duration of that session. If you select **OK**, the settings will be recorded in the appropriate main section (**[4NT]**) of the TCMD.INI file and will be in effect each time you start that command processor. If you want to set configuration directives in the **[Primary]** or **[Secondary]** sections of the *.INI* file, you must edit the file directly instead of using the dialog. Similarly, if you modified directives that originally resided in a separate included INI file, new directives will be saved to the main *.INI* file but the included file itself will not be altered. It would be wise to verify that no "old" directive in included files override the changes you made into the main file.

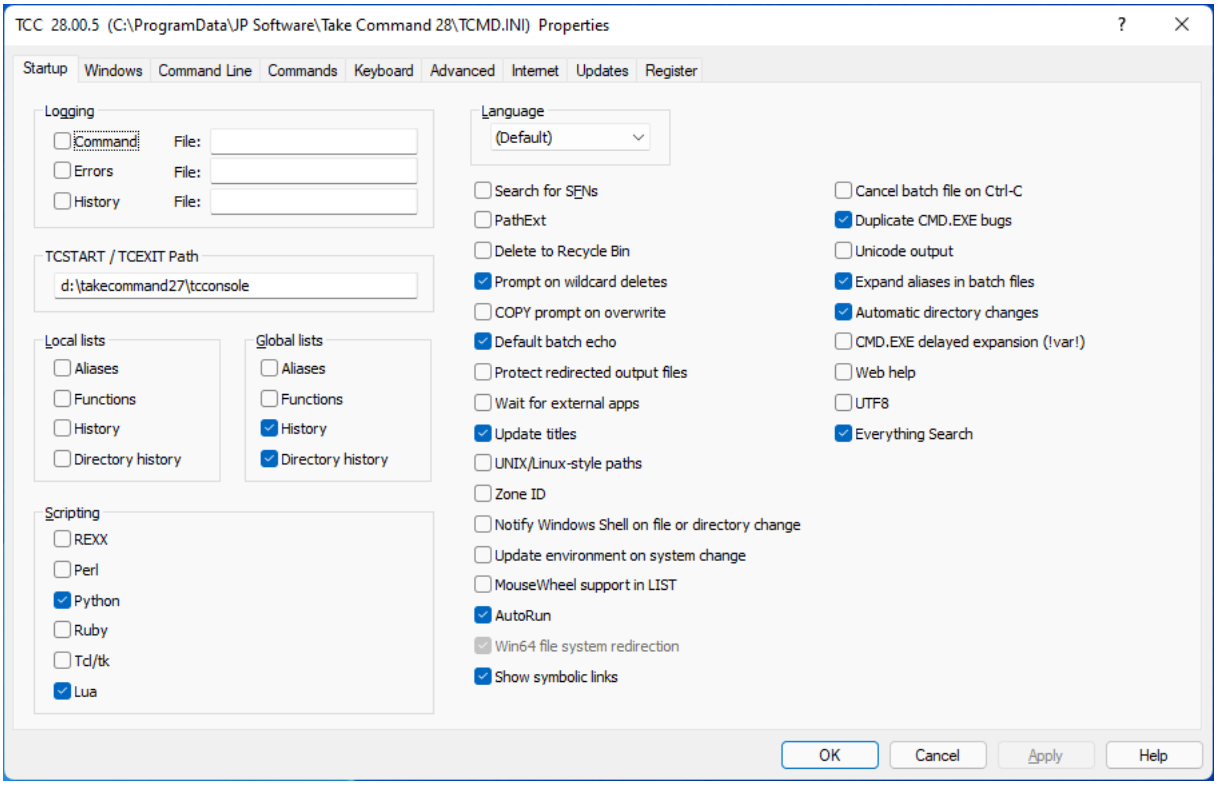
For details about the *.INI* file and *.INI* file directives, the allowable ranges for each, and the effect of each, see Initialization (.INI) Files and Directives.

While you are using the dialog, you can move between sets of configuration options by clicking on the individual tabs. The options available in this dialog are:

Startup
Windows
Command Line
Commands
Keyboard
Advanced
Internet
Updates
Register

4.9.1.1 Startup

If you are not familiar with the purpose or use of the Startup configuration dialog, review the main configuration dialogs topic before continuing.



Logging:

Command : Save internal and external commands (after alias and variable expansion) executed either from the command prompt or a batch file to the log file. See LOG for more details.

Errors : Save error messages to the log file. If you enter a file name in the File field, that file will be used for error logging. See LOG for more details.

History : Save each command executed from the command prompt exactly as it was entered (before aliases and variable expansion) to the log file. If you enter a file name in the File field, that file will be used for history logging. See LOG for more details.

TCSTART / TCEXIT:

You can set the path to your TCSTART / TCEXIT files if they aren't in the same directory as ***Take Command***.

Local Lists:

Local Aliases instructs ***TCC*** to use a local alias list.

Local Functions instructs ***TCC*** to use a local function list.

Local History instructs ***TCC*** to use a local command history list.

Local Directory History instructs ***TCC*** to use a local directory history list.

Global Lists:

Global Aliases instructs ***TCC*** to use a global alias list.

Global Functions instructs ***TCC*** to use a global function list.

Global History instructs ***TCC*** to use a global command history list.

Global Directory History instructs ***TCC*** to use a global directory history list.

Scripting:

REXX : Enable the internal REXX support (Regina or Open Object REXX).

Perl : Enable the internal Perl (ActiveState) support.

Python : Enable the internal Python (ActivePython 2.6 - 3.6) support.

Ruby : Enable the internal Ruby (1.8 or 1.9) support.

Tcl : Enable the internal Tcl (8.6) support.

Note : you must restart the ***TCC*** tab window for the **REXX**, **Perl**, **Python, Ruby,** and **Tcl** options to take effect.

Language:

The **Language** combo box allows you to override the default language that ***Take Command*** uses for menus and dialogs.

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Search for SFNs : If enabled, filename searches will search for both long filenames and short filenames. See LFN File Searches for details.

PathExt : Determines whether ***TCC*** will use the PATHEXT environment variable. If disabled, the PATHEXT variable is ignored. If enabled, the PATHEXT variable will be used to determine extensions to look for when searching the PATH for an executable file. For details, see the PATHEXT variable and the PATH command. If you enable **PathExt** and then fail to set the PATHEXT variable, path searches will fail as there will be no extensions for which to search!

Delete to Recycle Bin : If enabled, files deleted by the DEL / ERASE commands and by RD /S are placed in the Windows Recycle Bin. If disabled, the files are deleted without being placed in the Recycle Bin. DEL's and RD's /K and /R switches allow you to override this setting for individual commands. The RecycleExclude environment variable can be used to exclude specific files.

Prompt on Wildcard Deletes : Enable the confirmation prompt from DEL /Q when doing a wildcard-only or directory deletion. Use caution if you disable this option, as this will allow DEL /Q to delete an entire directory without prompting for confirmation. See DEL for additional details.

Copy Prompt on Overwrite : If enabled COPY and MOVE will prompt before overwriting an existing file if the command is being performed at the command prompt. (This duplicates the behavior of the current version of CMD.)

Default Batch Echo : Set the default batch echo mode. If enabled, all batch file commands are echoed unless ECHO is explicitly set off in the batch file. If disabled, no batch file commands are echoed unless ECHO is explicitly set on. See also: SETDOS /V.

Protect Redirected Output Files : If enabled, standard output redirection will be prevented from overwriting an existing file, and will require that the output file already exist for append redirection. (You can override this option by adding the exclamation point to the output redirection symbol; i.e. **>!**.) See also: SETDOS /N.

Wait for External Apps : Determines whether ***TCC*** waits for an external program started from the command line to complete before redisplaying the prompt. See Waiting for Applications to Finish for details on the effects of this option.

Update Titles : ***Take Command*** normally changes the window titles to include the command or batch file name each time a new command is executed. If you prefer a static title bar which does not change with each command, disable this option.

UNIX/Linux-style Paths : Enables the forward slash as a path separator in the command name (the first item on the command line). Note that setting UnixPaths to Yes does not change the switch character, it simply allows you to put forward slashes in the command name. When this option is enabled, command switches beginning with a forward slash must be preceded by a space to avoid confusion (this is a good general practice).

Zone ID : Set the NTFS Zone ID security when running executables downloaded from the Internet. (Note that CMD never checks for the Zone ID, so setting it may introduce a minor incompatibility.)

Notify Windows Shell on File or Directory Change : Notify the system shell when changing files or directories. The shell notification is done by the ASSOC, COPY, DEL, MD, MOVE, and RD commands. Note that setting this option could introduce a slight incompatibility with CMD, which doesn't notify the system shell about anything.

Update Environment on System Change : If enabled, ***TCC*** will monitor the WM_SETTINGCHANGE message and if the environment is specified, update the environment from the User, Volatile, and

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System registry entries. The updates are done whenever ***TCC*** displays a prompt (to prevent the environment from changing in the middle of a batch file). Unless you have a specific need for this option it's better not to enable it, as it can result in variables set by ***TCC***'s parent process being destroyed.

MouseWheel Support in LIST : Set mouse wheel support in LIST. Disable this option if you experience incompatibilities with other applications.

AutoRun : If enabled when a ***TCC*** tabbed window starts, execute the AutoRun registry variables (HKEY_LOCAL_MACHINE\Software\Microsoft\Command Processor\AutoRun and/or HKEY_CURRENT_USER\Software\Microsoft\Command Processor\AutoRun).

Win64 File System Redirection : If disabled, overrides the default Win64 behavior of remapping *windows\system32* calls to *windows\SysWOW64*.

Show Symbolic Links : Displays the symbolic link in DIR or PDIR.

Cancel Batch File on Ctrl-C : Cancel batch file processing without the usual prompt when you press Control-C.

Duplicate CMD bugs : Tells the ***TCC*** parser to duplicate bugs in CMD. The only bugs currently replicated are in the FOR and IF commands.

Unicode Output : The ***TCC*** output files (such as redirected output) will be written in Unicode format.

Expand Aliases in Batch Files : If disabled, ***TCC*** won't try to expand command aliases when in a batch file. (Directory aliases will still be expanded.)

Automatic Directory Changes : If enabled, ***TCC*** will change directories when a directory name with a trailing \ is the only argument on the command line.

CMD delayed variable expansion (!var!) : If enabled, ***TCC*** will emulate the peculiar CMD **!var!** expansion.

Web Help : If enabled, ***TCC*** will use the browser-based help (at https://jpsoft.com/help/index.htm) instead of the local help. Using web help allows you to add comments to the help topics.

UTF8: If enabled, ***TCC*** will check (non UTF-16) files to see if they are in UTF-8 format (i.e., for UTF-8 batch files, SET /R, @LINE, etc.). ***TCC*** (and Windows) are UTF-16 internally, so ***TCC*** will convert UTF-8 characters to their UTF-16 equivalents before processing the line. ***TCC*** will first check the BOM to see if it is UTF-8; if not ***TCC*** will examine the beginning of the batch file looking for valid UTF-8 characters. If the file is very small or has very few (<4) UTF-8 characters, ***TCC*** will assume the file is ASCII. Because of the possibility of erroneously identifying a file with extended ASCII characters as UTF-8, this option is disabled by default. We recommend you do not enable it unless you know you need to read UTF-8 files.

Everything Search : If enabled, ***TCC*** will use Everything Search (see EVERYTHING) for fuzzy directory searches.

4.9.1.2 Windows

If you are not familiar with the purpose or use of the Windows configuration dialog, review the main configuration dialogs topic before continuing.

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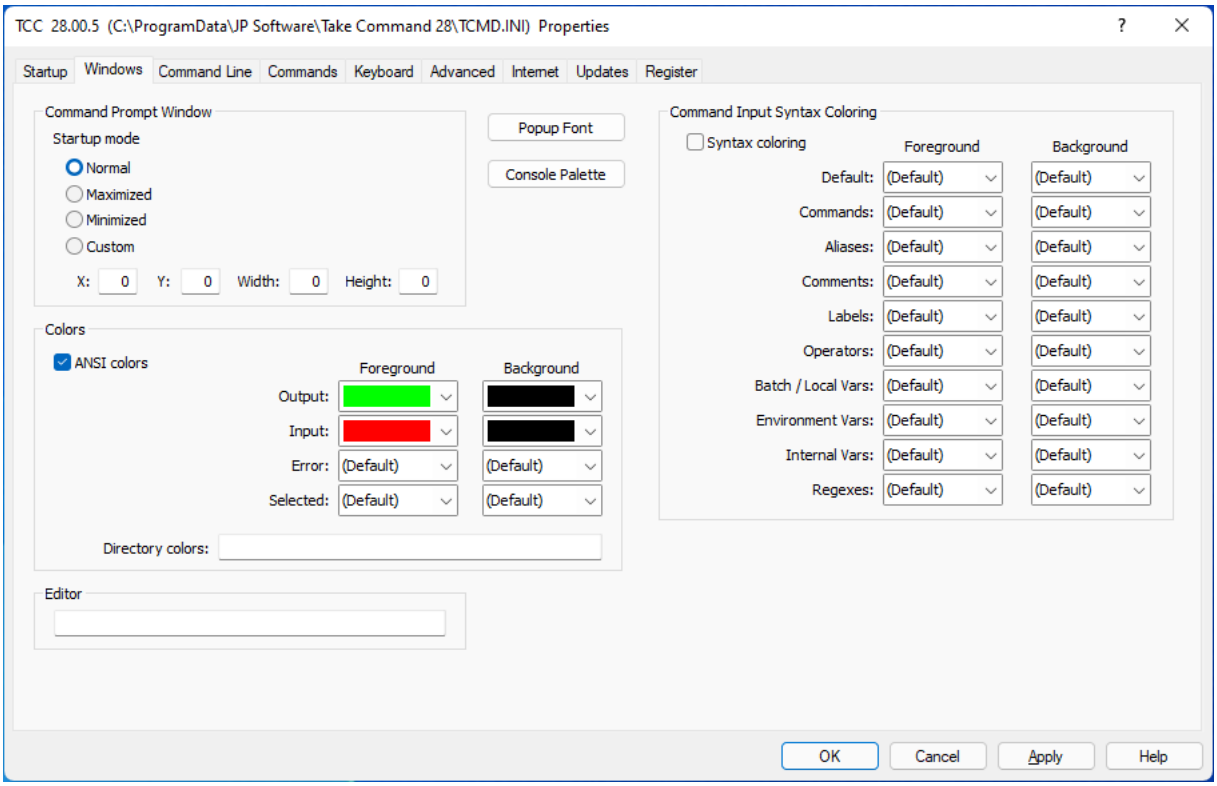

Command Prompt Window

(These options are only used when ***TCC*** is not running in a ***Take Command*** tab window.)

The **Normal**, **Max**, **Min**, and **Custom** buttons select the initial state for the ***TCC*** window.

The **X**, **Y**, **Width**, and **Height** fields set the initial size and position of the ***TCC*** window. They are ignored unless the **Custom** button is also selected.

Colors:

ANSI Colors : Enable ANSI X3.64 string processing of the output of Take Command internal commands. Note that ANSI X3.64 processing of the output of external applications is not supported. See the ANSI X3.64 Commands Reference for a list of the ANSI X3.64 commands supported by ***TCC***.

Colors : Select foreground and background colors for input, output, and error messages.

Directory Colors : Sets the directory colors used by DIR and SELECT. The format is the same as that used for the COLORDIR environment variable. See Color-Coded Directories for a detailed explanation.

Editor:

Editor : The pathname of the editing program to run from LIST if there is no Windows "edit" association for the extension. (The default is NOTEPAD.EXE.)

Pop-Up Font:

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Set the font to use in the command history, directory history, filename completion, and fuzzy directory searching popup windows.

Console Palette:

Defines a custom color palette, not restricted to the standard console window 16 colors. This will **not** work when running ***TCC*** in a ***Take Command*** tab window due to a Windows API bug. (But you can define custom palettes in ***Take Command*** for tab windows.)

Syntax Coloring:

TCC supports syntax coloring on the command line (similar to the syntax coloring in the IDE / batch debugger). You set the option and the colors to use in the OPTION / Windows dialog. You can define both foreground and background using any of the 16 Windows console colors. TCC will colorize:

- Default - any text that doesn't match a syntax option
- Commands - internal TCC commands
- Aliases - command aliases defined with the TCC ALIAS command.
- Comments - lines beginning with **rem** or **::**
- Labels - labels for a GOTO or GOSUB
- Operators - | < > && || etc.
- Batch / Local Vars - %1 - %n, %*, %~... etc.
- Environment Vars - environment variables
- Internal Vars - internal TCC variables and variable functions
- Regexes - regular expressions

4.9.1.3 Command Line

If you are not familiar with the purpose or use of the Command Line configuration dialog, review the main configuration dialogs topic before continuing.

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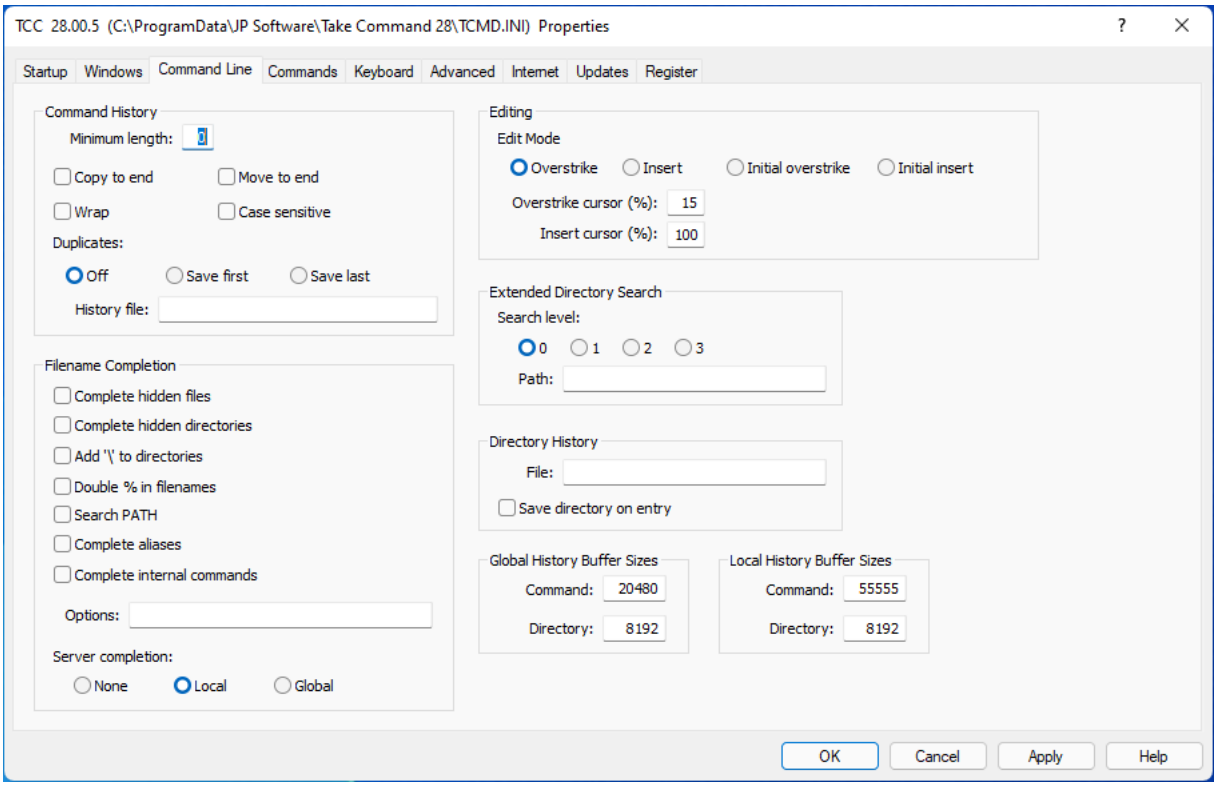

Command History:

Minimum Length : Set the minimum command line size to save in the command history list. Any command line whose length is less than this value will not be saved. Legal values range from 0, which saves everything, to 8192. You can prevent any command line from being saved in the history by beginning it with an "at" sign ("@"). See also the HISTORY command.

Copy to end : This option controls what happens when you re-execute a line from the command history. If this option is set, the line is appended to the end of the history list. The original copy of the command is always retained at its original position in the list. If this option is set, it will override **Move to End**.

Move to end : If enabled, a recalled line will be moved to the end of the command history. The difference between this directive and **Copy to end** is that **Copy to end** copies each recalled line to the end of the history but leaves the original in place. **Move to end** copies the line to the end of history and removes the original line. This directive has no effect if **Copy to end** is set.

Wrap : If enabled, the command history "wraps" when you reach the top or bottom of the list (so the list appears "circular"). If this option is disabled, history recall will stop (and beep) at the beginning and end of the list rather than wrapping.

Case Sensitive : If enabled, the command history comparisons will be case sensitive.

Duplicates : Controls duplicate entry placement in the history list.

Off	Always add new entries
Save First	Add new entry only if it does not match any old entries
Save Last	Add new entry unconditionally, and delete matching older entries

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History File : Load the specified history list file before running TCSTART, and save the command history to the file after running TCEXIT. You should include the full pathname.

Filename Completion:

Complete hidden files : If enabled, hidden and system files will be displayed by filename completion.

Complete hidden directories : If enabled, hidden directories will be displayed by filename completion. CDD /S will also index hidden directories if this option is set.

Add '\' to Directories : If enabled, a \ (backslash) is automatically appended to directory names (or **/** to FTP directories) in filename completion.

Double % in filename : If enabled, and the filename has embedded % characters, and the first argument on the command line is an internal command, the % characters will be doubled so that variable expansion won't delete (or unexpectedly expand) the filename. (This will not affect filenames on lines beginning with aliases or variables.)

Search PATH : If enabled, the directories in the PATH variable are searched if a match isn't found in the current directory.

Complete Aliases : If enabled, ***TCC*** will tab complete alias names at the command line.

Complete Internal Commands : If YES, ***TCC*** will tab complete internal command names at the command line.

Options : Sets the files returned during filename completion for selected commands. The format is the same as that used for the FILECOMPLETION environment variable. Note that specifying any options for a command here will override the default filename completion options (such as complete hidden files & directories). See Customizing Filename Completion for a detailed explanation of selective filename completion.

Server Completion : Configures server name completion (see Filename Completion for information on how to use server name completion). **Local** lists only local servers (i.e., those in your "network neighborhood"). **Global** will enumerate the entire network. **None** will disable server completion; this may be necessary to prevent "hanging" if you start typing a server name and accidentally press Tab, and your local domain is very large or slow to respond.

Editing:

Edit Mode : Starts the command line editor in either **Insert** or **Overstrike** mode. If you specify **Initial Overstrike** or **Initial Insert**, the command line editor will start in the specified state, but if you toggle insert mode while editing a line, the editor will continue to use the new mode on subsequent lines. See also: SETDOS /M.

Overstrike Cursor : The shape of the cursor for insert mode during command line editing, and all commands which accept line input (DESCRIBE, ESET, etc.). The size is a percentage of the total character cell size, between 0% and 100%. Because of the way video drivers map the cursor shape, you may not get a smooth progression in cursor shapes as **Insert Cursor** and **Overstrike Cursor** change. If you set **Insert Cursor** and **Overstrike Cursor** to -1, the cursor shape won't be modified at all. If you set them to 0, the cursor will be invisible. See also: SETDOS /S.

Insert Cursor : The shape of the cursor for overstrike mode during command line editing and all commands which accept line input. The size is a percentage of the total character cell size, between 0% and 100%. See also: **Overstrike Cursor** (above) and SETDOS /S.

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Extended Directory Search:

Search Level : Configure extended directory searches. **0** disables extended searches. For complete details on the meaning of the other settings see Extended Directory Searches.

Path : The path to *JPSTREE.IDX*, the file used for the extended directory search database.

Directory History :

File : Load the specified directory history list file before running TCSTART, and save the directory history to the file after running TCEXIT.

Save Directory on Entry: ***TCC*** normally saves the previous directory to the directory history when you change to a new directory. This option saves the new directory to the directory history when you change directories.

History Buffer Sizes

Command History : Set the amount of memory allocated to the command history list (in characters). The allowable range of values is from 4,000 to 500,000. If you use a global history list, this value is ignored in all sessions except that which first establishes the global list. (To change the size, you will need to close all of the ***TCC*** windows, and any SHRALIAS session.)

Directory History : Set the amount of memory allocated to the directory history list (in characters). The allowable range is 1,000 to 50,000. If you use a global directory history list, this value is ignored in all sessions except that which first establishes the global list. (To change the size, you will need to close all of the ***TCC*** windows, and SHRALIAS session.)

4.9.1.4 Commands

The "Commands" dialog lets you define which ***TCC*** internal commands you want to enable and disable.

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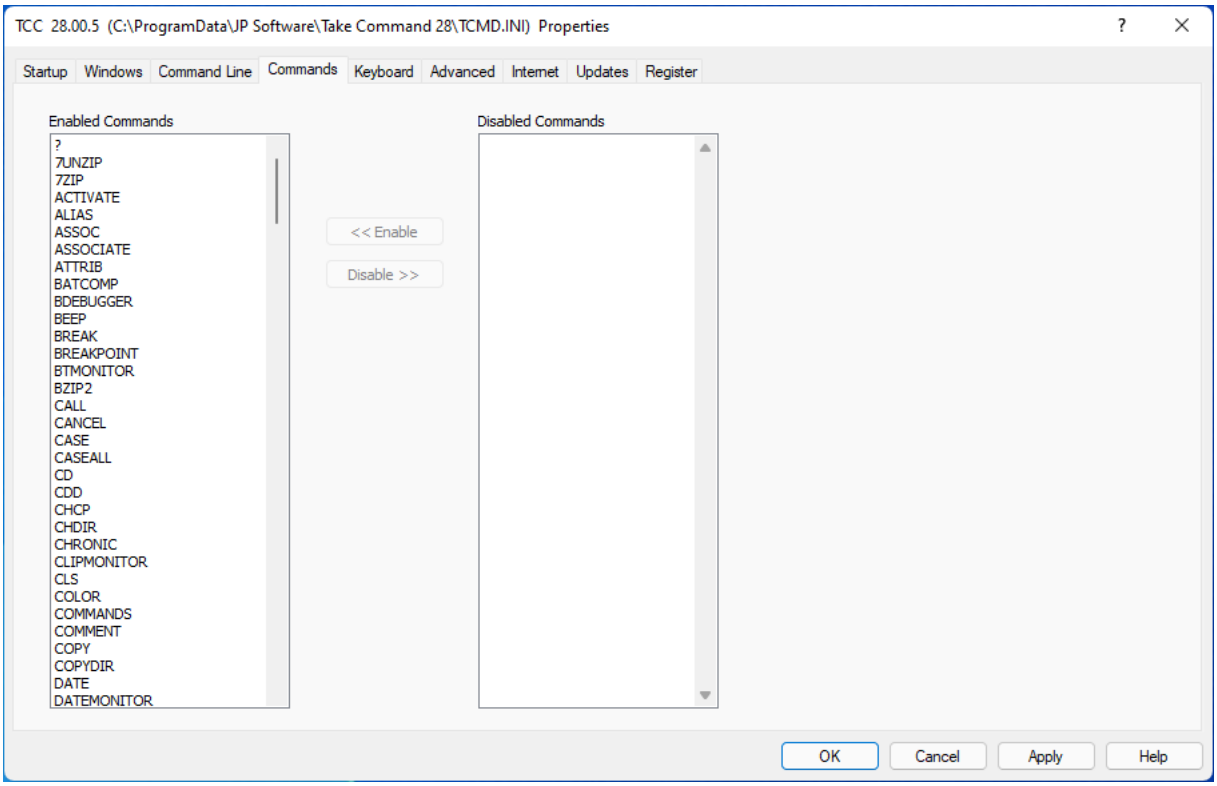
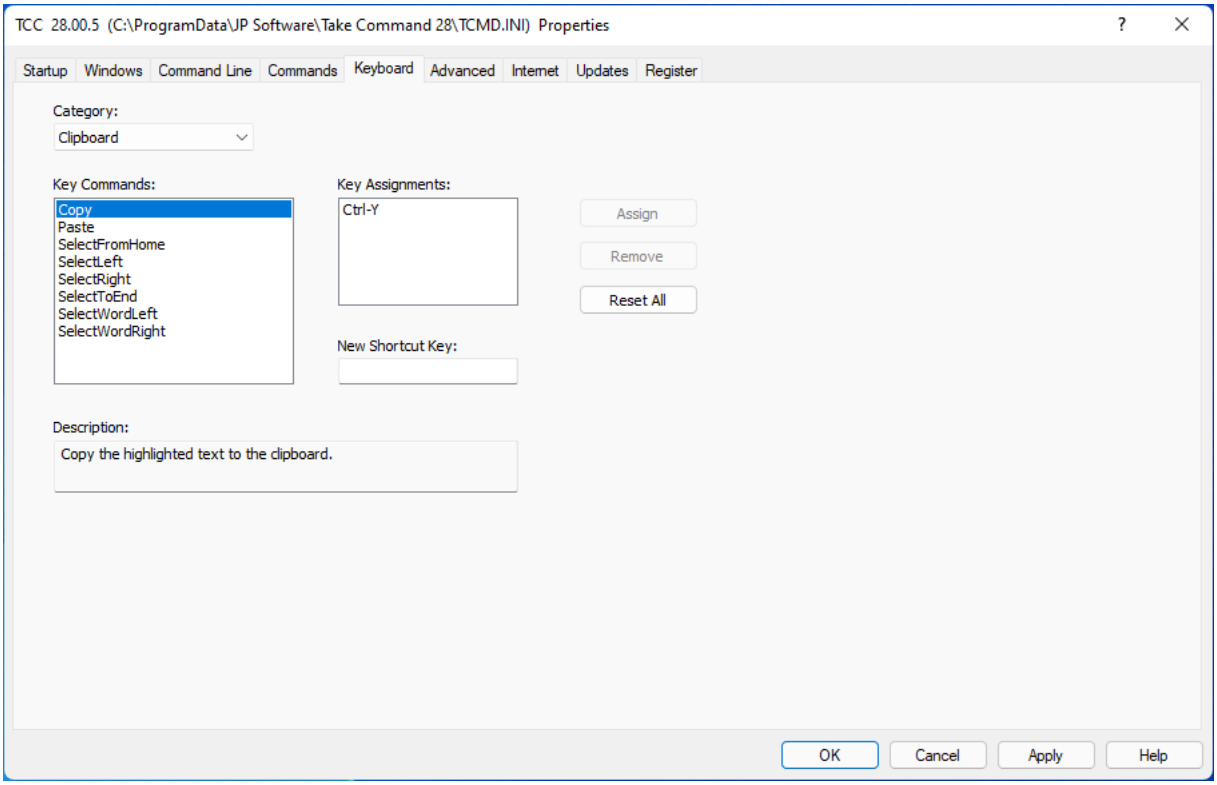


4.9.1.5 Keyboard

The "Keyboard" dialog lets you redefine the ***TCC*** command line editing keys.

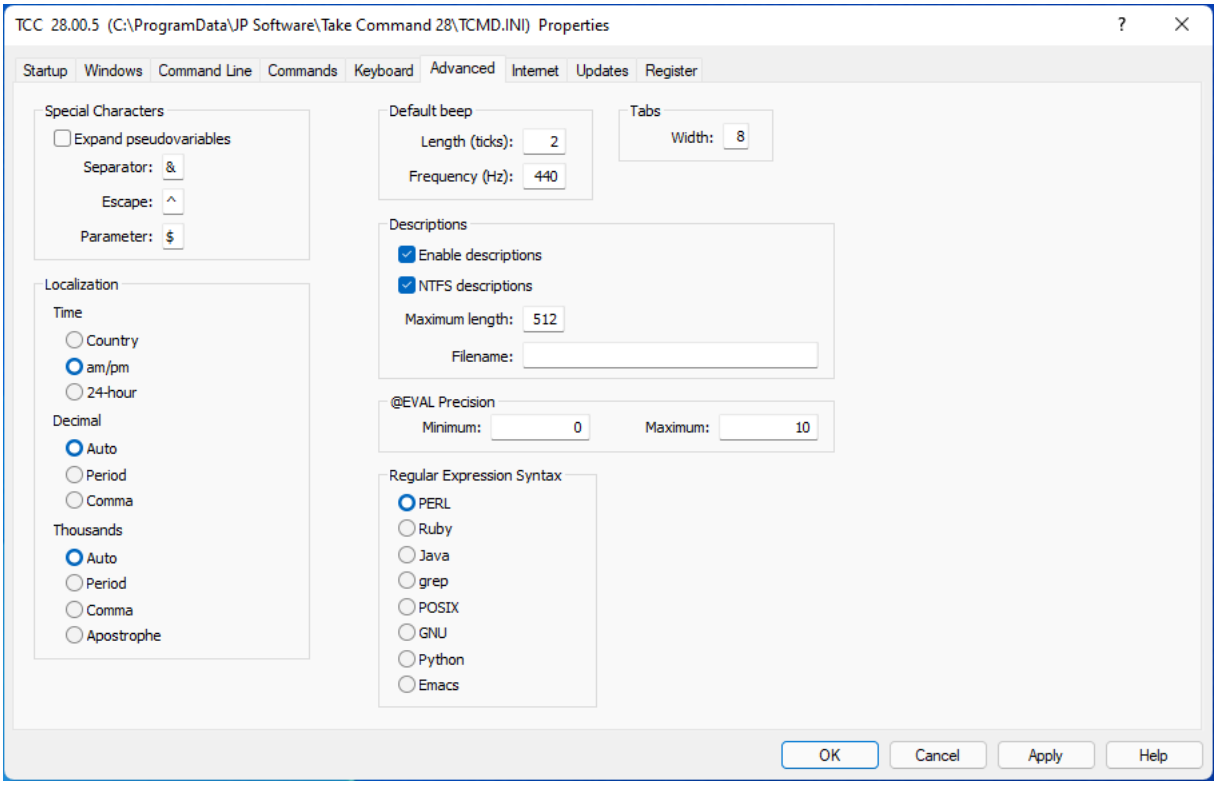


Select the category and the key command you want to modify, then click on the "New Shortcut Key" edit control and press the key combination you want. ***TCC*** will interpret the keys and display the assignment name. Then press the Assign button to add it to the Key Assignments list.

You can define multiple key combinations for a key command.

4.9.1.6 Advanced

If you are not familiar with the purpose or use of the Advanced configuration dialog, review the main configuration dialogs topic before continuing.



Special Characters:

Separator : The character used to separate multiple commands on the same line. The default is an ampersand (**&**). It can be dynamically modified by the /C option of the SETDOS command. You cannot use any of the redirection characters (| > <) or any of the white space characters (space, tab, comma, or equal sign).

Escape : The character used to suppress the normal meaning of the following character. The default is a caret (**^**). See Escape Character for a description of the special escape sequences. You cannot use any of the redirection characters (|, >, or <) or the white space characters (space, tab, comma, or equal sign) as the escape character. See also: SETDOS /E.

Parameter : The character used after a percent sign to specify all or all remaining command line parameters in a batch file or alias (e.g., **%$** or **%n$**; see Batch File Parameters and ALIAS). The default is the dollar sign [**$**]. See also: SETDOS /P.

Localization:

Time : The format of time displays in the output of the DATE, DIR, SELECT, TIME and TIMER commands, and in LOG files. It has no effect on %_TIME, %@MAKETIME, the **$t** and **$T** options of PROMPT, or date and time ranges.

Country	Formats the time according to the country code set for your system.
am/pm	Displays the time in 12-hour format with a trailing "a" for AM or "p" for PM.
24-hour	Display **the time** in 24-hour time format.

Decimal : Sets the character used as the decimal separator for @EVAL, numeric IF and IFF tests, version numbers, and other similar uses. The only valid settings are period [**.**], comma [**,**], and **Auto** (the default). A setting of **Auto** tells ***TCC*** to use the decimal separator associated with your current country code. If you change the decimal character you will need to adjust the thousands character so that the two characters are different. See also: SETDOS /G.

Thousands : Sets the character used as the thousands separator for numeric output. The only valid settings are period [**.**], comma [**,**], and **Auto** (the default). **Auto** tells ***TCC*** to use the thousands separator associated with your current country code. If you change the thousands character you will need to adjust the decimal character so that the two characters are different. See also: SETDOS /G.

Default Beep:

Length : The default BEEP length in system clock ticks (approximately 1/18 of a second per tick). Also the default length for "error" beeps (for example, if you press an illegal key).

Frequency : The default frequency (in Hz) for the BEEP command. This is also the frequency for "error" beeps (for example, if you press an illegal key). To disable all error beeps set the frequency to 0. If you do, the BEEP command will still be operable, but will not produce sound unless you explicitly specify the frequency and duration.

You can play a system sound on an error by setting Length to 0 and Frequency to the desired sound:

0	Windows default ("OK") beep sound
16	Windows Critical Stop ("Hand") sound
32	Windows Question sound
48	Windows Exclamation sound
64	Windows Asterisk sound

Tabs:

Tabs : Sets the tab stops for LIST output. The allowable range is 1 to 32.

Descriptions:

Enable Descriptions : Set description handling for the file processing commands (COPY, DEL, MOVE, REN, etc.). If disabled, ***TCC*** will not update the description file when files are moved, copied, deleted or renamed. See also: SETDOS /D.

NTFS Descriptions : If set, ***TCC*** uses the Comments field in the NTFS SummaryInformation stream for each file to hold its description, instead of the *DESCRIPT.ION* file. The advantages are that the description will always remain with the file regardless of what program copies, moves, or renames it. The disadvantage is that you cannot attach a description to directories.

Maximum Length : Set the description length limit for DESCRIBE. The allowable range is 20 to 511 characters.

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Filename : Sets the file name in which to store file descriptions. The default file name is DESCRIPT.ION. See also: SETDOS /D.

@EVAL Precision

Minimum : The minimum number of digits after the decimal point in values displayed by @EVAL. The allowable range is 0 to 1000. This directive will be ignored if **Minimum** is larger than **Maximum**. You can override this setting with the construct @EVAL[expression=n,n]. See also: SETDOS /F.

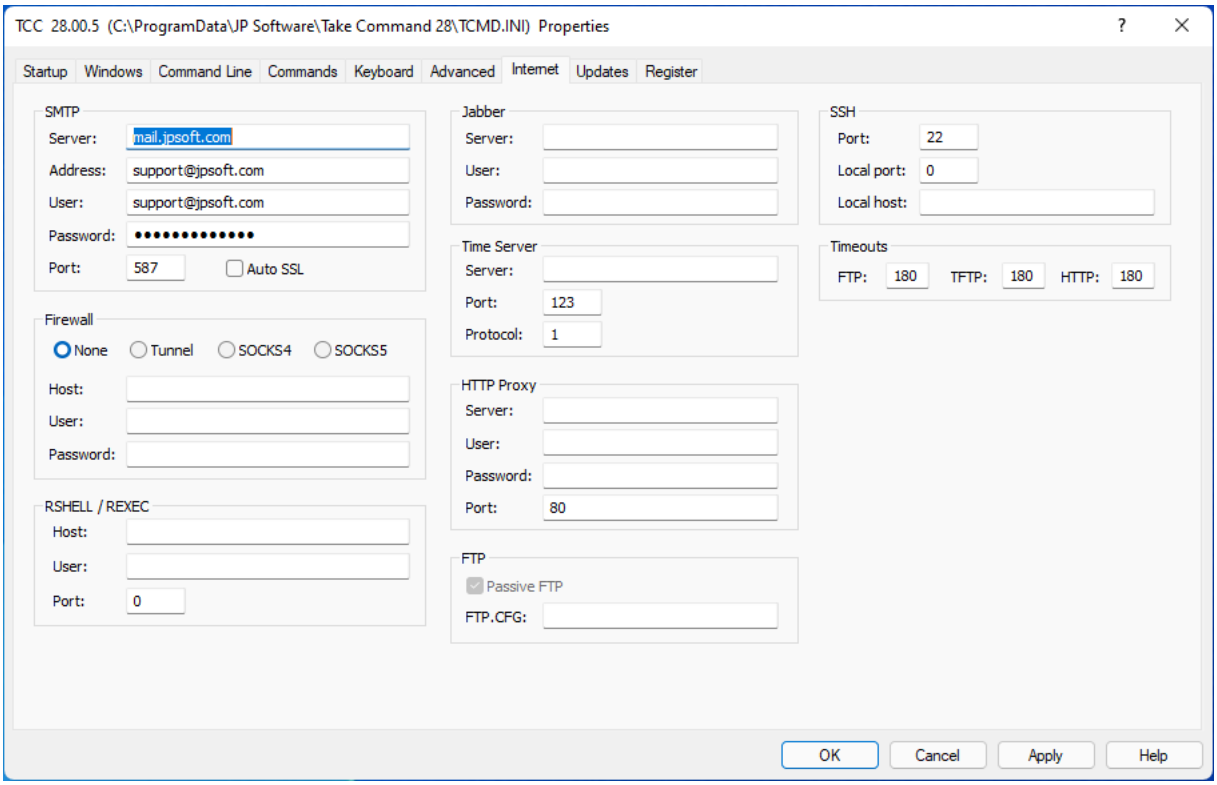
Maximum : The maximum number of digits after the decimal point in values displayed by @EVAL. You can override this setting with the construct @EVAL[expression=n,n]. The allowable range is 0 to 1000; if you use the "=n,n" syntax the maximum is 10,000. See also: SETDOS /F.

Regular Expression Syntax

Sets the type of regular expression syntax to use.

4.9.1.7 Internet

If you are not familiar with the purpose or use of the Internet configuration dialog, review the main configuration dialogs topic before continuing.



SMTP:

Server : The SMTP server name to use in SENDMAIL and SENDHTML for outgoing mail. (If not set, ***TCC*** will attempt to get the address from the registry.)

Address : The email address to use in SENDMAIL and SENDHTML for outgoing mail. (If not set, ***TCC*** will attempt to get the current user's email address from the registry.)

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User : The email username (if your SMTP server requires it for authentication).

Password : The email password of the user (if your SMTP server requires it for authentication).

Port : The SMTP port number for use by SENDMAIL and SENDHTML. (The default port number is 25).

Auto SSL : If checked, SENDMAIL and SENDHTML will use Auto SSL negotiation. If the remote port is set to the standard plaintext port, ***TCC*** will use Explicit mode. In all other cases, SSL negotiation will be implicit.

Firewall:

Type : The type of firewall in use on your network.

Host : The server name of the firewall (if any) for FTP and HTTP access.

User : The user name if the firewall requires authentication.

Password : The password if the firewall requires authentication.

RSHELL / REXEC:

Host : The name of the local host or user-assigned IP interface through which connections are initiated or accepted (for REXEC and RSHELL).

User : The name of the user on the local machine (for RSHELL).

Port : The port number (or communication endpoint) in the local machine to bind to for REXEC and RSHELL.

Timeouts:

Set the timeout (inactivity) period in seconds for FTP, TFTP, and HTTP operations.

JABBER:

Server is the JABBER server to log into.

User : The default user name for logging onto a Jabber server and sending IM's via the JABBER command.

Password : The logon password for the default Jabber user.

Time Server:

Time Server : The URL for the internet time server for TIME /S. If no server is specified, TIME uses clock.psu.edu.

HTTP Proxy:

Server : The proxy server address to use for HTTP calls

User : The user name if Basic authentication is to be used for the HTTP proxy.

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Password : The user password if Basic authentication is to be used for the HTTP proxy.

Port : The proxy port number to use for HTTP calls.

FTP:

Passive FTP : Set passive mode for FTP calls (sometimes required by a firewall).

FTP.CFG : Specify the location and name of the file containing the FTP user names and passwords, and optionally the directory format for non-standard FTP servers. The default is FTP.CFG in the ***Take Command*** installation directory. See Using FTP/HTTP Servers for details.

SSH:

SSHPort : The port on the SSH server where the SSH service is running (default is 22).

SSHLocalPort : The TCP port in the local host where IPPort binds.

SSHLocalHost : The name of the local host or user-assigned IP interface through which connections are initiated or accepted.

4.9.1.8 Updates

The **Check for Updates** button queries the JP Software web server to see if there is an updated version of ***Take Command / TCC*** available. If there is, the new version information will be displayed and you can choose to download and automatically update your existing version.

4.9.1.9 Register

There are no separate **trial** and **registered** versions of ***Take Command.*** Without registration, a trial version is fully functional for 30 days of use.

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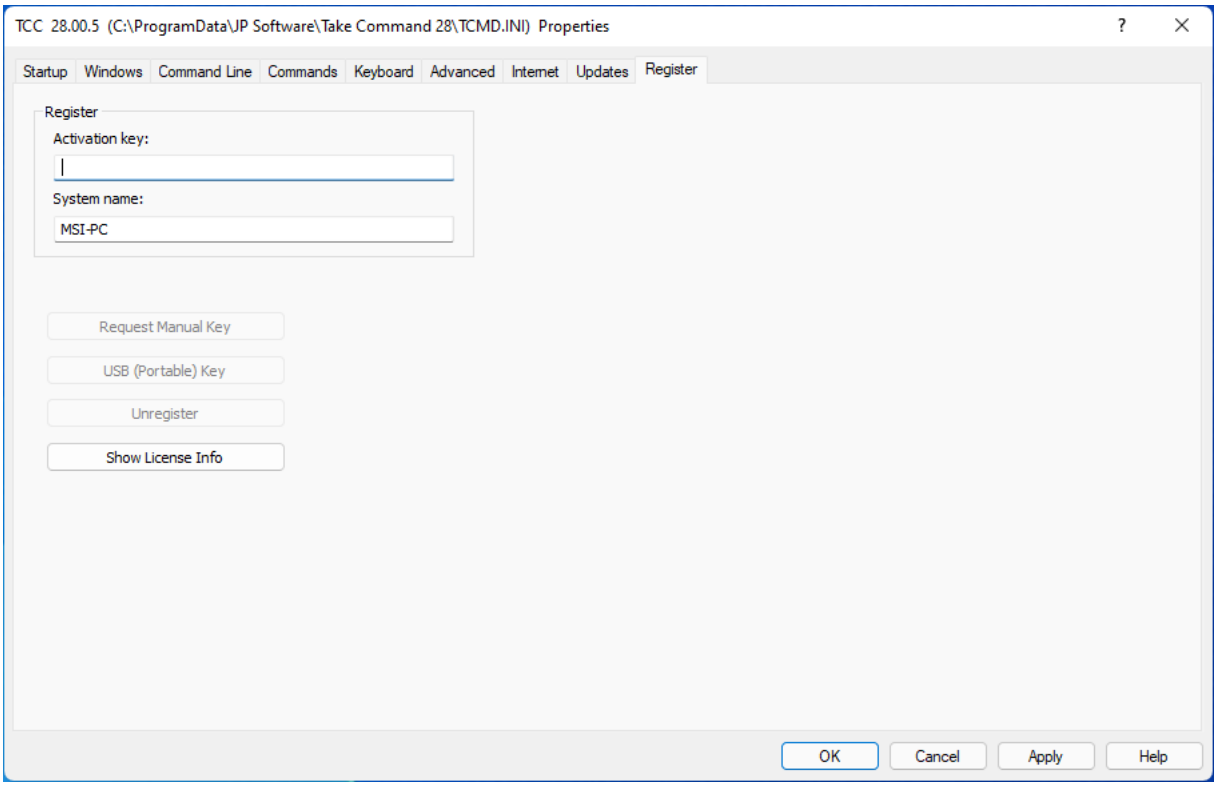

At any time you can apply your current personal registration information to a trial version in order to turn it into a registered product. Use the command VER /R from the ***TCC*** prompt to verify the status of the copy you are currently running. You can also view the Help/About menu entry in ***Take Command***.

When you purchase a new or upgrade copy of ***Take Command***, you will receive an email with your name and registration key. Start ***Take Command***, click on the **Options** menu entry and then **Configure Take Command**. Select the **Register** tab and enter the registration information exactly as you received it in the email. Remember to save your registration key in a safe place in case you need to reinstall. If you have lost your registration key, you can request a replacement by contacting JP Software at operations@jpsoft.com.

If you do not have internet access from the computer you wish to register, you can request a key (from a machine that **does** have internet access) by clicking on the "Request Manual Key" button and following the prompts.

If you need to remove your ***Take Command*** registration from a computer, select the **Unregister** button and enter the activation key you used to register ***Take Command***.

The "USB (Portable) key" option allows you to generate a registration key on the USB (thumb) drive & directory of your choice. You an also now create a USB registration key even if you have already registered ***Take Command*** on the computer.

4.9.2 Initialization Files

Part of the power of ***TCC*** is its flexibility, in allowing you to alter its configuration to match your style of computing. ***TCC***'s configuration is controlled through a file of initialization information.

See Locating the .INI files below to find out how ***TCC*** locates its *TCMD.INI* file.

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Modifying the TCMD.INI File

You can create, add to, and modify the *TCMD.INI* file with the configuration dialog, available via the OPTION command, or (if in a ***Take Command*** tab window), the **Configure TCC** entry in the Options menu.

Most of the changes you make in the OPTION command take effect immediately. A few (*e.g.*, those associated with the startup screen size) only take effect when you start a new ***TCC*** session. See the online help for each individual dialog page if you are not sure when a change will take effect.

The dialogs handle most of the configuration options. The Advanced directives and the Key Mapping directives do not have corresponding fields in the configuration dialogs, and must be entered manually.

TCC reads its *TCMD.INI* file (see Locating the .INI file) when it starts, and configures itself accordingly. The *.INI* file is not reread when you change it manually. For manual changes to take effect, you must restart ***TCC***.

Each item that you can include in the *.INI* file has a default value. You only need to include entries in the file for settings that you want to change from their default values.

The password fields in TCMD.INI (for example, the Internet password settings) are encrypted by the OPTION command.

See Directives for information on the types and format of *TCMD.INI* directives.

Using the TCMD.INI File

Some settings in the *.INI* file are initialized when you install ***TCC***; others are modified as you use and when you exit ***TCC***.

You can optionally include environment variables in the *TCMD.INI* [4NT] and [TCMD] sections; they will be expanded when *TCMD.INI* is loaded. If you want to delay expansion until command execution time (for example, with ColorDir) you will need to double the %'s.

Locating the TCMD.INI File

1) When starting ***TCC*** (a "primary shell"):

- If there is an ***@d:\path\inifile*** option on the startup command line, ***TCC*** will use the path and file name specified there.
- Otherwise, the default *.INI* file name in the table below is used, and the search starts in the directory where the ***TCC*** program file is stored. If the .INI file is not found, ***TCC*** will look in the %LOCALAPPDATA% directory.

If no *.INI* file is found, all options are set to their default values. A new *.INI* file will be created, using the default location and name, as explained above.

2) When starting ***TCC*** (a "secondary" shell) from another ***TCC*** shell:

TCC retrieves the primary shell's .INI file data, processes the [Secondary] section of the original *.INI* file if necessary, and then processes any ***@d:\path\inifile*** option on the secondary shell command line.

See Command Line Options for more details about the startup command line.

TCMD.INI File Sections

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The *TCMD.INI* file has a number of sections. Each section is identified by the section name in square brackets on a line by itself. ***Take Command*** stores the user-defined options in **[TakeCommand]**; ***TCC*** stores its user-defined options in **[4NT].**

The **[Primary]** and **[Secondary]** sections include directives that are used only in ***TCC*** primary and secondary shells, respectively. You don't need to set up these sections unless you want different directives for primary and secondary shells.

Directives in the **[Primary]** section are used for the first or primary shell. The values are passed automatically to all secondary shells, unless overridden by a directive with the same name in the **[Secondary]** section.

Directives in the **[Secondary]** section are used in secondary shells only, and override any corresponding primary shell settings.

Note that the terms **Primary** and **Secondary Shells** are now mostly obsolete in Windows. The interaction between Primary and Secondary ***TCC*** shells is limited to some minor inheritance (due to the design of Windows).

4.9.2.1 Directives

This topic contains general information on ***TCC*** initialization. For information on specific directives see the separate topic for each type of directive:

- Key Mapping Directives
- Advanced Directives

These topics list the directives, with a short description of each, and a cross reference which selects a full description of that directive. A few of the directives are simple enough that the short description is sufficient, but in most cases you should check for any additional information in the cross reference topic if you are not already familiar with the directive.

Syntax for Directives

Most lines in the *.INI* file consist of a one-word **directive**, an equal sign **=**, and a **value**. For example, in the following line, the word **History** is the directive and **2048** is the value:

```
History = 2048
```

Any spaces before or after the equal sign are ignored.

Regardless of how long a string value is, for example the list for the ColorDir directive, you must enter it all on one line. Strings cannot be continued to a second line.

Each line must be within the command line length limit.

The format of the **value** part of a directive line depends on the individual directive. It may be a numeric value, a single character, a choice (like **Yes** or **No**), a color setting, a key name, a path, a filename, or a text string. The value begins with the first non-blank character after the equal sign and ends at the end of the line or the beginning of a comment.

Blank lines are ignored in the *.INI* file and can be used to separate groups of directives.

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You can place comments in the file by beginning a line with a semicolon `;`. You can also place comments at the end of any line except one containing a text string value. To do so, enter at least one space or tab after the value, a semicolon, and your comment, like this:

```
History = 2048        ;set history list size
```

If you try to place a comment at the end of a string value, the comment will become part of the string and will probably cause an error.

If you use the configuration dialogs to modify the *.INI* file, comments on lines modified from within the dialogs will not be preserved when the new lines are saved. To be sure *.INI* file comments are preserved, put them on separate lines in the file.

When ***Take Command*** or ***TCC*** detects an error while processing the *.INI* file, it displays an error message and prompts you before processing the remainder of the file. This allows you to note any errors before the startup process continues. The directive in error will retain its previous or default value.

If you need to test different values for an *.INI* directive without repeatedly editing the *.INI* file, use the OPTION command or see the INIQuery directive.

The SETDOS command can override several of the *.INI* file directives. For example, the cursor shape used by ***TCC*** can be adjusted either with the CursorIns and CursorOver directives or the SETDOS /S command. The correspondence between a SETDOS option and a *.INI* directive is noted under both the individual help topic for that directive and under that option in the SETDOS help topic.

A ***TCC*** shell started from another ***TCC*** shell (a "secondary shell") automatically inherits the configuration settings currently in effect in the previous shell. If values have been changed by SETDOS or OPTION since the primary shell started, the current values will be passed to the secondary shell. If the previous shell's *.INI* file had a [Secondary] section, it will then be read and processed. If not, the previous shell's settings will remain in effect.

If you want to force secondary shells to start with a specific value for a particular directive, regardless of any changes made in a previous shell, repeat the directive in the **[Secondary]** section of the *.INI* file.

Types of Directives

There are various types of directives in the *.INI* file. The type of a directive is shown under the individual help topic for that directive. The types are distinguished by the kind of data, if any, that must be entered after the = (equal sign):

- **Name = *nnnn* (1234)**: This directive takes a numeric value which replaces the "nnnn." The default value is shown in parentheses or listed below the directive's description.

- **Name = *c* (X)**: This directive accepts a single character as its value. The default character is shown in parentheses. You must type in the actual character; you cannot use a key name.

- **Name = *CHOICE1* | *Choice2* | *...***: This directive must be set to one of the vertical bar separated values listed between the braces. The default value is shown in all upper case letters in the directive description, but in your file any one of the choices can be entered, using any case. (Do not enter the vertical bar.) For example, if the choices were shown as **YES | no** then **YES** is the default.

- **Name = *Color***: This directive takes a color specification. See Colors and Color Names for the format of color names.

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- **Name = *Key*** : This directive takes a key specification. See Keys and Keynames for the format of key names.

- **Name = *Path*** : This directive takes a path specification, without a filename. The value should include both a drive and path (*e.g.*, *C:\TCMD*) to avoid any possible ambiguities. A trailing backslash **** at the end of the path name is accepted but not required. Any default path is described in the text.

- **Name = *File*** : This directive takes a filename. We recommend that you use a full filename including the drive letter and path to avoid any possible ambiguities. Any default filename is described in the text.

- **Name = *String*** : This directive takes a string in the format shown. The text describes the default value and any additional requirements for formatting the string correctly. No comments are allowed.

Evaluation of Directives

The directives are evaluated sequentially from top to bottom within each section processed. When a directive is processed more than once during startup, it replaces any previous value(s).

Most key mapping and advanced directives are cumulative and may appear several times when several concurrent values are desired, such as when assigning several different keystrokes to the same function.

4.9.2.1.1 Key Mapping Directives

These directives allow you to change the keys used for ***TCC*** command line editing and other internal functions. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. You can bind multiple key combinations to a directive (for example, the default Paste directive accepts either Ctrl-V or Shift-Ins).

They are divided into seven types, depending on the context in which the keys are used. For a discussion and list of directives for each type see:

- Clipboard
- Editing
- History
- Popup Windows
- System
- Tab Completion
- LIST

Use some care when you reassign keystrokes. If you assign a default key to a different function, it will no longer be available for its original use. For example, if you assign **F1** to the AddFile directive (a part of filename completion), the **F1** key will no longer invoke the help system, so you will probably want to assign a different key to Help.

See Keys and Key Names before using the key mapping directives.

Key assignments are processed after looking for keystroke aliases. For example, if you assign Shift-F1 to HELP and also assign Shift-F1 to a key alias, the key alias will be run and Help won't work.

Note: if you assign the same key to two different functions, the first assignment found will be used.

4.9.2.1.1.1 Clipboard Keys

These directives apply to ***TCC*** clipboard actions. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

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Directive	Default	Description
Copy	Ctrl-Y	Copy the highlighted text to the clipboard
Paste	Ctrl-V or Shift-Ins	Paste line from clipboard
SelectFromHome	Shift-Home	Mark from the beginning of the line to the cursor
SelectLeft	Shift-Left	Add the character on the left to the selection
SelectRight	Shift-Right	Add the character on the right to the selection
SelectToEnd	Shift-End	Mark from the cursor to the end of the line
SelectWordLeft	Ctrl-Shift-Left	Add the word on the left to the selection)
SelectWordRight	Ctrl-Shift-Right	Add the word on the right to the selection

4.9.2.1.1.2 Editing Keys

These directives apply to ***TCC*** command line editing. They are in effect whenever ***TCC*** requests input from the keyboard, including during command line editing and the DESCRIBE, ESET, INPUT, LIST, QUERYBOX, and SELECT commands. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

Directive	Default	Description
AliasExpand	Ctrl-W	Expand all aliases on the command line
ArgLeft	Alt-Shift-Left	Move the cursor left to the previous argument
ArgRight	Alt-Shift-Right	Move the cursor right to the next argument
Backspace	Backspace	Delete the character to the left of the cursor
BeginLine	Home	Move the cursor to the start of the line
CommandEscape	Alt-255	Do not interpret the next keystroke as an editing key
Del	Del	Delete the character at the cursor
DelArgLeft	Ctrl-Alt-L	Delete the argument to the left of the cursor
DelArgRight	Ctrl-Alt-R	Delete the argument to the right of the cursor
DelToBeginning	Ctrl-Home	Delete from the cursor to the start of the line
DelToEnd	Ctrl-End	Delete from the cursor to the end of the line
DelWordLeft	Ctrl-L	Delete the word to the left of the cursor
DelWordRight	Ctrl-R	Delete the word to the right of the cursor
EndLine	End	Move the cursor to the end of the line
EraseLine	Esc	Delete the entire line
ExecLine	Enter	Execute or accept a line
Help	F1	Display the Help topic for the current command
HelpWord	Ctrl-F1	Display the Help topic for the word at the cursor
Ins	Ins	Toggle insert / overstrike mode
Left	Left	Move the cursor left one character on the input line
PrevArgument	Ctrl-B	Recall the last argument from the previous command line
Redo	Alt-Y	Redo the last Undo
Right	Right	Move the cursor right one character on the input line
Undo	Alt-Z	Undo the last edit
VariableExpand	Ctrl-X	Expand variables on the entire command line
VariableExpandWord	Ctrl-Shift-X	Expand variables for the current word
WordLeft	Ctrl-Left	Move the cursor left one word
WordRight	Ctrl-Right	Move the cursor right one word

4.9.2.1.1.3 History Keys

These directives apply to ***TCC*** command and directory history. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

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Directive	Default	Description
Argument0	Ctrl-0	Get argument 0 from previous command line
Argument1	Ctrl-1	Get argument 1 from previous command line
Argument2	Ctrl-2	Get argument 2 from previous command line
Argument3	Ctrl-3	Get argument 3 from previous command line
Argument4	Ctrl-4	Get argument 4 from previous command line
Argument5	Ctrl-5	Get argument 5 from previous command line
Argument6	Ctrl-6	Get argument 6 from previous command line
Argument7	Ctrl-7	Get argument 7 from previous command line
Argument8	Ctrl-8	Get argument 8 from previous command line
Argument9	Ctrl-9	Get argument 9 from previous command line
DelHistory	Ctrl-D	Delete the current history list entry and display the previous entry
EndHistory	Ctrl-E	Display the last entry in the history list
HistWinOpen	PgUp	Open the command history popup window
LastHistory	F3	Return the last history entry
LineToEnd	Ctrl-Enter	Copy the current command line to the end of the history list, then execute it
NextDirHistory	Shift-PgDn	Get the next directory from the directory history
NextHistory	Down	Get the next command from the command history
PrevDirHistory	Shift-PgUp	Get the previous directory from the directory history
PrevHistory	Up	Get the previous command from the command history
SaveHistory	Ctrl-K	Save the command line in the command history list without executing it

4.9.2.1.1.4 Popup Window Keys

The following directives apply to popup windows, including the command history window, the directory history window, the filename completion window, the extended directory search window, and the @SELECT window. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

Directive	Default	Description
PopupWinDel	Ctrl-D	Delete a line from in the command history or directory history window
PopupWinEdit	Ctrl-Enter	Moves a line from the command or directory history window to the prompt for editing
PopupWinEditWin	Ctrl-E	Edit a line in the command history or directory history window
PopupWinSelect	Enter	Select the current line and close the popup window

The following directives are used for ***TCC*** character-mode popup windows. (See the ConsolePopupWindows directive.) This is intended for use with server consoles that are character-mode only, or when using SSH with no GUI support. There is no benefit (and several disadvantages) in using this option for normal non-server environments.

Directive	Default	Description
CPopupWinDel	Ctrl-D	Delete a line from in the command or directory history window
CpopupWinDown	Down	Move down one line
CPopupWinEdit	Ctrl-Enter	Moves a line from the command or directory history window to the prompt for editing
CPopupWinEditWin	Ctrl-E	Edit a line in the command history or directory history window
CPopupWinEnd	End or Ctrl-PgDn	Move to the last line
CPopupWinExit	Esc	Close the popup window
CPopupWinHelp	F1	Display help for console popup windows
CPopupWinHome	Home	Move to the first line

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CPopupWinLeft	Left	Shift left 4 columns
CPopupWinPgDn	PgDn	Page down
CPopupWinPgUp	PgUp	Page up
CPopupWinReset	Backspace	Reset the search string
CPopupWinRight	Right	Shift right 4 columns
CPopupWinSelect	Enter	Select the current line and close the window
CPopupWinUp	Up	Move up one line

4.9.2.1.1.5 System Keys

These directives apply to various ***TCC*** non-editing keys (changing the console font or size, moving the console, popping up command or file dialogs, etc.). You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

Directive	Default	Description
CommandDialog	Alt-F2	Display the command dialog for the first argument on the command line
ConsoleHeightMax	Ctrl-Alt-Shift-Down	Increase the console window height
ConsoleHeightMax	Ctrl-Alt-Shift-Up	Decrease the console window height
ConsoleWidthMax	Ctrl-Alt-Shift-Right	Increase the console window width
ConsoleWidthMin	Ctrl-Alt-Shift-Left	Reduce the console window width
FileBrowse	F5	Display the Windows file browse dialog
FolderBrowse	Alt-F5	Display the Windows folder browse dialog
FontMax	Ctrl-Plus	Increase the console font size
FontMin	Ctrl-Minus	Reduce the console font size
MoveConsoleDown	Alt-Win-Down	Move the console window down
MoveConsoleUp	Alt-Win-Up	Move the console window up
MoveConsoleLeft	Alt-Win-Left	Move the console window left
MoveConsoleRight	Alt-Win-Right	Move the console window right
ParentDirectory	Ctrl-Shift-Up	Change to the parent directory
Regex	Ctrl-F7	Display the regular expression analyzer dialog
SingleStep	Ctrl-F5	Toggle batch debugger single-stepping

4.9.2.1.1.6 Tab Completion Keys

These directives apply to ***TCC*** tab completion. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

Directive	Default	Description
AddFile	F10	Keep tab completion entry and add another
DirectoryCompletion	Shift-F6	Toggle between the default files + directories filename completion, and directories only
LFNToggle	Ctrl-A	Toggle tab completion between long filename and short filename modes on LFN drives
NextFile	Tab or F9	Get the next matching filename during tab completion
OriginalFile	Alt-F9	Restore the original filename
PATHCompletion	Ctrl-F6	Toggle between completing files found in the local directory, and completing them in the local directory + all of the directories in PATH
PopFile	F7 or Ctrl-Tab	Open the tab completion window

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PrevFile	F8 or Shift-Tab	Get the previous matching filename
RepeatFile	F12	Repeat the previous matching filename

4.9.2.1.1.7 LIST Keys

These directives are effective only in the ***TCC*** LIST command. You can redefine the keys using the ***TCC*** OPTION / Keyboard dialog. The key directives are saved in the [Keys] section in TCMD.INI.

Directive	Default	Description
ListBack	B	Return to the previous file.
ListClipboard	Ctrl-B	Copy the current filename to the clipboard.
ListContinue	C	Continue with the next file.
ListDelete	Del	Delete the current file.
ListDown	Down	Scroll down one row.
ListEdit	E	Edit the file with the editor associated with that filetype. If there is no association, LIST will use the editor defined in the Editor configuration option. If no editor is defined, LIST will use Notepad. If LIST is displaying a pipe, the contents are saved to the clipboard and the editor is started. (You will need to manually paste the clipboard contents.)
ListEnd	End	Go to the end of the file.
ListExit	Esc	Exit the current file.
ListFind	F	Prompt and search for a string or a sequence of hexadecimal values.
ListFindPrevious	Ctrl-N	Find previous matching string in the file.
ListFindRegex	R	Prompt and search for a regular expression.
ListFindRegexReverse	Ctrl-R	Search backwards for a regular expression.
ListFindReverse	Ctrl-F	Prompt and search for a string, searching backward from the end of the file.
ListGoto	G	Display a dialog to jump to a specific line.
ListHelp	F1	Display help for LIST.
ListHex	X	Toggle the hex mode (/X) option.
ListHexSpace	S	Toggle display of nonprintable characters (space or .) when in hex mode.
ListHighBit	H	Toggle the "strip high bit" (/H) option.
ListHome	Home	Go to the beginning of the file.
ListInfo	I	Displays information about the current file.
ListLeft	Left	Scroll left one column.
ListNext	N	Find next matching string.
ListNumber	L	Number the lines.
ListOpen	O	Display the "Open File" dialog.
ListPageLeft	Ctrl-Left	Scroll left 40 columns.
ListPageRight	Ctrl-Right	Scroll right 40 columns.
ListPgUp	PgUp	Scroll up one page.
ListPgDn	PgDn	Scroll down one page.
ListPrevious	Ctrl-B	Find the previous matching string
ListPrint	P	Print all or part of the file (displays the Windows "Print" dialog).
ListRefresh	F5	Refresh the display.
ListRight	Right	Scroll right one column.
ListSave	Ins	Save to a file.
ListTabSize	Tab	Display a dialog to set the tab size.
ListUnicode	U	Toggle the Unicode display mode.
ListUp	Up	Scroll up one row.
ListWrap	W	Toggle the "line wrap" (/W) option.

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4.9.2.1.2 Advanced Directives

These directives are generally used for unusual circumstances, or for diagnosing problems. Most often they are not needed in normal use. They cannot be entered via the configuration dialogs; you must enter them manually (see the .INI file for details).

AliasSize	Set the global alias list size
ANSIWin10	Use internal ANSI instead of the Windows 10 console ANSI
AppendCommandLines	Insert & between lines in multiline paste
AutoFirewall	Enable / disable automatic firewall detection
AutoProxy	Enable / disable automatic HTTP proxy detection
CMDBatch	Run all BAT and CMD files in CMD.EXE
CMDBatchDelimiters	Use CMD delimiter characters in batch file commands
CMDVariables	Use the CMD variable syntax (%var%)
CompleteAllFiles	Match all extensions at the beginning of a command line
ConsolePopupWindows	Enable / disable character-mode popup windows
Copyright	Enable / disable the TCC copyright message display
Debug	Set debugging options
DelWipePasses	Set default passes for DEL /W
EnglishMessages	If set to Yes, ***TCC*** will display Windows messages in English
FileCompletionLooping	Enable / disable Linux-style file completion loops
FilesCaseSensitive	Enable / disable case sensitivity in filename comparisons
FunctionSize	Set the global user-defined functions list size
INIQuery	Query for each line in the .INI file
LanguageDLL	Set localized language DLL
LibraryDirectory	Default TCC library functions directory
MaintainIndent	
MSAAMenu	Check for screen readers & disable detachable menus
NoINIErrors	Don't display error messages for TCMD.INI errors
PluginDirectory	Default TCC plugins directory
PowerShellProfileID	ID to look for when loading PowerShell profiles
QuakeHotKey	Key to minimize TCC "Quake style"
ReadConsole	Get input with Windows ReadConsole API
ScriptDirectory	Default directory for filename completion scripts
TimeServerPort	UDP port for remote time server
TimeServerProtocol	Protocol used to connect to time server
TrayHotKey	Hotkey to toggle ***TCC*** to / from the system tray
UpdateINI	Enable / disable changes to the .INI file.
UTF8Output	Write TCC redirected output in UTF-8 format
XMLSettings	Save IDE window layout in TCMD.XML

4.9.2.1.2.1 AliasSize

AliasSize = n

AliasSize allows you to set the size of the global alias list (in characters). The default is 256K; you should only need to change this if you have an exceptionally large alias list or if you want to minimize ***TCC***'s memory footprint.

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You do not need to set the alias list size if you're using local lists -- ***TCC*** will automatically resize the alias list as needed.

4.9.2.1.2.2 ANSIWin10

ANSIWin10=YES | no : If set to NO, ***TCC*** will use its internal ANSI instead of the Windows 10 console ANSI support.

4.9.2.1.2.3 AppendCommandLines

AppendCommandLines=yes|NO : If 1, insert a " & " between lines of a multiline paste instead of the default " ".

You can also insert " & " by holding down the Ctrl + Shift keys when doing a paste.

4.9.2.1.2.4 AutoFirewall

AutoFirewall=YES|no

If set to "yes", ***TCC*** will attempt to automatically detect and use HTTP firewall system settings (if available).

4.9.2.1.2.5 AutoProxy

AutoProxy=YES|no

If set to "yes", ***TCC*** will attempt to automatically detect and use HTTP proxy server system settings (if available).

4.9.2.1.2.6 CMDBatch

CMDBatch=YES|no

If set to "Yes", ***TCC*** will run all .BAT and .CMD files in a CMD.EXE shell. (For those of you using poorly-written batch files that depend on CMD bugs or undocumented behavior.)

4.9.2.1.2.7 CMDBatchDelimiters

CMDBatchDelimiters=YES|no

If set to "no", TCC will not treat an = as a batch argument delimiter. (Note: this will break CMD compatibility!). This is only for users with (very) old 4NT scripts; it is strongly discouraged for new installations.

4.9.2.1.2.8 CMDVariables

CMDVariables = yes | NO

TCC allows you to specify variables with only a single leading %; CMD requires both a leading and a trailing %. Normally TCC is able to detect this, but if you have variable names with embedded whitespace (a bad idea!) TCC will not expand the variable.

If you need as close to 100% CMD compatibility as possible, and you don't care about running existing TCC batch files or aliases, setting **CMDVariables=yes** will allow TCC to properly expand these types of variable names.

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4.9.2.1.2.9 CompleteAllFiles

CompleteAllFiles = yes | NO

Normally, ***TCC*** will only complete directories and executable files (as defined by PATHEXT) when you press Tab or F9 at the beginning of a command line. If CompleteAllFiles is set to YES, ***TCC*** will complete any matching filename. Note that if you also have CompletePaths set, you'll probably have several hundred (or thousand!) matches for any filename you enter.

4.9.2.1.2.10 ConsolePopupWindows

ConsolePopupWindows = yes | NO

Enable or disable character-mode popup windows (for example, command or directory history windows). This is intended for use with server consoles that are character-mode only, or when using SSH with no GUI support. There is no benefit (and several disadvantages) in using this option for normal non-server environments.

4.9.2.1.2.11 Copyright

Copyright=YES | no

Display the TCC copyright message at startup. This is the same as the TCC /Q startup option, and only applies to registered copies.

4.9.2.1.2.12 Debug

Debug = *n*

Default: 2

Controls certain debugging options which can assist you in tracking down unusual problems. Use the following values for **Debug** (to enable more than one option, add the desired values together):

- **0** Disabled.
- **1** During the startup process, display the complete command tail passed to ***Take Command***, then wait for a keystroke.
- **2** (default) Include the product name with every error message displayed by ***Take Command***. This may be useful if you are unsure of the origin of a particular error message.

See also: the batch file debugger, a separate and unrelated facility for stepping through batch files.

See other Advanced Directives.

4.9.2.1.2.13 DelWipePasses

DelWipePasses = *n*

Default: 3

Sets the default number of passes for a DEL /W (wipe). If you have a slow disk drive you might want to set this to 1 or 2. The range is 1-999 (but there's little reason to set it higher than 3 or 4).

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4.9.2.1.2.14 EnglishMessages

EnglishMessages=NO | yes

If set to Yes, ***TCC*** will display error messages from Windows in English, regardless of the default language.

4.9.2.1.2.15 FileCompletionLooping

FileCompletionLooping = yes | NO

Enable or disable Linux-style filename completion looping. I.e., when ***TCC*** reaches the last match, it will loop back to the first match (with no indication that it has done so).

It's easier to use the tab / F8 forward/back stepping in ***TCC***.

4.9.2.1.2.16 FilesCaseSensitive

FilesCaseSensitive = yes | NO

If YES, filename comparisons will be case sensitive (like Linux, and unlike Windows). This will only affect filename matching within TCC.

4.9.2.1.2.17 FunctionSize

FunctionSize = n

FunctionSize allows you to set the size of the global user-defined function list (in characters). The default is 128K; you should only need to change this if you have an exceptionally large function list or if you want to minimize ***TCC***'s memory footprint.

You do not need to set the function list size if you're using local lists -- ***TCC*** will automatically resize the function list as needed.

4.9.2.1.2.18 INIQuery

INIQuery = yes | NO

If set to **Yes**, a prompt will be displayed before execution of each subsequent line in the current *.INI* file. This allows you to modify certain directives when you start ***Take Command*** or ***TCC*** in order to test different configurations. INIQuery can be reset to **No** at any point in the file. Normally INIQuery = Yes is only used during testing of other *.INI* file directives.

The dialog displayed when INIQuery = Yes gives you three options:

Yes	Executes the directive
No	Skips the directive
Cancel	Executes the directive and all remaining directives in the [TakeCommand] section of the *.INI* file (*i.e.*, cancels the INIQuery = Yes setting)

See other Advanced Directives.

4.9.2.1.2.19 LanguageDLL

LanguageDLL = *filename*

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Specifies the filename of the language DLL ***Take Command*** and ***TCC*** should use (English.dll, French.dll, German.dll, Italian.dll, Russian.dll, or Spanish.dll). ***Take Command*** normally uses the language dll that matches the default Windows user language, but you can override it with this directive.

(In most cases you shouldn't set this directive -- if you use a non-default language dll, you will get a mix of one language from ***Take Command*** and another from Windows for the system error messages.)

See other Advanced Directives.

4.9.2.1.2.20 LibraryDirectory

LibraryDirectory=*path*

The directory where ***TCC*** will look for library functions to automatically load at startup. The default is the **Library** subdirectory in the ***Take Command / TCC*** installation directory.

4.9.2.1.2.21 MaintainIndent

MaintainIndent=YES|no : Start new lines in the IDE editor with the same indentation as previous lines.

4.9.2.1.2.22 MSAAMenu

MSAAMenu = yes | NO

Take Command checks to see if a screen reader is installed, and if so it sets MSAAMenu=Yes. This is to avoid problems with the ***Take Command*** detachable menus and some screen readers.

4.9.2.1.2.23 NoINIErrors

NoINIErrors = yes | NO

If set to YES, no TCMD.INI parsing error messages will be displayed for all lines following the NoINIErrors line. This directive would normally be placed at the beginning of the [TakeCommand] and/or [4NT] section. It will **not** apply to the other section, so if you want all parsing errors suppressed you need to add NoIniErrors=Yes to both sections.

Note that setting this directive is generally **not** recommended, as it will suppress potentially critical errors.

4.9.2.1.2.24 PluginDirectory

PluginDirectory=*path*

The directory where ***TCC*** will look for plugins to automatically load at startup. The default is the **Plugins** subdirectory in the ***Take Command*** installation directory.

4.9.2.1.2.25 PowerShellProfileID

PowerShellProfileID=*id*

The profile Id to look for when loading profiles. ***TCC*** will look for profiles that begin with the specified *id*. For instance, the default value is "Microsoft.PowerShell" so the class will look for profiles named "Microsoft.PowerShell_profile.ps1".

4.9.2.1.2.26 QuakeHotKey

QuakeHotKey=Enter : Hotkey to minimize the TCC window by sliding it up off the top "Quake Console" style. The hotkey is always Ctrl-Alt-something; the value for QuakeHotKey is the last key. The default is Enter, so the actual hotkey is Ctrl-Alt-Enter.

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4.9.2.1.2.27 ReadConsole

ReadConsole=NO | yes

If YES, ***TCC*** will use the Windows ReadConsole API (like CMD.EXE) to read its line input. If you set ReadConsole=Yes, then you will lose **all** of the ***TCC*** line editing features. Windows will pass the line back to ***TCC*** for processing when you press Enter. This option is intended for users who have an extensive editing setup using something like CLink and don't want to convert everything over to the ***TCC*** format.

4.9.2.1.2.28 ScriptDirectory

ScriptDirectory=path - The directory for filename completion scripts (the default is "Complete" in the ***Take Command*** installation directory).

4.9.2.1.2.29 TimeServerPort

TimeServerPort=*n*

The UDP port where the remote time server is listening (default 123). If TimeServerProtocol is set to tpTimeProtocol (1) the port will be set to 37.

4.9.2.1.2.30 TimeServerProtocol

TimeServerProtocol=*n*

The protocol used to connect to the time server. The default is 1 (tpSNTP). The Time protocol may be selected by setting this value to 0 (tpTimeProtocol).

4.9.2.1.2.31 TrayHotKey

TrayHotKey = Z

The hotkey to toggle TCC to and from the system tray. The specified alphabetic key is combined with Ctrl + Shift, so the default hotkey is Ctrl-Shift-Z.

4.9.2.1.2.32 UpdateINI

UpdateINI = YES | no

Enable or disable changes to the .INI file. (Useful for administrators who want to prevent users from changing their configuration.)

4.9.2.1.2.33 UTF8Output

UTF8Output = yes | NO : The ***TCC*** output files (such as redirected output and pipes) will be written in UTF-8 format.

4.9.2.1.2.34 XMLSettings

XMLSettings=NO | yes

If YES, retrieve and store the ***IDE*** window layout in a file (*IDE.XML*) instead of the Windows Registry. This is for systems where the administrator has locked registry write access (even to HKEY_CURRENT_USER). The *IDE.XML* file must be in the same directory as *TCMD.INI*.

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5 IDE / Batch Debugger

Take Command includes a very powerful IDE (Integrated Development Environment) for creating, editing, and debugging batch files. The IDE includes syntax coloring for batch files (.BAT, .CMD, and .BTM) and code folding for command groups and the ***TCC*** DO, IFF, SWITCH, and TEXT commands.

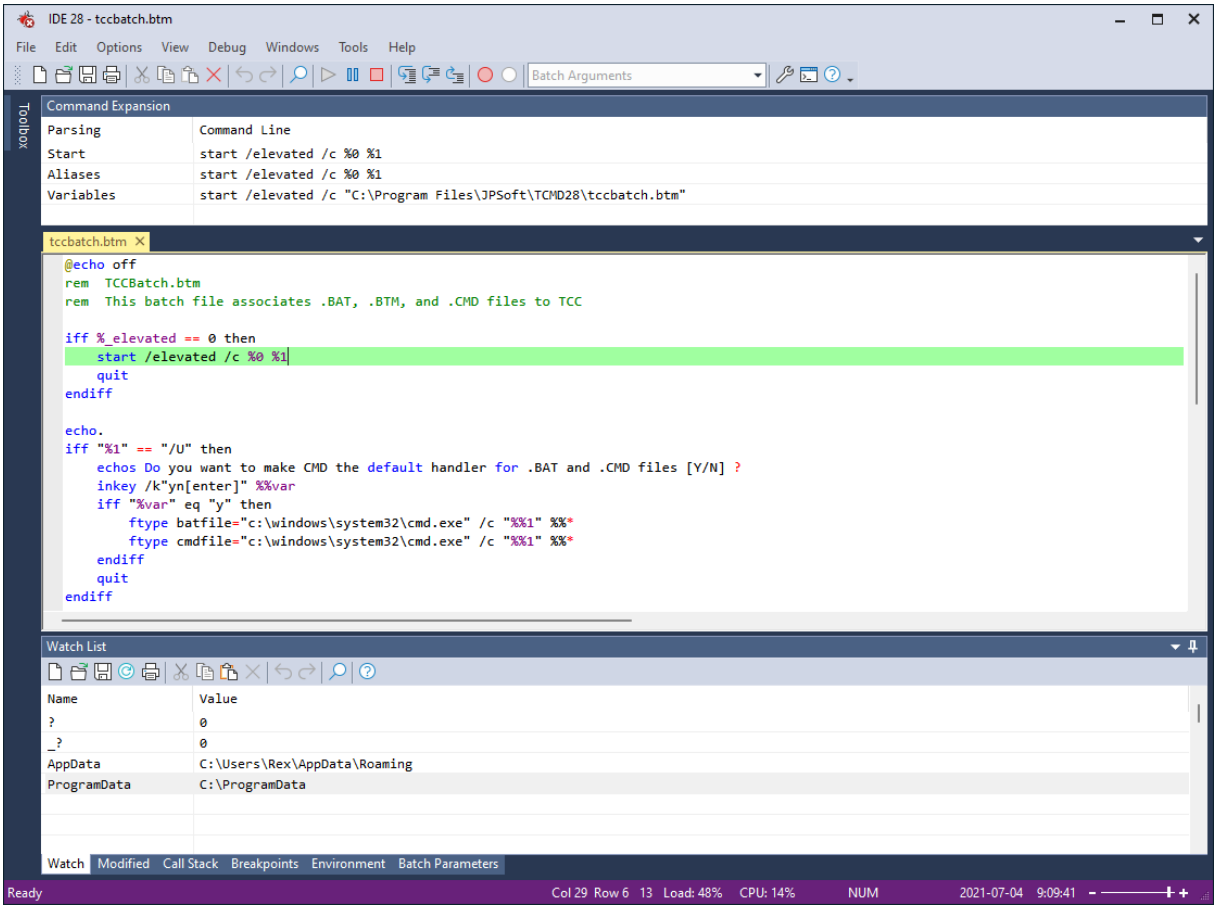
If you are creating or debugging a ***TCC*** batch file, use the **TCC Syntax** in the Options menu. If you are creating or debugging a batch file to run under CMD.EXE, select the (default) **CMD Syntax**. If you select **CMD Syntax,** the debugger will reconfigure the batch file parser for maximum **CMD.EXE** compatibility, including disabling ***TCC--***only internal commands, aliases, variables, functions, and plugins.

If you press **Ctrl-C** or **Ctrl-Break** while debugging, you will see the prompt:

Cancel batch job ***filename*** (Y/N/A/D) :

Pressing **D** will return you to single-step mode in the debugger. (This allows you to interrupt a **run-to-breakpoint** without terminating the debugger and batch file.

The IDE sets the environment variable BATCH_DEBUGGING=1. A batch file can test for that variable if it needs to know when it's being debugged.



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5.1 Console Window

The IDE will create a console window when it starts. All batch input and output will be done in the batch window, so you can see exactly how the batch file will run when executed directly from Windows or the command processor.

5.2 IDE Menus

- File
- Edit
- Options
- View
- Debug
- Windows
- Help

5.2.1 File

The **File** menu allows you to create new or open existing batch files, save or print the edit windows, or exit the IDE.

New

Opens a new (empty) edit window.

Open

Open the specified file in a new edit window. If the file is a batch file, **Open** will load the batch file and any associated breakpoint file (filename.ext.bp) and the watched variables file (filename.ext.watch).

Reload from Disk

Reloads the file in the current tab from the disk.

Close

Close the current edit window. If the file has been modified, you will be prompted to save it.

Close All

Close all edit windows. If the files have been modified, you will be prompted to save them.

Save

Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use. If the file is a batch file, **Save** will save the batch file and any associated breakpoint file (filename.ext.bp) and the watched variables file (filename.ext.watch).

Save As

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Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save Copy As

Saves the contents of the current edit window. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Save All

Saves the contents of the current edit window to a file. A *Save As* dialog box appears in which you can enter the name of the file that you wish to use.

Encoding

Files are always treated as UTF-8 inside the editor. This option allows you to specify how the file will be written when it is saved to disk.

Default Codepage	When the file is saved it will be written using the current codepage
UTF16 Little Endian	When the file is saved it will be written as UTF-16
UTF8	When the file is saved it will be written as UTF-8
UTF8 with BOM	When the file is saved it will be written as UTF-8 with a leading BOM

Move to Recycle Bin

Delete the file in the current tab by sending it to the Recycle Bin.

Print...

Sends the contents of the current edit window to the printer. A Print dialog box appears in which you can choose the portion of the screen buffer you wish to print.

Print Preview

Show a Print Preview window for the current edit window.

Setup Printer...

Displays a standard printer setup dialog box. The options available in the dialog box depend on the printer driver(s) you are using.

File Properties

Display the Windows properties dialog for the file in the current edit window.

File Properties

Display the Windows properties dialog for the file in the current edit window.

Load Session...

Open a session file previously saved with the **"Save Session"** option (see below), which loads the specified files into tab windows.

Save Session...

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Create a **.session* file with the names of the files in the tab windows. A subsequent "Load Session" will open the files in the *.session file you specify.

Exit

Ends the current IDE session.

5.2.2 Edit

To use the Cut, Copy, or Delete commands, you must first select a block of text with the mouse, the keyboard, or with the Select All command, below.

Undo

Undo the last action in the active editor window.

Redo

Redo the last action in the active editor window.

Cut

Copies selected text to the clipboard and deletes it from the editor.

Copy

Copies selected text to the clipboard.

Copy+Append

Append the current selection to the existing clipboard content.

Paste

Copies text from the clipboard to the command line. If the text you insert contains a line feed or carriage return, the command line will be executed just as if you had pressed Enter. If you insert multiple lines, each line will be treated like a command typed at the prompt. Paste will check to see if the Ctrl + Shift keys are down, and if so it will insert a " & " between lines of a multiline paste.

Delete

Deletes the selected text from the editor.

Select All

Marks the entire contents of the active editor window as selected text.

Move Line Up

Move the selected (highlighted) line up one row.

Move Line Down

Move the selected (highlighted) line down one row.End f

Tabs...

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Displays a dialog to set the tab width, indentation width, and whether to insert tabs as spaces and to reformat indentation.

End of Line Characters

CR + LF	Lines end in a Carriage Return + Linefeed (Windows default)
CR	Lines end in a Carriage Return (OSX default)
LF	Lines end in a Linefeed (Linux default)

Convert End of Line Characters

Convert the end of line character(s) in the current tab window to the character(s) defined in the "End of Line Characters" menu entry above.

Insert Directory

Displays the Windows folder selection dialog and puts the selected directory name at the current position in the editor.

Insert Filename...

Displays the Windows file selection dialog and puts the selected filename at the current position in the editor.

Find...

Search the contents of the editor window using regular expressions.

Replace...

Search and replace text in the editor window.

Goto...

Move the cursor to the specified line number.

Advanced

Toggle Comment

Inserts or removes a **rem** statement at the beginning of the current command line.

Remove Blank Lines

Remove blank lines from the file in the active edit window.

Compress Spaces

Remove extra spaces from the file in the active edit window.

Tabify Selection

Replace spaces with tabs in the selected text in the active edit window.

Untabify Selection

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Replace tabs with spaces in the selected text in the active edit window.

Make Selection Upper Case

Convert the selected text to upper case.

Make Selection Lower Case

Convert the selected text to lower case.

View Whitespace

Shows a dot for space & tab characters.

View EOL

Show the CR & LF characters.

Toggle Current Fold

Toggles code folding for the current line.

Toggle All Folds

Toggles code folding for the file in the active edit window. When using **CMD syntax**, this only affects command groups. When using **TCC syntax**, this also affects IF, DO, and SELECT.

Bookmarks

Toggle Bookmark

Create or remove a bookmark on the current line in the active edit window.

Next Bookmark

Go to the next bookmark in the active edit window.

Previous Bookmark

Go to the previous bookmark in the active edit window.

Clear All Bookmarks

Removes all bookmarks from the active edit window.

The debugger will automatically save bookmarks (the current batch file name + ".bmark"), and reload them the next time the batch file is loaded in the debugger.

Add to Watch

Add the selected variable to the Watch window.

Evaluate Selection

Call the "Evaluate Expression" dialog and evaluate the highlighted expression.

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Read Only

Change the current edit window to read-only, disabling all modify / write operations.

5.2.3 Options

TCC Syntax

If enabled, the IDE will use the TCC syntax colorizer, and enable the extended ***TCC*** commands, variables, and functions. This is the default for .BTM files.

CMD Syntax

If enabled, the IDE will use the CMD syntax colorizer, and disable the extended ***TCC*** commands, variables, and functions. This is the default for .BAT and .CMD files.

Syntax Colors...

Select the colors used in the syntax colorization from a 16 million color palette. When you click on one of the foreground or background color buttons, The IDE will display a color picker dialog to let you choose colors.

Font...

Displays a font selection dialog. The font will be used in the edit windows and the Watch, Modified, Breakpoints, Environment, Batch Parameters, Aliases, and Functions tab windows.

Caret Color...

Set the caret color for the tab edit windows.

Profiler

Toggles the batch file profiler timer on and off. When the Profiler is on, it will display the elapsed time in milliseconds for each command line in the margin immediately to the left of the command line.

Display Line Numbers

Display line numbers in the left margin.

Display Folding Margin

Toggles the code folding margin (the + indicator) on and off. Code folding supports command groups and (***TCC*** only) DO, IFF, SWITCH, and TEXT.

Indentation Guides

Toggles the vertical lines at the current indent columns (this is useful for lining up code).

Always on Top

If enabled, forces the IDE window to be the top-most (i.e., always on top of other windows).

Change Directory

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Change the current working directory for the IDE.

Themes

Select a predefined Visual Studio-style theme for the IDE. This will change the color and appearance of the IDE windows and borders.

VS 2005
VS 2008
VS 2010
VS 2012
VS 2012 Dark
VS 2015
VS 2015 Dark
VS 2015 Blue

Window Tabs...

Select the window tab location (top, bottom, left, or right).

5.2.4 View

Toggle current fold

Toggles folding the current line on & off.

Toggle all folds

Toggles every fold in the file.

Toolbar

Show or hide the IDE toolbar.

Status Bar

Show or hide the status bar.

Toolbox

The Toolbox window lists all of the internal commands, variables, and variable functions organized by category. Double-clicking on a command will display its command dialog (if it has one), and then insert the resulting command on the current line in the editor. Selecting a command or variable and then pressing F1 will display the help for that command/variable.

Command Expansion

The "Command Expansion" window will pop up above the tab window when you start debugging. The Command Expansion window shows the original command line, the command line after alias expansion, and the command line after variable expansion. This is a docking window, so it can be moved & attached at other locations. If you don't want to see the Command Expansion window, you can turn it off from the IDE "View / Command Expansion" menu option.

Watch

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The Watch window allows you to monitor variables.

When using **TCC syntax**, the Watch tab defaults to showing two variables:

%_? - The last ***TCC*** result value
%? - The last ERRORLEVEL value

Open will load the batch file and any associated breakpoint file (filename.ext.bp) and the watched variables file (filename.ext.watch).

Save will save the batch file and any associated breakpoint file (filename.ext.bp) and the watched variables file (filename.ext.watch).

If you right click in the first column of the Watch window, the debugger will pop up an environment variable listbox. If you select an entry, it will be added to the watch list.

The watch window now also supports internal variables, variable functions, and user-defined functions.

Modified

The Modified tab window shows all variables that are created or modified while executing the batch file. (This is like the "Auto" window in Visual Studio.)

Breakpoints

The Breakpoints tab window shows the breakpoints for the active tab window. (Line number, Count, and optional condition.)

Environment

Show the Windows environment the IDE is using when it runs batch files. You can add, modify, or delete variables.

Batch Parameters

Display the batch file arguments (%0 - %n). You can modify the batch arguments while debugging the batch file. To specify batch arguments when the batch file starts, you can enter them in the Batch Arguments combobox on the toolbar.

Local Aliases
Global Aliases

(***TCC syntax*** only) Show the user-defined functions. You can add, modify, or delete aliases in the edit window. ***TCC*** will only show these tabs if you have local and/or global aliases. If you are using CMD Syntax, these windows are hidden.

Local Functions
Global Functions

(***TCC syntax*** only) Show the user-defined functions. You can add, modify, or delete functions in the edit window. ***TCC*** will only show these tabs if you have local and/or global functions. If you are using CMD Syntax, these windows are hidden.

Command Prompt

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Start a new command prompt window.

5.2.5 Debug

Start

Start debugging a .BAT, CMD, or .BTM batch file

Start Without Debugging

Run a .BAT, CMD, or .BTM batch file (no debugging)

Pause

Pause debugging for the batch file

Stop Debugging

Stop debugging the batch file

Show Next Statement

Show the next statement

Step Into

Step into the next statement

Step Over

Step over

Run to Breakpoint or End

Run until the debugger reaches a breakpoint. If you are in a CALL'd batch file, and there are no more breakpoints in the current file, you will be returned to the parent batch file at the line following the CALL, and "Run to Breakpoint or End" will be turned off.

Skip This Line

Skip this line and continue execution with the next line

Run to Cursor

If you click on a line in the debugger window and select "Run to Cursor", the debugger will execute the batch file (ignoring any breakpoints) until it reaches the selected line.

Jump to This Line

If you click on a line in the debugger window and select "Jump to This Line", the debugger will continue execution starting with the selected line. You can can also change the line to be executed next when in debugging mode by moving the caret to the line and either right clicking & selecting "Jump to This Line" or by pressing Ctrl-Shift-F11. Note that if you attempt to jump into or out of a DO loop or IFF block, bad things will happen!

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Pause on Error

Pause if the debugger encounters a Windows or internal command error

Toggle Breakpoint

Set or clear a breakpoint on the current line

Next Breakpoint

Go to the next breakpoint

Previous Breakpoint

Go to the previous breakpoint

Clear All Breakpoints

Clear all breakpoints

Enable All Breakpoints

Enable all breakpoints

Disable All Breakpoints

Disable all breakpoints

Jump to This Line

Jump to the selected line and continue

Error Lookup

Opens a small dialog that lets you look up Windows and network error messages based on the integer value.

Evaluate Command

Display a dialog and execute the command on the current line.

Evaluate Expression

Display a dialog and expand variables and aliases on the line. Alt-F11 will invoke the Evaluate Expression dialog.

Evaluate Selection

Expand variables and aliases in the selected text. Alt-Shift-F11 will invoke the Evaluate Expression dialog for the current selection, or if no text is selected, for the current line.

Add to Watch

Add the selected variable to the Watch window

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5.2.6 Windows

Zoom In

Increase the tab window font size by one point.

Zoom Out

Decrease the tab window font size by one point.

Reset Zoom

Revert to the original editor window font size.

5.2.7 Tools

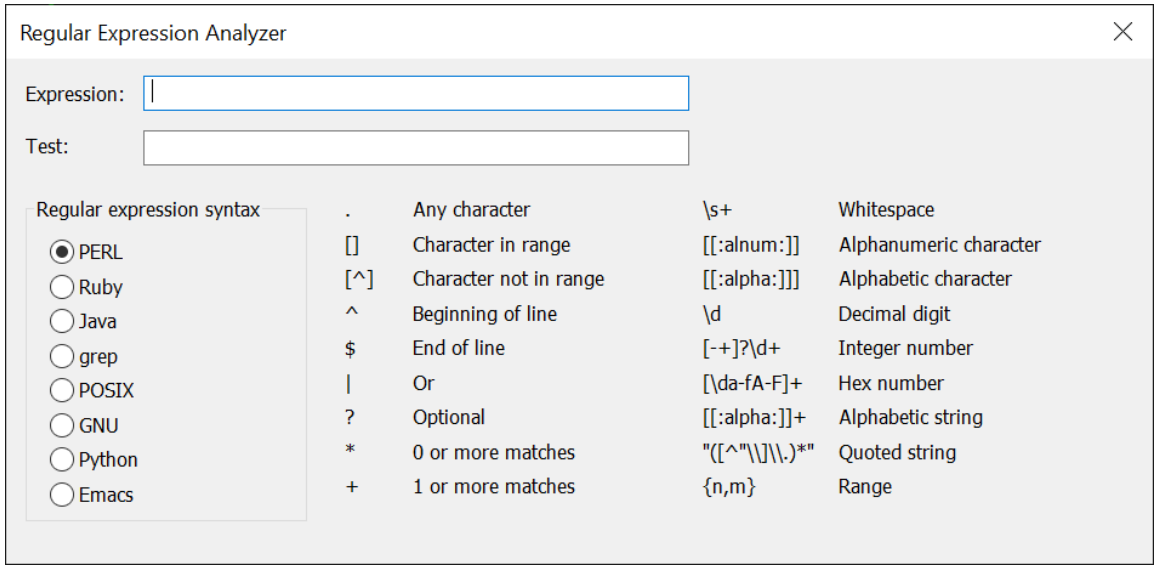
Regular Expressions...

The IDE / Batch Debugger includes a regular expression analyzer dialog. There are two edit boxes:

1) The first is for the regular expression to test.. If the regular expression is valid, the dialog will display a green check to the right of the expression edit box. If the regular expression is invalid, the dialog will display a red X.
2) The second edit box is for the text you want to match against the regular expression. If the text matches the regex, the dialog will display a green check to the right of the test edit box. If the text doesn't match, the dialog will display a red X.

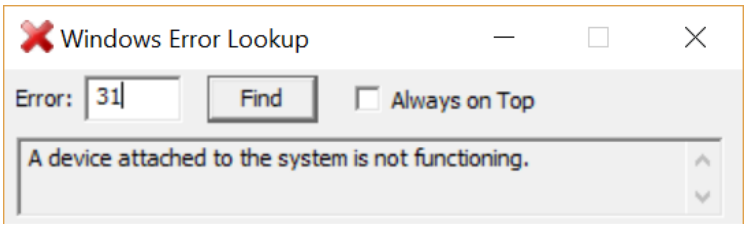
You can also choose the regular expression syntax you want to use (Perl, Ruby, Java, etc.). The analyzer will default to the current default for ***Take Command***.

The analyzer has a microsecond timer (to the right of the "Test" edit control) that measures the time it took to evaluate the expression.



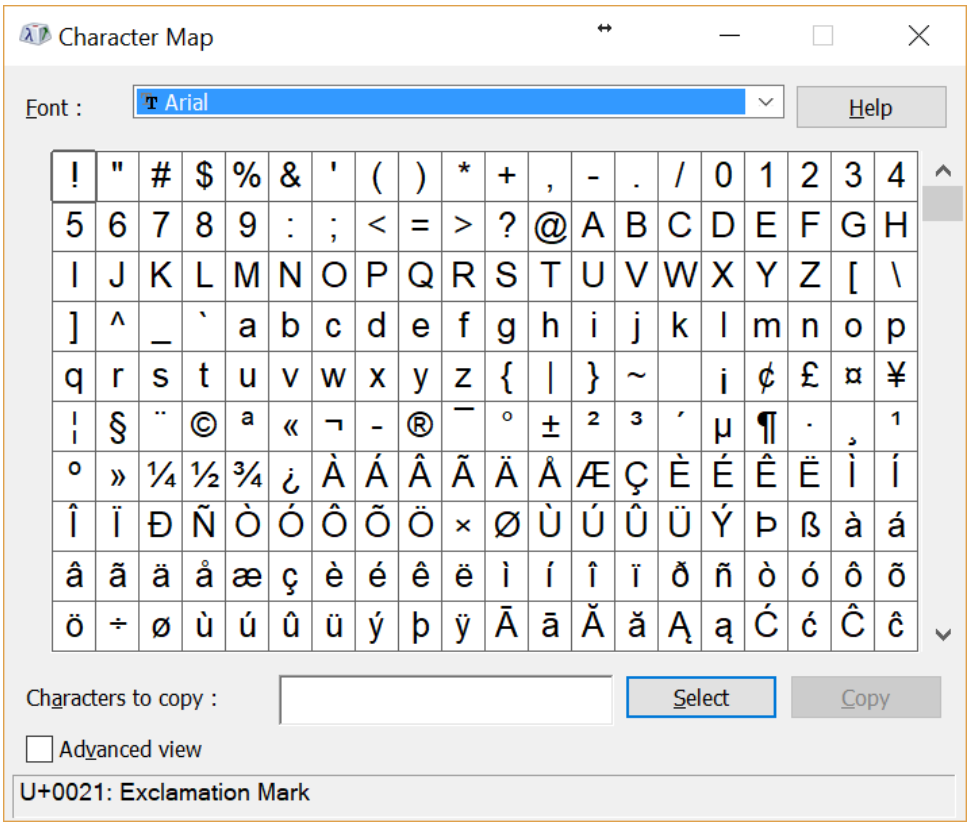
Lookup Windows Errors...

Opens a small dialog that lets you look up Windows, network, and NSTATUS error messages based on the integer value. You can enter hex input with a leading **x** or **0x**.



Character Map...

Opens the Windows Character Mapping dialog that lets you look up and copy characters for any font.



Command Prompt

Start a new ***TCC*** command prompt window.

5.2.8 Help

Help

Display the ***Take Command*** help, from which you can directly navigate to any topic. You can get help for the currently selected (highlighted) command / variable / function by pressing Ctrl-F1, or right-clicking the mouse and selecting **Help** from the context menu.

Dynamic Help

(***TCC syntax only***) Display help for the command or variable at the current cursor position.

Search Topics

Displays the **Search** window of the ***Take Command*** help file.

Index

Displays the **Index** window of the ***Take Command*** help file.

https://jpsoft.com

A hyperlink to the JP Software web site. Clicking it will attempt to display the JP Software home page in your default browser.

JP Software Forums

A hyperlink to the JP Software support forums.

Feedback

Leave a suggestion in the JP Software feedback forum.

Check for Updates

Query the JP Software web server to see if there is an updated version of ***Take Command*** available. If there is, the new version information will be displayed and you can choose to download and automatically update your existing version.

Order from JP Software

A hyperlink to our secure online store. Clicking it will attempt to display the store's first page in your default browser. Depending on your configuration, you may need to first establish an Internet connection.

About IDE

Displays the ***Take Command*** or ***CMDebug*** version, copyright, and license information.

5.3 IDE Toolbar

The IDE toolbar has a number of icons to control editing and debugging. Each has a tooltip for quick reference:

New	Create a new batch file in a new tab window.
Open	Open an existing batch file in a new tab window.
Save	Save the current batch file.
Print	Print the current batch file.
Cut	Copy the highlighted selection to the clipboard and delete it from the file.
Copy	Copy the highlighted selection to the clipboard.

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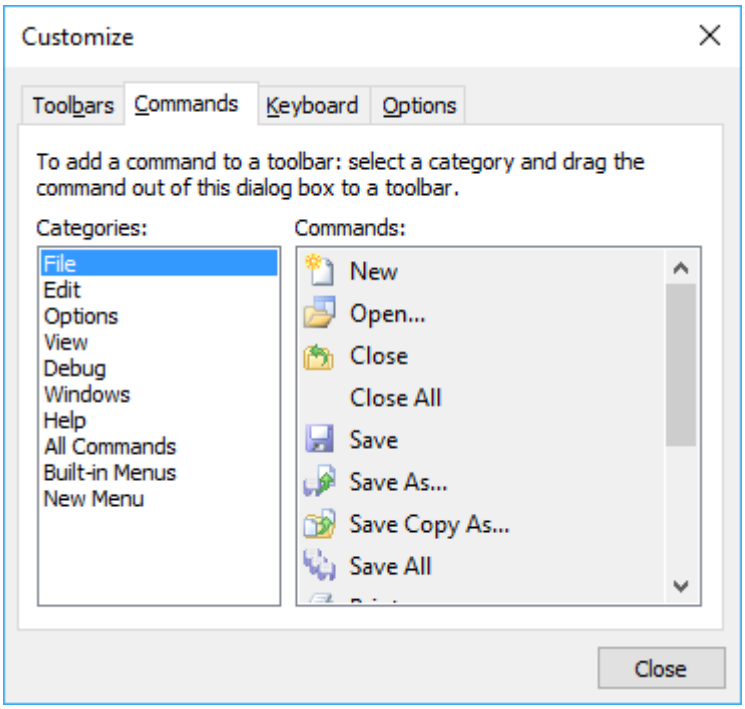
Paste	Copy the contents of the clipboard to the current cursor location.
Delete	Delete the highlighted selection.
Undo	Undo the last edit.
Redo	Restore the last Undo.
Find	Search for text.
Batch Arguments	New batch file arguments. The text will be parsed into %1 - %n batch arguments and used when the batch file is debugged.
Start Debugging	Starts the debugger. The cursor will be placed on the first line.
Pause Debugging	Pause execution at the next line.
Stop Debugging	Stops the debugger.
Step Into	Execute the current line.
Step Over	Execute the current line but disable the debugger during a CALL or GOSUB.
Run to Breakpoint	Execute the batch file, stopping at the next breakpoint.
Toggle Breakpoint	Sets or turns off a breakpoint on the current line.
Clear Breakpoints	Clear all breakpoints in the current batch file.
File Properties	Displays information on the current batch file.
Start New Shell	Start another copy of ***TCC*** (this is useful if you need to perform some tasks while debugging a file.)
Help	Display the online help.

The IDE toolbar is customizable. To customize the toolbar click on the down arrow on the right side of the toolbar.



5.4 Toolbox

When you are using ***TCC* syntax**, the IDE will show a window that lists all of the internal commands, variables, and variable functions organized by category. Double-clicking on a command will display its command dialog (if it has one), and then insert the resulting command on the current line in the editor. Selecting a command or variable and then pressing F1 will display the help for that command / variable.

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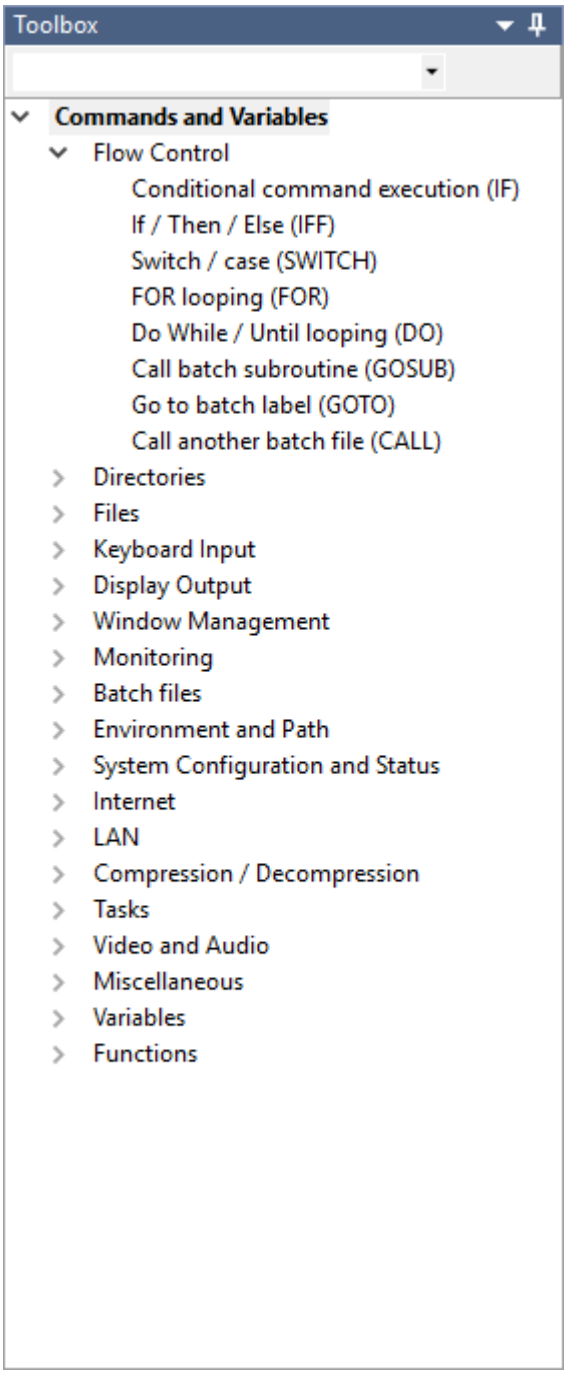

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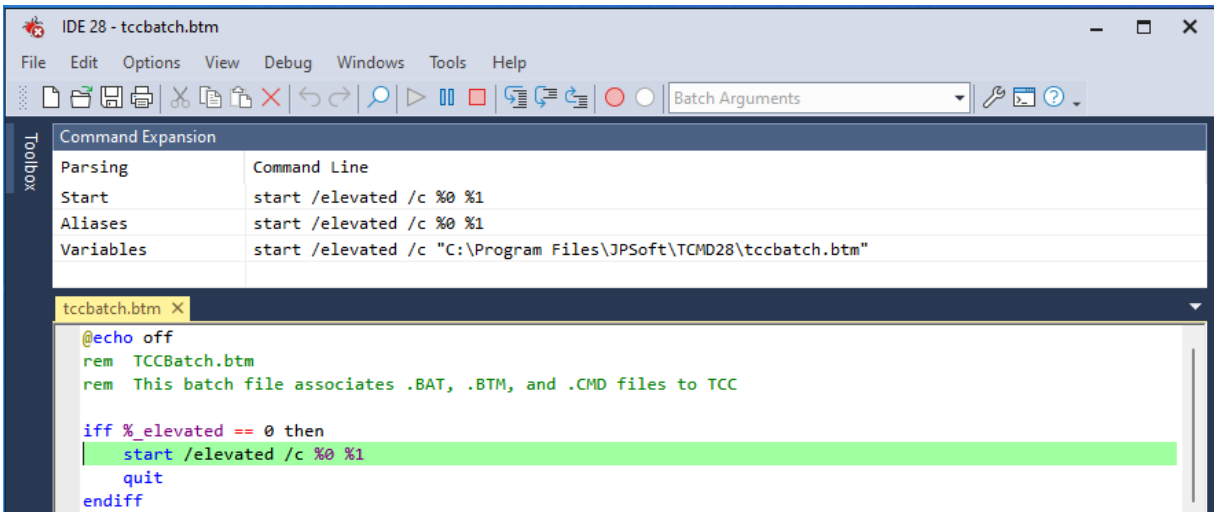
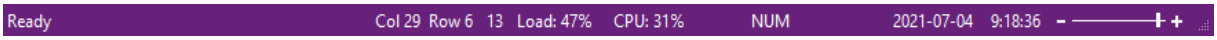
5.5 Command Expansion



The batch debugger has a "Command Expansion" window that will pop up above the tab window when you start debugging. The Command Expansion window will show the original command line, the command line after alias expansion, and the command line after variable expansion. The Command Expansion window is a docking window, so it can be moved & attached at other locations. If you don't want to see the Command Expansion window, you can turn it off from the IDE "View / Command Expansion" menu option.

5.6 IDE Status Bar

The IDE window has a Status Bar that displays tooltips when you move the cursor over menu entries.



The status bar also displays the following information:

- The current cursor position (column and row)
- The Unicode value of the character at the current cursor location
- The edit window size (columns x rows)
- The CPU usage (0 - 100%)
- The memory load (0 - 100%)
- The state of the Caps Lock key
- The state of the Num Lock key
- The state of the Insert key
- The state of the Scroll Lock key
- The current date
- The current time

If you are using ***TCC*** syntax, and the first command on the line is an internal ***TCC*** command, the IDE will display the quick usage help on left side of the status bar.

You can hide the status bar fields by right clicking on the status bar and unchecking the fields you don't want to see.

There is a slider in the right corner that allows you to change the transparency level of the IDE window. You can also change the transparency with Ctrl-Shift-Mousewheel.

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5.7 Edit Windows

The IDE edit windows allow you to edit and debug Windows batch files.

If a file in a tab edit window has been modified but not yet saved, the tab title will be prefixed with a *****. When the file is saved, the ***** is removed.

If you are using **TCC syntax**, you can get help for the currently selected (highlighted) command / variable / function by pressing Ctrl-F1, or right-clicking the mouse and selecting **Help** from the context menu. You can also hover the mouse over a ***TCC*** variable name, and the IDE will pop up a tooltip with the current value. If you hover the mouse over a ***TCC*** internal command name, the IDE will pop up a tooltip with the command syntax.

You can change the line to be executed next when in debugging mode by moving the caret to the line and either right clicking & selecting "Jump to This Line" or by pressing Ctrl-Shift-F11. Note that if you attempt to jump into or out of a DO loop or IFF block, bad things will happen!

You can block select in the edit window by holding down the Alt key while selecting text with the left mouse button.

The edit window supports multiple selections at one time. You can select additional text by holding down the Ctrl key while dragging with the mouse. Multiple selections are added to the clipboard in order with no delimiting characters. For block selections, the line end is added after each line of text. Block selections are always copied from top to bottom, not in the order of selection.

Margins

There are three possible margins on the left of the edit window:

- The line number (selectable by the "Options / Display Line Numbers" menu option).
- The Breakpoint margin (left click in this margin to set a breakpoint on this line).
- The Fold margin (selectable by the "Options / Display Fold Margin" menu option), which will display a - for blocks that can be collapsed to a single line (DO, IFF, and SWITCH commands, and command groups). When a block is collapsed, the Fold margin will display a **+**. Left clicking in the Fold margin will toggle the fold state.

Syntax Coloring

The IDE will select the syntax lexer (colorization) based on the file extension:

.bat	CMD (or optionally TCC)
.btm	TCC
.cmd	CMD (or optionally TCC)
.css	CSS
.htm	HTML
.html	HTML
.lua	Lua
.php	PHP
.pl	Perl
.ps1	PowerShell
.py	Python
.rb	Ruby

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.sh	Bash shell
.sql	SQL
.tcl	Tcl/Tk
.vbs	VBScript
.xml	XML

The edit window toolbar (which is configurable by clicking on the rightmost down arrow), has a number of icons to control debugging. Each has a tooltip for quick reference:

New	Create a new batch file in a new tab window.
Open	Open an existing batch file in a new tab window.
Save	Save the current batch file.
Print	Print the current batch file.
Cut	Copy the highlighted selection to the clipboard and delete it from the file.
Copy	Copy the highlighted selection to the clipboard.
Paste	Copy the contents of the clipboard to the current cursor location.
Delete	Delete the highlighted selection.
Undo	Undo the last edit.
Redo	Restore the last Undo.
Find	Search for text.
Batch Arguments	New batch file arguments. The text will be parsed into %1 - %n batch arguments and used when the batch file is debugged.
Start Debugging	Starts the debugger. The cursor will be placed on the first line.
Pause Debugging	Pause execution at the next line.
Stop Debugging	Stops the debugger.
Step Into	Execute the current line.
Step Over	Execute the current line but disable the debugger during a CALL or GOSUB.
Run to Breakpoint	Execute the batch file, stopping at the next breakpoint.
Toggle Breakpoint	Sets or turns off a breakpoint on the current line.
Clear Breakpoints	Clear all breakpoints in the current batch file.
File Properties	Displays information on the current batch file.
Start New Shell	Start another copy of ***TCC*** (this is useful if you need to perform some tasks while debugging a file.)
Help	Display the online help.

5.8 Call Stack Window

The Call Stack window that displays the current call stack (the filename, line #, command line, and the line(s) that called it (i.e., GOSUB or CALL).

Double-clicking on a line in the Call Stack window will take you to that line in the tab window.

5.9 Editing Commands

Edit Windows

You can block select in the edit window by holding down the Alt key while selecting text with the left mouse button.

The edit window supports multiple selections. Select additional text by holding down the Ctrl key while dragging with the mouse. Multiple selections are added to the clipboard in order with no delimiting characters. For block selections, the line end is added after each line of text. Block selections are always copied from top to bottom, not in the order of selection.

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The text processing commands available in the IDE edit windows are listed below. The text commands can be classified into general categories:

- Caret commands
- Edit commands
- Mark / Clipboard commands
- Search commands
- File commands
- Bookmark commands
- Breakpoint commands
- Expression evaluation commands

- **Caret commands**

Right	This command will move the caret one character to the right. When the caret is on the last position of the current line it is moved to the first position of the next line.
Shift-Right	In addition to the caret movement this command will also extend the current selection to the new caret position.
Left	This command will move the caret one character to the left. When the caret is on the first position of the current line it is moved to the last position of the previous line.
Shift-Left	In addition to the caret movement, this will also extend the current selection to the new position.
Up	This command will move the caret one line up. The caret column position will be set as close to its previous column position as possible.
Shift-Up	In addition to the caret movement this command will also extend the current selection to the new position.
Down	This command will move the caret one line down. The caret column position will be set as close to it's previous column position as possible. When the caret is on the last line but not on the last column it will be moved to the last column.
Shift-Down	In addition to the caret movement this command will also extend the current selection to the new position.
End	This command will move the caret to the end of the line it is currently on. If the caret is already at the end nothing happens.
Shift-End	In addition to the caret movement this command will also extend the current selection to the new position.
Home	This command will move the caret to the start of the line it is currently on. If the caret is already at the start nothing happens.
Shift-Home	In addition to the caret movement this command will also extend the current selection to the new position.
Ctrl-Right	This command will move in one of the following ways: • When the caret is located on a delimiter character the caret is moved right until the first non-delimiter is found. • When the caret is located on a non-delimiter character the caret is moved to the next delimiter character. • When the caret is located on the last word or delimiter of the current line the caret is moved to the first word or delimiter of the next line.
Ctrl-Shift-Right	In addition to the caret movement this command will also extend the current selection to the new caret position.
Ctrl-Left	This command will move in one of the following ways: • When the caret is located on a delimiter character the caret is moved to the start of the previous word. • When the caret is located on a non-delimiter character and not on a white-space character the caret is moved to the start of the current word.

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- When the caret is located on the start of the first word, delimiters or white-space of the current line the caret is moved to the start of the last word or delimiters of the previous line.

Ctrl-Shift-Left In addition to the caret movement this command will also extend the current selection to the new position.

Ctrl-Home This command will move the caret to the beginning of the text. When the caret is already at this location nothing happens.

Ctrl-Shift-Home In addition to the caret movement this command will also extend the current selection to the new position.

Ctrl-End This command will move the caret to the end of the text. When the caret is already at this location nothing happens.

Ctrl-Shift-End In addition to the caret movement this command will also extend the current selection to the new position.

PgUp This command will move the caret one view up when it is located on the top line currently in the view. When the caret is not located on the top line of the view, it will be moved there.

Shift-PgUp In addition to the caret movement this command will also extend the current selection to the new position.

PgDn This command will move the caret one view down when it is located on the bottom line currently in the view. When the caret is not located on the bottom line of the view, it will be moved there.

Shift-PgDn In addition to the caret movement, this command will also extend the current selection to the new position.

- **Edit commands**

Ctrl-Z This command will undo the last change made to the edit control contents. You can undo any number of changes made to the control contents up to the maximum number of undo/redo hops.

Ctrl-Y This command will redo the last change you have undone. You can re-do any number of changes up to the number of changes undone.

Backspace This command will remove the character to the left of the caret. When the caret is located at the start of the line, the characters right of the caret are appended to the previous line and the caret is moved to be positioned between the old line contents and the appended characters.

Delete This command removes the character to the right of the caret. When there are no characters to the right of the caret, the contents of the next line is appended to the current line.

Return This command will split the current line and create a new line of the characters, if any, right of the caret. The caret is moved to the start of the newly created line.

Ctrl-Delete When the caret is located on a word, this command will delete all characters in the word right of the caret position.

Ctrl-Backspace When the caret is located on a word, this command will delete all characters in the word left of the caret position.

Tab This command does one of the two following things:

- When there is a valid text selection, this command will indent the lines covered by the selection right by one tab-stop.
- When there is no text selection, a tab is inserted at the current caret position.

Shift-Tab When there is a valid text selection, this command will indent the lines covered by the selection left by one tab-stop.

Shift-Ctrl-U When there is a valid selection, this command will convert all lower-case characters in the selection to upper-case characters. If there is no valid selection, nothing happens.

Ctrl-U When there is a valid selection, this command will convert all upper-case characters in the selection to lower-case characters. If there is no valid

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selection, nothing happens.

Ins This command will toggle the current editing mode between overwrite and insert.

- **Mark / Clipboard commands**

Ctrl-A This command will select all the text.

Ctrl-V This command will, when there is text present in the clipboard, paste the clipboard contents at the current position.

Ctrl-C This command will, when there is a selection, copy the selected text to the clipboard.

Ctrl-Shift-C Append the current selection to the clipboard.

Ctrl-X This command will, when there is a selection, copy the selected text to the clipboard and remove the selection from the text.

- **Search commands**

Ctrl-F3 This command will find the next occurrence of the word under the caret. When the next occurrence is found, it is selected.

F3 This command will find the next occurrence of the current search pattern. When the search pattern is found, it is selected.

Shift-F3 This command will find the previous occurrence of the current search pattern. When the search pattern is found, it is selected.

Ctrl-G This command will show the *goto* dialog.

Ctrl-F This command will show the *find* dialog.

Ctrl-H This command will show the *replace* dialog.

- **File commands**

Ctrl-N Open a new file in a new tab window.

Ctrl-O Open an existing file in a new tab window.

Ctrl-W Close all files.

Ctrl-S This command will save the current file.

Ctrl-Shift-S Save all files.

Ctrl-P This command will open the print dialog.

Ctrl-I Display the properties for the current file.

Alt-F4 Exit the debugger.

- **Bookmark commands**

Ctrl-F2 This command will clear the bookmark on the current line if it is set, or set the bookmark if it is cleared.

Shift-Ctrl-F2 This command will clear all bookmarks.

F2 This command will place the caret on the next line which has a bookmark set. When there is no next line with a bookmark, the text is searched starting at the first line.

Shift-F2 This command will place the caret on the previous line which has a bookmark set. When there is no previous line with a bookmark, the text is searched from the last line up again.

- **Breakpoint commands**

Ctrl-F9 This command will toggle a breakpoint on the current line.

Ctrl-Shift-F9 This command will clear all breakpoints.

- **Expression evaluation commands**

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Alt-F11	Invoke the Evaluate Expression dialog.
Alt-Shift-F11	Invoke the Evaluate Expression dialog for the current selection.
	You can select the result and copy it to the clipboard.

5.10 Modified Tab Window

The Modified variables window shows all variables that are created or modified while executing the batch file. (This is like the "Auto" window in Visual Studio.) The window will show the variable name, the previous value, and the new value.

The Modified window has a toolbar, with the following buttons:

New	Restore the original values for the modified variables list
Save	Save the current modified variables list to a file
Apply	Replace the original values with the modified list
Print	Print the current modified variables list
Cut	Copy the highlighted selection to the clipboard and delete it from the modified variables list
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

5.11 Watch Tab Window

The Watch window allows you to monitor environment variables, internal variables, variable functions, and user-defined functions, or to pause execution when a specified condition is met. The Watch window appears at the bottom of the debugger window. Enter the variable name or expression in the left column; the debugger will automatically display the current value in the right column. You can also add a variable to the Watch window by selecting it in the main debugger window, then clicking the right mouse button and selecting "Add to Watch". If the string in the left column is a single argument, it is assumed to be a variable name. Otherwise, it is assumed to be an expression. Expressions can be anything that IF can evaluate; for example:

```
%i = 3
ERRORLEVEL GT 12
```

Note that expressions require variable names to be prefixed by a %. If you're entering a single variable argument to monitor, do not use a %.

If you right click on the first column in the Watch window, the debugger will display an environment variable listbox. Select an entry to have it added to the watch list.

When the value of a monitored variable changes, the Watch window will change the text color to red.

The Watch tab default to always showing two variables:

%_?	The last ***TCC*** internal command result
%?	The last ERRORLEVEL value

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The watch windows has a toolbar, with the following buttons:

New	Restore the original values for the watch list
Open	Add the contents of a file to the watch list
Save	Save the current watch list to a file
Apply	Replace the original values with the modified watch list
Print	Print the current watch list
Cut	Copy the highlighted selection to the clipboard and delete it from the watch list
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

The debugger will automatically save watch lists (the current batch file name + ".watch"), and reload them the next time the batch file is loaded in the debugger.

5.12 Breakpoints Tab Window

The IDE debugger will pause when it reaches a line with a breakpoint set.

You can set a breakpoint either through the menu, the toolbar, or by moving the mouse cursor to the left margin of a line and left-clicking. You can only set a breakpoint on an executable line (i.e., not on a blank line, comment, label, etc.),

You can define conditional breakpoints by specifying the number of iterations before the breakpoint is triggered, and/or define a conditional expression that must be true before the breakpoint is triggered. After setting the breakpoint, enter the conditions either by right-clicking on the breakpoint and selecting "Break >=" (to set the minimum number of iterations), or "Condition" (to set the conditional expression). You can also select the Breakpoint window and double-click on the "Break >=" or "Condition" columns to edit or modify the conditions.

You can temporarily disable a breakpoint (without deleting it) by right-clicking on the breakpoint and selecting "Enable/Disable Breakpoint". You can disable all breakpoints by clicking on the Debug menu and selecting "Disable All Breakpoints".

The breakpoint window has a toolbar, with the following buttons:

New	Restore the original values for the breakpoints list
Open	Add the contents of a file to the breakpoints list
Save	Save the current breakpoints list to a file
Apply	Replace the original values with the modified breakpoints list
Print	Print the current breakpoints list
Cut	Copy the highlighted selection to the clipboard and delete it from the breakpoints
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

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The debugger will automatically save breakpoints (the current batch file name + ".bp"), and reload them the next time the batch file is loaded in the debugger.

5.13 Environment Tab Window

The environment window displays the Windows environment used when debugging the batch file in the active edit window.

The environment variables window displays any variables changed since the last command in red. You can specify variables to exclude from the environment variable window with the DebugVariableExclude variable. For example, to suppress the display of the processor and user variables:

```
set DebugVariableExclude=proc*;user*
```

Note that this option doesn't affect the existence of the variables, just whether they're displayed in the environment variable window.

The environment window has a toolbar, with the following buttons:

New	Restore the original values for the environment
Open	Add the contents of a file to the environment
Save	Save the current environment to a file
Apply	Replace the original values with the modified environment
Print	Print the current environment
Cut	Copy the highlighted selection to the clipboard and delete it from the environment
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

5.14 Batch Parameters Tab Window

The Batch Parameters window shows the batch file arguments (%0 - %9). You can enter default arguments using the batch arguments combo box on the toolbar. (You can change them before running the batch file.)

The Batch Variables window supports modifying any of the batch arguments during batch file execution.

The batch window has a toolbar, with the following buttons:

New	Restore the original values for the batch parameters
Open	Add the contents of a file to the batch parameters list
Save	Save the current batch parameters list to a file
Apply	Replace the original values with the modified batch parameters list

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Print	Print the current list
Cut	Copy the highlighted selection to the clipboard and delete it from the batch parameters
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

5.15 Aliases Tab Windows

(TCC Syntax Only)

The Local and Global Aliases tab windows allows you to display and/or modify ***TCC*** user-defined functions.

TCC will only display the Local Alias tab window if you have local aliases defined, and the Global Alias tab window if you have global aliases defined.

The aliases windows have a toolbar, with the following buttons:

New	Restore the original values for the alias list
Open	Add the contents of a file to the alias list
Save	Save the current alias list to a file
Apply	Replace the original values with the modified alias list
Print	Print the current alias list
Cut	Copy the highlighted selection to the clipboard and delete it from the alias list
Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

5.16 Functions Tab Windows

(TCC Syntax Only)

The Local and Global Functions tab windows allows you to display and/or modify ***TCC*** user-defined functions.

TCC will only display the Local Functions tab window if you have local functions defined, and the Global Functions tab window if you have global functions defined.

The Functions windows have a toolbar, with the following buttons:

New	Restore the original values for the user-defined functions list
Open	Add the contents of a file to the user-defined functions list
Save	Save the current user-defined functions list to a file
Apply	Replace the original values with the modified user-defined functions list
Print	Print the current user-defined functions list
Cut	Copy the highlighted selection to the clipboard and delete it from the user-defined functions list

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Copy	Copy the highlighted selection to the clipboard
Paste	Copy the contents of the clipboard to the current cursor location
Delete	Delete the highlighted selection (or the character at the cursor location if no selection)
Undo	Undo the last edit
Redo	Restore the last Undo
Find	Search for text
Help	Display the online help

6 Troubleshooting

- Troubleshooting Service and Support
- Supported Platforms
- Help File
- Error Messages
- Registration

6.1 Troubleshooting, Service & Support

If you need help with ***Take Command***, we encourage you to review our documentation and then contact us for assistance if required.

If you need help with sales, ordering, or registration keys, please contact our Sales and Customer Service department. See Contacting JP Software for our email address, mail address, and telephone numbers. Note that Sales and Customer service staff cannot assist you with technical problems and conversely Technical Support representatives cannot answer your sales or registration questions.

If you need technical support for ***Take Command***, review the Technical Support information section, which tells you what we need to know to provide you with accurate and timely support, then contact us via one of the methods described there. In most instances, our Online Support Forum is the fastest and most efficient way to address your technical questions and concerns.

6.1.1 Technical Support

Support Plans

Standard, no-charge support is available electronically through our Support Forums (see below). We also offer a paid support option which includes automatic upgrades and support by private email or telephone. For complete details on all support options, including plans currently offered and support terms and conditions, see our web site at https://jpsoft.com/.

Before you contact Technical Support, please review the What Information do we need? section which outlines the basic data we need to best address your questions and concerns.

Online Support

The primary venue for Technical Support is via our free online Support Forums, where our support personnel can read and respond to your messages, and other users can participate in and benefit from the exchange. The Forums are a lively community frequented by a number of experienced and helpful users. JP Software representatives read every Forum message and respond as promptly as reasonably possible whenever appropriate.

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If you have any kind of Internet access, even if only email, chances are you can use the Forums which we make accessible as a mailing list and a set of web pages. Forum members must provide a valid email address and a full name to be able to post, but you do need not need to join or provide any information to simply visit or search the Forum. For complete details and direct access links see the support area of our web site at https://jpsoft.com/.

A number of other support resources are available from our web site, including documentation files, technical tips and discussions, other technical information, and links to other sites. We update this information regularly, and we encourage you to check the Technical Support area of the web site to see if the information there will address any questions you have.

If you are unable to gain access to the forum, or you need to include confidential information in your support request, contact us via email at support@jpsoft.com and we will assist you in resolving the problem with forum access, or assist you with your request privately if appropriate. Please do not use that address for standard support questions which can be posted on the forum.

If you are a paid support customer you should use the online Support Forums for routine questions. To create a private support incident refer to the materials sent to you with your subscription for contact information, or email priority_support@jpsoft.com and include your support ID (mail to this address may not be answered if it does not include a valid support ID).

What Information do we need?

Before contacting us for support, please check this help file and other documentation for answers to your question. If you can't find what you need, try the Index. If you're having trouble getting ***Take Command*** to run properly, review the information on Error Messages, and look through the Support Forum for any last-minute information.

If you need help with sales, ordering, registration keys, or other similar non-technical issues please contact our Sales and Customer Service department. Technical Support will not be able to assist you with those matters. Conversely, Customer Service is not equipped to answer your technical questions. See Contacting JP Software for our addresses.

Regardless of how you contact us for support, we can do a much better job of assisting you if you can give us some basic information, separate from your interpretations of or conclusions about the problem. Remember that we know NOTHING about your system or configuration unless you tell us, and we can't always make accurate guesses if you don't. The first four items listed below are essential for us to be able to understand and assist you with your problem:

- **What environment are you working in?** This includes the operating system version you are using, the version of the JP Software product involved, and related information such as network connections and the name and version number of any other software which appears to be involved in the problem. Use the VER /R command to determine the ***Take Command*** version and operating system version. This item is essential**!** Every question posted on the Forum should include a brief identification such as "Take Command 28.0.12 under Windows 10 x64" or something similar.

- **What exactly did you do?** A concise description of what steps you must take to make the problem appear is much more useful than a long analysis of what might be happening. In most cases, posting the exact command line(s) giving you trouble is the simplest approach.

- **What did you expect to happen?** Tell us the result you expected from the command or operation in question, so that we understand what you are trying to do. Something that seems "obvious" to you might not be so to others. For example, tell us "I was expecting the file name to be in upper case" or a similar brief explanation.

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- **What actually happened?** At what point did the failure occur? If you saw an error message or other important or unusual information on the screen, what **exactly** did it say? Don't simply tell us "it didn't work". For example, if you were expecting output from a command and saw none, at least tell us that much.

- **Briefly, what techniques did you use to try to resolve the problem?** What results did you get? One technique that tends to solve many problems is to review the help for the command or feature in question and try it with the documented exact correct syntax, as opposed to some undocumented alternative.

- **If the problem seems related to startup and configuration issues,** what are the contents of any startup files you use (such as TCSTART or TCEXIT, and the .INI file), any batch files they call, and any alias or environment variable files they load?

- **Can you repeat the problem or does it occur randomly?** If it's random, does it seem related to the programs you're using when the problem occurs? Random or occasional problems are very difficult to diagnose. Do your best to determine some sort of pattern or sequence of events that triggers the problem. If you can't reproduce it, chances are we won't be able to either. Note that mysterious unexplainable problems often permanently disappear after simply reloading the program or even rebooting the system.

- If ***Take Command***, ***TCC.*** or the IDE experience an unrecoverable failure, they will save the error information to tcmd.log, tcc.log, and ide.log files that contain the error info (including the file name, function, and line number of the error). The log files will be created in the installation directory if it is writeable (i.e. not in "Program Files" or "Program Files (x86)). If not, they will be in c:\users\<username>\appdata\local\jpsoft.

6.1.2 Contacting JP Software

You can contact JP Software at the following addresses. Our normal business hours are 9:00 AM to 5:00 PM weekdays, Eastern US time (except holidays).

Address:	**JP Software Inc.** **P.O. Box 328** **Chestertown, MD 21620** **USA**
Online:	Web site: https://jpsoft.com/ Sales / Customer Service
Technical Support:	Standard (no-charge) support: Available via our online Support Forum, accessible from the support area of our web site.

See Technical Support for additional details, and for information on paid support options.

Note: Our server implements anti-spam measures. Please make sure you are using the correct address with appropriate subject line and contents, else we might not receive your email message.

6.2 Supported Platforms

Take Command and ***CMDebug*** a 64-bit GUI applications.

TCC and ***TCC-RT*** are 64-bit console (character-mode) applications.

The 32-bit versions of ***Take Command*** and ***TCC*** were discontinued in version 26 and later.

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Take Command, TCC, CMDebug, and ***TCC-RT*** are supported on Windows 10 (and later) and Windows Server 2016 and 2019.

6.3 Help File

The installer for ***Take Command*** includes **TakeCommand.ewriter.** That file includes description and syntax for all commands, variables and functions, as well as reference information to assist you in installing and using ***Take Command*** and developing batch files, aliases and functions.

The help is also available on our web site as a PDF file or as web help at https://jpsoft.com/downloads/v28/tcmd.pdf.

You can request help at the prompt from the **Help** menu, by typing HELP (or HELP plus a command name), or by pressing the F1 key at any time when ***TCC*** is accepting keyboard input at the prompt. If you use the HELP command by itself you will be taken to an introductory page, but if you follow the command with a topic name (e.g. **help copy**) you will see help on the requested topic if available.

If you type a command name on the line and then press F1, the help system will provide context sensitive help by using the first word on the line as the help topic. For example, if you press **F1** after entering each of the command lines shown below you will get the display indicated:

`[c:\]`	Overview
`[c:\] copy * a:`	Help on the COPY command
`[c:\] c:\util\map`	"The page cannot be displayed"

You can use this feature to obtain help directly on any topic, not just on commands. All internal commands, internal variables, variable functions, and key mapping directives have their own topic, allowing you to directly query, for example, **help @eval** (help for the @eval[] function) or **help _disk** (help for the _DISK internal variable).

You can also invoke help for the word immediately above (or immediately to the left of) the cursor by pressing the Ctrl-F1 key. This feature is especially useful when you need the syntax for a variable function.

If the topic you seek is not listed, look for a suitable cross reference from the **Index** tab or use the **Search** tab. The topics you use most often can be stored and recalled through the **Favorites** tab.

Quick Syntax Help:

If you just need a quick reminder of an internal command's syntax, type the name of the command at the prompt, followed by a slash and a question mark **/?** For example:

```
copy /?
```

TCC will display the syntax and the valid options for the command.

If you are running ***TCC*** in a ***Take Command*** tab window, and you enter an internal command name, ***Take Command*** will display quick help for that command on the status bar. If you move the mouse over the status bar, ***Take Command*** will display a more detailed tooltip help window.

6.4 Error Messages

This section lists error messages generated by ***Take Command***, and includes a recommended course of action for most errors. If you are unable to resolve the problem after reviewing these help files, contact JP Software for technical support.

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Error messages relating to files are generally reports of errors returned by Windows. You may find some of these messages (for example, "Access denied") vague enough that they are not always helpful. ***Take Command*** includes the file name in file error messages, but is often unable to determine a more accurate explanation of these errors. The message shown is the best information available based on the error codes returned by Windows.

Not all errors potentially reported by Windows can be listed here. See Windows System Errors for examples of system errors returned in the _SYSERR internal variable.

The following list includes most common error messages, in alphabetical order:

Access denied: You tried to write to or erase a read-only file, rename a file or directory to an existing name, create a directory that already exists, remove a read-only directory or a directory with files or subdirectories still in it, or access a file in use by another program in a multitasking system.

Alias loop: An alias refers back to itself either directly or indirectly (*i.e.*, a = b = a), or aliases are nested more than 16 levels deep. Correct your alias list.

Already debugging a batch file: You are attempting to invoke a nested instance of the Batch File Debugger (BDEBUGGER) while you are already in the debugger.

Already excluded files: You used more than one exclude range in a command. Combine the exclusions into a single range.

Array variable is already defined: You tried to create an array variable that already exists.

Bad disk unit: Generally caused by a disk drive hardware failure.

Batch file missing: ***TCC*** can't find the batch (*.BTM* or *.CMD*) file it was running. It was either deleted, renamed, moved, or the disk was changed. Correct the problem and rerun the file.

Can't COPY or MOVE file to itself: You cannot COPY or MOVE a file to itself. ***TCC*** attempts to perform full path and filename expansion before copying to help ensure that files aren't inadvertently destroyed.

Can't create: ***TCC*** can't create the specified file. The disk may be full or write protected, or the file already exists and is read-only, or the root directory is full.

Can't delete: ***TCC*** can't delete the specified file or directory. The disk is probably write protected.

Can't end current process: You attempted to terminate ***TCC*** with a TASKEND command. TASKEND can only be used to end other processes; to terminate ***TCC***, use the EXIT command.

Can't get directory: ***TCC*** can't read the directory. The disk drive is probably not ready.

Can't make directory entry: ***TCC*** can't create the filename in the directory. This is usually caused by a full root directory. Create a subdirectory and move some of the files to it.

Can't open: ***TCC*** can't open the specified file. Either the file doesn't exist or the disk directory or File Allocation Table is damaged.

Can't query key type: The key name supplied to @REGQUERY refers to a key with a type that @REGQUERY does not support. See @REGQUERY for a list of supported key types.

Can't remove current directory: You attempted to remove the current directory, which Windows does not allow. Change to the parent directory and try again.

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CD-ROM door open or **CD-ROM not ready**: The CD-ROM drive door is open, the power is off, or the drive is disconnected. Correct the problem and try again.

CD-ROM not High Sierra or ISO-9660: The CD-ROM is not recognized as a data CD (it may be a music CD). Put the correct CD in the drive and try again.

Clipboard is empty or not text format: You tried to retrieve some text from the Windows clipboard, but there is no text available. Correct the contents of the clipboard and try again.

Clipboard is in use by another program: ***Take Command*** could not access the Windows clipboard because another program was using it. Wait until the clipboard is available, or complete any pending action in the other program, then try again.

Command line too long: A single command or the entire command line exceeded the maximum allowable length (including during alias, variable, or function expansion). Reduce the complexity of the command or use a batch file. Also check for an alias which refers back to itself either directly or indirectly.

Command only valid in batch file: You have tried to use a batch file command, like DO or GOSUB, from the command line or in an alias. A few commands can only be used in batch files (see the individual commands for details).

Contents lost before copy: COPY was appending files, and found one of the source files is the same as the destination. That source file is skipped, and appending continues with the next file.

Data error: Windows can't read or write properly to the device. On a floppy drive, this error is usually caused by a defective floppy disk, dirty disk drive heads, or a misalignment between the heads on your drive and the drive on which the disk was created. On a hard drive, this error may indicate a drive that is too hot or too cold, or a hardware problem. Retry the operation; if it fails again, correct the hardware or diskette problem.

Directory stack empty: POPD or DIRS can't find any entries in the directory stack.

Disk is write protected: The disk cannot be written to. Check the disk and remove the write-protect tab or close the write- protect window if necessary.

Divide by zero: The command or function you used tried to do a division by zero. If the data causing the problem is from your own input or batch file, change the input to avoid the divide by zero condition. If the data was generated internally by ***Take Command***, contact JP Software for assistance.

Drive not ready; close door: The removable disk drive door is open. Close the door and try again.

Duplicate redirection: You tried to redirect standard input, standard output, or stand error more than once in the same command. Correct the command and try again.

Error in command line directive: You used the **//iniline** option to place an .INI directive on the startup command line, but the directive is in error. Usually a more specific error message follows, and can be looked up in this list.

Error on line [nnnn] of [filename]: There is an error in your .INI file. The following message explains the error in more detail. Correct the line in error and restart ***TCC*** for your change to take effect.

Error reading: Windows experienced an I/O error when reading from a device. This is usually caused by a bad disk, a device not ready, or a hardware error.

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Error writing: Windows experienced an I/O error when writing to a device. This is usually caused by a full disk, a bad disk, a device not ready, or a hardware error.

Exceeded the maximum number of simultaneous monitors: You have attempted to create more than 100 monitoring functions.

File Allocation Table bad: Windows can't access the FAT on the specified disk. This can be caused by a bad disk, a hardware error, or an unusual software interaction.

File association not found: The ASSOC command could not find a file association for the specified extension in the Windows registry.

File exists: The requested output file already exists, and ***TCC*** won't overwrite it.

File not found: ***TCC*** couldn't find the specified file. Check the spelling and path name.

File type not found: The FTYPE command could not find the specified file type in the Windows registry.

General failure: This is usually a hardware problem, particularly a disk drive failure or a device not properly connected to a serial or parallel port. Try to correct the problem, or reboot and try again. See also: **Data error** above.

Include file not found: You used the Include directive in the .INI file, but the file you specified was not found or could not be opened.

Include files nested too deep: You used the Include directive in the .INI file, and attempted to nest include files more than three levels deep.

Infinite COPY or MOVE loop: You tried to COPY or MOVE a directory to one of its own subdirectories and used the /S switch, so the command would run forever. Correct the command and try again.

Input and output files must have different names: (BATCOMP) You are attempting to compress a file to itself.

Input file is already compressed: (BATCOMP) You are attempting to compress a batch file that has already been compressed.

Insufficient disk space: COPY or MOVE ran out of room on the destination drive. Remove some files and retry the operation.

Invalid array argument (out of bounds): You tried to reference an array element that exceeded the array size.

Invalid batch file: The batch file is corrupted, or improperly compressed, or encrypted. Retry with a new copy of the file.

Invalid character value: You gave an invalid value for a character directive in the .INI file.

Invalid choice value: You gave an invalid value for a "choice" directive (one that accepts a choice from a list, like "Yes" or "No") in the INI file.

Invalid color: You gave an invalid value for a color directive in the INI file.

Invalid count: The character repeat count for KEYSTACK is incorrect.

Invalid date: An invalid date was entered. Check the syntax and reenter.

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Invalid directive name: ***Take Command*** can't recognize the name of a directive in the INI file.

Invalid drive: A bad or non-existent disk drive was specified.

Invalid key name: You tried to make an invalid key substitution in the INI file, or you used an invalid key name in a keystroke alias or command. Correct the error and retry the operation.

Invalid numeric value: You gave an invalid value for a numeric directive in the INI file.

Invalid parameter: ***TCC***didn't recognize a parameter. Check the syntax and spelling of the command you entered.

Invalid path: The specified path does not exist. Check the disk specification and/or spelling.

Invalid path or file name: You used an invalid path or filename in a directive in the .INI file.

Invalid time: An invalid time was entered. Check the syntax and reenter.

Keystroke substitution table full: ***TCC*** ran out of room to store keystroke substitutions entered in the .INI file. Reduce the number of key substitutions or contact JP Software or your dealer for assistance.

Label not found: A GOTO or GOSUB referred to a non-existent label. Check your batch file.

Listbox is full: There is no more room in the Find Files / Text dialog's results box. Use a more selective search, or use the FFIND command rather than the dialog.

Missing close paren: A KEYSTACK command is missing a closing parentheses around a character group. Correct the command.

Missing ENDTEXT: A TEXT command is missing a matching ENDTEXT. Check the batch file.

Missing GOSUB: ***TCC*** cannot perform the RETURN command in a batch file. You tried to do a RETURN without a GOSUB, or your batch file has been corrupted.

Missing SETLOCAL: An ENDLOCAL was used without a matching SETLOCAL.

No aliases defined: You tried to display aliases but no aliases have been defined.

Not an array variable: You tried to reference a non-existent array variable.

No closing quote: ***TCC*** couldn't find a second matching back quote [`] or double-quote ["] on the command line.

No expression: The expression passed to the %@EVAL variable function is empty. Correct the expression and retry the operation.

No shared memory found: The SHRALIAS command could not find any global alias list, history list, or directory history list to retain, because you executed the command from a session with local lists. Start ***TCC*** with at least one global list, then invoke SHRALIAS.

No SMTP server: SENDMAIL can't find an SMTP server. Check your INI file or mailer configuration (see SENDMAIL for additional details).

Not a directory: The name passed to RD is not a directory.

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Not an alias: The specified alias is not in the alias list.

Not in environment: The specified variable is not in the environment.

Not ready: The specified device can't be accessed.

Not same device: This error usually appears in RENAME. You cannot rename a file to a different disk drive.

Out of function space: You are attempting to create a User-defined Function that would require more resources than what your system makes available. Shorten the function definition or delete functions you no longer need

Out of memory: ***Take Command*** or Windows had insufficient memory to execute the last command. Try to free some memory by closing other sessions. If the error persists, contact JP Software for assistance.

Out of paper: Windows detected an out-of-paper condition on one of the printers. Check your printer and add paper if necessary.

Overflow: An arithmetic overflow occurred in the @EVAL variable function. Check the values being passed to @EVAL.

Read error: Windows encountered a disk read error; usually caused by a bad or unformatted disk. See also: **Data error** above.

Sector not found: Disk error, usually caused by a bad or unformatted disk. See also: **Data error** above.

Seek error: Windows can't seek to the proper location on the disk. This is generally caused by a bad disk or drive. See also: **Data error** above.

Sharing violation: You tried to access a file in use by another program in a multitasking system or on a network. Wait for the file to become available, or change your method of operation so that another program does not have the file open while you are trying to use it.

SHRALIAS already loaded: You used the SHRALIAS command to load SHRALIAS.EXE, but it was already loaded. This message is informational and generally does not indicate an error condition.

SHRALIAS not loaded: You used the SHRALIAS /U command to unload SHRALIAS.EXE, but it was never loaded. This message is informational and may not indicate an error condition.

String area overflow: ***TCC*** ran out of room to store the text from string directives in the .INI file. Reduce the complexity of the *.INI* file or contact JP Software for assistance.

String too long: You tried to put more than 2038 characters into the KEYSTACK buffer. Reduce the number of characters you are trying to send to the application at one time.

Syntax error: A command or variable function was entered in an improper format. Check the syntax and correct the error.

Too many open files: Windows has run out of file handles.

Unbalanced parentheses: The number of left and right parentheses did not match in an expression passed to the @EVAL variable function. Correct the expression and retry the operation.

UNKNOWN_CMD loop: The UNKNOWN_CMD alias called itself more than ten times. The alias probably contains an unknown command itself, and is stuck in an infinite loop. Correct the alias.

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Unknown command: A command was entered that ***TCC*** didn't recognize and couldn't find in the current search path. Check the spelling or PATH specification. You can handle unknown commands with the UNKNOWN_CMD alias (see ALIAS).

Unknown option name: (OPTION) You are attempting to modify or display an invalid or unknown option name.

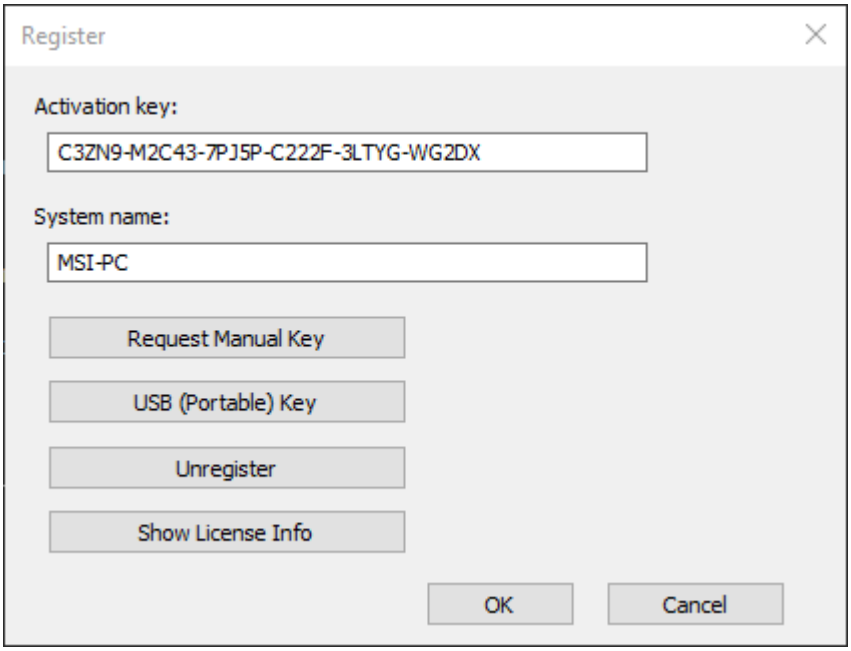
Unknown process: TASKEND cannot find the process you specified. If you are ending a process using the title you may need to use wildcards to get a match on the title string. Correct the command and try again.

Variable loop: A nested environment variable refers to itself, or variables are nested more than 16 deep. Correct the error and retry the command.

Window title not found: The ACTIVATE command could not find a window with the specified title. Correct the command or open the appropriate window and try again.

Write error: Windows encountered a disk write error; usually caused by a bad or unformatted disk. See also: **Data error** above.

7 Registration



There are no separate **trial** and **registered** versions of ***Take Command.*** Without registration, a trial version is fully functional for 30 days of use.

At any time you can apply your current personal registration information to a trial version in order to turn it into a registered product. Use the command VER /R from the ***TCC*** prompt to verify the status of the copy you are currently running. You can also view the Help/About menu entry in ***Take Command***.

When you purchase a new or upgrade copy of ***Take Command***, you will receive an email with your name and registration key. Start ***Take Command***, click on the **Help** menu entry and then **Register**. Select the **Register** tab and enter the registration information exactly as you received it in the email. Remember to

save your registration key in a safe place in case you need to reinstall. If you have lost your registration key, you can request a replacement by contacting JP Software at operations@jpsoft.com.

You can unregister any system, provided you have the original activation key and the name of the computer to unregister. Click on the **Help** menu entry and then **Register.** The registration dialog has an "Activation key" field, and a "System name" field for the computer name (which defaults to the current system). Enter the activation key you received with your order email, and the name of the computer you wantto unregister. Click the "Unregister" button to remove the specified system. ***Take Command*** will open a web page on your browser with the unregistration result.

You can generate a manual key (one that doesn't require internet activation) on any system, provided you have the original activation key and the name of the computer to register, and the system where you request the key does have internet access. The registration dialog has a "System name" field for the computer name (which defaults to the current system). Enter the name and click the "Request Manual Key" button. ***Take Command*** will open a web page on your browser that returns the manual key. Copy that key value and enter it in the "Activation Key" field on the registration dialog on the computer you want to register.

You can display your license info on the registration server. Bring up the registration dialog, enter your activation key and click on the "Show License Info" button. ***Take Command*** will open a web page on your browser that shows the maximum number of systems you can register, the name(s) of registered systems, and the dates they were registered.

TCC Registration

If you ordered the stand-alone version of ***TCC,*** you can register it by running the OPTION command and clicking on the Register tab. The registration dialog is the same as described above for ***Take Command***.

8 Reference

- Updater
- Windows x64
- Plugins
- CMD Comparison
- CMD Compatibility
- Limits
- File Systems and File Name Conventions
- Regular Expression Syntax
- Miscellaneous Reference Information
- ANSI X3.64 Command Reference
- Colors, Color Names & Codes

8.1 Updater

You can check for updates to ***Take Command*** with the Help / Check for Updates menu entry. (In ***TCC***, you can also use the OPTION / Check for Updates tab.)

You can also automate updates by using the Updater tool. UPDATER.EXE is a small executable tool (located in your ***Take Command*** installation directory) whose role is to check for updates, inform the user of their presence and offer to download and install them. When launched, the Updater checks if a newer version of ***Take Command*** exists.

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Updater options

You can also run the Updater from the command line or batch files. The Updater has the following command line options:

- /checknow - The Updater is launched, pops up a dialog box, checks for updates and automatically informs the user that new updates are available. If no updates are available, the Updater will exit immediately.
- /silent - The Updater will search silently for updates at the interval specified by the user. The search interval can be specified in the Configuration dialog. By default it is the value you specified in the "Check Frequency" field (Updater Page). If the check frequency has not passed or there are no updates available, the Updater will exit immediately.
- /silentall - The Updater will search silently for updates and automatically install all updates. This has the has the same effect as the /silent option if the user has selected the "Check and automatically install all updates" option in the configuration dialog. If the check frequency has not passed or there are no updates available, the Updater will exit immediately.
- /configure - the Configure dialog will be displayed allowing the configuration of the Updater. In this dialog the user can specify the download folder, the check frequency, enable or disable the automatically update option.

8.2 Windows x64

Take Command, TCC, CMDebug, and ***TCC-RT*** are 64-bit (x64) applications and only run on 64-bit Windows versions (Windows 10 and later, and Server 2016 and later).

8.3 Plugins

TCC plugins are user-written DLL's that allow you to write your own internal variables, variable functions, and internal commands, and have ***TCC*** load them at startup. Plugin names will override existing names, so you can extend and/or replace internal variables and commands. When ***TCC*** starts, it will automatically load any plugins in the default directory (the subdirectory PLUGINS\ in the ***TCC*** installation directory). The plugins will be loaded before the startup file (TCSTART) are executed.

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. For example:

```
echo %_myplugin$variable
echo %@myplugin$func[abc]
myplugin$mycommand
```

Plugins can be written in any language that can create a Windows DLL. The ***TCC*** plugin SDK has samples for Visual C++ and Delphi. The SDK is available on our web site at https://jpsoft.com/downloads/sdk/sdk.zip.

Keystroke Plugins:

You can also write keystroke plugins that will be called for every keystroke entered at the command line. A keystroke plugin can perform actions when a specific key is entered, or even change the key before passing it back to the command processor. Keystroke plugins are called after key aliases, and before ***TCC*** looks for the default action for that key.

V24+ only: If the value passed in "nKey" is 0, the key is not a valid Unicode character, and the plugin needs to parse the ***pszKey*** string to get the name. The name will be passed in the format:

```
[Ctrl-][Alt-][Shift-]key
```

For example:

```
F12
Ctrl-F1
Ctrl-Alt-Left
Ctrl-Shift-F5
```

The keystroke plugin can modify the ***nKey*** or ***pszKey*** value and pass it back to ***TCC*** to evaluate the default action for the (new) value. If ***nKey*** is != 0, ***TCC*** will treat it as a normal Unicode character. If ***nKey*** = 0, ***TCC*** will evaluate ***pszKey*** for a valid keyname.

If the plugin handled the key and doesn't want ***TCC*** to do anything more, set ***nKey*** to 0 and ***pszKey*** to an empty string (write a null to the first byte).

Plugin Syntax:

```
// PluginInfo structure - returned by plugin in response to GetPluginInfo()
call from command processor
// Note that the strings should all be Unicode; if your PlugIn is compiled for
ASCII you'll need to use
//   the MultiByteToWideChar API to convert the strings before passing them
back to TCC
typedef struct {
      TCHAR       *pszDll;          // name of the DLL
      TCHAR       *pszAuthor;       // author's name
      TCHAR       *pszEmail;        // author's email
      TCHAR       *pszWWW;          // author's web page
      TCHAR       *pszDescription;  // (brief) description of plugin
      TCHAR       *pszFunctions;    // comma-delimited list of functions in
the
                                    //   plugin (leading _ for internal vars,
@ for
                                    //   var funcs, * for keystroke
function,
                                    //   otherwise it's a command)
      int         nMajor;           // plugin's major version #
      int         nMinor;           // plugin's minor version #
      int         nBuild;           // plugin's build #
      HMODULE     hModule;          // module handle
      TCHAR       *pszModule;       // module name
} PLUGININFO, *LPPLUGININFO;


// structure passed to plugin functions to monitor keystrokes. A
//   keystroke function can be named anything, but must prefix a
//   * to its name in the function list (pszFunctions, above).
//   If the keystroke plugin handled the keystroke and doesn't want
```

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```
//   to pass it back to TCC, it should set nKey = 0 and pszKey to an empty
string.
//   The command processor will call the keystroke function with all
//     parameters set to 0 just before accepting input for each new
//     command line.
//   The string pointers are Unicode
typedef struct {
      int         nKey;             // key entered
      int         nHomeRow;         // start row
      int         nHomeColumn;      // start column
      int         nRow;             // current row in window
      int         nColumn;          // current column in window
      LPTSTR      pszLine;          // command line
      LPTSTR      pszCurrent;       // pointer to position in line
      int         fRedraw;          // if != 0, redraw the line
      LPTSTR      pszKey;           // (v24+ only) ASCII name of key (for
example, "Ctrl-Alt-Home")
} KEYINFO, *LPKEYINFO;

__declspec(dllexport) BOOL WINAPI InitializePlugin( void );          // called
by command processor after loading all plugins
__declspec(dllexport) LPPLUGININFO WINAPI GetPluginInfo( HMODULE hModule ); //
called by command processor to get information from plugin, primarily for the
names of functions & commands
__declspec(dllexport) BOOL WINAPI ShutdownPlugin( BOOL bEndProcess ); // called
by command processor when shutting down
                                                                     //   if
bEndProcess = 0, only the plugin is being closed
                                                                     //   if
bEndProcess = 1, the command processor is shutting down
```

The functions listed in "pszFunctions" and called by TCC need to be in the format:

DLLExports INT WINAPI MyFunctionName(LPTSTR pszArguments);

Internal variable names in pszFunctions (and their corresponding functions) must begin with an underscore ('_').

Variable function names in pszFunctions must begin with an @; the corresponding function must be prefixed by "f_". (This allows variable functions to have the same name as internal commands.)

For example:

> pszFunctions = "reverse,@reverse"
>
> Entering the name "reverse" on the command line will invoke the command reverse()
> Entering the name "@reverse[]" on the command line will invoke the variable function f_reverse()

Variable function names are limited to a maximum of 31 characters.

Internal command names are any combination of alphanumeric characters (maximum 12 characters).

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Calling the PlugIn:

For internal variables, pszArguments is empty (for output only)

For variable functions, pszArguments passes the argument(s) to the plugin function

For internal commands, pszArguments is the command line minus the name of the internal command

Returning from the PlugIn:

For internal variables and variable functions, copy the result string over pszArguments. The maximum string length for internal variables and variable functions is 32K (32767 characters + terminating null character).

Internal variables have no meaningful integer return value. For variable functions, the integer return can be:

0 = success
< 0 = failure; error message already displayed by the PlugIn function
> 0 = failure; error value should be interpreted as a system error and displayed by 4NT / TC

There is a special return value (0xFEDCBA98) that tells the parser to assume that the plugin decided not to handle the variable/function/command. The parser then continues looking for a matching internal, then external. Note that you can use this return value to have your plugin modify the command line and then pass it on to an existing internal variable/function/command!

For internal commands, return the integer result (anything left in pszArgument will be ignored)

Exception Handling:

TCC will trap any exceptions occurring in the plugin, to prevent the plugin from crashing the command processor. An error message will be displayed and the plugin will return an exit code = 2.

Take Command Interface:

Added some new API functions for manipulating the directory history and command history:

DirHistoryStart(void) - returns a pointer to the beginning of the directory history

HistoryStart(void) - returns a pointer to the beginning of the command history

DeleteFromHistory(LPTSTR lpszLine) - deletes the line from the command history (this is a pointer to the line to be deleted, not a line to be matched!)

If the user tries to display online help with HELP, F1 or Ctrl-F1, TCC will check for a plugin variable, variable function, or command, and if the name matches search for, load and execute a "Help" function in the plugin. The plugin is responsible for displaying its own help. The "Help" function should NOT appear in the plugin's comma-delimited function list in pszFunctions. Help should return 1 if it displayed help (or if it doesn't want TCC to try to display help for this topic). The syntax of the Help function in the plugin should be:

Help(LPTSTR pszName);

If Take Command wants to display usage text, TCC will check for a plugin command, and if the name matches search for, load and execute a "Usage" function in the plugin. The plugin is responsible for

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displaying its own help. The "Usage" function should NOT appear in the plugin's comma-delimited function list in pszFunctions. The plugin should return a multi-line string containing the command syntax. The first line (terminated by a \r) is displayed in the Take Command status bar. The entire string is displayed as a tooltip popup when the mouse hovers over the status bar message. Usage should return 1 if it wrote something to pszUsage (or if it doesn't want TCC to try to display a usage string). The syntax of the Usage function in the plugin should be:

```
Usage( LPTSTR pszName, LPTSTR pszUsage );
```

The TakeCommandIPC function allows plugins to communicate with the controlling Take Command instance. The syntax is:

```
__declspec(dllexport) int TakeCommandIPC( LPTSTR pszCommand, LPTSTR
pszArguments );
```

The supported commands are:

ACTIVATE
Activate the window whose handle (as a decimal string) is in **pszArguments**.

CDD
Change the current folder in File Explorer to the directory name in **pszArguments**.

COLOR
Change the color palette for this console. ***Take Command*** reads the console color palette and sets its own palette to match.

DETACH
Detach this console window (whose PID is a decimal string in **pszArguments**) from ***Take Command.***

FLASH
Flash the tab window. The count and type are passed in **pszArguments** in the same format as in the WINDOW command.

FONT
Change the font for this tab window. **pszArguments** is a (space-delimited) string; see TCFONT for the syntax.

HELP
Displays the Take Command help for the topic in **pszArguments**.

HWND
Returns the Take Command window handle in **pszArguments**.

HVIEW
Returns the handle of the active tab window in **pszArguments**.

RECORDER
Control the macro recorder. **pszArguments** should point to the command line to be passed to RECORDER.

SHORTCUT
Return the name of the shortcut that started Take Command in **pszArguments**.

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SELECTED
Return the currently selected text in **pszArguments**.

START
Attach a hidden console window whose hex PID (as a string) is in **pszArguments**.

STARTNA
Attach a hidden console window whose hex PID (as a string) is in **pszArguments** but don't make it active.

STATUSBAR
Display the message in **pszArguments** in the status bar.

TCTOOLBAR
Update the Take Command tab toolbar with the TCTOOLBAR command line in **pszArguments**.

TCFILTER
Return the selected filter in the File Explorer window in **pszArguments**.

TCFILTER_CMD
Set the selected filter in the File Explorer window to the value in **pszArguments**.

TCFOLDER
Return the selected folder in the Folders tree control in **pszArguments**.

TCLISTVIEW
Returns a space-delimited list in **pszArguments** of the files selected in the Explorer list view control..

TCTABACTIVE
Returns 1 if the current tab is active.

TCTAB
Returns 1 if the process ID in **pszArguments** is running in a TC window

TCTABS
Returns the number of Take Command tab windows.

TCTABVISIBLE
Returns 1 if the current tab is visible.

TRANS
Set ***Take Command*** window transparency to the string value (0-100) in **pszArguments**.

USAGE
Display the usage message in **pszArguments** in the status bar. The first line (up to the first CR) is displayed in the
status bar; the rest is displayed in the tooltip if you hover the mouse over the status bar.

WINDOW

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Has a number of arguments (specified as a string in **pszArguments**) to control the Take Command window:

MAX
MIN
HIDE
RES
TRAY
TRANS=n
FLASH=n
DETACH n (where n is the PID of the process to detach)
TOPMOST
NOTOPMOST
TOP
BOTTOM

WSHELL
Change the ***Take Command*** working directory to the shell directory name specified in **pszArguments**.

WSHORTCUT
Change to the Explorer shortcut name specified in **pszArguments**.

Filename Completion

When TCC is performing filename ("tab") completion, it will look for a plugin function named TABCOMPLETION. Like TABCOMPLETE scripts, TABCOMPLETION allows you to create plugin functions to customize TCC's filename completion. The syntax is:

```
INT WINAPI TABCOMPLETION(LPCTSTR Command, LPCTSTR Argument, int Index,
LPCTSTR CommandLine);
```

Command - the name of the command at the beginning of the command line

Argument - the current argument being evaluated

Index - the offset in the command line of the beginning of Argument

CommandLine - the entire command line (double quoted)

When the plugin function finishes, it should return 0 if it processed the completion, and save the result(s) in the TABCOMPLETIONRESULT environment variable. If the function has multiple completion results, they should be added to TABCOMPLETIONRESULT, separated by a space (and double quoted if they contain any whitespace).

TCC will examine the contents of TABCOMPLETIONRESULT; if it contains a single value TCC will insert it at the completion point on the command line. If there are multiple return values, TCC will display a popup window for selection (like the F7 completion window).

TCC will try to find a filename completion script first; if none of them perform the requested completion, TCC will look for the plugin function.

You can specify a particular plugin to execute by prefixing the function / variable / command name with the plugin name and a $. For example:

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```
echo %_myplugin$variable
echo %@myplugin$func[abc]
myplugin$mycommand
```

8.4 CMD.EXE Comparison

The comparison of commands available is based on the version of **CMD** included with Windows 10.

If the CMD command name matches an internal ***TCC*** command, the ***TCC*** command is almost always substantially enhanced.

- TCC and CMD commands
- Command line editing
- Filename completion
- Command completion
- Redirection
- Wildcards
- Built-In Variables
- Unique TCC features

***TCC and* CMD commands**

TCC	*CMD*
?	
ACTIVATE	
ALIAS	
ASSOC	Y
ASSOCIATE	
ATTRIB	*
BATCOMP	
BDEBUGGER	
BEEP	
BREAK	Y
BREAKPOINT	
BTMONITOR	
BZIP2	
CALL	Y
CANCEL	
CD / CHDIR	Y
CDD	
CHCP	*
CLIPMONITOR	
CLS	Y
COLOR	Y
COMMENT	
COPY	Y
COPYDIR	
DATE	Y
DATEMONITOR	
DEBUGMONITOR	
DEBUGSTRING	
DEDUPE	
DEFER	

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DEL / ERASE	Y
DELAY	
DESCRIBE	
DESKTOP	
DETACH	
DIR	Y
DIRHISTORY	
DIRS	
DISKMONITOR	
DO	
DRAWBOX	
DRAWHLINE	
DRAWVLINE	
ECHO	Y
ECHOERR	
ECHOS	
ECHOSERR	
ECHOX	
ECHOXERR	
EJECTMEDIA	
ENDLOCAL	Y
ENUMPROCESSES	
ENUMSERVERS	
ESET	
EVENTLOG	
EVENTMONITOR	
EVERYTHING	
EXCEPT	
EXIT	Y
FFIND	
FILELOCK	
FIREWIREMONITOR	
FOLDERMONITOR	
FONT	
FOR	Y
FREE	
FTYPE	Y
FUNCTION	
GLOBAL	
GOSUB	
GOTO	Y
GZIP	
HASH	
HEAD	
HELP	*
HISTORY	
IDE	
IF	Y
IFF	
IFTP	
INKEY	
INPUT	
INSTALLED	

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JABBER	
JAR	
JOBMONITOR	
JOBS	
JOINDOMAIN	
JUMPLIST	
KEYBD	
KEYS	Y
KEYSTACK	
LIBRARY	
LINKS	
LIST	
LOADBTM	
LOADMEDIA	
LOCAL	
LOCKMONITOR	
LOG	
LUA	
MD / MKDIR	Y
MEMORY	
MKLINK	Y
MKLNK	
MONITOR	
MOUNTISO	
MOUNTVHD	
MOVE	Y
MOVEDIR	
MSGBOX	
NETMONITOR	
ON	
OPTION	
OSD	
PATH	Y
PAUSE	Y
PDIR	
PLAYAVI	
PLAYSOUND	
PLUGIN	
POPD	Y
POSTMSG	
POWERMONITOR	
PRINT	
PRIORITY	
PROCESSMONITOR	
PROMPT	Y
PSHELL	
PSUBST	
PUSHD	Y
QUERYBOX	
QUIT	
RD / RMDIR	Y
REBOOT	
RECORDER	

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RECYCLE	
REGDIR	
REGMONITOR	
REM	Y
REN / RENAME	Y
RESOLUTION	
RESTOREPOINT	
RETURN	
REXEC	
RSHELL	
SAVECONSOLE	
SCREEN	
SCREENMONITOR	
SCRIPT	
SCRPUT	
SELECT	
SENDHTML	
SENDMAIL	
SERVICEMONITOR	
SERVICES	
SET	Y
SETARRAY	
SETDOS	
SETERROR	
SETLOCAL	Y
SETP	
SHIFT	Y
SHORTCUT	
SHRALIAS	
SMPP	
SNMP	
SNPP	
SSHEXEC	
START	Y
STATUSBAR	
SWITCH	
SYNC	
TABCOMPLETE	
TAIL	
TAR	
TASKBAR	
TASKDIALOG	
TASKEND	
TASKLIST	
TCDIALOG	
TCFILTER	
TCFONT	
TCTOOLBAR	
TEE	
TEXT	
TIME	Y
TIMER	
TITLE	Y

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TOUCH	
TPIPE	
TRANSIENT	
TREE	*
TRUENAME	
TYPE	Y
UNALIAS	
UNBZIP2	
UNFUNCTION	
UNGZIP	
UNJAR	
UNMOUNTISO	
UNMOUNTVHD	
UNQLITE	
UNSET	
UNSETARRAY	
UNSETP	
UNTAR	
UNZIP	
UPTIME	
USBMONITOR	
UUID	
VBEEP	
VDESKTOP	
VER	Y
VERIFY	Y
VIEW	
VOL	Y
VSCRPUT	
WAKEONLAN	
WEBFORM	
WEBUPLOAD	
WHICH	
WINDOW	
WINSTATION	
WMIQUERY	
WMIRUN	
WSETTINGS	
WSHELL	
WSHORTCUT	
Y	
ZIP	
ZIPSFX	
7UNZIP	
7ZIP	

* This is an internal command in ***TCC*** but an external command in CMD.

Command line editing

TCC offers vastly more sophisticated command line editing capabilities; see Command Line Editing for details.

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Filename completion

CMD has a simple filename completion (with the tab key); ***TCC*** offers many more options, including server and sharename completion, customizable completion and (optional) popup window selection. See Filename Completion and Filename Completion Window for more details.

Command history

CMD has simple (optional) command history recall. ***TCC*** offers many more options, including loading and saving history lists, editing and moving commands in the list, searching for matching commands, and a popup command history window.

Redirection

In addition to the CMD <, > and |, ***TCC*** allows you to also redirect standard error, combine standard output and standard error, protect existing files from being overwritten by redirection, and redirect standard input using "here-documents". See Redirection for more details.

Wildcards

CMD only supports the ? and * wildcards in filenames. ***TCC*** adds character sets and regular expressions, and also supports wildcards in pathnames. See Wildcards for more details.

Built-In Variables

CMD has a few built-in variables (i.e., which are treated as environment variables but which do not exist in the environment):

CD - current directory

CMDCMDLINE - command line that started CMD

CMDEXTVERSION - the command extensions internal version number

DATE - the current date (in the default short format)

RANDOM - a random number between 0 and 32767

TIME - current time

TCC supports all of these built-in variables. (In ***TCC***, **CMDEXTVERSION** will always return **2**.) ***TCC*** also includes 185+ additional internal variables, 330+ variable functions, and 60+ command variables.

Unique *TCC* features

TCC includes many more features not in CMD, including:

Batch debugger

Aliases

Internal functions

User defined variable functions

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File selection

File Ranges

Conditional Commands

Internet access and email

OpenAFS support

ANSI X3.64 support

Directory navigation and **Directory History**

Histories and **Logs**

Intersession sharing

Lua, **Perl**, **Python**, **REXX**, **Ruby**, and **Tcl** support

8.5 CMD Compatibility

We try to keep ***TCC*** as compatible as possible with CMD, given the limitations and bugs in CMD, the variances in CMD in different versions of Windows, and the thousands of additional features available in ***TCC***. On rare occasions, you may find batch files that exploit undocumented features (or bugs) in CMD (or are simply badly written) that don't work in ***TCC***. In almost all of those cases, ***TCC*** will run those batch files if you set the appropriate compatibility options.

There are two options you should set if you regularly run batch files created for CMD:

OPTION / Startup / Duplicate CMD.EXE bugs (This is the default, and tells ***TCC*** to duplicate two bugs in CMD's IF command parsing.)

OPTION / Startup / CMD.EXE delayed expansion (If you have this startup option set for your CMD environment.)

If you **only** run batch files created for CMD, you should also set:

`CMDVariables`=YES

in your TCMD.INI file. **WARNING:** This means you won't be able to run any batch files written for ***TCC***, which only requires a single leading % for variables.

There are also some ***TCC*** features that might on very rare occasions cause conflicts with CMD batch files:

Enable "OPTION / Startup / Search for SFNs". (Definitely **not** recommended unless you want some potentially unpleasant results when you're copying, moving, or deleting files, but it *is* how CMD does it.)

Disable pseudovariable expansion (OPTION / Advanced / Special Characters).

SETDOS /X279 to disable nested aliases, quoting, and include lists.

Finally, if you want CMD-style command line editing (i.e., practically none), you can remove most of the ***TCC*** command line editing features with the OPTION / Command Line dialog.

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8.6 Limits

Most ***TCC*** arguments are only limited by the amount of available RAM. There are a few (like the maximum filename size) that are limited by the Windows APIs.

Length Limits (characters)

entity	name	value	combined
environment variable	none	none	none
alias	none	none	none
user defined variable function	none	none	none

command type	before expansion	after expansion
command line	none	none
command group	none	none

Nesting Limits

command	depth
CALL	no limit
DO	no limit
FOR	no limit
GOSUB without parameters	no limit
GOSUB with parameters	22
SETLOCAL	32
IFF	no limit

Miscellaneous Limits (characters)

entity	limit
character count in any function	none
number of batch file parameters	8,191
number of GOSUB parameters	255
file name (Windows limitation)	32,767
include list	none
single parameter	none
global alias list *	262,144
global function list *	131,072
directory stack (PUSHD)	16,383

* The global alias list and global function list sizes may be increased with the AliasSize and FunctionSize .INI directives.

8.7 File Systems & File Names

The unique name of any file is composed of a drive letter, a directory path, and a filename. In Windows, each of these parts of the file's name is case insensitive; you can mix upper and lower case letters in any way you wish. (Note that when accessing Linux / UNIX FTP servers, the filenames **are** case sensitive.)

The topics below are roughly divided according to the different parts of a file name, and cover the file system structure and naming conventions:

- Drives and Volumes

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- File Systems
- Directories and Subdirectories
- File Names
- File Attributes
- Time Stamps
- NTFS Streams

8.7.1 Drives & Volumes

A **drive letter** designates which drive contains the file. In a file's full name, the drive letter is followed by a colon. Drive letters **A:** and **B:** are normally reserved for the floppy disk drives (now largely obsolete).

Normally, drive **C:** is the first (or only) hard disk drive. Most current operating systems can partition a large hard disk into multiple logical drives or volumes that are usually called **C:**, **D:**, **E:**, etc. Network systems (LANs) give additional drive letters to sections of the network file server drives. In addition, you can access network drives via their **UNC** (universal naming convention) name (*e.g. \\data\vol1\...*), without using a drive letter. See File Systems for more details.

Most systems also include optical drives (i.e. CD-ROM, CD-RW, and/or DVD). The optical drive is also assigned a drive letter (or several letters, for changers), typically using letters beyond that used by the last hard disk in the system, but before any network drives.

For example, on a system with a large hard disk you might have **A:** and **B:** as floppy drives, **C:**, **D:**, and **E:** as parts of the hard disk, **F:** as a CD-ROM drive, **G:** as a DVD drive, and **H:** and **I:** as network drives.

Each volume is formatted under a particular file system; see File Systems for details. Additional information about disk files and directories is available under Directories and Subdirectories, File Names, and File Attributes.

8.7.2 File Systems

Take Command uses only documented Windows APIs to access the file systems, so it works with any file system supported by Windows.

Additional information about disk files and directories is available under Drives and Volumes, Directories and Subdirectories, File Names, and File Attributes.

Network File Systems

A network file system allows you to access files stored on another computer on a network, rather than on your own system. ***Take Command*** supports all network file systems which are compatible with the underlying operating system. The networking software used to access remote systems (such as UNIX, Linux, OS X, etc..) which use different file systems typically emulates one of the common Windows file systems. Those emulations do not always provide a perfect duplicate of some functions (attributes, timestamps, etc.), an issue unrelated to ***Take Command***.

File and directory names for network file systems depend on both the "server" software running on the system that has the files on it, and the "client" software running on your computer to connect it to the network. However, they usually follow the rules described here.

Most network software maps unused drive letters on your system to specific locations on the network, and you can then treat the drive as if it were physically part of your local computer.

When you use a network file system, remember that the naming rules for files on the network may not match those on your local system. For example, your local system may support long filenames while the network server or client software does not, or vice versa. ***Take Command*** will usually handle whatever

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naming conventions are supported by your network software, as long as the network software accurately reports the types of names it can handle.

In rare cases, ***Take Command*** may not be able to report correct statistics on network drives (such as the number of bytes free on a drive). This is usually because the network file system does not provide complete or accurate information.

Universal Naming Convention (UNC)

Some networks also support the Universal Naming Convention, which provides a common method for accessing files on a network drive without using a mapped drive letter. Names specified this way are called UNC names. They typically appear as ***server**path**filename***, where ***server*** is the name of the network server where the files reside, and the ***path**filename*** portion is a directory name and file name which follow the conventions described under Directories.

Take Command also allows you to use UNC directory names when changing directories (see Directory Navigation for more details).

OpenAFS

Take Command and ***TCC*** have built-in support for OpenAFS. The parser will recognize Linux-style AFS names (i.e., **/afs/athena/user**) and convert them to Windows-compatible names (i.e., **\\afs\athena\user**). (It will also check for custom AFS mount points, and use that name instead of **afs**.)

See http://www.openafs.org for more information on OpenAFS.

8.7.3 Directories & Subdirectories

A file system is a method of organizing all of the files on an entire disk or hard disk volume. Directories (or folders) are used to divide the files on a disk into logical groups that are easy to work with. Their purpose is similar to that of file drawers containing groups of hanging folders, hanging folders containing smaller folders, and so on. (The terms directory and folder are not synonymous but often used as such in common Windows terminology. For accuracy, we use **directory** throughout these help files unless other folder types are also specifically applicable.)

Every drive has a root or base directory, and many have one or more subdirectories. Subdirectories can also have subdirectories, extending in a branching tree structure from the root directory. The collection of all directories on a drive is often called the directory tree, and a portion of the tree is sometimes called a subtree. The terms directory and subdirectory are typically used interchangeably to mean a single subdirectory within this tree structure.

Subdirectory names follow the same naming rules as files in each operating system (see File Names).

The drive and subdirectory portions of a file's name are called the file's path. For example, the file name *C:\DIR1\DIR2\MYFILE.DAT* says to look for the file *MYFILE.DAT* in the subdirectory *DIR2* which is part of the subdirectory *DIR1* which is on drive C. The path for *MYFILE.DAT* is *C:\DIR1\DIR2*. The backslashes between subdirectory names are required.

Under ***TCC***, the path and filename can be up to 32,767 characters, though many Windows applications (including CMD and Explorer) have trouble with path and filename lengths exceeding 260 characters. Shorter paths and names are advisable under Windows whenever feasible.

TCC maintains both a current or default drive for your system as a whole, and a current or default directory for every drive in your system. Whenever a program tries to create or access a file without specifying the file's path, the operating system uses the current drive (if no other drive is specified) and the current directory (if no other directory path is specified).

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The root directory is named using the drive letter and a single backslash. For example, **D:** refers to the root directory of drive *D:*. Using a drive letter with no directory name at all refers to the current directory on the specified drive. For example, E:JPSOFT.DOC refers to the file *JPSOFT.DOC* in the current directory on drive **E:**, whereas E:\JPSOFT.DOC refers to the file *JPSOFT.DOC* in the root directory on drive **E**:.

There are also two special subdirectory names that are useful in many situations: a single period [**.**] means "the current default directory." Two periods [**..**] means "the directory which contains the current default directory" (referred to as the parent directory). These special names can be used wherever a full directory name can be used. ***TCC*** allows you to use additional periods to specify directories further "up" the tree (see Extended Parent Directory Names).

Additional information about disk files and file systems is available under Drives and Volumes, File Systems, File Names, and File Attributes.

8.7.4 File Names

FAT File Names

Under the **FAT** file system, a filename consists of a base name of 1 to 8 characters plus an optional extension composed of a period plus 1 to 3 more characters. FAT filenames with an 8-character name and a 3-character extension are sometimes referred to as short filenames (SFNs) to distinguish them from long file names (LFNs).

You can use alphabetic and numeric characters plus the punctuation marks **! # $ % & ' ( ) - @ ^ _ ` { }** and **~** in both the base name and the extension of a FAT filename. Because the exclamation point [**!**], percent sign [**%**], caret [**^**], at sign [**@**], parentheses [**()**], and back-quote [`] also have other meanings to ***TCC***, it is best to avoid using them in filenames. It is also better to use only those characters found in ASCII, because changing font and/or code page may change drastically how they are displayed.

FAT file names are always stored on the disk in upper case, and are displayed in upper or lower case depending on the options you select in ***TCC***.

Long File Names

VFAT, **FAT32** and **NTFS** allow using long file names with a maximum of 255 characters, including spaces and other characters that are not allowed in a FAT system file name, but excluding some punctuation characters which are allowed in FAT file names. See your operating system documentation for details on the characters allowed. If you use file names which contain semicolons [**;**], see Wildcards for details on avoiding problems with interpretation of those file names under ***TCC***.

LFNs are stored and displayed exactly as you entered them, and are not automatically shifted to upper or lower case. For example, you could create a file called *MYFILE*, *myfile*, or *MyFile*, and each name would be stored in the directory just as you entered it. However, case is ignored when looking for filenames, so you cannot have two files whose names differ only in case (*i.e.*, the three names given above would all refer to the same file). This behavior is sometimes described as "case-retentive but not case-sensitive" because the case information is retained, but does not affect access to the files. This is in contrast with Linux-style file systems, which are case sensitive, and permit **AA**, **Aa**, **aA**, and **aa** to be four different file names.

A file that has an LFN may have an additional, "FAT-compatible" name, which contains only those characters legal on a FAT volume, and which meets the 8-character name / 3-character extension limits. Programs which cannot handle long names generally can access files by using their FAT-compatible names. This name is assigned at the time the LFN is created in the specific directory, and to make it unique, it depends on what other SFNs exist in that directory at that instance. Consequently, when copying

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the file to another directory by its LFN the SFN generated in the target directory may be different from the SFN in the source directory.

When specifying an LFN-compatible file name, which includes spaces or other characters that would either not be allowed in a FAT name, or that may have syntactical significance for ***TCC***, you must place double quotes around the name in the command line. For example, suppose you have a file named *LET3* on a FAT volume, and you want to copy it to the *LETTERS* directory on drive F:, an LFN volume, and give it the name *Letter To Sara*. To do so, use either of these commands:

```
copy let3 f:\LETTERS\"Letter To Sara"
copy let3 "f:\LETTERS\Letter To Sara"
```

The LFN file systems do not explicitly define an "extension" for file names which are not FAT-compatible. However, by convention, all characters after the last period in the file name are treated as the extension. For example, the file name *"Letter to Sara"* has no extension, whereas the name *"Letter.to.Sara"* has the extension *Sara*.

Additional information about disk files and file systems is available under Drives and Volumes, File Systems, Directories and Subdirectories, File Attributes, and Time Stamps.

8.7.5 File Attributes

Each file has attributes, each of which defines a single characteristic of the file that can be either set or reset. Most file processing commands allow you to select files for processing based on their attributes. The basic attributes Archive, Read only, Hidden, System, and Directory are present on all disk volumes. NTFS volumes support additional attributes: Encrypted, Compressed, Normal, Offline, Temporary, Not content-indexed, Sparse, Junction / Symbolic Link / Reparse point, No Scrub, and Integrity. ***Take Command*** fully supports these extended attributes.

Archive - set by the operating system when the contents of the file are modified to indicate that it is *a candidate to be archived*, i.e., to be backed up. The attribute can be reset by any program to indicate that the file's contents have been archived. Most programs which can unset this attribute require that you use the explicit reset option, and default to retaining the status of this attribute. For example, the ***TCC*** command **COPY** requires the **/X** option to reset this attribute.

Read-only - if this attribute is set, the file can't be changed or erased accidentally. Most programs honor this attribute by default, which helps to protect important files from erasure and damage.

Either of the **Hidden** and **System** attributes, when set, prevent the file from appearing in directory listings and file searches, including those performed by file processing command of ***Take Command***, unless explicitly requested.. This both protects such files from accidental modification, and also speeds up user tasks not explicitly intended to process them.

Directory - this attribute is set by the operating system when a subdirectory is created, e.g., by the MKDIR command. The attribute cannot be reset. The operating system restricts all accesses to a directory file to directory manipulation operations.

Volume label - a special attribute of at most one directory entry in the root directory of a disk drive. The entry can be created, modified, or deleted only through the Windows utility LABEL (or equivalent third-party software). ***Take Command*** does not directly modify the volume label or any of its attributes, and provide read access only through the VOL command and the @LABEL[] variable function. All other commands ignore this directory entry.

Normal - this pseudo attribute is considered to be set if all other attributes (including the extended attributes available only on an NTFS volumes) are reset. It is not stored by the file system. When ***Take***

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Command checks file attributes, it considers the Normal attribute as set if each of the other attributes is either reset, or unsupported by the combination of the file system and operating system.

The file attributes can also be accessed with the ATTRIB and DIR commands, and by the @ATTRIB and @WATTRIB variable functions.

Attributes can be set, reset, and viewed with the ATTRIB command. The DIR command also has options to view the attribute status of files, and to view information about normally invisible hidden and system files and directories.

8.7.6 File Time Stamps

Each file has one or more time stamps. They are used by the operating system to record when the file was created, last modified, or last accessed. Most ***TCC*** file processing commands allow you to select files for processing based on their time stamps.

1. **Write time** is the date and time the file was last written, i.e., when its content was last modified**,** On FAT volumes this is the only timestamp. In all commands and functions this is the timestamp used unless you specify another. On FAT and VFAT volumes, the resolution is 2 seconds. NTFS volumes have a 100 nanosecond resolution for the file creation and last write. (UNIX and Linux systems use 1 second resolution.) When a file is copied using the COPY command, even across a network, its write time is not changed. However, different file systems record time with different resolution, so minor changes may occur.

2. **Creation time** is the date and time the current instance of the file was created.

3. **Access time** is the date, and on NTFS volumes, the time, when the file was last accessed for either reading or writing.

Several ***TCC*** commands and functions let you specify which set of time and date stamps you want to view or work with on LFN volumes. These commands and functions use the letter

c creation time stamp,
w last write time stamp, and
a last access time stamp.

Note that FAT32 and VFAT volumes store the date but not the time of the last access. On these drives the time of last access will always be 00:00.

Time Stamp Resolution

The resolution of time stamps as well as the range of time instances representable vary with file systems.

file system	*resolution*	*earliest time stamp*	*latest time stamp*
FAT/VFAT	2 s	1980-01-01 00:00:00 *local*	2107-12-31 23:59:58 *local*
NTFS	100 ns	1601-01-01 00:00:00 *UTC*	60056-05-28 *UTC*

NTFS Timestamp Reports

These operating systems report timestamps in local time. However, conversion between UTC and local time is based on the difference between UTC and local time at the time of conversion, instead of that in effect when the file event occurred. Consequently, if daylight saving time is currently in effect, all file events around the year will be reported in DST. conversely, when DST is not in effect, all file events around the year will be reported in standard time. This method has the advantage that differences in event times can be calculated easily. However, the times reported will not be those when the event took place if the state DST at time of event is not the same as at the time of reporting.

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The TOUCH command can be used to modify the timestamps of files and directories.

Additional information about disk files and file systems is available under Drives and Volumes, File Systems, Directories and Subdirectories, and File Names.

8.7.7 NTFS File Streams

The NTFS file system allows each file to contain multiple "streams" or sets of data. For example a compiler could use streams to store a program's source code, object code, and other data, or a word processing program could use them to store multiple versions of the same document.

Streams are specified by entering a stream name following the file name, for example:

```
myfile.doc:version1
myfile.doc:version2
```

You cannot use wildcards in stream names except when using filename completion.

You can display stream names with the DIR */:* option. The file processing commands COPY, DEL, HEAD, LIST, MOVE, TAIL and TYPE support file streams when the stream name is explicitly specified; see the individual commands for additional details. Other file-related commands, such as ATTRIB and TOUCH work with the file as a whole, and not with any particular stream or portion of the file data.

Variable functions which reference file contents, such as @FILEOPEN, @LINE, and @LINES also accept stream names.

8.8 Regular Expression Syntax

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This section covers the Ruby regular expression syntax. For information on Perl regular expression syntax, see your Perl documentation or https://perldoc.perl.org/perlre.html.

1. Syntax elements

\	escape (enable or disable meta character meaning)
|	alternation
(...)	group
[...]	character class

2. Characters

\t	horizontal tab (0x09)
\v	vertical tab (0x0B)
\n	newline (0x0A)
\r	return (0x0D)
\b	back space (0x08)
\f	form feed (0x0C)
\a	bell (0x07)
\e	escape (0x1B)
\nnn	octal char (encoded byte value)
\xHH	hexadecimal char (encoded byte value)
\x{7HHHHHHH}	wide hexadecimal char (character code point value)

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```
\cx         control char        (character code point value)
\C-x        control char        (character code point value)
\M-x        meta  (x|0x80)       (character code point value)
\M-\C-x     meta control char     (character code point value)

(* \b is effective in character class [...] only)
```

3. Character types

```
.           any character (except newline)

\w          word character

            Not Unicode:
                alphanumeric, "_" and multibyte char.

            Unicode:
                General_Category -- (Letter|Mark|Number|Connector_Punctuation)

\W      non word char

\s          whitespace char

            Not Unicode:
                \t, \n, \v, \f, \r, \x20

            Unicode:
                0009, 000A, 000B, 000C, 000D, 0085(NEL),
                General_Category -- Line_Separator
                 -- Paragraph_Separator
                  -- Space_Separator

\S          non whitespace char

\d          decimal digit char

            Unicode: General_Category -- Decimal_Number

\D          non decimal digit char

\h          hexadecimal digit char   [0-9a-fA-F]

\H          non hexadecimal digit char

Character Property

    * \p{property-name}
    * \p{^property-name}    (negative)
    * \P{property-name}     (negative)

    property-name:

            + works on all encodings
            Alnum, Alpha, Blank, Cntrl, Digit, Graph, Lower, Print, Punct, Space, Upper, XDigit,
            Word, ASCII,
```

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+ works on UTF8, UTF16, UTF32

\R Linebreak

Unicode:
(?>\x0D\x0A|[\x0A-\x0D\x{85}\x{2028}\x{2029}])

Not Unicode:
(?>\x0D\x0A|[\x0A-\x0D])

\X eXtended grapheme cluster

Unicode:
(?>\P{M}\p{M}*)

Not Unicode:
(?m:.)

4. Quantifier

greedy

? 1 or 0 times
* 0 or more times
+ 1 or more times
{n,m} at least n but not more than m times
{n,} at least n times
{,n} at least 0 but not more than n times ({0,n})
{n} n times

reluctant

?? 1 or 0 times
*? 0 or more times
+? 1 or more times
{n,m}? at least n but not more than m times
{n,}? at least n times
{,n}? at least 0 but not more than n times (== {0,n}?)

possessive (greedy and does not backtrack after repeated)

?+ 1 or 0 times
*+ 0 or more times
++ 1 or more times

({n,m}+, {n,}+, {n}+ are possessive op. in ONIG_SYNTAX_JAVA only)

ex. /a*+/ === /(?>a*)/

5. Anchors

^ beginning of the line
$ end of the line
\b word boundary
\B not word boundary
\A beginning of string

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\Z	end of string, or before newline at the end
\z	end of string
\G	matching start position (*)

6. Character class

^...	negative class (lowest precedence operator)
x-y	range from x to y
[...]	set (character class in character class)
..&&..	intersection (low precedence at the next of ^)

ex. [a-w&&[^c-g]z] ==> ([a-w] AND ([^c-g] OR z)) ==> [abh-w]

* If you want to use '[', '-', ']' as a normal character in a character class, you should escape these characters by '\'.

POSIX bracket ([:xxxxx:], negate [:^xxxxx:])

Not Unicode Case:

alnum	alphabet or digit char
alpha	alphabet
ascii	code value: [0 - 127]
blank	\t, \x20
cntrl	
digit	0-9
graph	include all of multibyte encoded characters
lower	
print	include all of multibyte encoded characters
punct	
space	\t, \n, \v, \f, \r, \x20
upper	
word	alphanumeric, "_" and multibyte characters
xdigit	0-9, a-f, A-F

Unicode Case:

alnum	Letter | Mark | Decimal_Number
alpha	Letter | Mark
ascii	0000 - 007F
blank	Space_Separator | 0009
cntrl	Control | Format | Unassigned | Private_Use | Surrogate
digit	Decimal_Number
graph	[[:^space:]] && ^Control && ^Unassigned && ^Surrogate
lower	Lowercase_Letter
print	[[:graph:]] | [[:space:]]
punct	Connector_Punctuation | Dash_Punctuation | Close_Punctuation | Final_Punctuation | Initial_Punctuation | Other_Punctuation | Open_Punctuation
space	Space_Separator | Line_Separator | Paragraph_Separator | 0009 | 000A | 000B | 000C | 000D | 0085
upper	Uppercase_Letter
word	Letter | Mark | Decimal_Number | Connector_Punctuation
xdigit	0030 - 0039 | 0041 - 0046 | 0061 - 0066 (0-9, a-f, A-F)

7. Extended groups

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(?#...) comment

(?imxdau-imx) option on/off
i: ignore case
m: multi-line (dot(.) match newline)
x: extended form

character set option (character range option)
d: Default (compatible with Ruby 1.9.3)
\w, \d and \s doesn't match non-ASCII characters.
\b, \B and POSIX brackets use the each encoding's rules.
a: ASCII
ONIG_OPTION_ASCII_RANGE option is turned on.
\w, \d, \s and POSIX brackets doesn't match non-ASCII characters.
\b and \B use the ASCII rules.
u: Unicode
ONIG_OPTION_ASCII_RANGE option is turned off.
\w (\W), \d (\D), \s (\S), \b (\B) and POSIX brackets use the each encoding's rules.

(?imxdau-imx:subexp) option on/off for subexp

(?:subexp) not captured group
(subexp) captured group

(?=subexp) look-ahead
(?!subexp) negative look-ahead
(?<=subexp) look-behind
(?<!subexp) negative look-behind

Subexp of look-behind must be fixed character length. But different character length is allowed in top level alternatives only.
ex. (?<=a|bc) is OK. (?<=aaa(?:b|cd)) is not allowed.

In negative-look-behind, captured group isn't allowed, but shy group(?:) is allowed.

\K keep
Another expression of look-behind. Keep the stuff left of the \K, don't include it in the result.

(?>subexp) atomic group
don't backtrack in subexp.

(?<name>subexp) define named group
(All characters of the name must be a word character. And first character must not be a digit or upper case)
Not only a name but a number is assigned like a captured group.

Assigning the same name as two or more subexps is allowed. In this case, a subexp call can not be performed although the back reference is possible.

(?(cond)yes-subexp), (?(cond)yes-subexp|no-subexp)
conditional expression
Matches yes-subexp if (cond) yields a true value, matches no-subexp otherwise.
Following (cond) can be used:

(n) (n >= 1)
Checks if the numbered capturing group has matched something.

(<name>), ('name')
Checks if a group with the given name has matched something.

8. Back reference

\n	back reference by group number (n >= 1)
\k<n>	back reference by group number (n >= 1)
\k'n'	back reference by group number (n >= 1)
\k<-n>	back reference by relative group number (n >= 1)
\k'-n'	back reference by relative group number (n >= 1)
\k<name>	back reference by group name
\k'name'	back reference by group name

In the back reference by the multiplex definition name, a subexp with a large number is referred to preferentially. (When not matched, a group of the small number is referred to.)

* Back reference by group number is forbidden if named group is defined in the pattern and ONIG_OPTION_CAPTURE_GROUP is not setted.

Back reference with nest level

level: 0, 1, 2, ...

\k<n+level> (n >= 1)
\k<n-level> (n >= 1)
\k'n+level' (n >= 1)
\k'n-level' (n >= 1)
\k<-n+level> (n >= 1)
\k<-n-level> (n >= 1)
\k'-n+level' (n >= 1)
\k'-n-level' (n >= 1)

\k<name+level>
\k<name-level>
\k'name+level'
\k'name-level'

Destinate relative nest level from back reference position.

example 1.

```
/\A(?<a>|.|(?:(?<b>.)\g<a>\k<b+0>))\z/.match("reer")
```

example 2.

```
r = Regexp.compile(<<'__REGEXP__'.strip, Regexp::EXTENDED)
(?<element> \g<stag> \g<content>* \g<etag> ){0}
(?<stag> < \g<name> \s* > ){0}
(?<name> [a-zA-Z_:]+ ){0}
(?<content> [^<&]+ (\g<element> | [^<&]+)* ){0}
(?<etag> </ \k<name+1> >){0}
\g<element>
```

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```
__REGEXP__

p r.match('<foo>f<bar>bbb</bar>f</foo>').captures
```

9. Subexp call ("Tanaka Akira special")

```
\g<name>      call by group name
\g'name'      call by group name
\g<n>         call by group number (n >= 1)
\g'n'         call by group number (n >= 1)
\g<0>      call the whole pattern recursively
\g'0'      call the whole pattern recursively
\g<-n>     call by relative group number (n >= 1)
\g'-n'     call by relative group number (n >= 1)
\g<+n>     call by relative group number (n >= 1)
\g'+n'     call by relative group number (n >= 1)
```

* left-most recursive call is not allowed.
  ex. (?<name>a|\g<name>b) => error
  (?<name>a|b\g<name>c) => OK

* Call by group number is forbidden if named group is defined in the pattern and
  ONIG_OPTION_CAPTURE_GROUP is not set.

* If the option status of called group is different from calling position then the group's option is
  effective.

ex. (?-i:\g<name>)(?i:(?<name>a)){0} match to "A"

Perl syntax:: use (?&name), (?n), (?-n), (?+n), (?R) or (?0) instead.

10. Captured group

Behavior of the no-named group (...) changes with the following conditions. (But named group is not changed.)

case 1. /.../ (named group is not used, no option)

(...) is treated as a captured group.

case 2. /.../g (named group is not used, 'g' option)

(...) is treated as a no-captured group (?:...).

case 3. /..(?<name>..)../ (named group is used, no option)

(...) is treated as a no-captured group (?:...).
numbered-backref/call is not allowed.

case 4. /..(?<name>..)../G (named group is used, 'G' option)

(...) is treated as a captured group.
numbered-backref/call is allowed.

where
g: ONIG_OPTION_DONT_CAPTURE_GROUP

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G: ONIG_OPTION_CAPTURE_GROUP

A-1. Syntax dependent options

+ RUBY
  (?m): dot(.) match newline

+ PERL, JAVA, and Python
  (?s): dot(.) match newline
  (?m): ^ match after newline, $ match before newline

+ PERL
  (?d), (?l): same as (?u)

A-2. Original extensions

+ hexadecimal digit char type \h, \H
+ named group (?<name>...)
+ named backref \k<name>
+ subexp call \g<name>, \g<group-num>

A-3. Missing features compared with Perl 5.14.0

+ \N{name}, \N{U+xxxx}, \N
+ \l,\u,\L,\U, \C
+ \v, \V, \h, \H, \o{xxx}
+ (?{code})
+ (??{code})
+ (?|...)
+ (*VERB:ARG)

* \Q...\E
  This is effective in PERL and JAVA.

A-5. Disabled functions by default syntax

+ capture history

  (?@...) and (?@<name>...)

  ex. /(?@a)*/.match("aaa") ==> [<0-1>, <1-2>, <2-3>]

A-6. Problems

+ Invalid encoding byte sequence is not checked.

  ex. UTF-8

  * Invalid first byte is treated as a character.
    /./u =~ "\xa3"

  * Incomplete byte sequence is not checked.
    /\w+/ =~ "a\xf3\x8ec"

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8.9 Miscellaneous

- Executable Files and File Searches
- Popup Windows
- Windows System Errors
- ASCII Codes and Key Names
- ANSI X3.64 Command Reference
- Colors, Colors Names & Codes

8.9.1 Executable Files & File Searches

When ***TCC*** can't find a matching internal command name, it tries to find an executable file whose name matches the command name. (Executable files are typically those with an *.EXE* extension.)

If ***TCC*** cannot find an executable program to run, it next looks for a matching batch file name. ***TCC*** looks first for a *.BTM* file, then for a *.CMD* file, then for a *.BAT* file, and finally for a *.REX*, *.REXX*, *.PL*, *.PY*, *.RB, or .TCL* file (if REXX, Perl, Python, Ruby, and/or Tcl are enabled).

You can change the list of extensions that are considered "executable", and the order in which they are searched, with the PATHEXT environment variable, and the related PathExt configuration option. PATHEXT is supported for compatibility reasons but should not generally be used as a substitute for executable extensions, which are more flexible.

Note: If the search for an external program or batch file fails, ***TCC*** checks to see if the command name matches the name of a file with an executable extension. If an executable extension is found, ***TCC*** runs the program specified when the association was defined. If no executable extension is found, ***TCC*** will look for a direct association for the extension in the registry and insert the associated string (usually the name of an application) at the beginning of the command line, then call the Windows CreateProcess API to execute that command. If the CreateProcess call fails, or if no association was found in the registry, ***TCC*** calls the ShellExec Windows API. ***TCC*** has no control over which action the above Windows APIs will take when presented with a file name. If you are concerned about what Windows might do with an "unknown" extension, create a specific executable extension.

TCC first performs this search (for an executable program, a batch file, or a file with an executable extension) in the current directory. If that search fails, they repeat the search in every directory in your search path.

The search path is a list of directories that ***TCC*** (and some applications) search for executable files. For example, if you wanted ***TCC*** to search the root directory of the C: drive, the \WINUTIL subdirectory on the C: drive, and the \UTIL directory on the D: drive for executable files, your search path would look like this:

```
PATH=C:\;C:\WINUTIL;D:\UTIL
```

The directory names in the search path are separated by semicolons.

You can create or view the search path with the PATH command. You can use the ESET command to edit the path. Many programs also use the search path to find their own files. The search path is stored in the environment with the name PATH.

Take Command also searches the *\WINDOWS\SYSTEM32* directory followed by the *\WINDOWS* directory. (The actual directory names may be different on your system. ***TCC*** will determine the correct names for the "Windows" and "Windows System" directories and use them.) This part of the search procedure conforms with the traditional search sequences used under each Windows operating system.

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Note: If the file is not found on the PATH, ***TCC*** then checks for a corresponding **App Paths** entry in the Windows registry (either in the HKCU or HKLM tree). **App Paths** entries are created by some applications during the installation process.

Remember, ***TCC*** always looks for an executable file (or a file with an executable extension or Windows file association) in the current subdirectory, then in the Windows directories if appropriate (see above), then in each directory in the search path, and then in the **App Paths** area of the registry. (You can change the search order so the current directory is not searched first; see the PATH command for details.)

If you include an extension as part of the command name, ***TCC*** only searches for a file with that extension. Similarly, if you include a path as part of the command name, ***TCC*** will look only in the directory you specified, and ignore the usual search of the current directory and the PATH.

If your command name includes a path, the elements must be separated with backslashes (*e.g.* **c:\wp\wp**). If you are accustomed to Linux syntax where forward slashes are used in command paths, and want ***TCC*** to recognize this approach, you can set the Unix/Linux Paths configuration option.

Once the file is found, ***TCC*** executes it based on its extension. *.EXE* files are executed by passing their names to the operating system. *.BTM, .BAT,* and (if applicable) *.CMD* files are executed by ***TCC***, which reads each line in the file as a new command. Files with executable extensions are executed by starting the associated application, and passing the name of the file on the command line.

If you specify a file name including extension, and the file exists in the current directory (or you specify a path), but the file does not have an extension known to ***TCC*** (*.EXE, .BTM, .BAT, .CMD*, or an executable extension), then the file name will be passed to Windows to check for file associations defined in the Windows registry. This allows you to execute any file whose extension is known to Windows, simply by typing its name. For example, if you have no executable extension defined for *.PSP* files, but this is an extension known to Windows, at the prompt you can simply enter a command like this:

```
[c:\graphics] image1.psp
```

and ***Take Command*** will request that Windows start the application for you. See Windows File Associations for additional details on how to control Windows file associations in ***TCC***.

The following table sums up the possible search options (the term "standard search" refers to the search of the current directory, the Windows directories, and each directory in the search path):

Command	*TCC* Search Sequence
WP	Search for any executable file whose base name is *WP*.
WP.EXE	Search for *WP.EXE*; will not find files with other extensions.
C:\WP\WP	Looks in the *C:\WP* directory for any executable file whose base name is *WP*. Does not check the standard search directories.
C:\WP\WP.EXE	Looks only for the file *C:\WP\WP.EXE*.
LAB.DOC	Search for *LAB.DOC*, if *.DOC* is defined as an executable extension. Runs the associated application if the file is found. If *.DOC* is not an executable extension, passes the name to Windows to check for a Windows file association.
C:\LI\LAB.DOC	Looks only for the file *C:\LI\LAB.DOC*, and only if *.DOC* is defined as an executable extension. Runs the associated application if the file is found. If *.DOC* is not an executable extension, passes the name to Windows to check for a Windows file association.

If the first argument on a command line is in the format "env_var=value command options" (and env_var=value doesn't match an external command) then TCC will set the specified environment variable to the value, execute the command, and then remove the variable.

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If ***TCC*** cannot find an executable file, batch program, or a file with an executable extension or Windows file association in the current directory, a directory in the search path, or the directory you specified in the command, it then looks for an alias called **UNKNOWN_CMD** (see the ALIAS command for details). If you have defined an alias with that name, it is executed (this allows you to control error handling for unknown commands). If ***TCC*** cannot find an **UNKNOWN_CMD** alias, it will look for a plugin command named **UNKNOWN_CMD**. Otherwise, ***TCC*** displays an "Unknown command" error message and waits for your next instruction.

See also: the WHICH command.

8.9.1.1 Windows File Associations

Windows includes the ability to associate file extensions with specific applications. For example, a graphics program might be associated with files with a *.JPG* extension, while Notepad could be associated with files with a *.TXT* extension.

When you attempt to start an application from the command line or a batch file, ***TCC*** first searches for an external program file with a standard extension (*.EXE*, *.CMD,* etc.). It then checks executable extensions. If all of these tests fail, ***TCC*** passes the command name to Windows to see if Windows can find an association for it.

TCC offers three commands which provide control over file associations. They should be used with caution to avoid creating errors in the registry or damaging existing file types. The ASSOC command modifies or displays the associations between extensions and file types in the Windows registry. The FTYPE command modifies or displays the default command used to "open" a file of a specified type. The ASSOCIATE command combines ASSOC and FTYPE into a single easier-to-use command.

Executable extensions defined in ***TCC*** always take precedence over file associations defined in Windows. For example, if you associate the *.TXT* extension with your own editor using a ***TCC*** executable extension, and Windows has associated *.TXT* with Notepad, your setting will have priority, and the association with Notepad will be ignored when you invoke a *.TXT* file from within ***TCC***.

See also: START, ASSOC, FTYPE, ASSOCIATE, Executable Extensions, Executable Files and File Searches.

8.9.2 Popup Windows

Several features of ***TCC*** display popup windows. A popup window may be used to display filenames, recently-executed commands, recently-used directories, the results of an extended directory search, or a list created by the SELECT command or the @SELECT internal function.

Popup windows always display a list of choices and a cursor bar. You can move the cursor bar inside the window until you find the choice that you wish to make, then press the **Enter** key to select that item.

Navigation inside any popup window follows the conventions described below. Additional information on each specific type of popup window is provided where that window is discussed in detail.

The popup windows can be moved and resized, and will remember their position and size when recalled. You can also change the keys used in popup windows with key mapping directives.

Once a window is open, you can use these navigation keys to find the selection you wish to make:

Up Arrow	Move the selection bar up one line
Down Arrow	Move the selection bar down one line
Left Arrow	Scroll the display left 1 column, if it is a scrolling display (i.e. if it has a horizontal scrollbar)

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Right Arrow	Scroll the display right 1 column, if it is a scrolling display (i.e. if it has a horizontal scrollbar)
PgUp	Scroll the display up one page
PgDn	Scroll the display down one page
Home	Go to the beginning of the list
End	Go to the end of the list
Esc	Close the window without making a selection
Enter	Select the current item and close the window
Ctrl-E	Edit the current selection
Ctrl-D	Delete the current selection

Note: The keystrokes shown above are the defaults values. See Key Mapping Directives for details on how to assign different keystrokes.

All of the popup windows have an edit control on the toolbar. Entering a search string there (or just typing while the popup window has focus) will eliminate non-matching entries from the window. The search string can also contain wildcards or regular expressions. If the string doesn't contain any wildcards or a leading **::** (for a regular expression), ***TCC*** will append a ***** to the string (to match any line beginning with the string. For example, entering ***jpsoft** in the edit control at the top of the window will select all matching lines that contain "jpsoft" anywhere.

The ***TCC*** popup windows can optionally use character-mode windows instead of GUI windows. This is intended for use with server consoles that are character-mode only, or when using SSH with no GUI support; there is no benefit (and several disadvantages) in using this option for normal non-server environments. See the TCMD.INI ConsolePopupWindows directive.

8.9.3 Windows System Errors

System errors are internal errors returned by Windows when Windows APIs fail. You can retrieve the number of the most recent Windows system error with the internal variable _SYSERR.

For a detailed list of Windows system error codes, see:

http://msdn2.microsoft.com/en-us/library/ms681381(VS.85).aspx

8.9.4 ASCII Codes and Key Names

For ASCII codes and key names see:

- ASCII Tables
- Keys & Key Names

The remainder of this section gives a explanation of the ASCII character sets and key names. For more information on ***TCC***'s ANSI X3.64 string support see ANSI X3.64 Commands Reference. If you are troubleshooting a keyboard or character display problem, be sure to read all of the explanation below before referring to the tables.

The translation of a key you type on the keyboard to a displayed character on the screen depends on several related aspects of character handling. A complete discussion of these topics is well beyond the scope of this document. However, a basic picture of the steps in the keystroke and character translation process will help you understand how characters are processed in your system, and why they occasionally may not come out the way you expect.

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Internally, computers use numbers to represent the keys you press and the characters displayed on the screen. To display the text that you type, your computer and operating system require five pieces of information:

1. The numeric key code for the physical key you pressed (determined by your keyboard hardware);
2. The specific character that key code represents based on your current keyboard layout or country setting;
3. The character set currently in use on your system (see below);
4. The international code page in use for that character set; and
5. The display font used to display the character.

If the key codes produced by your keyboard, the code page, and the font you choose are not fully compatible, the characters displayed on the screen will not match what you type. The differences are likely to appear in line-drawing characters, "international" (non-English) characters, and special symbols, but not in commonly-used U.S. English alphabetic, numeric, or punctuation characters.

The control codes can be entered on most keyboards by pressing the **Ctrl** key plus another character, or by pressing the special keys **Tab**, **Enter**, **Backspace**, and **Esc**.

See your operating system documentation for more information about character sets, code pages, and country and language support. Refer to your operating system and/or font documentation for details on the full character set available in any particular font.

The tables in this section are based on U.S. English conventions. Your system may differ if it is configured for a different country or language. See your operating system documentation for more information about country and language support.

Note: You may also be able to use the **Alt + keypad** approach to generate ASCII values. See "Command Line Editing" for additional information.

8.9.4.1 ASCII Tables

These tables show the 128-character ASCII set for U.S. English systems. Most of the characters in code range 32..126 (the only codes for which ASCII specifies displayable symbols) will be the same on non-U.S. systems. The symbols associated with all other codes vary from font to font, as well as from country to country.

For more details on ASCII, character sets, and key codes, see the general information topic on ASCII, Key Codes, and ANSI X3.64 Commands.

- Control Characters 0 - 31, 127
- Printing Characters 32 - 47
- Printing Characters 48 - 63
- Printing Characters 64 - 79
- Printing Characters 80 - 95
- Printing Characters 96 - 111
- Printing Characters 112 - 126

Control Characters 0 - 31, 127

ASCII (Dec)	ASCII (Hex)	Ctrl + Key	Acronym	Name
0	00	@	NUL	null
1	01	A	SOH	start of header

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2	02	B	STX	start text
3	03	C	ETX	end text
4	04	D	EOT	end of transmission
5	05	E	ENQ	enquiry
6	06	F	ACK	acknowledge
7	07	G	BEL	bell
8	08	H	BS	backspace
9	09	I	HT	horizontal tab
10	0A	J	LF	linefeed
11	0B	K	VT	vertical tab
12	0C	L	FF	form feed
13	0D	M	CR	carriage return
14	0E	N	SO	shift out
15	0F	O	SI	shift in
16	10	P	DLE	data link escape
17	11	Q	DC1	device control 1
18	12	R	DC2	device control 2
19	13	S	DC3	device control 3
20	14	T	DC4	device control 4
21	15	U	NAK	negative acknowledge
22	16	V	SYN	synchronize
23	17	W	ETB	end text block
24	18	X	CAN	cancel
25	19	Y	EM	end of medium
26	1A	Z	SUB	substitute
27	1B	[	ESC	escape
28	1C	\	FS	field separator
29	1D	]	GR	group separator
30	1E	^	RS	record separator
31	1F	_	US	unit separator
127	7F	***n/a***	DEL	delete

Printing Characters 32 - 47

Dec	Hex	Char	Special character name
032	20	Space	space
033	21	!	exclamation mark
034	22	"	quote mark
035	23	#	number sign
036	24	$	dollar (currency) sign
037	25	%	percent mark
038	26	&	ampersand
039	27	'	apostrophe
040	28	(	left parenthesis
041	29	)	right parenthesis
042	2A	*	asterisk
043	2B	+	plus sign
044	2C	,	comma

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045	2D	-	hyphen (minus sign)
046	2E	.	period
047	2F	/	slash

Printing Characters 48 - 63

Dec	Hex	Char	Special character name
048	30	0	
049	31	1	
050	32	2	
051	33	3	
052	34	4	
053	35	5	
054	36	6	
055	37	7	
056	38	8	
057	39	9	
058	3A	:	colon
059	3B	;	semicolon
060	3C	<	less than sign
061	3D	=	equal sign
062	3E	>	greater than sign
063	3F	?	question mark

Printing Characters 64 - 79

Dec	Hex	Char	Special character name
064	40	@	at sign
065	41	A	
066	42	B	
067	43	C	
068	44	D	
069	45	E	
070	46	F	
071	47	G	
072	48	H	
073	49	I	
074	4A	J	
075	4B	K	
076	4C	L	
077	4D	M	
078	4E	N	
079	4F	O	

Printing Characters 80 - 95

Dec	Hex	Char	Special character name
080	50	P	
081	51	Q	

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082	52	R	
083	53	S	
084	54	T	
085	55	U	
086	56	V	
087	57	W	
088	58	X	
089	59	Y	
090	5A	Z	
091	5B	[	left bracket
092	5C	\	backslash
093	5D	]	right bracket
094	5E	^	caret
095	5F	_	underscore

Printing Characters 96 - 111

Dec	Hex	Char	Special character name
096	60	`	accent grave (back tick or back quote)
097	61	a	
098	62	b	
099	63	c	
100	64	d	
101	65	e	
102	66	f	
103	67	g	
104	68	h	
105	69	i	
106	6A	j	
106	6B	k	
108	6C	l	
109	6D	m	
110	6E	n	
111	6F	o	

Printing Characters 112 - 126

Dec	Hex	Char	Special character name
112	70	p	
113	71	q	
114	72	r	
115	73	s	
116	74	t	
117	75	u	
118	76	v	
119	77	w	
120	78	x	
121	79	y	

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122	7A	z	
123	7B	{	left brace
124	7C	|	vertical bar
125	7D	}	right brace
126	7E	~	tilde

8.9.4.2 Key Names

Key names are used by ***Take Command*** in tab toolbar buttons, and in ***TCC*** to define keystroke aliases, in key mapping directives, and in the INKEY and KEYSTACK commands. The format of a key name is the same in all four cases:

```
[Prefix-]Keyname
```

The valid prefix and keyname combinations are shown in the table below. Names of keys must be spelled exactly as shown, except for case. Note that you cannot specify a punctuation key.

Prefix	Valid for keynames
none	A-Z, 0-9, F1-F24, Tab, Bksp, Enter, Up, Down, Left, Right, PgUp, PgDn, Home, End, Ins, Del, Esc, Apps, Sleep, Select, Execute, Print, Mute, VolumeUp, VolumeDown
Alt-	A-Z, 0-9, F1-F24, Bksp, and the non-alphanumeric keys `-=[]\;',./
Ctrl-	A-Z, F1-F24, Tab, Bksp, Enter, Up, Down, Left, Right, PgUp, PgDn, Home, End, Ins, Del
Shift-	A-Z, F1-F24, Tab
LWin-	A-Z, F1-F24
RWin-	A-Z, F1-F24

The prefix and key name must be separated by a hyphen (-). For example:

```
Alt-F10 ctrl-bksp
```

Some keys are intercepted by Windows and are not passed on to ***Take Command***. For example, **Alt-Tab**, **Alt-Esc** and **Ctrl-Esc** typically pop up a task list, or are used in switching among multiple tasks. **Alt-space** brings down a menu to control window size and position, etc. Keys which are intercepted by the operating system (including menu accelerators, i.e. **Alt** plus another key) generally cannot be assigned to aliases or with key mapping directives, because ***Take Command*** never receives these keystrokes. However, KEYSTACK can send them to Windows (though not to another application).

The above comments are based on common 101/102-key US-style keyboards. Some key combinations might not be available on some keyboards.

8.9.5 ANSI X3.64 Command Reference

TCC includes support for ANSI Std X3.64, allowing you to manipulate the cursor, screen color, and other display attributes through sequences of special characters embedded in the text sent to the display. These sequences are called "ANSI commands". (For a general description of this feature, see ANSI Support.) Because of the design of Windows, ***TCC*** cannot provide ANSI X3.64 support to external applications. (If you are running Windows 10 Creators Update or later, ***TCC*** will enable the built-in console ANSI support.)

TCC supports most common ANSI X3.64 screen commands, but does not provide the complete set of options supported by some operating system's ANSI X3.64 drivers (for example, ***TCC*** does not include ANSI X3.64 key substitutions; that functionality is already provided with key aliases). This section is a quick reference to the ANSI X3.64 commands supported by ***TCC***.

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ANSI X3.64 support within ***TCC*** can be enabled or disabled with the ANSI Colors configuration option, or the SETDOS /A command. You can test whether ANSI X3.64 support is enabled with the _ANSI internal variable.

An ANSI X3.64 command string consists of three parts:

<ESC>[	The ASCII character ESC, followed by a left bracket. These two characters must be present in all ANSI X3.64 strings.
parameters	Optional parameters for the command, usually numeric. If there are multiple parameters, they are separated by semicolons.
command	A single-letter command. (Case sensitive!)

For example, to position the cursor to row 7, column 12 the ANSI X3.64 command is:

```
<ESC>[7;12H
```

The **parameters** part of this command is "7;12" and the **command** part is "H".

To transmit ANSI X3.64 commands to the screen you can use the ECHO command. The ESC character can be generated by inserting it into the string directly (if you are putting the string in a batch file and your editor will insert such a character), or by using the internal "escape" character (defaults: caret, [**^**]) followed by a lower-case "e".

For example, the sequence shown above could be transmitted from a batch file with either of these commands (the first uses an ESC character directly, represented below by "<ESC>"; the second uses ^e):

```
echo <ESC>[7;12H
echo ^e[7;12H
```

You can also include ANSI X3.64 commands in your prompt, using $e to send the <ESC> character.

Commands

The internal ***TCC*** ANSI X3.64 interpreter supports the subset of X3.64 commands below. Variable parameters are shown in lower-case italics, e.g., ***#***. ***row*** and ***attr***, and must be replaced with the appropriate decimal numeric value when using the commands. The default value for ***row***, ***rows***, ***col***, and ***cols*** is 1.

<ESC>[rowsA	Cursor up by *rows* (default is 1)
<ESC>[rowsB	Cursor down by *rows* (default is 1)
<ESC>[b	Repeat the previous character
<ESC>[#b	Repeat the previous character # times
<ESC>[colsC	Cursor right by *cols* (default is 1)
<ESC>[colsD	Cursor left by *cols* (default is 1)
<ESC>[d	Move cursor to first row
<ESC>[rowd	Move cursor to *row*
<ESC>[E	Cursor down one line and to first column
<ESC>[rowsE	Cursor down by *rows* and to first column
<ESC>[F	Cursor up one line and to first column
<ESC>[rowsF	Cursor up by *rows* and to first column
<ESC>[row;colf	Set cursor position, same as "H" command
<ESC>[G	Move cursor to column 1

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<ESC>[colG	Move cursor to column
<ESC>[H	Set cursor to top left
<ESC>[row;H	Move cursor to row, column 1
<ESC>[row;colH	Set cursor position (top left is row 1, column 1)
<ESC>[4h	Insert mode
<ESC>[?25h	Show cursor
<ESC>[J	Erase from cursor to end of display
<ESC>[0J	Erase from cursor to end of display
<ESC>[1J	Erase from start of display to cursor
<ESC>[2J	Clear whole screen
<ESC>[K	Clear from cursor to end of line
<ESC>[1K	Erase from start of line to cursor (inclusive)
<ESC>[2K	Erase line
<ESC>[L	Insert one blank line
<ESC>[#L	Insert # blank lines
<ESC>[l	Move cursor forward one tab
<ESC>[#l	Move cursor forward # tabs
<ESC>[4l	Overstrike mode
<ESC>[?25l	Hide cursor
<ESC>[M	Delete one line
<ESC>[#M	Delete # of lines
<ESC>[attr1;attr2;...m	Set display attributes; see table of attribute values below
<ESC>[L	Delete one character
<ESC>[#L	Delete # characters
<ESC>[s	Save cursor position (may not be nested)
<ESC>[#S	Scroll up
<ESC>[#T	Scroll down
<ESC>[u	Restore saved cursor position (or top-left if nothing saved)
<ESC>[?5W	Set tab at every 8 columns
<ESC>[?5;#W	Set tab at every # columns
<ESC>[X	Erase one character
<ESC>[#X	Erase # characters
<ESC>[Z	Move cursor back one tab
<ESC>[#Z	Move cursor back # tabs
<ESC>[?7h	Wrap lines at screen edge
<ESC>[?7l	Don't wrap lines at screen edge
<ESC>[21t	Send "^e]lTitle^e\" (the console's window title) to console input
<ESC>]0;TitleBEL	Set console title to "Title". BEL is the ASCII character 7
<ESC>]4;...BEL	Change color(s)
<ESC>]104;...BEL	Reset color(s)
<ESC>[@	Insert one blank character
<ESC>[#@	Insert # blank characters
<ESC>8	Restore cursor
<ESC>7	Save cursor

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<ESC>[#;#;#...,~	Play sound
<ESC>c	Reset
<ESC>D	Index
<ESC>E	Next line
<ESC>H	Horizontal tab set
<ESC>M	Reverse index

Display Attributes

The **m** escape sequences set display attributes. Attribute values used for the **m** command are:

0 Restore all attributes to default
1 Bright (high intensity) foreground color
2 Normal intensity foreground color
4 Bright (high intensity) background
5 Bright (high intensity) background
7 Reverse video
8 Concealed (foreground becomes background)
22 Bold off (foreground is not intense)
24 Background is not intense
25 Background is not intense
27 Normal video
28 Concealed off
30..37 Foreground color
40..47 Background color
90..97 Bright foreground color
100..107 Bright background color

Foreground Code	Background Code	Color
30	40	Black
31	41	Red
32	42	Green
33	43	Yellow
34	44	Blue
35	45	Magenta
36	46	Cyan
37	47	White
90	100	Gray
91	101	Bright red
92	102	Bright green
93	103	Bright yellow
94	104	Bright blue
95	105	Bright magenta
96	106	Bright cyan
97	107	Bright white

If you are setting multiple attributes, combine them into a single command (using the **;** concatenation operator). The attribute settings are cumulative, and are independent of order (except code **0**, reset to default).

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Examples

Set bright red foreground without changing background:

```
echo ^e[31;1m
```

Set the display to bright cyan on blue, and clear the screen:

```
echo ^e[44;36;1m^e[2J
```

Set up a prompt which saves the cursor position, displays the date and time on the top line in bright white on magenta, and then restores the cursor position and sets the color to bright cyan on blue, and displays the standard prompt:

```
prompt $e[s$e[1;1f$e[45;37;1m$e[K$d $t$e[u$e[44;36;1m$p$g
```

8.9.6 Colors, Color Names & Codes

You can use color names in several configuration options and in some internal commands. The general form of a color specification is:

```
[BRIght] fg ON [BRIght] bg
```

where ***fg*** is the foreground or text color, and ***bg*** is the background color.

Color Names

Color names as well as the attribute name **BRI**ght may be shortened to their first three letters. The available color names, shown below on approximations of the 8 basic background colors, are: **BLA**ck, **BLU**e, **GRE**en, **CYA**n, **RED, MAG**enta, **YEL**low, **WHI**te.

	BLUe	GREen	CYAn	RED	MAGenta	YELlow	WHIte
BLAck	BLU	GREen	CYAn	RED	MAGenta	YELlow	WHIte
BLAck	BLUe	GRE	CYAn	RED	MAGenta	YELlow	WHIte
BLAck	BLUe	GREen	CYA	RED	MAGenta	YELlow	WHIte
BLAck	BLUe	GREen	CYAn	RED	MAGenta	YELlow	WHIte
BLAck	BLUe	GREen	CYAn	RED	MAG	YELlow	WHIte
BLAck	BLUe	GREen	CYAn	RED	MAGenta	YEL	WHIte
BLAck	BLUe	GREen	CYAn	RED	MAGenta	YELlow	WHI

Note: The colors (if any) represented by your viewer in the above table do not necessarily match the actual rendition provided by your display hardware and drivers at a ***TCC*** prompt. **BRI**ght backgrounds are generally always enabled under Windows.

Color Codes

You can also specify colors by numeric code (see table below) instead of by name. The numeric form is most useful in potentially long options such as ColorDIR, where using color names may take too much space. The codes are decimal numbers, with the codes for bright colors larger than those of the corresponding normal colors by 8.

The COLOR command also supports the CMD style color specification ***bf***, where ***b*** and ***f*** are CMD.EXE's codes for background and foreground colors, respectively (shown in the CMD columns of the table below). The numeric values of these codes are the same as the ***TCC*** codes, but they are represented in hexadecimal.

ANSI X3.64 color codes are also shown in the table. Note that X3.64 support for the *bright* attribute is restricted to foreground. Note that the color codes are decimal, and the codes for *background* colors are larger than those of the corresponding *foreground* colors by 10.

SCREEN COLOR		**TCC name**	**TCC codes** (decimal)		**CMD** codes* (hexadecimal)		ANSI X3.64 codes (decimal)	
normal	bright		normal	bright	normal	bright	foreground	background
black	gray	**BLA**ck	**0**	**8**	0	8	30	40
blue	blue	**BLU**e	**1**	**9**	1	9	34	44
green	green	**GRE**en	**2**	**10**	2	A	32	42
cyan	cyan	**CYA**n	**3**	**11**	3	B	36	46
red	pink	**RED**	**4**	**12**	4	C	31	41
magenta	magenta	**MAG**enta	**5**	**13**	5	D	35	45
brown	yellow	**YEL**low	**6**	**14**	6	E	33	43
white	white	**WHI**te	**7**	**15**	7	F	37	47

Note: The numeric values of the CMD and native color codes are identical, the difference is in representation only.

Use one number to substitute for the **[BRIght] fg** portion of the color name, and a second to substitute for the **[BRIght] bg** portion. For example, instead of **bright white on red** you could use **15 on 4** to save space in a ColorDir specification.

The @OPTION function returns the value of color configuration options by combining both foreground and background into a single number (0-255) using the following logic:

foreground value + (background value * 16) = code

For example, **bright white on red** (15 on 4) can be expressed as:

```
15 + ( 4 * 16 ) =  79
```

The following batch file translates a combined numeric color code:

```
@echo off
setlocal
function x=`%@if[%1 gt 8,bri ,]%@word[%@eval[%1 %% 8],bla blu gre cya red mag
   yel whi]`
:loop
input /c /d ^nColor code? %%c
if  %c gt 255 .or. %c lt 0  quit
set f=%@eval[%c %% 16] & set b=%@eval[%c \ 16]
echos The color code %c is "%f on %b" ("%@x[%f] on %@x[%b]")
goto loop
```

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Color Errors

A standard color specification allows sixteen foreground and sixteen background colors. However, many monitors do not provide true renditions of certain colors. For example, most users see normal "yellow" as brown, and bright yellow as yellow; many also see normal red as red, and "bright red" as pink. Color errors are often worse when running in windowed mode, because Windows may not map the text-mode colors the way you expect. These problems are inherent in the monitor and they cannot be corrected using the ***Take Command*** color specifications. You can, however, define a custom color palette to get the exact colors you want, via the "Tab Colors" button on the Configure Take Command / Tab dialog.

9 Tutorials

Video Tutorials

We're working on a series of video **command prompt tutorials** for Take Command and TCC. They will be posted here as soon as they are available.

- An Introduction to Take Command
- Creating and Debugging Windows Batch Files

Basic Tutorials

Take Command is a rich environment that allows you complete control of your Windows systems. We have created some quick command prompt tutorials that describe the basic features of the Take Command environment and the TCC scripting languge. You will come up learning curve faster if you take a few moments to look through these documents and videos.

- Introduction to Take Command
- Scripting Language Basics
- Triggers (Event Monitoring)
- Take Command In the Internet World

Customizing the Take Command Environment

Take Command is the GUI component, providing the tabbed console windows in which TCC, and other console programs like CMD.EXE and PowerShell run. It also provides file-management windows, a tabbed toolbar, and other graphical amenities, along with the framework they all fit into.

Many of Take Command's customization options are available in the Take Command configuration dialog, which you start with the "Configure Take Command..." selection in the Options menu. (Note that this is a different dialog from the OPTION dialog used to configure TCC.)

- Rearranging Windows
- Themes
- Fonts
- Defining Hotkeys
- The Tabbed Tool Bar
- Startup Programs
- Other Take Command Tweaks

Customizing the TCC Environment

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TCC.EXE is the command prompt interpreter included with Take Command. It's the brains of the package, the program which accepts your commands from the keyboard or from a batch file, parses and executes them. TCC is usually run within a tab window in the Take Command interface. It can also be run by itself, in a regular console window outside of the Take Command environment, for a more spartan experience. The customizations in this section are specifically for TCC, whether it's run within the Take Command interface or by itself.

- Input and Error Colors
- Customizing the Prompt
- Console Fonts
- Filename Completion
- Aliases Overview
- Command Aliases
- Keystroke Aliases
- Directory Aliases
- Colorized Directories
- Other Command-Line Tweaks

9.1 Introduction to Take Command

The integrated Take Command Environment provides a huge boost in productivity. This tutorial describes the Take Command Environment's features and how to use them to increase your ability to work in the console environment.

Overview

Take Command is composed of four elements which work closely together:

Take Command Environment - A rich development and operations environment that allows you to:

- Manage files and review the results of file manipulation
- Create and edit command scripts
- Debug scripts
- Host, manage and control multiple console applications simultaneously in tabbed windows, including native Take Command consoles, CMD, PowerShell and bash
- Cut and paste text
- Drag and drop files into tab windows from an Explorer-like environment, other applications, or the desktop

TCC (Take Command Console) - A command processor upwardly compatible with (and a replacement for) CMD.EXE, the default command processor in Windows 8 / 2012 / 10 / 2016 / 2019. TCC is substantially enhanced with thousands of additional features, that provides the ability to:

- Interactively run commands, such as DIR, COPY, etc.
- Interactively run batch script files, such as .CMD, .BAT or .BTM scripts
- Run batch scripts as background processes based on timed schedules or operational triggers, such as changes in the system environment

Take Command Language - A mature scripting language based on and compatible with CMD.EXE, but massively enhanced. It includes:

- 235+ internal commands
- 290+ functions
- 380+ variables

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- Hundreds of additional switches for CMD compatible commands (such as COPY, DEL, DIR, and START).
- Additional underlying capabilities, such as the ability to treat FTP and HTTP directories as if they were local directories

Integrated graphical IDE with tabbed edit windows and a batch file debugger (compatible with CMD or TCC batch files), with:

- Single stepping
- Breakpoints
- Syntax coloring
- Tooltips (to display command syntax or the current variable value)
- Bookmarks
- Variable, alias, and watch windows

The Take Command Environment

Before Xerox created the concept of the graphical environment in the late 1970's, there was the command line. Typing versus selection with a mouse. Most people like windowing systems better, but, to this day many people still do much of their work at the command line because for many tasks, it's a lot more efficient.

In Take Command, the GUI and the command line work together to make you more efficient:

- **A Windowing Environment** - So you can do things like drag and drop, cut and paste, set up common tasks as icons, etc.
- **A Windows Explorer Type File Manager** - So you can see the file system while you are working at the command line
- **Tabbed Console Manager** - Providing you with the capability to easily organize and operate multiple consoles simultaneously (like Take Command, CMD, PowerShell, bash, etc.)

Why Did We Do This?

A lot of people ask us why we merged a Windows Explorer Type File Manager with a Tabbed Console Manager. Invariably their first reaction is to ask us how to get rid of the Explorer components. A week later they are using the new capabilities every day and are asking for more.

It's pretty simple. First, some simple activities are easier to do in a graphical environment, so having the File Manager right there makes it simple to do these things without having to go look for the Windows Explorer. Second, when you are working at the command line and manipulating files, you can see the results immediately of the actions you have taken. Third, you can drag and drop file names into the console.

All in all, it turns out that these capabilities really do save you time. You will wonder why no one did this before!

The following image shows the basic Take Command environment:

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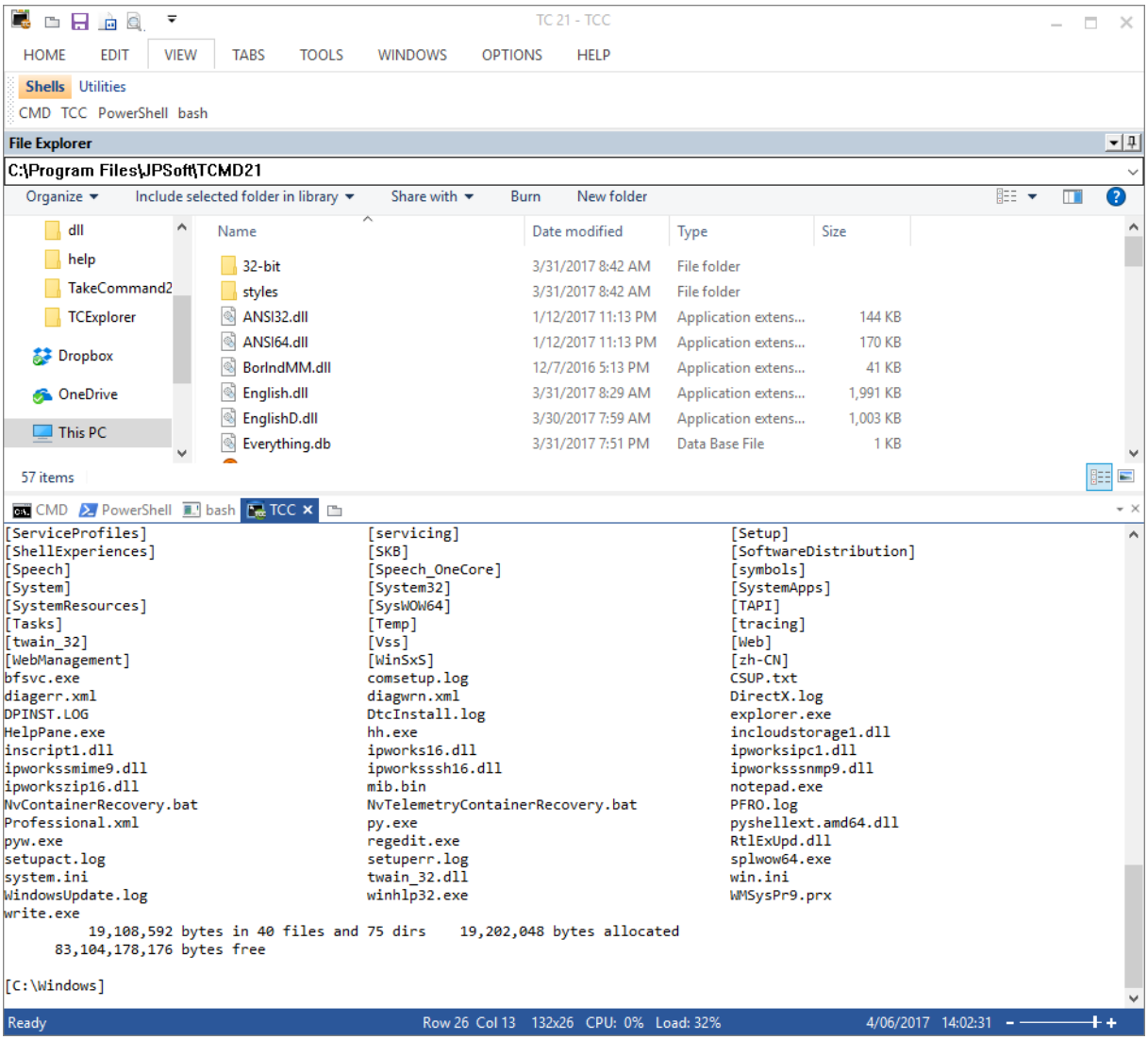

The key elements of the interface are:

1. **Menu Bar** -- This is an enhanced Windows Menu Bar. It allows access to the basic features of any Windows program, such as cut and paste, option, help etc. You can move it and redock it, customize it, and assign shortcut keys.

2. **Folder View** --The Folder View is similar to the standard Windows Explorer Folder tree view. You can see all of the primary system devices (disk drives, network devices, etc.) and expand or collapse them to see the underlying folders structure. You will not see any files in this view.

Using Autohide

In the upper right hand corner of the Folder View is a “pin”. If you select this pin, it will put the Folder View in autohide mode to increase the amount of console workspace. Putting the cursor over the resulting folder tab on the left side of the screen will bring the view back. You can return to the normal state by selecting the pin a second time. This also works for the List View.

You Can Change the List and Folder Views from a Console

You can also make the Folder and List views change to follow actions in one of the consoles. Type in the following at a console prompt and watch the results:

CDD /t c:\

The /t switch tells Take Command that it should switch the List and Folder views

3. **List View** -- List View shows the files (and folders) within the selected item in Folder View. As you change the selection in Folder View, this will immediately change to follow. You can also cause the folder view to follow actions in the console

4. **Console View** -- You can open up one or more consoles as individual tabs (a la Firefox) in this section. There are several ways to add a new console tab:

- Double click on the tab bar will open a new console window
- Right click on the console view header bar and select “new tab”. This will open up a new console tab based on the current COMSPEC variable (usually Take Command Console)
- Select “Tabs - New Tab” from the menu bar. This will also open up a new console tab based on the COMSPEC variable
- If you want to open up a new console that is different than the COMSPEC, then select “Tabs - Run”. This will open up a dialog box that will allow you to enter the name of the console program (e.g., CMD, Powershell, etc). Remember to include the full path name to the new console, unless it is already set in the environment. You can also specify the default directory for the new console tab.
- You can also set up console tabs to be automatically opened on startup. This will be discussed in the next section on options.

5. **Find** - Find will look for a specified text string somewhere in the active console tab. You can also search using regular expressions. The Find tool keeps a recent history of your searches that can be recalled in the drop down list.

6. **Views** -- Allows the List View to be configured as:

- Large icons
- List (with the name and small icon displayed)
- Detail (with names and associated data displayed)

7. **Folder History** -- Provides a history of the most recent directories selected in the Folder View. Previous directories can be recalled in the drop down list. You can also type a folder name directly into this field to go to that folder.

8. **Filter** -- You can filter what is displayed in the List View by entering a filter string here. For example, “*.pdf” will show only pdf files. “D*.pdf” will show only pdf files beginning in “D”. You can also filter based on regular expressions. As with other selection boxes, you have access to recent history.

9. **Edit/Debug** -- Pressing this button will open a edit/debug session. In this new window, you can edit and debug batch programs written in CMD’s language and the vastly extended TCClanguage. This is discussed in more detail in a later tutorial. It’s also useful to note that the editor and debugging functions will work with CMD.EXE batch files, offering a much improved development environment.

10. **Tab Toolbar** -- The Tab Toolbar allows each user to configure up to 20 toolbar tabs (with up to 50 buttons each) to execute common activities. These buttons can execute:

- Internal commands
- External commands/programs
- Batch programs

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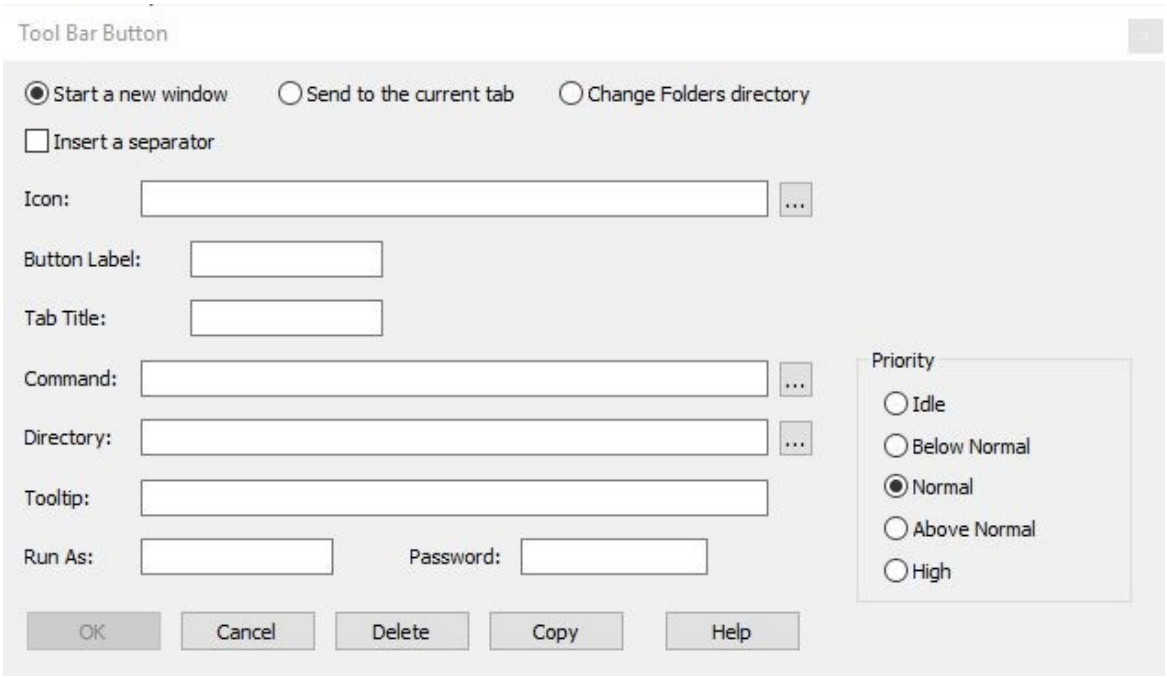
- Aliases
- Change the current Folder/List views
- Feed keystrokes to the active tab window

To set up a new button, right click on an empty part of the Tab Toolbar, and select “Add button”. (You can modify an existing button by right clicking on the button.) This will pop up the following dialog:



- **Startup Action** -- A toolbar button will execute one of three basic actions. It can either:
  - Open a new tab running whatever program you specify in the Command field)
  - Send keystrokes to the current tab (e.g., commands, aliases, etc.)
  - Change the folders directory- like CDD /T, but it does it without having to invoke a TCC tab window. (Useful for creating buttons to change Folders / List View to commonly used directories.)

A Note on Keystroke Interpretation

If the tab is sending keystrokes to the current tab, the text is in the same format as the KEYSTACK command in TCC.

Text entered within double quotes, e.g., "abc" will be sent to the active console application as is. The only items allowed outside the quotes are key names, /W options, and a repeat count.
If keyname is a number, it is interpreted as an ASCII character value.

Repetition. To send keyname several times, follow it with a space, left bracket [, the repetition count, and a right bracket]. For example, the command below will send the Enter key 4 times:

enter [4]

The repeat count works only with an individual keyname. It cannot be used with quoted strings. You must have a blank space between the keyname and the repetition count.

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- **Separator** -- You can also specify that there will be a separator (additional space) between this toolbar button and the previous button in the list - generally for cosmetic reasons. You can define a toolbar button to display an icon, a text label, or both. You must specify either the Icon or Label fields. If you enter both, Take Command will display the text to the right of the icon on the button.
- **Icon field** -- Enter the filename for the icon (.ico) that you want to display on the button. If you specify an .exe filename, Take Command will use the first icon in that file. You can use the Browse button to find the file.
- **Label field** -- enter the text that you want to display on the button.
- **Command field** -- you can enter either the command to be started in a new window ("Start a new window"), or the keystrokes to be sent to the current tab ("Send to current tab"). You can also use the Browse button to find a file to be entered at the beginning of the Command field.
- **Directory field** -- If you're starting a new window, the Directory field will set the startup directory for the command. You can use the Browse button to find the directory.

If you exit by choosing the **OK** button, any changes you have made will be saved in TCMD.INI, and reloaded automatically the next time you start Take Command. If you use the Cancel button, your changes will be discarded.

9.2 Scripting Language Basics

Take Command provides a rich command language in its command processor (TCC.EXE) that is highly upwardly compatible with (and a replacement for) the default Windows command processor CMD.EXE. It is suitable for creating both simple and highly sophisticated batch programs. The language can also be used at the command prompt to create very powerful real-time manipulation of your computer.

Overview

TCC has a huge set of capabilities. These capabilities are grouped into three categories:

• Internal Commands - These are the primary language constructs. Common commands include, DIR, COPY, MOVE, etc. TCC gives you instant access to more than 235 internal commands. (Microsoft's CMD.EXE has fewer than 40 internal commands.).

Internal vs. External Commands

When we talk about an internal command, we mean the command is built into the Take Command program. With CMD, some commands, like XCOPY are actually separate programs. In PowerShell, the commands are generally external programs. PowerShell requires a separate .NET Framework to be installed on the computer for the commands to work.

• Internal Variable - Internal variables are special variables built into TCC to provide information about your system. They are not stored in the environment, but can be accessed as if they were environment variables in interactive commands, aliases, and batch files. Take Command provides more than 270 internal variables that can tell you a great deal about your computer and how it is operating. These include installed hardware, hardware status, operating system and software status, etc.

• Variable Functions - Variable functions are very similar to internal variables, but they take one or more parameters (which can be environment variables or even other variable functions). Variable functions are useful at the command prompt as well as in aliases and batch files to check on available system resources, manipulate strings and numbers, and work with files and filenames. There are more than 360 variable functions built into TCC.

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We are not going to talk about all of the features of the TCC Language in this tutorial. (The manual is 1,300 pages long!) We are going to assume you know the basics of CMD and point you at a few of things that TCC does better with less work than CMD.

Internal Commands

There are several aspects of TCC's internal command set that are definitely worth looking at:

- Switches
- Aliases
- HTTP and FTP
- Flow of Control Commands
- KEYSTACK Command
- Event Monitoring Commands (Triggers) -- We made this into a separate tutorial

Each of these is covered below:

1. **Switches**

Switches modify commands by giving them special instructions. TCC has a superset of the CMD switches and is generally compatible. We say generally, because unfortunately, CMD has not been consistent from version to version.
For example, in CMD, the COPY command has 7 switches (XCOPY has more). The TCC COPY command has 34 switches. Examples of a few of the switches that the CMD COPY command does not have include:

- /N Executes the copy command and shows you what the output would be, but does not actually execute the command
- /O Copy the source file only if the target does not exist
- /S Copy the subdirectory tree starting with the files in the source directory plus each subdirectory
- /H Copy all matching files including those with a hidden or system attribute set
- /W Delete files in the target directory that don't exist in the source directory

These switches allow you to custom tailor the language in ways that you cannot do with CMD. They perform very powerful operations with only two or three keystrokes.

2. **Aliases**

So, we have given you all these powerful switches, but maybe you don't always want to have to type them.

Perhaps you have some common ways of doing things and you want TCC to adapt things to the way you want to do them.

We have a solution...aliases. Much of the power of TCC comes together in aliases, which give you the ability to create your own commands. An alias is a name that you select for a command or group of commands.

Simple aliases substitute a new name for an existing command. More complex aliases can redefine the default settings of internal or external commands, operate as very fast in-memory batch files, and perform commands based on the results of other commands. TCC also supports Directory Aliases, a shorthand way of specifying pathnames.

Aliases can also create customized versions of commands. For example, the DIR command can sort a directory in various ways. You can create an alias called DE that means "sort the directory by filename and extension, and pause after each page while displaying it" like this:

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alias de=dir /oe /p

So, you don't actually have to remember all those switches. You can set up versions of the language that meet your needs. For example, you can create aliases that match common Linux shell commands and operate the same way if that's more comfortable for you.

TCC aliasing differs from CMD (and its external DOSKEY) in a couple of key ways.

• You can use aliases in batch files. DOSKEY macros cannot be used in your batch files.

• TCC aliases can include variable expansion, which is not available in DOSKEY. This example creates a simple command line calculator.

alias calc=`echo The answer is: %@eval[%$]

Once you have entered the example, you can type CALC 4*19, for example, and you will see the answer. The variable function %@eval[%$] will be evaluated by the parser. The text "4*19" will replace the "$" placeholder and the variable function @eval which performs math functions will calculate the result.

• You can assign a commonly used alias to a keystroke. For example:

alias @Shift-F5=*dir /2/p

After you enter this example, you will see a 2-column directory with paging whenever you press Shift-F5 followed by Enter.

• TCC also allows Directory Aliases. Directory Aliases are a shorthand way of specifying pathnames. For example, if you define an alias:

alias pf:=c:\program files

You can then reference the files in c:\program files\jpsoft by entering pf:\jpsoft.

3. **Flow of Control Commands**

One of the weakest areas of CMD is flow of control. These are the constructs like IF..THEN..ELSE or DO LOOPS that allow you to develop sophisticated batch programs. If you are creating data center batch processes, the limitations in CMD keep you from doing anything sophisticated.

TCC provides a very rich set of constructs that allow you to duplicate (or exceed!) the capabilities of the typical Linux shells.

The following examples shows some of the types of DO Loops you can create:

Do Loops

DO count
DO FOREVER
DO varname = start TO end [BY step]
DO WHILE condition
DO UNTIL condition
DO UNTIL DATETIME date time
DO FOR n [SECONDS | MINUTES | HOURS]
DO varname IN [range...] [/I:"text" /S[n] /A:[-|+]hsad] fileset
DO varname IN [/T"delimiters"] /L stringset

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DO varname IN /C stringset
DO varname in /P command
DO varname IN @file

TCC also provides a very powerful IF..THEN..ELSE construct through the IFF command.

If...Then...Else Constructs

IFF condition1 THEN
commandset1
[ELSEIFF condition2 THEN commandset2]
...
[ELSE
commandset3]
ENDIFF

The alias in this IFF example checks to see if the parameter is a subdirectory. If so, the alias deletes the subdirectory's files and removes it (enter this on one line):

alias prune `iff isdir %1 then & del /s /x /z %1 & else & echo %1 is not a directory! & endiff`

This example shows how a SWITCH construct works. The batch file fragment below displays one message if the user presses A, another if the user presses B or C, and a third one if the user presses any other key:

Switch Constructs

inkey Enter a keystroke: %%key
switch %key
case A
echo It's an A
case B .or. C
echo It's either B or C
default
echo It's none of A, B, or C

4 .**KEYSTACK**

KEYSTACK takes a series of keystrokes and feeds them to a program or command as if they were typed at the keyboard. (It has no equivalent in CMD.) KEYSTACK is most often used for programs started from batch files. For example, to start Word and open the last document you worked on, you could use the command :

start word & keystack /w54 alt-f "1"

This causes the following:

• Starts Word,
• The /w switch causes a delay of about three seconds (54 clock ticks at about 1/18 second each) for Word to get started,
• Places the keystrokes for alt-F (File pulldown menu), and 1 (open the most recently used file) into the buffer.

Word receives these keystrokes and performs the appropriate actions. Notice that the two commands, START and KEYSTACK are issued on a single command line. This ensures that the keystrokes are sent to Word's window, not back to Take Command.

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5. **FTP and HTTP**

TCC's FTP and HTTP commands allow you to treat http and ftp sites as if they were local disk drives. This is a huge advantage over CMD. In Working in the Internet World, we show you how to use these commands to create practical remote monitoring applications.

In simplest form, you can act as if an FTP or HTTP site is a local disk. For example, to get a directory of the JP Software FTP site, you could use this command:

Dir ftp://ftp.jpsoft.com/*

The following example shows how to include an ftp user name and password:

Dir ftp://username:password@ftp.abc.com/mydir/*

You can reference internet sites for DIR, COPY, MOVE, DEL and other commands. These commands also work with secure versions of FTP and HTTP.

6. **Event Monitoring Commands (Triggers)**

One of the most powerful features in TCC are the event monitoring commands. They allow you to watch a wide variety of activities on your computer and "trigger" processes into action to deal with or report on issues.

This is described fully in Using Triggers in Take Command. It's well worth the read.

Internal Variables

Internal variables are special variables built into TCC to provide information about your system. They are not stored in the environment, but can be accessed as if they were environment variables in interactive commands, aliases, and batch files.

There are more than 280 of them (CMD has less than 10). Key types of variables include:

- Hardware status
- Operating system and software status
- Dates and times
- Drives and directories
- Error codes
- Screen, color, and cursor
- Take Command status
- Compatibility

Here is a simple example of how to use a common variable called _DOW (Day Of Week):

if "%_DOW" == "Mon" call c:\cleanup\weekly.bat

This example calls another batch file if today is Monday.

Before we go on...

A Quick Note:

One of the great mysteries of the command line is the % sign. What does it do? When you see a % sign in front of a variable or function, it means that the parser should evaluate the function and replace the variable

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or function with its text value. So, in the last example, %_DOW is replaced with the result, which in this case is MON, TUE or whatever.

How about something more real-time that you can run in the background:

```
DO FOREVER
if "%_BATTERYPERCENT" LT 25" MSGBOX Battery is low
ENDDO
```

This command will loop forever checking the battery status and popup a message box if the battery charge is getting low. MSGBOX is actually a very powerful command in TCC. Check it out in the help file.
Here is an example that checks to see if there are enough resources free before running an application.

```
iff %_GDIFREE lt 40 then
echo Not enough GDI resources!
quit else
d:\mydir\myapp
endiff
```

Take a look at the list of internal variables by category in the help file.

Variable Functions

Variable functions are one of the most powerful features of TCC. Variable functions are very similar to internal variables, but they take one or more parameters (which can be environment variables or even other variable functions).

Variable functions are useful at the command prompt as well as in aliases and batch files to check on available system resources, manipulate strings and numbers, and work with files and filenames.

There are more than 360 Variable Functions grouped into 13 categories. They allow you to gather and manipulate system information in very powerful ways. (CMD has no variable functions.). Remember...they are all built-in.

- Binary buffers
- Dates and times
- Drives and devices
- File content
- File names
- File properties
- Input dialog boxes
- Monitoring
- Network properties
- Numbers and arithmetic
- Strings and characters
- System status
- Utility

Using functions, TCC can read and write text files, as well as some specialty files, such as the Windows Registry or .ini files. In the example below, we are going to read a .csv file called names.csv (which is a text file with fields separated by commas). The file looks as follows:

```
Joe,100,joe@company.com
Jane,200,jane@company.com
Peter,400,peter@company.com
```

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Our example will read this file a line at a time, and select the email address in each line. It will then echo them to the console.

```
set filename=%@expand[names*.csv]
do record in @%filename
set email=%@field["",",3,%record] echo %email
enddo
```

This code does the following:

- The first line of the example creates a variable with the full file and pathname of the .csv file using the @expand function.
- The second line uses a special case of the DO command to:
- Open the filename we set in the first line with an @filename function
- Create a line counter that it sets to one
- Set up a new variable called “record”
- Read the first line of text up to the CR and returns it to “record”
- The @field function picks the third field in the line (which contains the email address) using a “,” as the field delimiter and places it in a variable called “email”. The delimiter could be anything you wanted.
- The ECHO command outputs the email address to the console
- ENDDO returns the loop to the do statement, which increments the line counter to the next line. If it’s the end of the file, it terminates the loop.

This particular example seems sort of limited, but we use a variant of it to process our orders, construct registration keys and email them to our users with a remarkably small amount of code.

9.3 Event Monitoring in Take Command

The Take Command command interpreter (TCC) provides a set of “trigger” commands that allow you to monitor activities on your computer and to trigger your computer to take an action based on changes occurring in the computer. This tutorial teaches you how to use them.

Overview

TCC features a number of internal commands to allow you to do real-time monitoring of your system. These commands include:

- **FOLDERMONITOR** - Monitor folder and/or file creation, modification, and deletion
- **EVENTMONITOR** - Monitor event logs
- **NETMONITOR** - Monitor network connections and execute a command when a network is connected or disconnected
- **PROCESSMONITOR** - monitor processes and execute a command when a process is started or ended
- **SERVICEMONITOR** - monitor Windows services and execute a command when a service is started, paused, or stopped
- **USBMONITOR** - monitor USB connections and execute a command when a device is connected or disconnected
- **FIREWIREMONITOR** - monitor FireWire connections and execute a command when a device is connected or disconnected
- **CLIPMONITOR** - monitor the Windows Clipboard activity and execute a command when the clipboard is modified.
- DATEMONITOR - Monitor the current Windows system date and time and execute a command when the date and time matches.
- DEBUGMONITOR - Monitor writes to the OutputDebugString API.

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- DISKMONITOR - Monitor free disk space.
- REGMONITOR - monitor Windows Registry keys
- SCREENMONITOR - Monitor the Windows screen saver.
- BLUETOOTHMONITOR - Monitor Bluetooth connections and execute a command when a device is connected or disconnected.
- POWERMONITOR - Monitor Windows system power changes.

Using these commands, you can easily watch most activity going on in your computer and provide alerts, such as emails or take actions, such as triggering a batch process if a monitored event occurs.

You can have up to 100 monitoring commands running simultaneously in a single Take Command tab window. The examples below show how simple it is to set up triggers and give you an idea about some of the things you can do with triggers.

Example 1 -- FOLDERMONITOR

FOLDERMONITOR lets you monitor directory and file creation, deletion, renaming, and modification. Let's say you want to watch for a file called "FinalResult.htm" to be created in the "d:\Results" subdirectory, and then copy it to "http://mycompany.com/results/FinalResult.htm"

The traditional approach would be to create a script file that waited forever for the file:

(TCC Syntax) FINAL.CMD:

```
do forever
iff exist "d:\results\FinalResult.htm" then
copy "d:\results\FinalResult.htm" "http://mycompany.com/results/FinalResult.htm"
del FinalResult.htm
rem Wait for the file again
endiff
Delay 10
enddo
```

This creates a separate TCC session, wasting memory and continuously requiring a small amount of CPU time.

In TCC you can do the same thing with (on one line):

```
foldermonitor d:\results /i"FinalResult.htm" created forever
(copy "d:\results\FinalResult.htm" "http://mycompany.com/results/FinalResult.htm" &
del d:\results\FinalResult.htm)
```

Here is what is happening:

1. **Foldermonitor d:\results** -- causes the command to watch the subdirectory d:\results
2. **/i"FinalResult.htm"** -- says to include (watch) only files with the name FinalResult.htm in the monitoring
3. **created forever** -- means that we are looking only for files that are newly created and that we will do this in a continuous loop that will execute forever
4. **(copy "d:\results\FinalResult.htm" "http://mycompany.com/results/FinalResult.htm" & del d:\results \FinalResult.htm)** - will copy the new file to a website and deletes the file from the d:\results directory after it has been copied. You could execute a batch file here instead of creating a command group as we have done.

This command creates a separate thread in the current TCC session.

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FOLDERMONITOR also creates four environment variables when a file or folder is created, deleted, modified, or renamed that can be queried by the command. The variables are deleted after the command is executed.

- **_folderaction** -- The type of change to the file or folder. The possible values are:
  - CREATED
  - DELETED
  - MODIFIED This includes changing the file size, attributes or the date/time stamp.
  - RENAMED
- **foldername** -- The name of the folder being monitored
- **folderfile1** -- The name of the file or folder that was created/deleted/modified/renamed. If the file was renamed, folderfile1 is the old name.
- **_folderfile2** -- If a file was renamed, folderfile2 is the new name

If you want to test for multiple changes, you should put the condition tests in a single FOLDERMONITOR command; otherwise FOLDERMONITOR will create a thread for each command (wasting your memory and CPU time).
For example, the following command will wait for any file to be created or changed in the d:\results directory and copy them to the web directory:

foldermonitor d:\results created modified forever (copy "%_folderfile1" "http://mycompany.com/results/")

Example 2 -- PROCESSMONITOR

PROCESSMONITOR monitors program starts and exits.

For example, if you want to be alerted with an email whenever a particular application exits:

processmonitor myapp* ended forever (sendmail bob@abc.com myapp Myapp just shut down!)

Here is what is happening:

1. **processmonitor myapp*** -- looks for any process with a name beginning with “myapp”
2. **ended forever** -- means that we are looking only for processes that have terminated (for any reason)
3. **(sendmail bob@abc.com myapp Myapp just shut down!)** - creates and sends an email using the internal TCC Sendmail command to bob@abc.com with a subject of “myapp” and message text of “”myapp just shut down”

This is good for making sure that key production processes are operating as expected.

You can also use processmonitor to watch for specific processes being started. Maybe there is a virus that has escaped in your company that executes a malicious process -- call it malproc. The following script will look for the process running on a machine, kill it and send you an email identifying where the infection is.

processmonitor malproc started forever
(taskend /F malproc & sendmail bob@abc.com malproc I have malproc on my computer!)

This code does the following:

4. **processmonitor malproc** -- looks for any process with a name malproc
5. **started forever** -- means that we are looking only for processes that have just started (for any reason)
6. **(taskend /F malproc & sendmail bob@abc.com malproc I have malproc on my computer)** - uses the TCC TASKEND command to force (/F) malproc to terminate immediately and then creates and sends

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an email using the internal TCC Sendmail command to bob@abc.com with a subject of “malproc” and message text of “”I have malproc on my machine”

The TCC triggers are exceptionally powerful and flexible commands that give you the ability to monitor and manage your computers like never before.

9.4 Take Command in the Internet World

The Take Command command interpreter (TCC) has evolved to provide a variety of features that allow you to work in an Internet-centric world.

Overview

TCC has the ability to:

- Access and Manipulate Remote Sites - You can get and put files in internet sites using several techniques including:
  - FTP (basic FTP)
  - TFTP (Trivial FTP)
  - FTPS (SSL FTP)
  - SFTP (SSH FTP)
  - HTTP (basic Web access)
  - HTTPS (SSL HTTP)
- Create Web Pages – TCC allows you to construct web pages and populate them with real time data from your system

In this tutorial, we are going to show you a simple way to construct web pages with data from your computer and send them to a central website

Example 1 -- Create A Web Page

To create a web page, we use a very easy technique that was developed originally for Linux and has been implemented in Take Command.

The following script creates a web page (called status.html) and populates it with data about the status of your computer:

```
type <<- EndHTML >! status.html
<html>
<head>
<title>Server Status</title>
</head>
<body>
<h1>Server Status</h1>
<p>
Total memory: %@comma[%@winmemory[5]] bytes<br/>
Memory available: %@comma[%@winmemory[6]] bytes<br/>
Memory load: %@winmemory[0] %%</p>
<p>
Free disk space on drive C: %@diskfree[c:,Mc] MB<br/>
Free disk space on drive D: %@diskfree[d:,Mc] MB</p>
<p>
Reported generated %_isodate %_time by %@upper[%@filename[%_batchname]].</p>
</body>
</html>
```

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EndHTML

Here is what is happening:

1. **<<-** -- This creates a redirect that sends everything in the following lines up to EndHTML to the type command -- which creates a text output

2. **>!** -- says redirect the text output of the type command to a file called status.html. The ! after the redirection command (>) means that the system should overwrite any existing status.html file

3. **HTML Code** -- The next few lines are standard HTML code that sets up some static header text

4. **System Data** -- The next few lines gather data from the system. The parser will examine each line of code and do variable expansion. What this means is that if you precede text with a % sign, TC9 will assume that everything up to the next space is a variable or function and it will convert the variable or function to its actual value.

So, for example, %@winmemory[5] is evaluated as the actual amount of memory in the system.

%@winmemory[0] is evaluated as the amount of memory (as a percentage) actually being used.

You can nest functions, so %@comma[%@winmemory[5]] will apply the comma function to the amount of memory returned, properly formatting it.

The text below shows what is in the status.html file after running the program.

```
<html>
<head>
<title>Server Status</title>
</head>
<body>
<h1>Server Status</h1> <p>
Total memory: 2,147,352,576 bytes<br>
Memory available: 2,064,941,056 bytes<br>
Memory load: 61 %</p>
<p>
Free disk space on drive C: 7,483 MB<br> Free disk space on drive D: 207 MB</p> <p>
Reported generated 2008-01-21 15:03:25 by BASICWEB.BTM.</p>
</body>
</html>
```

The following picture shows what the file looks like in a browser.

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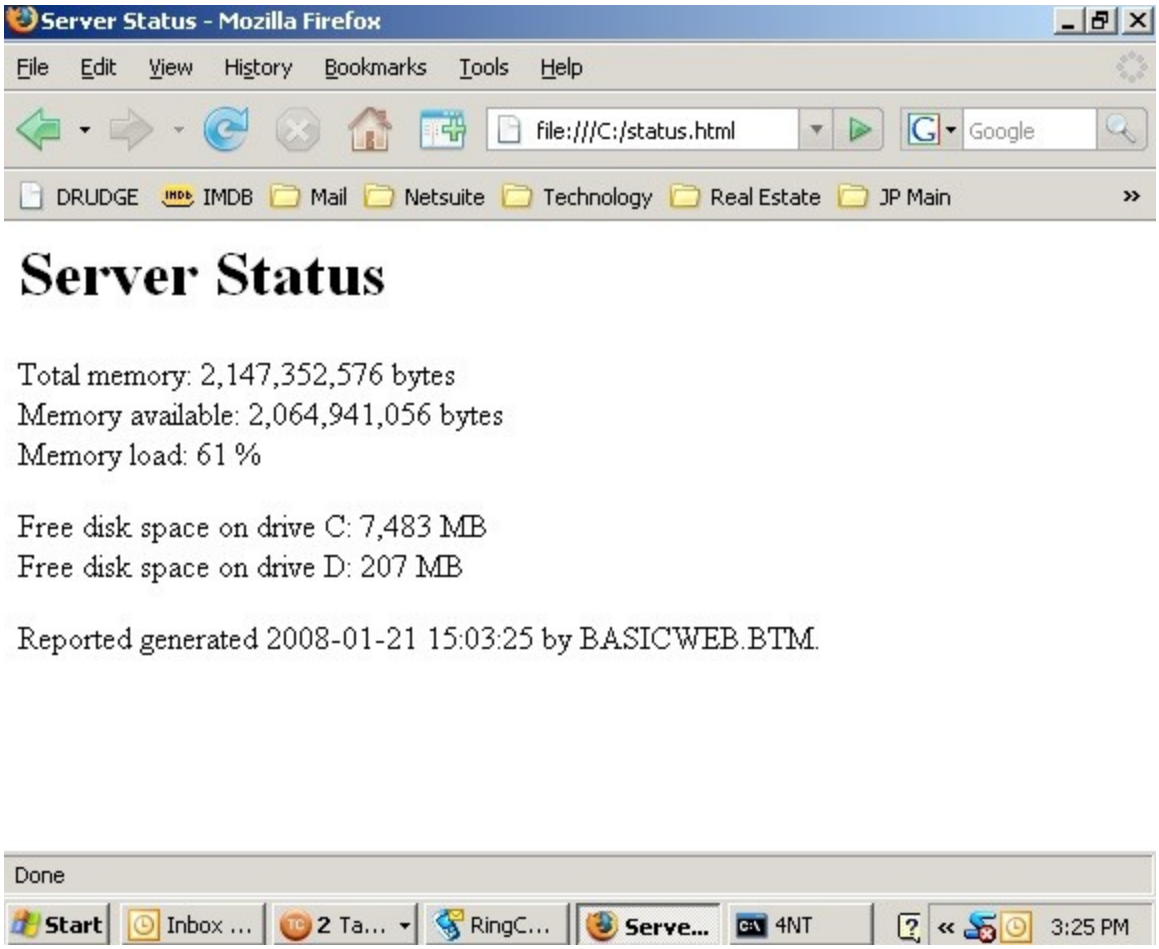

Example 2 -- Creating A Support System For Help Desks

If you have ever been part of a corporate help desk, you know that people often call in with issues about their computers, but you have no idea what is going on the computer. This example shows a simplified script you could put on all of the computers along with a desktop icon for users to press to execute the script. If a user has a problem this script will create a status web page and ftp: it to a central website so that the help desk group can get an idea what is going on in the computer.

We have expanded the code from the previous example:

```
type <<- EndHTML >! %_winname.html
<html>
<head>
<title>Server Status</title>
</head>
</body>
<h1>Server Status</h1>
<p>
Total memory: %@comma[%@winmemory[5]] bytes<br>
Memory available: %@comma[%@winmemory[6]] bytes<br>
Memory load: %@winmemory[0] %%</p>
<p>
```

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```
Free disk space on drive C: %@diskfree[c:,Mc] MB<br>
Free disk space on drive D: %@diskfree[d:,Mc] MB</p>
<p>
Reported generated %_isodate %_time by %@upper[%@filename[%_batchname]].</p>
</body>
</html>
EndHTML
tasklist >> %_winname.html
services >> %_winname.html
copy %_winname.html ftp://user:[password@helpdesk.company.com/
```

In this example, we have added several features:

1. **%_winname** -- This is the name of the computer. It will create a unique file name

2. **Tasklist** -- The tasklist command outputs a list of all currently running processes. We are using >> to append the output of tasklist to the existing html file

3. **Services** - this is similar to the previous command, but in this case we are appending a list of system services to the html file

4. **Copy** -- the copy command is copying the html file to the company help desk website using ftp (with a user name and password used for security). Note that you can treat an ftp site as if it was a local directory - a great feature of TCC.

This is a very simple example. TCC includes hundreds of additional system variables and functions that can be used to gather status information.

In addition, if you understand Windows Management Interface (WMI), TCC allows you to query anything known by WMI, which has almost all information about the status of the computer and activities going on in it.

9.5 Rearranging the Take Command Windows

Ideally, the screen layout of any application should reflect the way you use it. The functionalities which you use the most should get the lion's share of screen space; less-used functions should be tucked away or hidden so they don't distract you. You can customize the Take Command interface by moving and resizing components, detaching and docking them, or hiding and revealing them.

To move the Folders, List View, and Command Input panes, simply grab the desired pane's title bar and drag it into position with the mouse. As you drag it, notice the little blue graphical ‘targets’ which appear and disappear as you move the mouse over the main Take Command window. Dropping the pane you are dragging onto one of those will re-dock it. (If you don't see the targets, you need to change the pane's display mode to “Dockable” — see below for details.)

The targets at the outer edges of the window attach the pane you are moving to the outer edge of the main Take Command window (and therefore make the pane the same width or height as the Take Command window.) The targets which appear within the other panes allow you to dock the pane you're moving relative to the second pane (and therefore make it the same width or height as that one.)

The Folders, List View, and Command Input panes (but not the tabbed console pane) also show a “tabbed” docking target in the center, allowing you to drop one pane on top of another. If you stack two panes this way, Take Command will display little tabs which you can use to bring either one to the front, or to drag one off the other.

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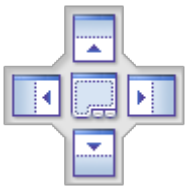

Docking targets allow you to attach one pane to another.

If you drop a pane anywhere other than on a docking target, the pane will become a free-floating window which you can move and resize like any other application window. To re-dock it, simply drag it again and drop it onto a target.

The tabbed console pane cannot be moved by dragging its title bar. To move the console pane relative to the other panes, move the others. For example, if you want the console pane to be to the left of the Folders pane, just drag Folders to the right of the console pane.

Individual panes can be resized by dragging their borders. The main Take Command window can also be resized by dragging its outer edges.

The Folders, List View, and Command Input panes each have a pair of icons which allow you to control their display modes. The first icon, usually a triangle pointing down, allows you to switch a pane between dockable, floating, auto-hide, or hidden modes. Dockable is the default state. In floating mode, a pane is detached from the main Take Command window and can be freely dragged anywhere on the screen; the docking targets will not appear when a floating-mode window is dragged. In auto-hide mode, the pane slides out of view when it is not selected; a small tab remains, allowing you to reopen the pane when you want it. In hidden mode, the pane is not displayed at all; you can reveal it by selecting the appropriate item in the View menu. (Note that the Folders and List View pane are hidden as a pair; you can't hide just one of them.) The second icon, which usually appears as a pushpin, toggles auto-hide mode on or off.

The various toolbars and menu bars can also be moved around, detached, or docked. To drag a toolbar or menu bar, grab it at the end marked with a ridge or a row of dimples (depending on your current theme.) You can hide and restore toolbars through the View / Toolbars and Menus menu.

All of this is far easier to do than it is to describe or read about. Play with the interface! Grab a pane or a toolbar and drag it around the screen. You'll get the hang of it quickly.

9.6 Take Command Themes

Here's a form of customization that will not make your work faster or more productive, reduce errors, or improve functionality in any way. Themes are entirely cosmetic. They change the appearance and colors of the title bars, tabs, and other controls.

To change Take Command's theme, select “Theme” in the Options menu. The available themes will appear in a sub-menu. Pick one; Take Command's appearance will change immediately.

9.7 Fonts in Take Command

Working at the prompt involves scanning masses of text, which can lead to eyestrain and headaches. You want to make the process as easy and comfortable as you can. It's been well known for centuries that typeface design can make printed material easier (or harder) to read. The same is true of computer fonts. If you're going to spend hours staring at a computer screen, then a few minutes selecting a comfortable, easily legible font is a worthwhile investment of your time.

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It is easier to configure fonts in Take Command's tabbed windows than in a regular console window, and you have more freedom of choice. You can use any monospaced font installed on your computer without having to edit the registry. You can even select italics if you wish. (If your chosen font includes a separate italic character set, Take Command will use that rather than just slanting the upright characters.)

To choose a font for the console pane, open the Take Command configuration dialog (Options / Configure Take Command...), select the“Tabs” tab and press the Font button. All the fixed-width fonts currently installed on your computer are listed in the selection window. Pick one, then choose a style and point size, and press OK. Your chosen font will be used for any program running in Take Command's tabbed console pane: not just TCC..

You should check that your selected font has all the characters you need, just as when choosing a font for the regular console window. You may need specific accented letters, or a non-Roman alphabet. You will also want the IBM line-drawing characters if you use **DRAWBOX**, **DRAWHLINE**, and **DRAWVLINE**.

9.8 Defining Hotkeys

Are you a keyboard person? Many Take Command users prefer keystrokes over mouse clicks for frequently-used operations. Take Command allows you to define shortcut keys for any menu entry in the Take Command menu bar. To create a hotkey, select View / Toolbars and Menus / Customize... and open the Keyboard tab. Pick the desired menu in the Category drop-down menu, then highlight your desired menu entry in the Commands box. Click once in the box labeled “Press new shortcut key:”, then press the key combination you want to assign to that menu entry. Click on the Assign button, then close the Customize dialog.

Be aware that such hotkey assignments override any other use of the key in Take Command, including editing and keystroke macros. Choose your hotkeys carefully.

For example, you might want to use a single keystroke to hide or reveal the Folders and List View panes. Alt-Enter might be a good choice for this, since it isn't used for anything else. Select View / Toolbars and Menus / Customize..., then choose Keyboard. In the Category menu, select View. In the Commands box, highlight Folder and List Views. Click in the“Press new shortcut key:” field, and then type Alt-Enter. Press the Assign button to assign Alt-Enter to this function, then close the dialog. Now you can press Alt-Enter at any time to hide or restore the Folders and List View panes.

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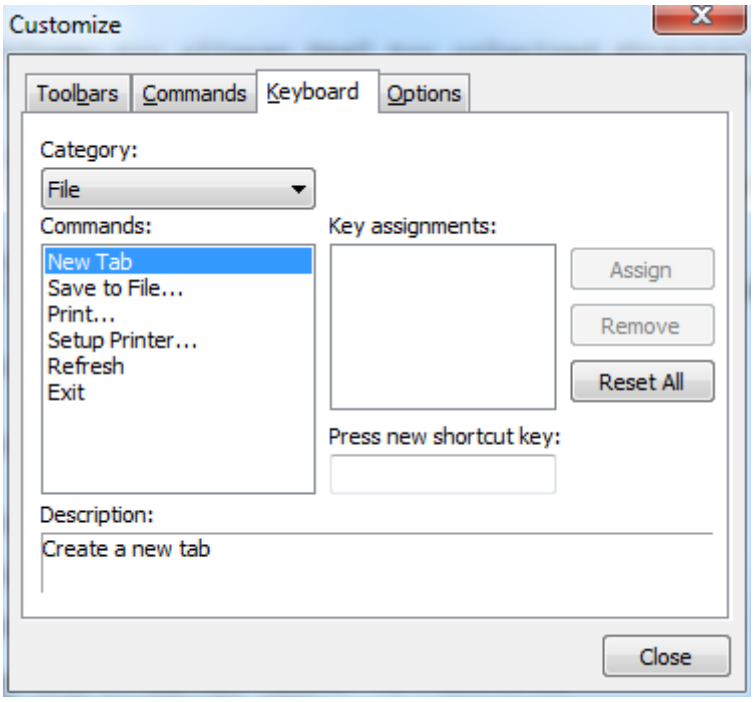
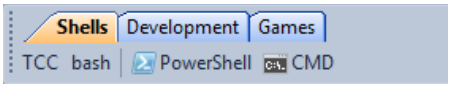


You can define a hotkey to trigger any item in Take Command's main menu.

9.9 The Tabbed Toolbar

Take Command features a user-configurable tabbed toolbar. You can create buttons to launch new instances of TCC or any other console program, send keystrokes to the console pane, or change the location displayed in the List View pane.



The tabbed toolbar provides single-click access to programs, locations, and even strings of keystrokes.

To use it, you will need to enable it: select View / Toolbars / Menus, and make sure the“Tabbed Toolbar” entry is checked. To define, change or remove buttons, select Options / Configure Tabbed Toolbar... and then click on the button you want to change. To create a new button, click on the first blank one.

There are three different kinds of buttons you can create: a button to start a new console tab, a button which sends keystrokes to the current tab, or a button which changes the directory shown in the List View pane. The first is probably the most common use; it's selected by the“Start a new window” option in the button definition dialog. The Command field specifies the filename of the program to run in the new tab, and optionally any paramaters to pass to it. You can use environment variables in the Command field, **%COMSPEC** for example. If the program is a command shell like TCC or CMD.EXE, you can use the /K option to run a batch file or other command when it starts. You can specify the program's current directory

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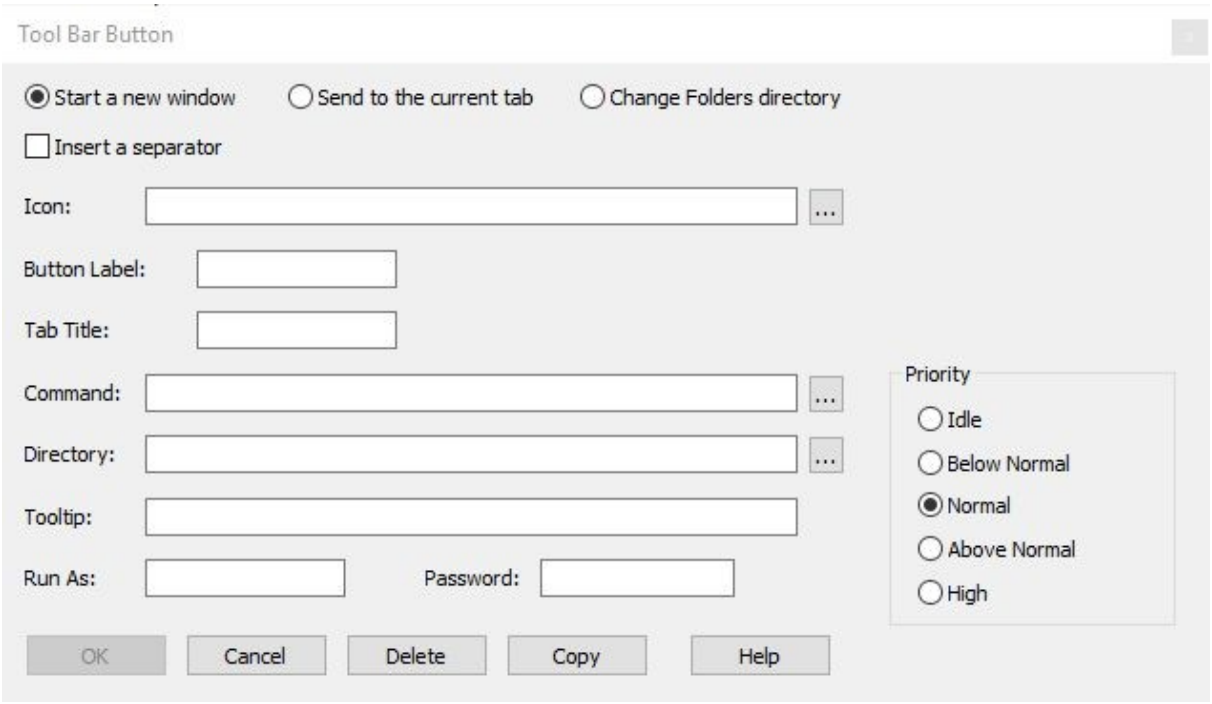
using the Directory field; if this field empty, the program will usually start in the same directory displayed in the List View window.

A program launched through the button bar does not have to be a shell; you can create a button for any Windows console program. For example, you might want a button to start telnet or your text editor.

To make a button which sends keystrokes to the console pane, choose the"Send to the current tab" option. The Command field holds the keys to send in **KEYSTACK** format: literal strings in double quotes, keynames not quoted. Type **HELP KEYSTACK** in TCC for details. Again, you can use environment variables if you like.

The final button type affects the Folders and List View panes, not the console pane. Choose the "Change Folders directory" in the button definition dialog, and type the desired location in the Directory field. Environment variables are legal here too: **%userprofile\My Documents** or **%userprofile\Desktop** might be useful. (Quotes are not required for directory names containing spaces.)



One use for a button: Changing the location displayed in the Folders and List View panes. Note the use of an environment variable in the definition.

Environment variable expansion in the Command and Directory fields is performed by Take Command, which has some interesting repercussions. One is that the specific environment used is the one inherited by Take Command when it started, not the environment of TCC or CMD.EXE or any other program running in a console tab. **SET**commands in TCC or CMD.EXE will not change this environment. An intriguing benefit is that you can use many internal variables and even functions; for instance,**%_winsysdir** and **%@path[%_cmdspec]** are both legal in the Directory field. Finally, note that a trailing percent sign is not required when the next character is unambiguously not part of the variable name.

If you want to rearrange toolbar buttons, hold down the Alt key and the left mouse button and drag the button to its new location.

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9.10 Startup Programs

On the “Tabs” tab of the Take Command configuration dialog are options specifying which programs will run in new tabs. The tabbed interface at the bottom of this page allows you to configure as many as 25 programs which will automatically be opened in separate tabs each time Take Command starts. Most often these will be command shells such as TCC, CMD.EXE, or bash; however, other console programs can be specified as well. Perhaps you would like to automatically launch your text editor or telnet in a tab when Take Command starts up.

The Command field for each startup tab allows you to specify not only a program name, but also command-line arguments for that program. You could define several startup tabs which all run TCC, but start each one in a different directory and give each a different prompt and colors. Note that Take Command does not expand variables in the Command and Directory fields; if you want to use environment variables to specify the startup directory, use a **CDD** or **CD /D** command in the Command field, and TCC (or CMD.EXE) will expand any variables.

Also on the “Tabs” tab is the COMSPEC field. This option sets the program started when a new tab is opened via File / New Tab, Tabs / New Tab, or by double-clicking in the tab bar. It is also used for the tab created when Take Command starts if no startup tabs are specified. If this field is empty, TCC.EXE is assumed.

9.11 Other Take Command Tweaks, Tips, and Tricks

Take Command offers a number of additional settings you can use to adjust it to your working style. All of the tweaks on this page are made through the Take Command configuration dialog, which you access through the menu: Options / Configure Take Command...

You might find the handling of Alt-key and Control-key combinations in Take Command surprising or even frustrating. Key combinations that you intended for TCC (or some other console program) instead affect Take Command, or vice versa. There are settings on the “Tabs” tab which will help. The “Left Alt Key”, “Right Alt Key”, “Left Ctrl Key”, and “Right Ctrl Key”tick boxes let you choose which key combinations affect which components. If a box is checked, key combinations using that key will be handled by the Take Command GUI. If it isn't checked, they will instead be passed to the program running in the tabbed console pane — most often TCC, but possibly CMD.EXE or the MS-DOS Editor or some other program.

The default configuration has Left Alt Key *on* —controlling Take Command's menu — and Right Alt Key *off* — it affects the console pane. I personally find that the opposite configuration works better for me: Left Alt Key *off* and Right Alt Key *on*. If you always use the mouse to operate Take Command's menus, you might prefer to turn both Alt keys off.

The Alt-Key and Control-Key options do not affect user hotkeys defined through the Customize dialog, by the way. User hotkeys take precedence over any other use of their key combinations, regardless of the Alt-key and Control-key settings on this page, and whether you press the left or right Alt (or Control) key.

Also on the “Tabs” tab you will find default Foreground and Background color options; these affect all new tabs started by Take Command. These are of limited usefulness if you mostly use TCC, which has its own color configuration options; if you mainly use TCC, I would recommend leaving them both at“Default” and using TCC commands like**COLOR** and **CLS** instead. But if you often use Take Command as a graphical “wrapper” for other shells such as CMD.EXE or bash, you may find these useful to specify a default color for new shells.

“Single Instance” and “Minimize to Tray”, both on the Windows tab, are worth experimenting with. Single Instance prevents you from having multiple copies of Take Command open at the same time; starting a second copy while Single Instance is set just brings the first instance to the foreground. Minimize to Tray

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does exactly that: if it's set, minimizing the Take Command window puts an icon in the system tray, instead of taking up space on the task bar.

On the Advanced tab, the “Minimize on Close” option causes Take Command to minimize instead of closing when the big red X in the upper-right corner is clicked. This is useful if you find yourself accidentally exiting Take Command (and multiple console sessions) when you only meant to close one console tab. You can still exit Take Command by individually closing all console tabs, or through the menu with File / Exit.

Also on the Advanced tab there are pair of useful options affecting the List View window. “Show File Extensions” causes file extensions to be displayed even if Explorer is set to hide them. If file extensions are not shown, set this option (and consider fixing Explorer's settings too — hiding file extensions is not a good idea.)“Show Hidden Files” causes all files and subdirectories to be displayed, regardless of the Hidden and System attributes. Turn this option on if you frequently work with hidden files.

9.12 Input and Error Colors

There's a certain rhythm to using a command shell, the regular alternation of command and output, command and output. This cycle isn't always obvious when scrolling back through the console buffer. When all of the text looks the same, it can be hard to spot where one command's output ends and the next command begins. One of the simplest customizations you can make is to change the input color, and it's surprising how much easier it is to interpret text on the screen when your input is visually distinct from the shell's output. To tweak the input color, start the OPTION dialog. Select the Windows tab, and pick a new Input Foreground; you can change the Background too if you like.

In addition to commands you type at the prompt, Input Colors also colors user input to internal commands like **INPUT** and **ESET**.

While you're on the Windows tab, you can also set the Error color. TCC uses this setting for error messages displayed by internal commands. It's an easy way to make errors visually distinct from other output, again making it easier for your eyes to parse the text in the console window.

Error Colors also colors the **ECHOERR** and **ECHOSERR** internal commands. It has no effect on external commands.

9.13 Customizing the Prompt

You're probably already familiar with changing the prompt in Microsoft's command shells. As in CMD.EXE and COMMAND.COM, TCC's prompt can be modified with the**PROMPT** command, or by setting an environment variable named PROMPT. All but one of the PROMPT $-sequences from CMD.EXE are supported in TCC, and there are more than a dozen new ones. (The one difference is $M, which was already in use in TCC when Microsoft added it to CMD. You can get the CMD $M behavior with the TCC @TRUENAME variable function.) See the help file for a complete list.

Since TCC's prompt has several additional capabilities beyond those CMD.EXE offers, you will probably want to change TCC's prompt without affecting CMD.EXE's. This is a good task for the startup batch file, TCSTART.BTM. Put a **PROMPT** command in TCSTART.BTM, and your desired prompt will be set when TCC starts.

In addition to the traditional $ codes, you can put environment variables, internal variables, and functions in your prompt, and they will be expanded each time the prompt is displayed. To prevent them from being expanded at the time you define the prompt variable, surround the entire value with backquotes:

```
rem A prompt which uses internal variables and functions:
prompt `$n: %@label[%_disk] %@diskfree[%_disk,mc]M free$_%_cwps $g `
```

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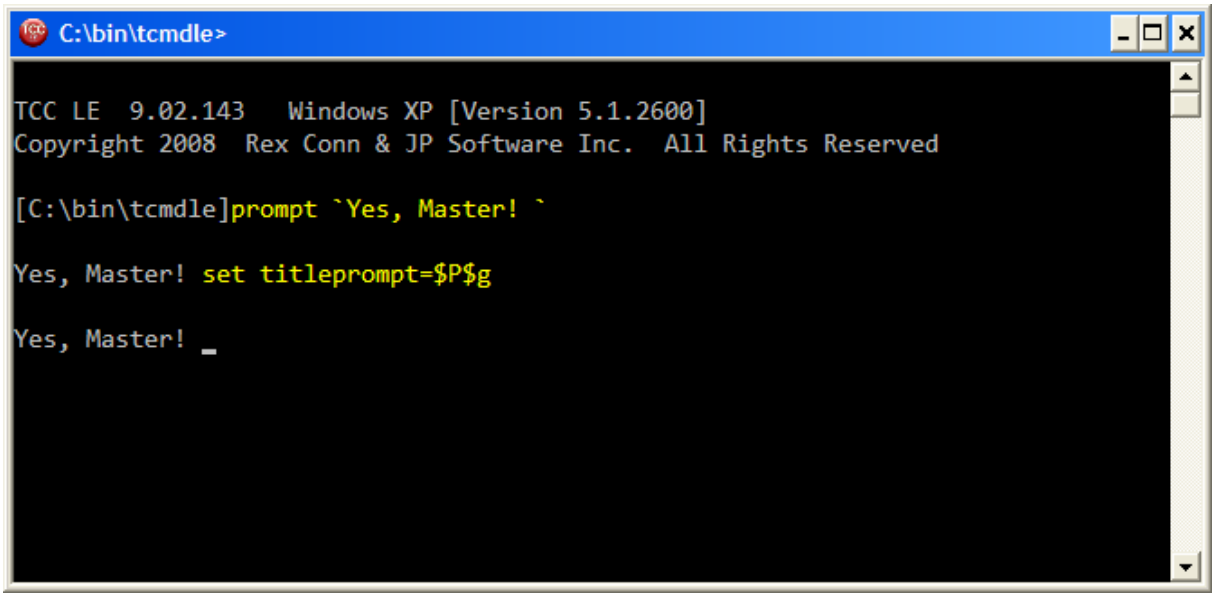
It is possible to “hook” the prompt and execute a command before the prompt is displayed by defining a PRE_INPUT, PRE_EXEC, or POST_EXEC alias:

```
rem A prompt which counts command lines:
set icmd=0
alias pre_exec=`set icmd=%@inc[%icmd]`
prompt `%icmd $P$g`
```

If you enable ANSI processing, you can embed ANSI escape sequences in your prompt. (To enable ANSI, open the OPTION dialog, select the Windows tab, and turn on the “ANSI Colors” tick box.) You can change colors within the prompt or even move the cursor around:

```
rem A prompt which uses ANSI colors:
prompt $e[1;32m$t $e[1;31m$g$e[0m
rem A prompt which uses ANSI positioning and colors:
prompt $e[s$e[1;1H$e[1;37;44m$e[K$P$e[0m$e[u$G
```

TCC also supports a second custom prompt variable, TITLEPROMPT. The contents of TITLEPROMPT are displayed in the tab's label when TCC is running in a Take Command tab window, or in the console window's title bar when TCC is running in a standalone console session. You can use $ codes, variables and functions, just like in PROMPT. ANSI sequences are not meaningful in the title bar, though.



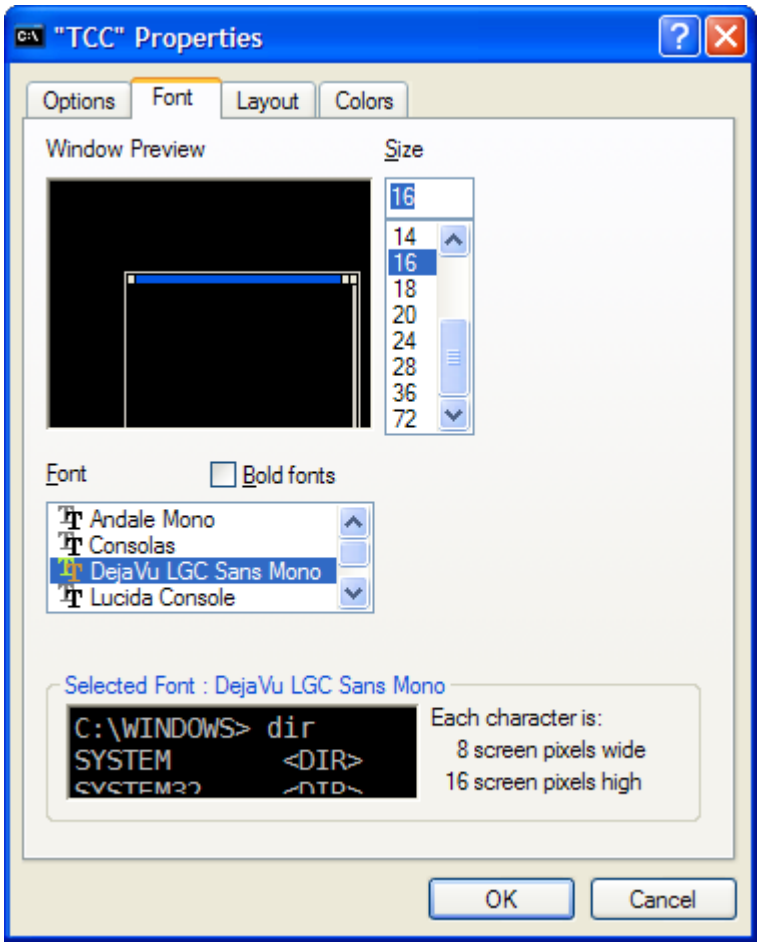
The TITLEPROMPT variable can be used to display prompt information in the title bar.

9.14 Console Fonts

When TCC is running in a console window, you can choose its font through the console's system menu, the same way you would select a font for CMD.EXE. (Note that the information on this page applies only to TCC in a standalone console window. When TCC is running within the Take Command environment, you can select fonts easily through the Take Command configuration dialog.)

To select the console font, open the system menu by clicking on the icon at the upper-left corner of the console window, or press Alt-Space. Select Properties, then the Font tab of the console properties dialog.

Your options are usually “Raster Fonts” (fat and rather unattractive), "Consolas" (default for ***Take Command*** and ***TCC***), and “Lucida Console”. You can also change the text size if you wish.



The Font page of the console properties dialog. Some additional fixed-width fonts have been made available via a registry tweak.

After changing the console font, you'll get a dialog prompting you to apply your changes only to the current window, or modify the shortcut used to start it. Choose “Modify shortcut” if you want to use the new font for future instances of TCC.

The selection of fonts available for console programs is controlled by Windows. It is possible to add more fonts to the list, provided you are comfortable modifying the system registry. To be suitable for console use, a font needs to be monospaced (all characters the same width.) If a font includes an italic variant, it may not work correctly; Windows console font handling has some peculiar bugs. If you add, say, Courier New, Windows may instead seize upon Courier New Italic, with strange and annoying results. As with all registry hacks, make a backup and then proceed with caution.

Console fonts are listed in the registry key **HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Console\TrueTypeFont**. Each entry is a string value, and the entry names have a peculiar format: the first entry must be named 0, the second must be named 00, the third must be 000, and so on. The value is the font's display name: Lucida Console, Andale Mono, or whatever. After adding fonts to this registry key, you must reboot before Windows will correctly support them in console windows.

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Different fonts may not support all characters. This may be a problem if you need accented or non-Roman letters. It can also be an issue if you use the line- and box-drawing commands **DRAWBOX**, **DRAWHLINE**, and **DRAWVLINE**. These commands use the IBM line-drawing graphics characters, and their output will look strange if your console font does not include them. If this happens, you can change the console font back to Lucida or Raster Fonts and the display will be correct.

DejaVu LGC Sans Mono and Andale Mono are both legible monospaced fonts which include the line-drawing characters. Microsoft's Consolas is a console font designed especially for use with ClearType; it looks very nice provided you are using ClearType, but does not include the line-drawing characters.

9.15 Filename Completion

TCC is first and foremost a file-management tool. Many of the command lines you type will include a filename or two. Filename completion speeds the process of entering filenames. Customizing filename completion so that it presents only filenames appropriate to the current command saves even more time. When you press the Tab (or F9) key on the TCC command line, TCC will insert a matching filename, command, alias, or variable (depending on the command and any matching filename completion arguments).

Like colored directories, filename completion can be customized either through an environment variable or via the OPTION dialog. You may want to use the FILECOMPLETION variable while experimenting, but it's ultimately more convenient to enter your final settings in OPTION.

An obvious completion tweak is for the subdirectory management commands: **CD**, **CHDIR**, **CDD**, **MD**, **MKDIR**, **RD**, **RMDIR**, and **PUSHD**. Only subdirectory names make sense in the context of these commands; there is no need for filename completion to offer names of files:

set filecompletion=cd chdir cdd md mkdir rd rmdir pushd:dirs;

(The default ***TCC*** filename completion already defines this for the subdirectory management commands.)

Once you have created the FILECOMPLETION variable with **SET**, you can change it either by recalling your **SET** command and editing it, or with **ESET FILECOMPLETION**. When adding new commands to the variable, keep in mind that you will almost certainly want DIRS as well as all appropriate file extensions. For example, when using UNZIP.EXE to extract .ZIP archives, you will often need to specify pathnames to the .ZIP files; you will want to use filename completion to enter those pathnames, so include DIRS along with ZIP:

set filecompletion=unzip:zip dirs;

Once you have FILECOMPLETION set the way you want it, copy it to the clipboard with:

echo %filecompletion > clip:

and you can paste it directly into the OPTION dialog, rather than retyping it. This setting goes on the Command Line tab, in the field labeled Options.

On the subject of filename completion, a few other customizations are worth mentioning. On the Command Line tab of the OPTION dialog, the“Complete hidden files”, “Complete hidden directories”,and “Add ‘\’ to Directories” options are all worth trying out. The first two cause filename completion to offer files and subdirectories with the Hidden and System attributes, as well as normal files and subdirectories. Turn these on if you often work with hidden or system files or subdirectories. The third option, “Add ‘\’ to Directories”, causes filename completion to automatically append a backslash when completing subdirectory names, saving you a few keystrokes.

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Finally, executable extensions also affect filename completion. When the cursor is at the start of a line, filename completion only presents subdirectories and executable files. You can override this restriction by typing a space first so that the cursor is not at the start of the line. But doing that gets tedious if you often want to complete other file types at the start of the line. Any executable extensions you define will also be offered at the start of the command line along with subdirectories and executables. For instance, if you frequently launch .DOC and .TXT files from the command line, create executable extensions and filename completion will include them:

set .doc=winword.exe
set .txt=notepad.exe

You can create an executable extension to open a specified file type using Windows's default handler. For example, to open .HTM files in the current default web browser:

set .htm=start /pgm

Because executable extensions are stored in environment variables, TCSTART.BTM is a good place to define them. If you have many, you can keep them in a text file and load it using **SET /R**. For instance, you might maintain a list of executable extensions in a file named ENVVARS.TXT in the same directory as Take Command, and add a command like this to your TCSTART.BTM file:

set /r "%@path[%_cmdspec]envvars.txt"

The file read by **SET /R** — ENVVARS.TXT in this example — should have one variable per line, in the format NAME=VALUE, with no **SET** command and no spaces around the equals sign, like this:

.doc=winword.exe
.txt=notepad.exe
.htm=start /pgm

9.16 Aliases Overview

Aliases are perhaps the single most powerful and flexible means of customizing TCC. Many regular users create dozens or even hundreds of aliases to make TCC fit the way they work. Aliases are a complex subject, and a thorough discussion could fill a book. In this tutorial I will only touch on a few ways that you can use aliases to customize your working environment in TCC.

As you create and refine useful aliases, you will gradually accumulate a collection that you'll want to have available whenever you use TCC. The usual method is to store them in a text file and load them with an **ALIAS /R** in your TCSTART.BTM file. If you keep your aliases in a file named ALIASES.TXT in the Take Command program directory, you might load them using a command like this:

alias /r "%@path[%_cmdspec]aliases.txt"

The alias definitions in the text file are almost the same as the commands used to define them at the command line. Just remove the **ALIAS** command from the start of the line; if backquotes or doubled percent signs were used to defer variable expansion, remove the backquotes or replace the doubled percent signs with single percent signs.

There are three types of aliases: command aliases, keystroke aliases, and directory aliases. They serve different purposes and are invoked at different times, but all three types are defined using the **ALIAS** command.

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9.17 Command Aliases

The first and most common type of alias is the command alias. A command alias is simply a command which you define, and which is expanded by TCC into some other command or series of commands. If you're familiar with the macro facility of Microsoft's DOSKEY program, you will find command aliases similar but more powerful. One major difference is that, unlike DOSKEY macros, command aliases can be used in batch files as well as at the prompt.

Most command aliases serve one of four purposes: to abbreviate a longer command (or series of commands), to supply default options to a command, to substitute one command for another, or just to provide a more mnemonic name for a command. An abbreviation can make a long command as short as you like, down to a single letter:

```
alias c=copy
alias d=dir
alias l=list
alias q=`pushd "c:\program files\quake iii arena" & quake3.exe & popd`
alias ff=firefox.exe
alias tf=dir /[d] /od
```

A command alias can be an abbreviation for multiple commands:

```
alias eval=`set eval=%@eval[%$] && echo [%$] = %@comma[%eval]`
alias nd=`md /s %1 && %1\`
```

You can use a command alias to supply default options to a command. For example, if you usually want **DIR** to include hidden and system files, you could create an alias to add the /A option automatically:

```
alias dir=*dir /a
```

Be careful with this kind of alias! Aliases are active in batch files as well as at the command prompt; changing the behavior of common commands like **DIR** can sometimes have unforeseen consequences in batch files or even in other aliases. It might be safer to create an alias with a different name:

```
alias da=dir /a
```

You can also use a command alias to substitute one command for another. If you are in the habit of typing one command name, you can substitute a different command without having to retrain your fingers:

```
alias edit=notepad.exe
alias more=list
alias pkunzip=unzip.exe
alias telnet="c:\program files\secure telnet and ftp\sshclient.exe"
```

Finally, you can use a command alias to create a more memorable name for a command:

```
alias kill=taskend /f
alias shutdown=reboot /p
alias word=winword.exe
```

9.18 Keystroke Aliases

The second type of alias is the keystroke alias. Keystroke aliases insert characters at the command line when you press a single key. There are two kinds of keystroke aliases: the kind that automatically executes the current command line (essentially pressing Enter for you); and the kind that doesn't.

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Autoexecuting keystroke aliases are generally used to run an entire command, or even a series of commands, with a single keystroke. Since the command is run as soon as you press the assigned key, you won't get a chance to edit the command or to add filenames or other options. Use this kind of alias for commands which you use very frequently, and which either don't require arguments, or which you always pass the same arguments. You should also be wary of using autoexecuting keystroke aliases for any command that might be dangerous or disruptive. Assigning **DEL /Y *** or **REBOOT** to a single keystroke might wind up costing you far more time than it saves!

To define an autoexecuting keystroke alias, give it a name of two @ signs followed by the key name:

```
alias @@f4=dir /w /x /p /a
alias @@f11=@cdd -
alias @@f12=@cls
alias @@ctrl-f11=`@c:\ & @cls`
alias @@ctrl-f12=@option
```

A keystroke alias which does not automatically execute — an “insert-only”alias — is more flexible. Since you get a chance to edit the command before pressing Enter, you can use it for commands that may take arguments. To define an insert-only keystroke alias, name it with a single @ sign followed by the key name:

```
alias @f5=`edit `
```

Note that if a command may take arguments, you can include a trailing space in the definition. You can even include default arguments:

```
alias @f5=edit *.txt
```

If you press F5 after defining this alias, the command **EDIT *.TXT** will be inserted into the command line; you can backspace over the *.TXT to type something different, or even press Tab to complete names of .TXT files in the current directory.

Insert-only keystroke aliases are not just for commands; they can also be used to add other text to an existing command line. Frequently-used arguments, filenames, wildcard patterns, server and share names — any string that you type very often is a good candidate for a keystroke alias:

```
alias @alt-a=\\awkwardly-named-server\
alias @alt-e=`%systemroot\system32\drivers\etc\lmhosts`
alias @alt-j=\\jeeves\
alias @alt-t= *.txt;*.doc;*.me;*.1st
alias @alt-w=` /[d-7] `
```

After defining a keystroke alias, you may discover that it doesn't work because TCC reserves the key for some other purpose. If you tried the examples above, you will know that the @@F12 didn't work as expected; F12 has a minor filename-completion function. If you'd rather use a key for your own alias instead of its predefined function, you can“de-assign” it by going to OPTION / Keyboard and removing the existing key assignment.

9.19 Directory Aliases

The final type of alias is the directory alias. A directory alias is a shorthand reference to a location: a local directory, a network share, even an FTP site. A directory alias name is two or more alphanumeric characters, followed by a colon; or a single digit followed by a colon. The value of the alias should be the complete pathname of the target directory, including a trailing backslash. Don't enclose the name in double quotes, even if it includes spaces.

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alias dl:=c:\download

alias desk:=%userprofile\desktop

alias docs:=%userprofile\my documents

alias progs:=%programfiles

alias shell:=%@path[%_cmdspec]

alias sys:=%systemroot\system32

alias jptc:=ftp://ftp.jpsoft.com/tcmd/

A directory alias can be used like a drive letter in most internal commands. External commands will not understand directory aliases, but you can still use directory aliases when typing external commands; just press Tab, and filename completion will expand the alias into a full pathname. You can also use directory aliases for redirecting input or output, even with external commands. Directory aliases can save you a great deal of typing; define one for any location you access often.

9.20 Colorized Directories

DIR is one of the most often-used commands. In TCC, it's easy to colorize **DIR**'s output so that the file types you are interested in will stand out and grab your attention. While you can create a riot of color combinations, directory coloring is often more helpful if you use it to highlight just a few file types. Think about which file extensions you most often search for in a directory listing; then colorize just those extensions.

There are two ways to define directory colors. The first is to create an environment variable named COLORDIR, and the second is through the Directory Colors field in the OPTION dialog. At the command line it's easier to use the environment variable to experiment with directory colorizing; the OPTION setting is nice for a more permanent configuration. (If both are set, the environment variable takes precedence and the OPTION setting is ignored.) Start by creating a COLORDIR variable with the **SET** command; for example, to color subdirectories bright blue,

set colordir=dirs:bri blu;txt:bri yel;

To test different values, you can recall the **SET** command from the command history and modify it, or you can use **ESET COLORDIR** to edit the value directly.

Once you've got directory coloring configured the way you want it, enter your settings into the OPTION dialog. You can copy the current value of the COLORDIR variable onto the clipboard by typing

echo %colordir > clip:

Start the OPTION dialog and select the Windows tab. Click in the Directory Colors field and delete its current contents (if any), then press Control-V to paste in your new value.

This setting also colors the **SELECT** and **PDIR** commands.

9.21 Other Command-Line Tweaks

There are a variety of other settings which you can adjust to make TCC behave the way you want it to. Here are several worth experimenting with. Most are entirely a matter of taste.

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“Default edit mode”: This setting, on the Command Line tab of the OPTION dialog, selects whether the command-line editor defaults to insert or overstrike mode. “Overstrike” or“Insert” sets the specified mode at the start of each new command line. “Initial Overstrike” or “Initial Insert” sets the specified mode when TCC starts, but retains the current setting from one line to the next. You will probably want the cursor to indicate the current editing mode. Cursor shapes are also defined on this tab with the fields labeled “Overstrike Cursor” and “Insert Cursor”. You might prefer a small cursor, say 15%, for your preferred default editing mode, and a larger cursor, 100%, for the other mode.

The “Copy to end” and “Move to end“ options, also on the Command Line tab, control the behavior of the command history. If “Copy to end” is on, then re-executing a command from the history will cause a new copy of that command to be added to the end of the command history. If “Copy to end” is off and “Move to end” is on, then re-executing a command from the history will move it to the end of the command history. If both options are off, then re-executing a command from history will not affect the command history. Personally, I find “Copy to end” *on* the most intuitive behavior.

On the Startup tab of the OPTION dialog are a couple of handy safety options. “Prompt on Wildcard Deletes” gives you an opportunity to confirm when performing mass deletions. It defaults to on; you can turn it off if you never make mistakes with **DEL** or **RD /S**. Just below it is “COPY Prompt on Overwrite”, which prompts you when a **COPY**or **MOVE** command at the prompt would overwrite a file in the target directory. This setting is only effective at the prompt, not in batch files; it defaults to off. It's worth turning on, unless you never make mistakes with **COPY** or **MOVE**.

Also on the Startup tab are options to make the command history, directory history, the alias list, and the function list either local or global. Local lists are specific to each instance of TCC; global lists are shared between all instances. If you want changes made in one TCC shell to be reflected in other running shells, you will prefer global lists. If you want each instance of TCC to be insulated from all others, with its own private command history, directory history, alias list, and so on, then local is the way to go. These settings are largely a matter of personal preference, so experiment with them. While you can set each one individually, it's likely that you will want to set all four the same way.

The “Default Beep” settings, found on the Advanced tab of the OPTION dialog, define the tone TCC makes for some error conditions in command-line editing, such as pressing an undefined key or attempting filename completion when nothing matches. They are also used by the **BEEP** command with no arguments. “Length” sets the duration, in units of approximately one-eighteenth a second; a length of zero disables the default beep completely. “Frequency”sets the pitch, in cycles per second.

Finally, on the Startup tab, you'll find an option labeled “Protect Redirected Output Files” (this option is often called *NoClobber*, after a similar option in Unix shells.) Unlike most of the tweaks described here, this option is not just a matter of taste; it makes significant changes to the handling of output redirection. Turning “Protect Redirected Output Files” on helps guard against mistyped filenames in redirections, but also introduces incompatibilities with CMD.EXE. If this option is on, the redirection operators which normally create a new file (**>**, **>&**, and **>&>**) will check that the specified file does not yet exist, and abort the command with an error message instead of overwriting an existing file. The redirection operators which are normally used to append to an existing file (**>>**, **>>&**, and **>>&>**) will check that the specified file does exist, and abort with an error message if it does not. The default is *off*.

“Protect Redirected Output Files” is a useful safety feature and can encourage good habits as well as preventing accidental data loss. However, it can break existing batch files which are not NoClobber-aware. I suggest turning this option on if you use Take Command as your primary shell and write your own batch files for it; leave it off if you have a large number of batch files written for CMD.EXE. (NoClobber support can also be changed dynamically in a batch file or at the command line with **SETDOS /N**.)

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