**Command Prompt is a command-line interpreter application available in most Windows operating systems. It is used to execute commands to perform various tasks, such as starting and stopping services, modifying system settings, and running scripts and programs.**

**Command Prompt was the first introduced in Windows NT and has been included in all versions of windows since then. It was originally developed as a text-based interface for interacting with the operating system, but has envolved over time to include additional features such as support for batch files, command history, and tabbed windows.**

**CMD COMMANDS IN DETAIL**

* **ASSOC** Displays or modifies file extension associations

SYNTAX 🡪 ASSOC [.ext[=[fileType]]]

.ext Specifies the file extension to associate the file type with

fileType Specifies the file type to associate with the file extension

Type ASSOC without parameters to display the current file associations.

If ASSOC is invoked with just a file extension, it displays the current

file association for that file extension. Specify nothing for the file

type and the command will delete the association for the file extension.

* **ATTRIB** Displays or changes file attributes.

SYNTAXES 🡪

* ATTRIB [+R | -R] [+A | -A] [+S | -S] [+H | -H] [+O | -O] [+I | -I] [+X | -X] [+P | -P] [+U | -U]
* [drive:][path][filename] [/S [/D]] [/L]

+ Sets an attribute.

- Clears an attribute.

R Read-only file attribute.

A Archive file attribute.

S System file attribute.

H Hidden file attribute.

O Offline attribute.

I Not content indexed file attribute.

X No scrub file attribute.

V Integrity attribute.

P Pinned attribute.

U Unpinned attribute.

B SMR Blob attribute.

[drive:][path][filename] Specifies a file or files for attrib to process.

/S Processes matching files in the current folder and all subfolders.

/D Processes folders as well.

/L Work on the attributes of the Symbolic Link versus the target of the Symbolic Link

* **BREAK** Sets or Clears Extended CTRL+C checking on DOS system.

This is present for Compatibility with DOS systems. It has no effect

under Windows.

If Command Extensions are enabled, and running on the Windows

platform, then the BREAK command will enter a hard coded breakpoint

if being debugged by a debugger.

* **BCDEDIT** Boot Configuration Data Store Editor.

The Bcdedit.exe command-line tool modifies the boot configuration data store.

The boot configuration data store contains boot configuration parameters and controls how the operating system is booted. These parameters were previously in the Boot.ini file (in BIOS-based operating systems) or in the nonvolatile RAM entries (in Extensible Firmware Interface-based operating systems). You can use Bcdedit.exe to add, delete, edit, and append entries in the boot configuration data store. For detailed command and option information, type bcdedit.exe /? <command>. For example, to display detailed information about the /createstore command, type:

bcdedit.exe /? /createstore

For an alphabetical list of topics in this help file, run "bcdedit /? TOPICS".

Commands that operate on a store

================================

/store Used to specify a BCD store other than the current system default.

/createstore Creates a new and empty boot configuration data store.

/export Exports the contents of the system store to a file. This file can be used later to restore the state of the system store.

/import Restores the state of the system store using a backup file created with the /export command.

/sysstore Sets the system store device (only affects EFI systems, does not persist across reboots, and is only used in cases where the system store device is ambiguous).

Commands that operate on entries in a store

===========================================

/copy Makes copies of entries in the store.

/create Creates new entries in the store.

/delete Deletes entries from the store.

/mirror Creates mirror of entries in the store.

Run bcdedit /? ID for information about identifiers used by these commands.

Commands that operate on entry options

======================================

/deletevalue Deletes entry options from the store.

/set Sets entry option values in the store.

Run bcdedit /? TYPES for a list of datatypes used by these commands.

Run bcdedit /? FORMATS for a list of valid data formats.

Commands that control output

============================

/enum Lists entries in the store.

/v Command-line option that displays entry identifiers in full, rather than using names for well-known identifiers. Use /v by itself as a command to display entry identifiers in full for the ACTIVE type.

Running "bcdedit" by itself is equivalent to running "bcdedit /enum ACTIVE".

Commands that control the boot manager

======================================

/bootsequence Sets the one-time boot sequence for the boot manager.

/default Sets the default entry that the boot manager will use.

/displayorder Sets the order in which the boot manager displays the multiboot menu.

/timeout Sets the boot manager time-out value.

/toolsdisplayorder Sets the order in which the boot manager displays the tools menu.

Commands that control Emergency Management Services for a boot application

==========================================================

/bootems Enables or disables Emergency Management Services for a boot application.

/ems Enables or disables Emergency Management Services for an operating system entry.

/emssettings Sets the global Emergency Management Services parameters.

Command that control debugging

==============================

/bootdebug Enables or disables boot debugging for a boot application.

/dbgsettings Sets the global debugger parameters.

/debug Enables or disables kernel debugging for an operating system entry.

/hypervisorsettings Sets the hypervisor parameters.

Command that control remote event logging

=========================================

/eventsettings Sets the global remote event logging parameters.

/event Enables or disables remote event logging for an operating system entry.

* **CACLS** Displays or modifies access control lists (ACLs) of files.

/T Changes ACLs of specified files in the current directory and all subdirectories.

/L Work on the Symbolic Link itself versus the target

/M Changes ACLs of volumes mounted to a directory

/S Displays the SDDL string for the DACL.

/S:SDDL Replaces the ACLs with those specified in the SDDL string (not valid with /E, /G, /R, /P, or /D).

/E Edit ACL instead of replacing it.

/C Continue on access denied errors.

/G user:perm Grant specified user access rights.

Perm can be: R Read

W Write

C Change (write)

F Full control

/R user Revoke specified user's access rights (only valid with /E).

/P user:perm Replace specified user's access rights.

Perm can be: N None

R Read

W Write

C Change (write)

F Full control

/D user Deny specified user access.

Wildcards can be used to specify more than one file in a command. You can specify more than one user in a command.

Abbreviations:

CI - Container Inherit.

The ACE will be inherited by directories.

OI - Object Inherit.

The ACE will be inherited by files.

IO - Inherit Only.

The ACE does not apply to the current file/directory.

ID - Inherited.

The ACE was inherited from the parent directory's ACL.

* **CALL**  The call command is a command line utility in windows that allows you to run a script or batch file from within another script or batch file. It is useful for organizing and modularizing complex scripts or for breaking down large scripts into smaller, more manageable pieces. Here is an example of how you might use the call command in batch file: **@echo off**

**call script1.bat**

**call script2.bat**

**call script3.bat**

**echo all script will completed.**

The call command can also be used to pass arguments to the called script or batch file. For example: **call script.bat arg1 arg2 arg3**

In this case, the arguments ‘arg1’ ‘arg2’ ‘arg3’ would be passed to the ‘script.bat’ script or batch file, and could be accessed within the script using the ‘%1’ ‘%2’ and ‘%3’ variables, respectively.

* **CD**  Displays the name of or changes the current directory.

SYNTAX 🡪

* CHDIR [/D] [drive:][path]
* CHDIR [..]
* CD [/D] [drive:][path]
* CD [..]

.. Specifies that you want to change to the parent directory.

Type CD drive: to display the current directory in the specified drive.

Type CD without parameters to display the current drive and directory.

Use the /D switch to change current drive in addition to changing current directory for a drive.

If Command Extensions are enabled CHDIR changes as follows:

The current directory string is converted to use the same case as

the on disk names. So CD C:\TEMP would actually set the current

directory to C:\Temp if that is the case on disk.

CHDIR command does not treat spaces as delimiters, so it is possible to CD into a subdirectory name that contains a space without surrounding the name with quotes. For example:

cd \winnt\profiles\username\programs\start menu

is the same as:

cd "\winnt\profiles\username\programs\start menu"

which is what you would have to type if extensions were disabled.

* **CHCP** Displays or sets the active code page number.

SYNTAX 🡪 CHCP [nnn]

nnn Specifies a code page number.

Type CHCP without a parameter to display the active code page number.

* **CHDIR = CD**
* **CHKDSK** Checks a disk and displays a status report.

SYNTAX 🡪 CHKDSK [volume[[path]filename]]] [/F] [/V] [/R] [/X] [/I] [/C] [/L[:size]] [/B] [/scan] [/spotfix]

volume Specifies the drive letter (followed by a colon), mount point, or volume name.

filename FAT/FAT32 only: Specifies the files to check for fragmentation.

/F Fixes errors on the disk.

/V On FAT/FAT32: Displays the full path and name of every file on the disk. On NTFS: Displays cleanup messages if any.

/R Locates bad sectors and recovers readable information (implies /F, when /scan not specified).

/L:size NTFS only: Changes the log file size to the specified number of kilobytes. If size is not specified, displays current size.

/X Forces the volume to dismount first if necessary. All opened handles to the volume would then be invalid (implies /F).

/I NTFS only: Performs a less vigorous check of index entries.

/C NTFS only: Skips checking of cycles within the folder structure.

/B NTFS only: Re-evaluates bad clusters on the volume (implies /R)

/scan NTFS only: Runs an online scan on the volume

/forceofflinefix NTFS only: (Must be used with "/scan") Bypass all online repair; all defects found are queued for offline repair (i.e. "chkdsk /spotfix").

/perf NTFS only: (Must be used with "/scan") Uses more system resources to complete a scan as fast as possible. This may have a negative performance impact on other tasks running on the system.

/spotfix NTFS only: Runs spot fixing on the volume

/sdcleanup NTFS only: Garbage collect unneeded security descriptor data (implies /F).

/offlinescanandfix Runs an offline scan and fix on the volume.

/freeorphanedchains FAT/FAT32/exFAT only: Frees any orphaned cluster chains instead of recovering their contents.

/markclean FAT/FAT32/exFAT only: Marks the volume clean if no corruption was detected, even if /F was not specified.

The /I or /C switch reduces the amount of time required to run Chkdsk by skipping certain checks of the volume.

* **CHKNTFS** Displays or modifies the checking of disk at boot time.

SYNTAXES 🡪

* + - CHKNTFS volume [...]
    - CHKNTFS /D
    - CHKNTFS /T[:time]
    - CHKNTFS /X volume [...]
    - CHKNTFS /C volume [...]

volume Specifies the drive letter (followed by a colon), mount point, or volume name.

/D Restores the machine to the default behavior; all drives are checked at boot time and chkdsk is run on those that are dirty.

/T:time Changes the AUTOCHK initiation countdown time to the specified amount of time in seconds. If time is not specified, displays the current setting.

/X Excludes a drive from the default boot-time check. Excluded drives are not accumulated between command invocations.

/C Schedules a drive to be checked at boot time; chkdsk will run if the drive is dirty.

If no switches are specified, CHKNTFS will display if the specified drive is dirty or scheduled to be checked on next reboot.

* **CLS** Clear the screen.
* **CMD** Starts a new instance of the Windows command interpreter.

SYNTAX 🡪 CMD [/A | /U] [/Q] [/D] [/E:ON | /E:OFF] [/F:ON | /F:OFF] [/V:ON | /V:OFF] [[/S] [/C | /K] string]

/C Carries out the command specified by string and then terminates

/K Carries out the command specified by string but remains

/S Modifies the treatment of string after /C or /K (see below)

/Q Turns echo off

/D Disable execution of AutoRun commands from registry (see below)

/A Causes the output of internal commands to a pipe or file to be ANSI

/U Causes the output of internal commands to a pipe or file to be Unicode

/T:fg Sets the foreground/background colors (see COLOR /? for more info)

/E:ON Enable command extensions (see below)

/E:OFF Disable command extensions (see below)

/F:ON Enable file and directory name completion characters (see below)

/F:OFF Disable file and directory name completion characters (see below)

/V:ON Enable delayed environment variable expansion using ! as the delimiter. For example, /V:ON would allow !var! to expand the variable var at execution time. The var syntax expands variables at input time, which is quite a different thing when inside of a FOR loop.

/V:OFF Disable delayed environment expansion.

Note that multiple commands separated by the command separator '&&' are accepted for string if surrounded by quotes. Also, for compatibility reasons, /X is the same as /E:ON, /Y is the same as /E:OFF and /R is the same as /C. Any other switches are ignored.

If /C or /K is specified, then the remainder of the command line after

the switch is processed as a command line, where the following logic is

used to process quote (") characters…

* **COLOR** Sets the default console foreground and background colors.

SYNTAX 🡪 COLOR [attr]

attr Specifies color attribute of console output

Color attributes are specified by TWO hex digits -- the first

corresponds to the background; the second the foreground. Each digit

can be any of the following values:

0 = Black 8 = Gray

1 = Blue 9 = Light Blue

2 = Green A = Light Green

3 = Aqua B = Light Aqua

4 = Red C = Light Red

5 = Purple D = Light Purple

6 = Yellow E = Light Yellow

7 = White F = Bright White

If no argument is given, this command restores the color to what it was

when CMD.EXE started. This value either comes from the current console window, the /T command line switch or from the DefaultColor registry value.

The COLOR command sets ERRORLEVEL to 1 if an attempt is made to execute the COLOR command with a foreground and background color that are the same.

Example: "COLOR fc" produces light red on bright white.

* **COMP** Compares the contents of two files or sets of files.

SYNTAX 🡪 COMP [data1] [data2] [/D] [/A] [/L] [/N=number] [/C] [/OFF[LINE]] [/M]

data1 Specifies location and name(s) of first file(s) to compare.

data2 Specifies location and name(s) of second files to compare.

/D Displays differences in decimal format.

/A Displays differences in ASCII characters.

/L Displays line numbers for differences.

/N=number Compares only the first specified number of lines in each file.

/C Disregards case of ASCII letters when comparing files.

/OFF[LINE] Do not skip files with offline attribute set.

/M Do not prompt for compare more files.

To compare sets of files, use wildcards in data1 and data2 parameters.

* **COMPACT** Displays or alters the compression of files on NTFS partitions.

SYNTAXES 🡪

* COMPACT [/C | /U] [/S[:dir]] [/A] [/I] [/F] [/Q] [/EXE[:algorithm]]
* [/CompactOs[:option] [/WinDir:dir]] [filename [...]]

/C Compresses the specified files. Directories will be marked so that files added afterward will be compressed unless /EXE is specified.

/U Uncompresses the specified files. Directories will be marked so that files added afterward will not be compressed.

If /EXE is specified, only files compressed as executables will be uncompressed; if this is omitted, only NTFS compressed files will be uncompressed.

/S Performs the specified operation on files in the given directory and all subdirectories. Default "dir" is the current directory.

/A Displays files with the hidden or system attributes. These files are omitted by default.

/I Continues performing the specified operation even after errors have occurred. By default, COMPACT stops when an error is encountered.

/F Forces the compress operation on all specified files, even those which are already compressed. Already-compressed files are skipped by default.

/Q Reports only the most essential information.

/EXE Use compression optimized for executable files which are read frequently and not modified. Supported algorithms are:

XPRESS4K (fastest) (default)

XPRESS8K

XPRESS16K

LZX (most compact)

/CompactOs Set or query the system's compression state. Supported options are:

query - Query the system's Compact state.

always - Compress all OS binaries and set the system state to Compact which remains unless administrator changes it.

never - Uncompress all OS binaries and set the system state to non Compact which remains unless administrator changes it.

/WinDir Used with /CompactOs:query, when querying the offline OS. Specifies the directory where Windows is installed.

filename Specifies a pattern, file, or directory.

Used without parameters, COMPACT displays the compression state of

the current directory and any files it contains. You may use multiple

filenames and wildcards. You must put spaces between multiple parameters.

* **CONVERT** Converts a FAT volume to NTFS.

SYNTAX 🡪 CONVERT volume /FS:NTFS [/V] [/CvtArea:filename] [/NoSecurity] [/X]

volume Specifies the drive letter (followed by a colon), mount point, or volume name.

/FS:NTFS Specifies that the volume will be converted to NTFS.

/V Specifies that Convert will be run in verbose mode.

/CvtArea:filename

Specifies a contiguous file in the root directory that will be the place holder for NTFS system files.

/NoSecurity Specifies that the security settings on the converted files and directories allow access by all users.

/X Forces the volume to dismount first if necessary. All open handles to the volume will not be valid.

* **COPY** Copies one or more files to another location.

SYNTAXES 🡪

* COPY [/D] [/V] [/N] [/Y | /-Y] [/Z] [/L] [/A | /B ] source [/A | /B]
* [+ source [/A | /B] [+ ...]] [destination [/A | /B]]

source Specifies the file or files to be copied.

/A Indicates an ASCII text file.

/B Indicates a binary file.

/D Allow the destination file to be created decrypted destination Specifies the directory and/or filename for the new file(s).

/V Verifies that new files are written correctly.

/N Uses short filename, if available, when copying a file with a non-8dot3 name.

/Y Suppresses prompting to confirm you want to overwrite an existing destination file.

/-Y Causes prompting to confirm you want to overwrite an existing destination file.

/Z Copies networked files in restartable mode.

/L If the source is a symbolic link, copy the link to the target instead of the actual file the source link points to.

The switch /Y may be preset in the COPYCMD environment variable.

This may be overridden with /-Y on the command line. Default is

to prompt on overwrites unless COPY command is being executed from

within a batch script.

To append files, specify a single file for destination, but multiple files

for source (using wildcards or file1+file2+file3 format).

* **DATE** Displays or sets the date.

SYNTAX 🡪 DATE [/T | date]

Type DATE without parameters to display the current date setting and

a prompt for a new one. Press ENTER to keep the same date.

If Command Extensions are enabled the DATE command supports

the /T switch which tells the command to just output the

current date, without prompting for a new date.

* **DEL** Deletes one or more files.

SYNTAX 🡪

* DEL [/P] [/F] [/S] [/Q] [/A[[:]attributes]] names
* ERASE [/P] [/F] [/S] [/Q] [/A[[:]attributes]] names

names Specifies a list of one or more files or directories. Wildcards may be used to delete multiple files. If a directory is specified, all files within the directory will be deleted.

/P Prompts for confirmation before deleting each file.

/F Force deleting of read-only files.

/S Delete specified files from all subdirectories.

/Q Quiet mode, do not ask if ok to delete on global wildcard

/A Selects files to delete based on attributes

attributes R Read-only files S System files

H Hidden files A Files ready for archiving

I Not content indexed Files L Reparse Points

O Offline files - Prefix meaning not

If Command Extensions are enabled DEL and ERASE change as follows:

The display semantics of the /S switch are reversed in that it shows

you only the files that are deleted, not the ones it could not find.

* **DIR** Displays a list of files and subdirectories in a directory.

SYNTAX 🡪

* DIR [drive:][path][filename] [/A[[:]attributes]] [/B] [/C] [/D] [/L] [/N]
* [/O[[:]sortorder]] [/P] [/Q] [/R] [/S] [/T[[:]timefield]] [/W] [/X] [/4]

[drive:][path][filename] Specifies drive, directory, and/or files to list.

/A Displays files with specified attributes.

attributes D Directories R Read-only files

H Hidden files A Files ready for archiving

S System files I Not content indexed files

L Reparse Points O Offline files

- Prefix meaning not

/B Uses bare format (no heading information or summary).

/C Display the thousand separator in file sizes. This is the default. Use /-C to disable display of separator.

/D Same as wide but files are list sorted by column.

/L Uses lowercase.

/N New long list format where filenames are on the far right.

/O List by files in sorted order.

sortorder N By name (alphabetic) S By size (smallest first)

E By extension (alphabetic) D By date/time (oldest first)

G Group directories first - Prefix to reverse order

/P Pauses after each screenful of information.

/Q Display the owner of the file.

/R Display alternate data streams of the file.

/S Displays files in specified directory and all subdirectories.

/T Controls which time field displayed or used for sorting

timefield C Creation

A Last Access

W Last Written

/W Uses wide list format.

/X This displays the short names generated for non-8dot3 file names. The format is that of /N with the short name inserted before the long name. If no short name is present, blanks are displayed in its place.

/4 Displays four-digit years

Switches may be preset in the DIRCMD environment variable. Override

preset switches by prefixing any switch with - (hyphen)--for example, /W.

* **DISKPART** Microsoft DiskPart version 11.4.13859.961

Copyright (C) Microsoft Corporation.

On computer: DESKTOP-PT234KA

SYNTAX 🡪 diskpart [/s <script>] [/?]

/s <script> Use a DiskPart script.

/? Show this help screen.

* **DOSKEY** Edits command lines, recalls Windows commands, and creates macros.
* DOSKEY [/REINSTALL] [/LISTSIZE=size] [/MACROS[:ALL | :exename]]
* [/HISTORY] [/INSERT | /OVERSTRIKE] [/EXENAME=exename] [/MACROFILE=filename]
* [macroname=[text]]

/REINSTALL Installs a new copy of Doskey.

/LISTSIZE=size Sets size of command history buffer.

/MACROS Displays all Doskey macros.

/MACROS:ALL Displays all Doskey macros for all executables which have Doskey macros.

/MACROS:exename Displays all Doskey macros for the given executable.

/HISTORY Displays all commands stored in memory.

/INSERT Specifies that new text you type is inserted in old text.

/OVERSTRIKE Specifies that new text overwrites old text.

/EXENAME=exename Specifies the executable.

/MACROFILE=filename Specifies a file of macros to install.

macroname Specifies a name for a macro you create.

text Specifies commands you want to record.

UP and DOWN ARROWS recall commands; ESC clears command line; F7 displays command history; ALT+F7 clears command history; F8 searches command history; F9 selects a command by number; ALT+F10 clears macro definitions.

The following are some special codes in Doskey macro definitions:

$T Command separator. Allows multiple commands in a macro.

$1-$9 Batch parameters. Equivalent to %1-%9 in batch programs.

$\* Symbol replaced by everything following macro name on command line.

* **DRIVERQUERY**

SYNTAX 🡪 DRIVERQUERY [/S system [/U username [/P [password]]]]

[/FO format] [/NH] [/SI] [/V]

Description: Enables an administrator to display a list of installed device drivers.

Parameter List:

/S system Specifies the remote system to connect to.

/U [domain\]user Specifies the user context

under which the command should execute.

/P [password] Specify the password for the given user context.

/FO format Specifies the type of output to display. Valid values to be passed with the switch are "TABLE", "LIST", "CSV".

/NH Specifies that the "Column Header" should not be displayed. Valid for "TABLE" and "CSV" format only.

/SI Provides information about signed drivers.

/V Displays verbose output. Not valid for signed drivers.

/? Displays this help message.

Examples:

DRIVERQUERY

DRIVERQUERY /FO CSV /SI

DRIVERQUERY /NH

DRIVERQUERY /S ipaddress /U user /V

DRIVERQUERY /S system /U domain\user /P password /FO LIST

* **ECHO** Displays messages, or turns command-echoing on or off.

SYNTAXES 🡪

* ECHO [ON | OFF]
* ECHO [message]

Type ECHO without parameters to display the current echo setting.

ENDLOCAL Ends localization of environment changes in a batch file.

Environment changes made after ENDLOCAL has been issued are

not local to the batch file; the previous settings are not

restored on termination of the batch file.

* **ENDLOCAL** Ends localization of environment changes in a batch file. Environment changes made after ENDLOCAL has been issued are not local to the batch file; the previous settings are not restored on termination of the batch file.

ENDLOCAL

If Command Extensions are enabled ENDLOCAL changes as follows:

If the corresponding SETLOCAL enable or disabled command extensions

using the new ENABLEEXTENSIONS or DISABLEEXTENSIONS options, then after the ENDLOCAL, the enabled/disabled state of command extensions will be restored to what it was prior to the matching SETLOCAL command execution.

* **DEL** = **ERASE**
* **EXIT** Quits the CMD.EXE program (command interpreter) or the current batch script.

SYNTAX 🡪 EXIT [/B] [exitCode]

/B specifies to exit the current batch script instead of CMD.EXE. If executed from outside a batch script, it will quit CMD.EXE

exitCode specifies a numeric number. if /B is specified, sets ERRORLEVEL that number. If quitting CMD.EXE, sets the process exit code with that number.

* **FC** Compares two files or sets of files and displays the differences between them.

SYNTAX 🡪

* FC [/A] [/C] [/L] [/LBn] [/N] [/OFF[LINE]] [/T] [/U] [/W] [/nnnn]
* [drive1:][path1]filename1 [drive2:][path2]filename2
* FC /B [drive1:][path1]filename1 [drive2:][path2]filename2

/A Displays only first and last lines for each set of differences.

/B Performs a binary comparison.

/C Disregards the case of letters.

/L Compares files as ASCII text.

/LBn Sets the maximum consecutive mismatches to the specified

number of lines.

/N Displays the line numbers on an ASCII comparison.

/OFF[LINE] Do not skip files with offline attribute set.

/T Does not expand tabs to spaces.

/U Compare files as UNICODE text files.

/W Compresses white space (tabs and spaces) for comparison.

/nnnn Specifies the number of consecutive lines that must match after a mismatch.

[drive1:][path1]filename1 Specifies the first file or set of files to compare.

[drive2:][path2]filename2 Specifies the second file or set of files to compare.

* **FIND** Searches for a text string in a file or files.

SYTAX 🡪 FIND [/V] [/C] [/N] [/I] [/OFF[LINE]] "string" [[drive:][path]filename[ ...]]

/V Displays all lines NOT containing the specified string.

/C Displays only the count of lines containing the string.

/N Displays line numbers with the displayed lines.

/I Ignores the case of characters when searching for the string.

/OFF[LINE] Do not skip files with offline attribute set.

"string" Specifies the text string to find.

[drive:][path]filename Specifies a file or files to search.

If a path is not specified, FIND searches the text typed at the prompt

or piped from another command.

**FINDSTR** Searches for strings in files.

SYNTAX 🡪

* FINDSTR [/B] [/E] [/L] [/R] [/S] [/I] [/X] [/V] [/N] [/M] [/O] [/P] [/F:file]
* [/C:string] [/G:file] [/D:dir list] [/A:color attributes] [/OFF[LINE]]
* strings [[drive:][path]filename[ ...]]

/B Matches pattern if at the beginning of a line.

/E Matches pattern if at the end of a line.

/L Uses search strings literally.

/R Uses search strings as regular expressions.

/S Searches for matching files in the current directory and all subdirectories.

/I Specifies that the search is not to be case-sensitive.

/X Prints lines that match exactly.

/V Prints only lines that do not contain a match.

/N Prints the line number before each line that matches.

/M Prints only the filename if a file contains a match.

/O Prints character offset before each matching line.

/P Skip files with non-printable characters.

/OFF[LINE] Do not skip files with offline attribute set.

/A:attr Specifies color attribute with two hex digits. See "color /?"

/F:file Reads file list from the specified file(/ stands for console).

/C:string Uses specified string as a literal search string.

/G:file Gets search strings from the specified file(/ stands for console).

/D:dir Search a semicolon delimited list of directories

strings Text to be searched for.

[drive:][path]filename Specifies a file or files to search.

Use spaces to separate multiple search strings unless the argument is prefixed with /C. For example, 'FINDSTR "hello there" x.y' searches for "hello" or "there" in file x.y. 'FINDSTR /C:"hello there" x.y' searches for "hello there" in file x.y.

Regular expression quick reference:

. Wildcard: any character

\* Repeat: zero or more occurrences of previous character or class

^ Line position: beginning of line

$ Line position: end of line

[class] Character class: any one character in set

[^class] Inverse class: any one character not in set

[x-y] Range: any characters within the specified range

\x Escape: literal use of metacharacter x

\<xyz Word position: beginning of word

xyz\> Word position: end of word

For full information on FINDSTR regular expressions refer to the online Command Reference.

* **FOR**  The ‘for’ command is a built in command in the windows command prompt (cmd.exe) that can be used to perform a set of commands on a specified list of files or directories. It allows you to iterate through a list of items and perform a specific action on each item in the list.

Here is the basic syntax of the ‘for’ command:

for %variable in (set) do command

Here, ‘%variable’ is a placeholder for the current item in the list, ‘set’ is a list of items, and ‘command’ is the command that you want to execute on each item in the list.

Here is an example of how you can use the ‘for’ command to iterate through a list of files and delete them:

for %f in (\*.txt) do del %f

This will delete all the text files in the current directory.

You can also use the ‘for’ command to iterate through a list of directories and perform a specific action on each directory. For example:

for /D %d (\*) do echo %d

This will print the names of all the directories in the current directory.

The ‘for’ command is very powerful and has many options that allows you to customize its behavior. You can use the ‘/R’ option to recursively process all subdirectories, the ‘/D’ option to specify a list of directories, and the ‘/F’ option to specify a list of files. You can also use the ‘/L’ option to iterate through a list of numbers or the ‘/P’ option to prompt the user for input. for more information about ‘for’ command and its options, you can type ‘for /?’ in the CMD to display the help information.

* **FORMAT** Formats a disk for use with Windows.

SYNTAXES 🡪

* FORMAT volume [/FS:file-system] [/V:label] [/Q] [/L[:state]] [/A:size] [/C] [/I:state] [/X] [/P:passes] [/S:state]
* FORMAT volume [/V:label] [/Q] [/F:size] [/P:passes]
* FORMAT volume [/V:label] [/Q] [/T:tracks /N:sectors] [/P:passes]
* FORMAT volume [/V:label] [/Q] [/P:passes]
* FORMAT volume [/Q]

volume Specifies the drive letter (followed by a colon), mount point, or volume name.

/FS:filesystem Specifies the type of the file system (FAT, FAT32, exFAT, NTFS, UDF, ReFS).

/V:label Specifies the volume label.

/Q Performs a quick format. Note that this switch overrides /P.

/C NTFS only: Files created on the new volume will be compressed by default.

/X Forces the volume to dismount first if necessary. All opened handles to the volume would no longer be valid.

/R:revision UDF only: Forces the format to a specific UDF version (1.02, 1.50, 2.00, 2.01, 2.50). The default revision is 2.01.

/D UDF 2.50 only: Metadata will be duplicated.

/L[:state] NTFS Only: Overrides the default size of file record. By default, a non-tiered volume will be formatted with small size file records and a tiered volume will be formatted with large size file records. /L and /L:enable forces format to use large size file records and /L:disable forces format to use small size file records.

/A:size Overrides the default allocation unit size. Default settings are strongly recommended for general use.

ReFS supports 4096, 64K.

NTFS supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K, 128K, 256K, 512K, 1M, 2M.

FAT supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K, (128K, 256K for sector size > 512 bytes).

FAT32 supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K, (128K, 256K for sector size > 512 bytes).

exFAT supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K, 128K, 256K, 512K, 1M, 2M, 4M, 8M, 16M, 32M.

Note that the FAT and FAT32 files systems impose the following restrictions on the number of clusters on a volume:

FAT: Number of clusters <= 65526

FAT32: 65526 < Number of clusters < 4177918

Format will immediately stop processing if it decides that the above requirements cannot be met using the specified cluster size.

NTFS compression is not supported for allocation unit sizes above 4096.

/F:size Specifies the size of the floppy disk to format (1.44) /T:tracks Specifies the number of tracks per disk side.

/N:sectors Specifies the number of sectors per track.

/P:count Zero every sector on the volume. After that, the volume will be overwritten "count" times using a different random number each time. If "count" is zero, no additional overwrites are made after zeroing every sector. This switch is ignored when /Q is specified.

/S:state Specifies support for short filenames (enable, disable) Short names are disabled by default

/TXF:state Specifies txf is enabled/disabled (enabled, disabled) TxF is enabled by default

/I:state ReFS only: Specifies whether integrity should be enabled on the new volume. "state" is either "enable" or "disable"

Integrity is enabled on storage that supports data redundancy by default.

/DAX[:state] NTFS Only: Enable direct access storage (DAX) mode for this volume. In DAX mode, the volume is accessed via the memory bus, boosting IO performance. A volume can be formatted with DAX mode only if the hardware is DAX capable. State can specify "enable" or "disable". /DAX is considered as /DAX:enable.

/LogSize[:size] NTFS Only: Specifies the size for NTFS log file in kilobytes.The minimum supported size is 2MB, so specifying size smaller than 2MB will result in a 2MB log file. Zero indicates the default value which generally depend on the volume size.

/NoRepairLogs NTFS Only: Disables NTFS repair logs. If the flag is set spotfix (i.e. chkdsk /spotfix) will not work.

* **FSUTIL** The ‘fsutil’ command is a command-line utility in CMD that allows you to perform various tasks related to file systems and disk management. Some examples of the task you can use these parameters to perform a particular task:

---- Commands Supported ----

8dot3name 8dot3name management

behavior Control file system behavior

dax Dax volume management

dirty Manage volume dirty bit

file File specific commands

fsInfo File system information

hardlink Hardlink management

objectID Object ID management

quota Quota management

repair Self healing management

reparsePoint Reparse point management

storageReserve Storage Reserve management

resource Transactional Resource Manager management

sparse Sparse file control

tiering Storage tiering property management

transaction Transaction management

usn USN management

volume Volume management

wim Transparent wim hosting management

* **FTYPE**  Displays or modifies file types used in file extension associations

SYNTAX 🡪 FTYPE [fileType[=[openCommandString]]]

fileType Specifies the file type to examine or change openCommandString Specifies the open command to use when launching files of this type.

Type FTYPE without parameters to display the current file types that have open command strings defined. FTYPE is invoked with just a file type, it displays the current open command string for that file type. Specify nothing for the open command string and the FTYPE command will delete the open command string for the file type. Within an open command string %0 or %1 are substituted with the file name being launched through the assocation. %\* gets all the parameters and %2 gets the 1st parameter, %3 the second, etc. %~n gets all the remaining parameters starting with the nth parameter, where n may be between 2 and 9, inclusive. For example:

ASSOC .pl=PerlScript

FTYPE PerlScript=perl.exe %1 %\*

would allow you to invoke a Perl script as follows:

script.pl 1 2 3

If you want to eliminate the need to type the extensions, then do the

following:

set PATHEXT=.pl;%PATHEXT%

and the script could be invoked as follows.

* **GOTO** Directs cmd.exe to a labeled line in a batch program.

SYNTAX 🡪 GOTO label

label Specifies a text string used in the batch program as a label.

You type a label on a line by itself, beginning with a colon.

If Command Extensions are enabled GOTO changes as follows:

GOTO command now accepts a target label of :EOF which transfers control to the end of the current batch script file. This is an easy way to exit a batch script file without defining a label. Type CALL /? for a description of extensions to the CALL command that make this feature

useful.

* **GPRESULT**

SYNTAXES 🡪

* GPRESULT [/S system [/U username [/P [password]]]] [/SCOPE scope]
  + [/USER targetusername] [/R | /V | /Z] [(/X | /H) <filename> [/F]]

Description:

This command line tool displays the Resultant Set of Policy (RSoP)

information for a target user and computer.

Parameter List:

/S system Specifies the remote system to connect to.

/U [domain\]user Specifies the user context under which the command should run. Can not be used with /X, /H.

/P [password] Specifies the password for the given user context. Prompts for input if omitted. Cannot be used with /X, /H.

/SCOPE scope Specifies whether the user or the computer settings need to be displayed. Valid values: "USER", "COMPUTER".

/USER [domain\]user Specifies the user name for which the RSoP data is to be displayed.

/X <filename> Saves the report in XML format at the location and with the file name specified by the <filename> parameter. (valid in Windows Vista SP1 and later and Windows Server 2008 and later)

/H <filename> Saves the report in HTML format at the location and with the file name specified by the <filename> parameter. (valid in Windows at least Vista SP1 and at least Windows Server 2008)

/F Forces Gpresult to overwrite the file name specified in the /X or /H command.

/R Displays RSoP summary data.

/V Specifies that verbose information should be displayed. Verbose information provides additional detailed settings that have been applied with a precedence of 1.

/Z Specifies that the super-verbose information should be displayed. Super-verbose information provides additional detailed settings that have been applied with a precedence of 1 and higher. This allows you to see if a setting was set in multiple places. See the Group Policy online help topic for more information.

/? Displays this help message.

Examples:

GPRESULT /R

GPRESULT /H GPReport.html

GPRESULT /USER targetusername /V

GPRESULT /S system /USER targetusername /SCOPE COMPUTER /Z

GPRESULT /S system /U username /P password /SCOPE USER /V

* **GRAFTABL** The ‘graftable’ command is a command-line utility in WINDOWS that enables and disables the ability to set volume mount points on a drive that servers as a “bridge” to another drive. When you create a volume mount point, you can access the contents of the other drive as if they were part of the same drive.

To use the ‘graftabl’ command, open CMD window and type ‘graftabl’ followed by either the ‘on’ or ‘off’ parameter, on whether you want to enable or disable the ability to set volumes mount points. For example, to enable volume point on the C: drive, you would type:

graftabl on

To disable volume mount points on the C: drive, you would type:

grafable off

Note that you must be an administrator to use the ‘graftabl’ command.

* **HELP** Provides help information for Windows commands.

SYNTAX 🡪 HELP [command]

command displays help information on that command.

* **ICACLS** ‘icacls’ is a command-line utility in windows thet allows you to view and modify the access control lists (ACLs) of files and directories.

SYNTAX 🡪

* ICACLS name /save aclfile [/T] [/C] [/L] [/Q]

stores the DACLs for the files and folders that match the name

into aclfile for later use with /restore. Note that SACLs,

owner, or integrity labels are not saved.

* ICACLS directory [/substitute SidOld SidNew [...]] /restore aclfile

[/C] [/L] [/Q]

applies the stored DACLs to files in directory.

* ICACLS name /setowner user [/T] [/C] [/L] [/Q]

changes the owner of all matching names. This option does not

force a change of ownership; use the takeown.exe utility for

that purpose.

* ICACLS name /findsid Sid [/T] [/C] [/L] [/Q]

finds all matching names that contain an ACL explicitly mentioning Sid.

* ICACLS name /verify [/T] [/C] [/L] [/Q]

finds all files whose ACL is not in canonical form or whose lengths are inconsistent with ACE counts.

* ICACLS name /reset [/T] [/C] [/L] [/Q]

replaces ACLs with default inherited ACLs for all matching files.

Different syntax 🡪ICACLS name [/grant[:r] Sid:perm[...]]

[/deny Sid:perm [...]]

[/remove[:g|:d]] Sid[...]] [/T] [/C] [/L] [/Q]

[/setintegritylevel Level:policy[...]]

/grant[:r] Sid:perm grants the specified user access rights. With :r, the permissions replace any previously granted explicit permissions. Without :r, the permissions are added to any previously granted explicit permissions.

/deny Sid:perm explicitly denies the specified user access rights.

An explicit deny ACE is added for the stated permissions and the same permissions in any explicit grant are removed.

/remove[:[g|d]] Sid removes all occurrences of Sid in the ACL. With

:g, it removes all occurrences of granted rights to that Sid. With

:d, it removes all occurrences of denied rights to that Sid.

/setintegritylevel [(CI)(OI)]Level explicitly adds an integrity

ACE to all matching files. The level is to be specified as one of:

L[ow]

M[edium]

H[igh]

Inheritance options for the integrity ACE may precede the level

and are applied only to directories.

/inheritance:e|d|r

e - enables inheritance

d - disables inheritance and copy the ACEs

r - remove all inherited ACEs

Note: Sids may be in either numerical or friendly name form. If a numerical form is given, affix a \* to the start of the SID.

/T indicates that this operation is performed on all matching

files/directories below the directories specified in the name.

/C indicates that this operation will continue on all file errors.

Error messages will still be displayed.

/L indicates that this operation is performed on a symbolic link

itself versus its target.

/Q indicates that icacls should suppress success messages.

ICACLS preserves the canonical ordering of ACE entries:

Explicit denials

Explicit grants

Inherited denials

Inherited grants

perm is a permission mask and can be specified in one of two forms:

a sequence of simple rights:

N - no access

F - full access

M - modify access

RX - read and execute access

R - read-only access

W - write-only access

D - delete access

a comma-separated list in parentheses of specific rights:

DE - delete

RC - read control

WDAC - write DAC

WO - write owner

S - synchronize

AS - access system security

MA - maximum allowed

GR - generic read

GW - generic write

GE - generic execute

GA - generic all

RD - read data/list directory

WD - write data/add file

AD - append data/add subdirectory

REA - read extended attributes

WEA - write extended attributes

X - execute/traverse

DC - delete child

RA - read attributes

WA - write attributes

inheritance rights may precede either form and are applied

only to directories:

(OI) - object inherit

(CI) - container inherit

(IO) - inherit only

(NP) - don't propagate inherit

(I) - permission inherited from parent container

Examples:

icacls c:\windows\\* /save AclFile /T

- Will save the ACLs for all files under c:\windows

and its subdirectories to AclFile.

icacls c:\windows\ /restore AclFile

- Will restore the Acls for every file within

AclFile that exists in c:\windows and its subdirectories.

icacls file /grant Administrator:(D,WDAC)

- Will grant the user Administrator Delete and Write DAC

permissions to file.

icacls file /grant \*S-1-1-0:(D,WDAC)

- Will grant the user defined by sid S-1-1-0 Delete and

Write DAC permissions to file.

* **IF** Performs conditional processing in batch programs.

SYNTAX 🡪

* IF [NOT] ERRORLEVEL number command
* IF [NOT] string1==string2 command
* IF [NOT] EXIST filename command

NOT Specifies that Windows should carry out the command only if the condition is false.

ERRORLEVEL number Specifies a true condition if the last program run returned an exit code equal to or greater than the number specified.

string1==string2 Specifies a true condition if the specified text strings match.

EXIST filename Specifies a true condition if the specified filename exists.

command Specifies the command to carry out if the condition is met. Command can be followed by ELSE command which will execute the command after the ELSE keyword if the specified condition is FALSE

The ELSE clause must occur on the same line as the command after the IF. For example:

IF EXIST filename. (

del filename.

) ELSE (

echo filename. missing.

)

* **LABEL** Creates, changes, or deletes the volume label of a disk.

SYNTAX 🡪

* LABEL [drive:][label]
* LABEL [/MP] [volume] [label]

drive: Specifies the drive letter of a drive.

label Specifies the label of the volume.

/MP Specifies that the volume should be treated as a mount point or volume name.

volume Specifies the drive letter (followed by a colon), mount point, or volume name. If volume name is specified, the /MP flag is unnecessary.

* **MD** Creates a directory.

SYNTAXES 🡪

* MKDIR [drive:]path
* MD [drive:]path

If Command Extensions are enabled MKDIR changes as follows:

MKDIR creates any intermediate directories in the path, if needed.

For example, assume \a does not exist then:

mkdir \a\b\c\d

is the same as:

mkdir \a

chdir \a

mkdir b

chdir b

mkdir c

chdir c

mkdir d

which is what you would have to type if extensions were disabled.

* **MKLINK** Creates a symbolic link.

SYNTAX 🡪 MKLINK [[/D] | [/H] | [/J]] Link Target

/D Creates a directory symbolic link. Default is a file symbolic link.

/H Creates a hard link instead of a symbolic link.

/J Creates a Directory Junction.

Link Specifies the new symbolic link name.

Target Specifies the path (relative or absolute) that the new link refers to.

* **MODE** Configures system devices.

Serial port: MODE COMm[:] [BAUD=b] [PARITY=p] [DATA=d] [STOP=s] [to=on|off] [xon=on|off] [odsr=on|off][octs=on|off] [dtr=on|off|hs][rts=on|off|hs|tg] [idsr=on|off]

Device Status: MODE [device] [/STATUS]

Redirect printing: MODE LPTn[:]=COMm[:]

Select code page: MODE CON[:] CP SELECT=yyy

Code page status: MODE CON[:] CP [/STATUS]

Display mode: MODE CON[:] [COLS=c] [LINES=n]

Typematic rate: MODE CON[:] [RATE=r DELAY=d]

**MORE** Displays output one screen at a time.

SYNTAX 🡪

* MORE [/E [/C] [/P] [/S] [/Tn] [+n]] < [drive:][path]filename
* command-name | MORE [/E [/C] [/P] [/S] [/Tn] [+n]]
* MORE /E [/C] [/P] [/S] [/Tn] [+n] [files]

[drive:][path]filename Specifies a file to display one screen at a time.

command-name Specifies a command whose output will be displayed.

/E Enable extended features

/C Clear screen before displaying page

/P Expand FormFeed characters

/S Squeeze multiple blank lines into a single line

/Tn Expand tabs to n spaces (default 8) Switches can be present in the MORE environment variable.

+n Start displaying the first file at line n

files List of files to be displayed. Files in the list are separated by blanks.

If extended features are enabled, the following commands are accepted at the -- More -- prompt:

P n Display next n lines

S n Skip next n lines

F Display next file

Q Quit

= Show line number

? Show help line

<space> Display next page

<ret> Display next line

MOVE Moves files and renames files and directories.

To move one or more files:

MOVE [/Y | /-Y] [drive:][path]filename1[,...] destination

To rename a directory:

MOVE [/Y | /-Y] [drive:][path]dirname1 dirname2

[drive:][path]filename1 Specifies the location and name of the file or files you want to move.

destination Specifies the new location of the file. Destination can consist of a drive letter and colon, a directory name, or a combination. If you are moving only one file, you can also include a filename if you want to rename the file when you move it.

[drive:][path]dirname1 Specifies the directory you want to rename.

dirname2 Specifies the new name of the directory.

/Y Suppresses prompting to confirm you want to overwrite an existing destination file.

/-Y Causes prompting to confirm you want to overwrite an existing destination file.

The switch /Y may be present in the COPYCMD environment variable.

This may be overridden with /-Y on the command line. Default is to prompt on overwrites unless MOVE command is being executed from within a batch script.

* **OPENFILES** Enables an administrator to list or disconnect files and folders that have been opened on a system.

SYNTAX 🡪 OPENFILES /parameter [arguments]

Parameter List:

/Disconnect Disconnects one or more open files.

/Query Displays files opened locally or from shared folders.

/Local Enables / Disables the display of local open files.

/? Displays this help message.

Examples:

OPENFILES /Disconnect /?

OPENFILES /Query /?

OPENFILES /Local /?

* **PATH** Displays or sets a search path for executable files.

SYNTAXES 🡪

* PATH [[drive:]path[;...][;%PATH%]
* PATH ;

Type PATH ; to clear all search-path settings and direct cmd.exe to search only in the current directory.

Type PATH without parameters to display the current path.

Including %PATH% in the new path setting causes the old path to be

appended to the new setting.

* **PAUSE** The pause command is a command-line utility in the windows Command Prompt that causes the CMD to pause and display a message indicating that the user should “Press any key to continue…”. When the user presses a key, the command prompt will resume execution of the next command if the batch file or command-line script.

Here is an example of how the ‘pause’ command might be used in a batch file:

@echo off

echo This is a batch file

echo It will run some commands, then

pause

dir C:\

pause

echo The batch file has resumed

echo It will now run some commands

dir C:\windows

echo The batch file has finished running.

* **POPD** Changes to the directory stored by the PUSHD command.

SYNTAX 🡪 POPD

If Command Extensions are enabled the POPD command will delete any temporary drive letter created by PUSHD when you POPD that drive off the pushed directory stack.

* **PRINT** Prints a text file.

SYNTAX 🡪 PRINT [/D:device] [[drive:][path]filename[...]]

/D:device Specifies a print device.

* **PROMPT** Changes the cmd.exe command prompt. i.e- it is used to change the appearance of the command prompt. By default, the prompt displays the current working directory, but you can use the ‘prompt’ command to customize it.

SYNTAX 🡪 PROMPT [text]

text Specifies a new command prompt.

Prompt can be made up of normal characters and the following special codes:

$A & (Ampersand)

$B | (pipe)

$C ( (Left parenthesis)

$D Current date

$E Escape code (ASCII code 27)

$F ) (Right parenthesis)

$G > (greater-than sign)

$H Backspace (erases previous character)

$L < (less-than sign)

$N Current drive

$P Current drive and path

$Q = (equal sign)

$S (space)

$T Current time

$V Windows version number

$\_ Carriage return and linefeed

$$ $ (dollar sign)

If Command Extensions are enabled the PROMPT command supports

the following additional formatting characters:

$+ zero or more plus sign (+) characters depending upon the

depth of the PUSHD directory stack, one character for each

level pushed.

* **PUSHD** Stores the current directory for use by the POPD command, then changes to the specified directory.

SYNTAX 🡪 PUSHD [path | ..]

path Specifies the directory to make the current directory.

If Command Extensions are enabled the PUSHD command accepts

network paths in addition to the normal drive letter and path.

If a network path is specified, PUSHD will create a temporary

drive letter that points to that specified network resource and

then change the current drive and directory, using the newly

defined drive letter. Temporary drive letters are allocated from

Z: on down, using the first unused drive letter found.

* **RD** Removes (deletes) a directory.

SYNTAXES 🡪

* RMDIR [/S] [/Q] [drive:]path
* RD [/S] [/Q] [drive:]path

/S Removes all directories and files in the specified directory

in addition to the directory itself. Used to remove a directory

tree.

/Q Quiet mode, do not ask if ok to remove a directory tree with /S

* **RECOVER** Recovers readable information from a bad or defective disk.

SYNTAX 🡪 RECOVER [drive:][path]filename

Consult the online Command Reference in Windows Help

before using the RECOVER command.

* **REM** Records comments (remarks) in a batch file or CONFIG.SYS.

SYNTAX 🡪 REM [comment]

* **REN/RENAME** Renames a file or files.

SYNTAXES 🡪

* RENAME [drive:][path]filename1 filename2.
* REN [drive:][path]filename1 filename2.

Note that you cannot specify a new drive or path for your destination file.

* **REPLACE** Replaces files.

SYNTAXES 🡪

* REPLACE [drive1:][path1]filename [drive2:][path2] [/A] [/P] [/R] [/W]
* REPLACE [drive1:][path1]filename [drive2:][path2] [/P] [/R] [/S] [/W] [/U]

[drive1:][path1]filename Specifies the source file or files.

[drive2:][path2] Specifies the directory where files are to be replaced.

/A Adds new files to destination directory. Cannot use with /S or /U switches.

/P Prompts for confirmation before replacing a file or adding a source file.

/R Replaces read-only files as well as unprotected files.

/S Replaces files in all subdirectories of the destination directory. Cannot use with the /A switch.

/W Waits for you to insert a disk before beginning.

/U Replaces (updates) only files that are older than source files. Cannot use with the /A switch.

* **RMDIR** Removes (deletes) a directory.

SYNTAXES 🡪

* RMDIR [/S] [/Q] [drive:]path
* RD [/S] [/Q] [drive:]path

/S Removes all directories and files in the specified directory in addition to the directory itself. Used to remove a directory tree.

/Q Quiet mode, do not ask if ok to remove a directory tree with /S

* **ROBOCOPY** ---------------------------------------------------------

ROBOCOPY :: Robust File Copy for Windows

-------------------------------------------------------------------------------

It allows you to copy files and directories from one location to another. It is particularly useful for copying large number of files over the network, and it has many options that allows you to customize the way that it copies files.

Started : 01 January 2023 14:59:39

Usage :: ROBOCOPY source destination [file [file]...] [options]

source :: Source Directory (drive:\path or \\server\share\path).

destination :: Destination Dir (drive:\path or \\server\share\path).

file :: File(s) to copy (names/wildcards: default is "\*.\*").

::

:: Copy options :

::

/S :: copy Subdirectories, but not empty ones.

/E :: copy subdirectories, including Empty ones.

/LEV:n :: only copy the top n LEVels of the source directory tree.

/Z :: copy files in restartable mode.

/B :: copy files in Backup mode.

/ZB :: use restartable mode; if access denied use Backup mode.

/J :: copy using unbuffered I/O (recommended for large files).

/EFSRAW :: copy all encrypted files in EFS RAW mode.

/COPY:copyflag[s] :: what to COPY for files (default is /COPY:DAT).

(copyflags : D=Data, A=Attributes, T=Timestamps, X=Skip alt data streams).

(S=Security=NTFS ACLs, O=Owner info, U=aUditing info).

/SEC :: copy files with SECurity (equivalent to /COPY:DATS).

/COPYALL :: COPY ALL file info (equivalent to /COPY:DATSOU).

/NOCOPY :: COPY NO file info (useful with /PURGE).

/SECFIX :: FIX file SECurity on all files, even skipped files.

/TIMFIX :: FIX file TIMes on all files, even skipped files.

/PURGE :: delete dest files/dirs that no longer exist in source.

/MIR :: MIRror a directory tree (equivalent to /E plus /PURGE).

/MOV :: MOVe files (delete from source after copying).

/MOVE :: MOVE files AND dirs (delete from source after copying).

/A+:[RASHCNET] :: add the given Attributes to copied files.

/A-:[RASHCNET] :: remove the given Attributes from copied files.

/CREATE :: CREATE directory tree and zero-length files only.

/FAT :: create destination files using 8.3 FAT file names only.

/256 :: turn off very long path (> 256 characters) support.

/MON:n :: MONitor source; run again when more than n changes seen.

/MOT:m :: MOnitor source; run again in m minutes Time, if changed.

/RH:hhmm-hhmm :: Run Hours - times when new copies may be started.

/PF :: check run hours on a Per File (not per pass) basis.

/IPG:n :: Inter-Packet Gap (ms), to free bandwidth on slow lines.

/SJ :: copy Junctions as junctions instead of as the junction targets.

/SL :: copy Symbolic Links as links instead of as the link targets.

/MT[:n] :: Do multi-threaded copies with n threads (default 8).

n must be at least 1 and not greater than 128.

This option is incompatible with the /IPG and /EFSRAW options.

Redirect output using /LOG option for better performance.

/DCOPY:copyflag[s] :: what to COPY for directories (default is /DCOPY:DA).

(copyflags : D=Data, A=Attributes, T=Timestamps, E=EAs, X=Skip alt data streams).

/NODCOPY :: COPY NO directory info (by default /DCOPY:DA is done).

/NOOFFLOAD :: copy files without using the Windows Copy Offload mechanism.

/COMPRESS :: Request network compression during file transfer, if applicable.

::

:: File Selection Options :

::

/A :: copy only files with the Archive attribute set.

/M :: copy only files with the Archive attribute and reset it.

/IA:[RASHCNETO] :: Include only files with any of the given Attributes set.

/XA:[RASHCNETO] :: eXclude files with any of the given Attributes set.

/XF file [file]... :: eXclude Files matching given names/paths/wildcards.

/XD dirs [dirs]... :: eXclude Directories matching given names/paths.

/XC :: eXclude Changed files.

/XN :: eXclude Newer files.

/XO :: eXclude Older files.

/XX :: eXclude eXtra files and directories.

/XL :: eXclude Lonely files and directories.

/IS :: Include Same files.

/IT :: Include Tweaked files.

/MAX:n :: MAXimum file size - exclude files bigger than n bytes.

/MIN:n :: MINimum file size - exclude files smaller than n bytes.

/MAXAGE:n :: MAXimum file AGE - exclude files older than n days/date.

/MINAGE:n :: MINimum file AGE - exclude files newer than n days/date.

/MAXLAD:n :: MAXimum Last Access Date - exclude files unused since n.

/MINLAD:n :: MINimum Last Access Date - exclude files used since n.

(If n < 1900 then n = n days, else n = YYYYMMDD date).

/FFT :: assume FAT File Times (2-second granularity).

/DST :: compensate for one-hour DST time differences.

/XJ :: eXclude symbolic links (for both files and directories) and Junction points.

/XJD :: eXclude symbolic links for Directories and Junction points.

/XJF :: eXclude symbolic links for Files.

/IM :: Include Modified files (differing change times).

::

:: Retry Options :

::

/R:n :: number of Retries on failed copies: default 1 million.

/W:n :: Wait time between retries: default is 30 seconds.

/REG :: Save /R:n and /W:n in the Registry as default settings.

/TBD :: Wait for sharenames To Be Defined (retry error 67).

/LFSM :: Operate in low free space mode, enabling copy pause and resume (see Remarks).

/LFSM:n[KMG] :: /LFSM, specifying the floor size in n [K:kilo,M:mega,G:giga] bytes.

::

:: Logging Options :

::

/L :: List only - don't copy, timestamp or delete any files.

/X :: report all eXtra files, not just those selected.

/V :: produce Verbose output, showing skipped files.

/TS :: include source file Time Stamps in the output.

/FP :: include Full Pathname of files in the output.

/BYTES :: Print sizes as bytes.

/NS :: No Size - don't log file sizes.

/NC :: No Class - don't log file classes.

/NFL :: No File List - don't log file names.

/NDL :: No Directory List - don't log directory names.

/NP :: No Progress - don't display percentage copied.

/ETA :: show Estimated Time of Arrival of copied files.

/LOG:file :: output status to LOG file (overwrite existing log).

/LOG+:file :: output status to LOG file (append to existing log).

/UNILOG:file :: output status to LOG file as UNICODE (overwrite existing log).

/UNILOG+:file :: output status to LOG file as UNICODE (append to existing log).

/TEE :: output to console window, as well as the log file.

/NJH :: No Job Header.

/NJS :: No Job Summary.

/UNICODE :: output status as UNICODE.

::

:: Job Options :

::

/JOB:jobname :: take parameters from the named JOB file.

/SAVE:jobname :: SAVE parameters to the named job file

/QUIT :: QUIT after processing command line (to view parameters).

/NOSD :: NO Source Directory is specified.

/NODD :: NO Destination Directory is specified.

/IF :: Include the following Files.

::

:: Remarks :

::

Using /PURGE or /MIR on the root directory of the volume formerly caused

robocopy to apply the requested operation on files inside the System

Volume Information directory as well. This is no longer the case; if

either is specified, robocopy will skip any files or directories with that

name in the top-level source and destination directories of the copy session.

The modified files classification applies only when both source

and destination filesystems support change timestamps (e.g., NTFS)

and the source and destination files have different change times but are

otherwise the same. These files are not copied by default; specify /IM

to include them.

The /DCOPY:E flag requests that extended attribute copying should be

attempted for directories. Note that currently robocopy will continue

if a directory's EAs could not be copied. This flag is also not included

in /COPYALL.

Using /LFSM requests robocopy to operate in 'low free space mode'.

In that mode, robocopy will pause whenever a file copy would cause the

destination volume's free space to go below a 'floor' value, which

can be explicitly specified by the LFSM:n[KMG] form of the flag.

If /LFSM is specified with no explicit floor value, the floor is set to

ten percent of the destination volume's size.

Low free space mode is incompatible with /MT, /EFSRAW, /B, and /ZB.

* **SET**  Displays, sets, or removes cmd.exe environment variables.

SYNTAX 🡪 SET [variable=[string]]

variable Specifies the environment-variable name.

string Specifies a series of characters to assign to the variable.

Type SET without parameters to display the current environment variables.

If Command Extensions are enabled SET changes as follows:

SET command invoked with just a variable name, no equal sign or value will display the value of all variables whose prefix matches the name given to the SET command. For example:

SET P would display all variables that begin with the letter 'P'

SET command will set the ERRORLEVEL to 1 if the variable name is not found in the current environment.

SET command will not allow an equal sign to be part of the name of a variable.

Two new switches have been added to the SET command:

SET /A expression

SET /P variable=[promptString]

The /A switch specifies that the string to the right of the equal sign is a numerical expression that is evaluated. The expression evaluator is pretty simple and supports the following operations, in decreasing

order of precedence:

() - grouping

! ~ - - unary operators

\* / % - arithmetic operators

+ - - arithmetic operators

<< >> - logical shift

& - bitwise and

^ - bitwise exclusive or

| - bitwise or

= \*= /= %= += -= - assignment

&= ^= |= <<= >>=

, - expression separator

If you use any of the logical or modulus operators, you will need to enclose the expression string in quotes. Any non-numeric strings in the expression are treated as environment variable names whose values are converted to numbers before using them. If an environment variable name is specified but is not defined in the current environment, then a value of zero is used. This allows you to do arithmetic with environment variable values without having to type all those % signs to get their values. If SET /A is executed from the command line outside of a command script, then it displays the final value of the expression. The assignment operator requires an environment variable name to the left of the assignment operator. Numeric values are decimal numbers, unless prefixed by 0x for hexadecimal numbers, and 0 for octal numbers. So 0x12 is the same as 18 is the same as 022. Please note that the octal notation can be confusing: 08 and 09 are not valid numbers because 8 and 9 are not valid octal digits.

The /P switch allows you to set the value of a variable to a line of input entered by the user.

Displays the specified promptString before reading the line of input. The promptString can be empty.

Environment variable substitution has been enhanced as follows:

%PATH:str1=str2%

would expand the PATH environment variable, substituting each occurrence of "str1" in the expanded result with "str2". "str2" can be the empty string to effectively delete all occurrences of "str1" from the expanded output. "str1" can begin with an asterisk, in which case it will match everything from the beginning of the expanded output to the first occurrence of the remaining portion of str1.

May also specify substrings for an expansion.

%PATH:~10,5%

would expand the PATH environment variable, and then use only the 5 characters that begin at the 11th (offset 10) character of the expanded result. If the length is not specified, then it defaults to the remainder of the variable value. If either number (offset or length) is negative, then the number used is the length of the environment variable value added to the offset or length specified.

%PATH:~-10%

would extract the last 10 characters of the PATH variable.

%PATH:~0,-2%

would extract all but the last 2 characters of the PATH variable.

Finally, support for delayed environment variable expansion has been added. This support is always disabled by default, but may be

enabled/disabled via the /V command line switch to CMD.EXE. See CMD /?

Delayed environment variable expansion is useful for getting around

the limitations of the current expansion which happens when a line

of text is read, not when it is executed. The following example

demonstrates the problem with immediate variable expansion:

set VAR=before

if "%VAR%" == "before" (

set VAR=after

if "%VAR%" == "after" @echo If you see this, it worked

)

would never display the message, since the %VAR% in BOTH IF statements is substituted when the first IF statement is read, since it logically includes the body of the IF, which is a compound statement. So the IF inside the compound statement is really comparing "before" with "after" which will never be equal. Similarly, the following example will not work as expected:

set LIST=

for %i in (\*) do set LIST=%LIST% %i

echo %LIST%

in that it will NOT build up a list of files in the current directory, but instead will just set the LIST variable to the last file found. Again, this is because the %LIST% is expanded just once when the FOR statement is read, and at that time the LIST variable is empty. So the actual FOR loop we are executing is:

for %i in (\*) do set LIST= %i

which just keeps setting LIST to the last file found.

Delayed environment variable expansion allows you to use a different character (the exclamation mark) to expand environment variables at execution time. If delayed variable expansion is enabled, the above examples could be written as follows to work as intended:

set VAR=before

if "%VAR%" == "before" (

set VAR=after

if "!VAR!" == "after" @echo If you see this, it worked

)

set LIST=

for %i in (\*) do set LIST=!LIST! %i

echo %LIST%

If Command Extensions are enabled, then there are several dynamic environment variables that can be expanded but which don't show up in the list of variables displayed by SET. These variable values are computed dynamically each time the value of the variable is expanded. If the user explicitly defines a variable with one of these names, then that definition will override the dynamic one described below:

%CD% - expands to the current directory string.

%DATE% - expands to current date using same format as DATE command.

%TIME% - expands to current time using same format as TIME command.

%RANDOM% - expands to a random decimal number between 0 and 32767.

%ERRORLEVEL% - expands to the current ERRORLEVEL value

%CMDEXTVERSION% - expands to the current Command Processor Extensions version number.

%CMDCMDLINE% - expands to the original command line that invoked the Command Processor.

%HIGHESTNUMANODENUMBER% - expands to the highest NUMA node number on this machine.

* **SETLOCAL** Begins localization of environment changes in a batch file. Environment changes made after SETLOCAL has been issued are local to the batch file.

ENDLOCAL must be issued to restore the previous settings. When the end of a batch script is reached, an implied ENDLOCAL is executed for any outstanding SETLOCAL commands issued by that batch script.

SYNTAX 🡪 SETLOCAL

If Command Extensions are enabled SETLOCAL changes as follows:

SETLOCAL batch command now accepts optional arguments:

ENABLEEXTENSIONS / DISABLEEXTENSIONS

enable or disable command processor extensions. These arguments takes precedence over the CMD /E:ON or /E:OFF switches. See CMD /? for details.

ENABLEDELAYEDEXPANSION / DISABLEDELAYEDEXPANSION

enable or disable delayed environment variable expansion. These arguments takes precedence over the CMD /V:ON or /V:OFF switches. See CMD /? for details.

These modifications last until the matching ENDLOCAL command, regardless of their setting prior to the SETLOCAL command. The SETLOCAL command will set the ERRORLEVEL value if given an argument. It will be zero if one of the two valid arguments is given and one otherwise. You can use this in batch scripts to determine if the extensions are available, using the following technique:

VERIFY OTHER 2>nul

SETLOCAL ENABLEEXTENSIONS

IF ERRORLEVEL 1 echo Unable to enable extensions

This works because on old versions of CMD.EXE, SETLOCAL does NOT set the ERRORLEVEL value. The VERIFY command with a bad argument initializes the ERRORLEVEL value to a non-zero value.

* **SC** DESCRIPTION:

SC is a command line program used for communicating with the

Service Control Manager and services.

USAGE:

sc <server> [command] [service name] <option1> <option2>...

The option <server> has the form "\\ServerName"

Further help on commands can be obtained by typing: "sc [command]"

Commands:

query-----------Queries the status for a service, or enumerates the status for types of services.

queryex---------Queries the extended status for a service, or enumerates the status for types of services.

start-----------Starts a service.

pause-----------Sends a PAUSE control request to a service.

interrogate-----Sends an INTERROGATE control request to a service.

continue--------Sends a CONTINUE control request to a service.

stop------------Sends a STOP request to a service.

config----------Changes the configuration of a service (persistent).

description-----Changes the description of a service.

failure---------Changes the actions taken by a service upon failure.

failureflag-----Changes the failure actions flag of a service.

sidtype---------Changes the service SID type of a service.

privs-----------Changes the required privileges of a service.

managedaccount--Changes the service to mark the service account password as managed by LSA.

qc--------------Queries the configuration information for a service.

qdescription----Queries the description for a service.

qfailure--------Queries the actions taken by a service upon failure.

qfailureflag----Queries the failure actions flag of a service.

qsidtype--------Queries the service SID type of a service.

qprivs----------Queries the required privileges of a service.

qtriggerinfo----Queries the trigger parameters of a service.

qpreferrednode--Queries the preferred NUMA node of a service.

qmanagedaccount-Queries whether a services uses an account with a password managed by LSA.

qprotection-----Queries the process protection level of a service.

quserservice----Queries for a local instance of a user service template.

delete----------Deletes a service (from the registry).

create----------Creates a service. (adds it to the registry).

control---------Sends a control to a service.

sdshow----------Displays a service's security descriptor.

sdset-----------Sets a service's security descriptor.

showsid---------Displays the service SID string corresponding to an arbitrary name.

triggerinfo-----Configures the trigger parameters of a service.

preferrednode---Sets the preferred NUMA node of a service.

GetDisplayName--Gets the DisplayName for a service.

GetKeyName------Gets the ServiceKeyName for a service.

EnumDepend------Enumerates Service Dependencies.

The following commands don't require a service name:

sc <server> <command> <option>

boot------------(ok | bad) Indicates whether the last boot should

be saved as the last-known-good boot configuration

Lock------------Locks the Service Database

QueryLock-------Queries the LockStatus for the SCManager Database

EXAMPLE:

sc start MyService

QUERY and QUERYEX OPTIONS:

If the query command is followed by a service name, the status for that service is returned. Further options do not apply in this case. If the query command is followed by nothing or one of the options listed below, the services are enumerated.

type= Type of services to enumerate (driver, service, userservice, all)

(default = service)

state= State of services to enumerate (inactive, all)

(default = active)

bufsize= The size (in bytes) of the enumeration buffer

(default = 4096)

ri= The resume index number at which to begin the enumeration

(default = 0)

group= Service group to enumerate

(default = all groups)

SYNTAX EXAMPLES

sc query - Enumerates status for active services & drivers

sc query eventlog - Displays status for the eventlog service

sc queryex eventlog - Displays extended status for the eventlog service

sc query type= driver - Enumerates only active drivers

sc query type= service - Enumerates only Win32 services

sc query state= all - Enumerates all services & drivers

sc query bufsize= 50 - Enumerates with a 50 byte buffer

sc query ri= 14 - Enumerates with resume index = 14

sc queryex group= "" - Enumerates active services not in a group

sc query type= interact - Enumerates all interactive services

sc query type= driver group= NDIS - Enumerates all NDIS drivers

* **SCHTASKS** Description:

Enables an administrator to create, delete, query, change, run and end scheduled tasks on a local or remote system.

SYNTAX 🡪 SCHTASKS /parameter [arguments]

Parameter List:

/Create Creates a new scheduled task.

/Delete Deletes the scheduled task(s).

/Query Displays all scheduled tasks.

/Change Changes the properties of scheduled task.

/Run Runs the scheduled task on demand.

/End Stops the currently running scheduled task.

/ShowSid Shows the security identifier corresponding to a scheduled task name.

/? Displays this help message.

Examples:

SCHTASKS

SCHTASKS /?

SCHTASKS /Run /?

SCHTASKS /End /?

SCHTASKS /Create /?

SCHTASKS /Delete /?

SCHTASKS /Query /?

SCHTASKS /Change /?

SCHTASKS /ShowSid /?

* **SHIFT** Changes the position of replaceable parameters in a batch file.

SYNTAX 🡪SHIFT [/n]

If Command Extensions are enabled the SHIFT command supports

the /n switch which tells the command to start shifting at the

nth argument, where n may be between zero and eight. For example:

SHIFT /2

would shift %3 to %2, %4 to %3, etc. and leave %0 and %1 unaffected.

* **SHUTDOWN** Usage: SHUTDOWN [/i | /l | /s | /sg | /r | /g | /a | /p | /h | /e | /o] [/hybrid] [/soft] [/fw] [/f]

[/m \\computer][/t xxx][/d [p|u:]xx:yy [/c "comment"]]

No args Display help. This is the same as typing /?.

/? Display help. This is the same as not typing any options.

/i Display the graphical user interface (GUI). This must be the first option.

/l Log off. This cannot be used with /m or /d options.

/s Shutdown the computer.

/sg Shutdown the computer. On the next boot, if Automatic Restart Sign-On is enabled, automatically sign in and lock last interactive user. After sign in, restart any registered applications.

/r Full shutdown and restart the computer.

/g Full shutdown and restart the computer. After the system is rebooted, if Automatic Restart Sign-On is enabled, automatically sign in and lock last interactive user. After sign in, restart any registered applications.

/a Abort a system shutdown. This can only be used during the time-out period. Combine with /fw to clear any pending boots to firmware.

/p Turn off the local computer with no time-out or warning. Can be used with /d and /f options.

/h Hibernate the local computer. Can be used with the /f option.

/hybrid Performs a shutdown of the computer and prepares it for fast startup. Must be used with /s option.

/fw Combine with a shutdown option to cause the next boot to go to the firmware user interface.

/e Document the reason for an unexpected shutdown of a computer.

/o Go to the advanced boot options menu and restart the computer. Must be used with /r option.

/m \\computer Specify the target computer.

/t xxx Set the time-out period before shutdown to xxx seconds. The valid range is 0-315360000 (10 years), with a default of 30. If the timeout period is greater than 0, the /f parameter is implied.

/c "comment" Comment on the reason for the restart or shutdown. Maximum of 512 characters allowed.

/f Force running applications to close without forewarning users. The /f parameter is implied when a value greater than 0 is specified for the /t parameter.

/d [p|u:]xx:yy Provide the reason for the restart or shutdown. p indicates that the restart or shutdown is planned. u indicates that the reason is user defined. If neither p nor u is specified the restart or shutdown is unplanned. xx is the major reason number (positive integer less than 256). yy is the minor reason number (positive integer less than 65536).

Reasons on this computer:

(E = Expected U = Unexpected P = planned, C = customer defined)

Type Major Minor Title

U 0 0 Other (Unplanned)

E 0 0 Other (Unplanned)

E P 0 0 Other (Planned)

U 0 5 Other Failure: System Unresponsive

E 1 1 Hardware: Maintenance (Unplanned)

E P 1 1 Hardware: Maintenance (Planned)

E 1 2 Hardware: Installation (Unplanned)

E P 1 2 Hardware: Installation (Planned)

E 2 2 Operating System: Recovery (Unplanned)

E P 2 2 Operating System: Recovery (Planned)

P 2 3 Operating System: Upgrade (Planned)

E 2 4 Operating System: Reconfiguration (Unplanned)

E P 2 4 Operating System: Reconfiguration (Planned)

P 2 16 Operating System: Service pack (Planned)

2 17 Operating System: Hot fix (Unplanned)

P 2 17 Operating System: Hot fix (Planned)

2 18 Operating System: Security fix (Unplanned)

P 2 18 Operating System: Security fix (Planned)

E 4 1 Application: Maintenance (Unplanned)

E P 4 1 Application: Maintenance (Planned)

E P 4 2 Application: Installation (Planned)

E 4 5 Application: Unresponsive

E 4 6 Application: Unstable

U 5 15 System Failure: Stop error

U 5 19 Security issue (Unplanned)

E 5 19 Security issue (Unplanned)

E P 5 19 Security issue (Planned)

E 5 20 Loss of network connectivity (Unplanned)

U 6 11 Power Failure: Cord Unplugged

U 6 12 Power Failure: Environment

P 7 0 Legacy API shutdown

* **SORT**

SYNTAXES 🡪

* SORT [/R] [/+n] [/M kilobytes] [/L locale] [/REC recordbytes]
* [[drive1:][path1]filename1] [/T [drive2:][path2]]
* [/O [drive3:][path3]filename3]

/+n Specifies the character number, n, to begin each comparison. /+3 indicates that each comparison should begin at the 3rd character in each line. Lines with fewer than n characters collate before other lines. By default comparisons start at the first character in each line.

/L[OCALE] locale Overrides the system default locale with the specified one. The ""C"" locale yields the fastest collating sequence and is currently the only alternative. The sort is always case insensitive.

/M[EMORY] kilobytes Specifies amount of main memory to use for the sort, in kilobytes. The memory size is always constrained to be a minimum of 160 kilobytes. If the memory size is specified the exact amount will be used for the sort, regardless of how much main memory is available. The best performance is usually achieved by not specifying a memory size. By default the sort will be done with one pass (no temporary file) if it fits in the default maximum memory size, otherwise the sort will be done in two passes (with the partially sorted data being stored in a temporary file) such that the amounts of memory used for both the sort and merge passes are equal. The default maximum memory size is 90% of available main memory if both the input and output are files, and 45% of main memory otherwise.

/REC[ORD\_MAXIMUM] characters Specifies the maximum number of characters in a record (default 4096, maximum 65535).

/R[EVERSE] Reverses the sort order; that is, sorts Z to A, then 9 to 0.

[drive1:][path1]filename1 Specifies the file to be sorted. If not specified, the standard input is sorted. Specifying the input file is faster than redirecting the same file as standard input.

/T[EMPORARY]

[drive2:][path2] Specifies the path of the directory to hold the sort's working storage, in case the data does not fit in main memory. The default is to use the system temporary directory.

/O[UTPUT]

[drive3:][path3]filename3 Specifies the file where the sorted input is to be stored. If not specified, the data is written to the standard output. Specifying the output file is faster than redirecting standard output to the same file.

* **START** Starts a separate window to run a specified program or command.

SYNTAX 🡪 START ["title"] [/D path] [/I] [/MIN] [/MAX] [/SEPARATE | /SHARED] [/LOW | /NORMAL | /HIGH | /REALTIME | /ABOVENORMAL | /BELOWNORMAL] [/NODE <NUMA node>] [/AFFINITY <hex affinity mask>] [/WAIT] [/B] [command/program] [parameters]

"title" Title to display in window title bar.

path Starting directory.

B Start application without creating a new window. The application has ^C handling ignored. Unless the application enables ^C processing, ^Break is the only way to interrupt the application.

I The new environment will be the original environment passed to the cmd.exe and not the current environment.

MIN Start window minimized.

MAX Start window maximized.

SEPARATE Start 16-bit Windows program in separate memory space.

SHARED Start 16-bit Windows program in shared memory space.

LOW Start application in the IDLE priority class.

NORMAL Start application in the NORMAL priority class.

HIGH Start application in the HIGH priority class.

REALTIME Start application in the REALTIME priority class.

ABOVENORMAL Start application in the ABOVENORMAL priority class.

BELOWNORMAL Start application in the BELOWNORMAL priority class.

NODE Specifies the preferred Non-Uniform Memory Architecture (NUMA) node as a decimal integer.

AFFINITY Specifies the processor affinity mask as a hexadecimal number. The process is restricted to running on these processors.

The affinity mask is interpreted differently when /AFFINITY and /NODE are combined. Specify the affinity mask as if the NUMA node's processor mask is right shifted to begin at bit zero. 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.

WAIT

command/program

Start application and wait for it to terminate. If it is an internal cmd command or a batch file then the command processor is run with the /K switch to cmd.exe. This means that the window will remain after the command has been run.

If it is not an internal cmd command or batch file then it is a program and will run as either a windowed application or a console application.

parameters These are the parameters passed to the command/program.

NOTE: The SEPARATE and SHARED options are not supported on 64-bit platforms.

Specifying /NODE allows processes to be created in a way that leverages memory locality on NUMA systems. For example, two processes that communicate with each other heavily through shared memory can be created to share the same preferred NUMA node in order to minimize memory latencies. They allocate memory from the same NUMA node when possible, and they are free to run on processors outside the specified node.

start /NODE 1 application1.exe

start /NODE 1 application2.exe

These two processes can be further constrained to run on specific processors within the same NUMA node. In the following example, application1 runs on the low-order two processors of the node, while application2 runs on the next two processors of the node. This example assumes the specified node has at least four logical processors. Note that the node number can be changed to any valid node number for that computer without having to change the affinity mask.

start /NODE 1 /AFFINITY 0x3 application1.exe

start /NODE 1 /AFFINITY 0xc application2.exe

If Command Extensions are enabled, external command invocation through the command line or the START command changes as follows:

non-executable files may be invoked through their file association just by typing the name of the file as a command. (e.g. WORD.DOC would launch the application associated with the .DOC file extension). See the ASSOC and FTYPE commands for how to create these associations from within a command script.

When executing an application that is a 32-bit GUI application, CMD.EXE does not wait for the application to terminate before returning to the command prompt. This new behavior does NOT occur if executing within a command script.

When executing a command line whose first token is the string "CMD " without an extension or path qualifier, then "CMD" is replaced with the value of the COMSPEC variable. This prevents picking up CMD.EXE from the current directory.

When executing a command line whose first token does NOT contain an extension, then CMD.EXE uses the value of the PATHEXT environment variable to determine which extensions to look for and in what order. The default value for the PATHEXT variable is:

.COM;.EXE;.BAT;.CMD

Notice the syntax is the same as the PATH variable, with

semicolons separating the different elements.

When searching for an executable, if there is no match on any extension, then looks to see if the name matches a directory name. If it does, the START command launches the Explorer on that path. If done from the command line, it is the equivalent to doing a CD /D to that path.

* **SUBST** Associates a path with a drive letter.

SYNTAX 🡪 SUBST [drive1: [drive2:]path]

SUBST drive1: /D

drive1: Specifies a virtual drive to which you want to assign a path.

[drive2:]path Specifies a physical drive and path you want to assign to a virtual drive.

/D Deletes a substituted (virtual) drive.

Type SUBST with no parameters to display a list of current virtual drives.

* **SYSTEMINFO** Description:

This tool displays operating system configuration information for

a local or remote machine, including service pack levels.

SYNTAX 🡪 SYSTEMINFO [/S system [/U username [/P [password]]]] [/FO format] [/NH]

Parameter List:

/S system Specifies the remote system to connect to.

/U [domain\]user Specifies the user context under which the command should execute.

/P [password] Specifies the password for the given user context. Prompts for input if omitted.

/FO format Specifies the format in which the output is to be displayed. Valid values: "TABLE", "LIST", "CSV".

/NH Specifies that the "Column Header" should not be displayed in the output. Valid only for "TABLE" and "CSV" formats.

/? Displays this help message.

Examples:

SYSTEMINFO

SYSTEMINFO /?

SYSTEMINFO /S system

SYSTEMINFO /S system /U user

SYSTEMINFO /S system /U domain\user /P password /FO TABLE

SYSTEMINFO /S system /FO LIST

SYSTEMINFO /S system /FO CSV /NH

* **TASKLIST** Description: This tool displays a list of currently running processes on either a local or remote machine.

SYNTAX 🡪 TASKLIST [/S system [/U username [/P [password]]]]

[/M [module] | /SVC | /V] [/FI filter] [/FO format] [/NH]

Parameter List:

/S system Specifies the remote system to connect to.

/U [domain\]user Specifies the user context under which the command should execute.

/P [password] Specifies the password for the given user context. Prompts for input if omitted.

/M [module] Lists all tasks currently using the given exe/dll name. If the module name is not specified all loaded modules are displayed.

/SVC Displays services hosted in each process.

/APPS Displays Store Apps and their associated processes.

/V Displays verbose task information.

/FI filter Displays a set of tasks that match a given criteria specified by the filter.

/FO format Specifies the output format. Valid values: "TABLE", "LIST", "CSV".

/NH Specifies that the "Column Header" should not be displayed in the output. Valid only for "TABLE" and "CSV" formats.

/? Displays this help message.

Filters:

Filter Name Valid Operators Valid Value(s)

----------- --------------- --------------------------

STATUS eq, ne RUNNING | SUSPENDED

NOT RESPONDING | UNKNOWN

IMAGENAME eq, ne Image name

PID eq, ne, gt, lt, ge, le PID value

SESSION eq, ne, gt, lt, ge, le Session number

SESSIONNAME eq, ne Session name

CPUTIME eq, ne, gt, lt, ge, le CPU time in the format

of hh:mm:ss.

hh - hours,

mm - minutes, ss - seconds

MEMUSAGE eq, ne, gt, lt, ge, le Memory usage in KB

USERNAME eq, ne User name in [domain\]user

format

SERVICES eq, ne Service name

WINDOWTITLE eq, ne Window title

MODULES eq, ne DLL name

NOTE: "WINDOWTITLE" and "STATUS" filters are not supported when querying a remote machine.

Examples:

TASKLIST

TASKLIST /M

TASKLIST /V /FO CSV

TASKLIST /SVC /FO LIST

TASKLIST /APPS /FI "STATUS eq RUNNING"

TASKLIST /M wbem\*

TASKLIST /S system /FO LIST

TASKLIST /S system /U domain\username /FO CSV /NH

TASKLIST /S system /U username /P password /FO TABLE /NH

TASKLIST /FI "USERNAME ne NT AUTHORITY\SYSTEM" /FI "STATUS eq running"

* **TASKKILL** Description: This tool is used to terminate tasks by process id (PID) or image name.

SYNTAX 🡪 TASKKILL [/S system [/U username [/P [password]]]]

{ [/FI filter] [/PID processid | /IM imagename] } [/T] [/F]

Parameter List:

/S system Specifies the remote system to connect to.

/U [domain\]user Specifies the user context under which the command should execute.

/P [password] Specifies the password for the given user context. Prompts for input if omitted.

/FI filter Applies a filter to select a set of tasks. Allows "\*" to be used. ex. imagename eq acme\*

/PID processid Specifies the PID of the process to be terminated. Use TaskList to get the PID.

/IM imagename Specifies the image name of the process to be terminated. Wildcard '\*' can be used to specify all tasks or image names.

/T Terminates the specified process and any child processes which were started by it.

/F Specifies to forcefully terminate the process(es).

/? Displays this help message.

Filters:

Filter Name Valid Operators Valid Value(s)

----------- --------------- --------------------------

STATUS eq, ne RUNNING | SUSPENDED

NOT RESPONDING | UNKNOWN

IMAGENAME eq, ne Image name

PID eq, ne, gt, lt, ge, le PID value

SESSION eq, ne, gt, lt, ge, le Session number

SESSIONNAME eq, ne Session name

CPUTIME eq, ne, gt, lt, ge, le CPU time in the format

of hh:mm:ss.

hh - hours,

mm - minutes, ss - seconds

MEMUSAGE eq, ne, gt, lt, ge, le Memory usage in KB

USERNAME eq, ne User name in [domain\]user

format

SERVICES eq, ne Service name

WINDOWTITLE eq, ne Window title

MODULES eq, ne DLL name

NOTE :

1) Wildcard '\*' for /IM switch is accepted only when a filter is applied.

2) Termination of remote processes will always be done forcefully (/F).

3) "WINDOWTITLE" and "STATUS" filters are not considered when a remote machine is specified.

Examples:

TASKKILL /IM notepad.exe

TASKKILL /PID 1230 /PID 1241 /PID 1253 /T

TASKKILL /F /IM cmd.exe /T

TASKKILL /F /FI "PID ge 1000" /FI "WINDOWTITLE ne untitle\*"

TASKKILL /F /FI "USERNAME eq NT AUTHORITY\SYSTEM" /IM notepad.exe

TASKKILL /S system /U domain\username /FI "USERNAME ne NT\*" /IM \*

TASKKILL /S system /U username /P password /FI "IMAGENAME eq note\*"

* **TIME** Displays or sets the system time.

SYNTAX 🡪 TIME [/T | time]

Type TIME with no parameters to display the current time setting and a prompt for a new one. Press ENTER to keep the same time.

If Command Extensions are enabled the TIME command supports

the /T switch which tells the command to just output the

current time, without prompting for a new time.

* **TITLE** Sets the window title for the command prompt window.

SYNTAX 🡪 TITLE [string]

string Specifies the title for the command prompt window.

* **TREE** Graphically displays the folder structure of a drive or path.

SYNTAX 🡪 TREE [drive:][path] [/F] [/A]

/F Display the names of the files in each folder.

/A Use ASCII instead of extended characters.

* **TYPE** Displays the contents of a text file or files.

SYNTAX 🡪 TYPE [drive:][path]filename

* **VER** Displays the Windows version.

SYNTAX 🡪 VER

* **VERIFY** Tells cmd.exe whether to verify that your files are written correctly to a disk.

SYNTAX 🡪 VERIFY [ON | OFF]

Type VERIFY without a parameter to display the current VERIFY setting.

* **VOL** Displays the disk volume label and serial number, if they exist.

SYNTAX 🡪 VOL [drive:]

* **XCOPY** Copies files and directory trees.

SYNTAX 🡪

XCOPY source [destination] [/A | /M] [/D[:date]] [/P] [/S [/E]] [/V] [/W] [/C] [/I] [/Q] [/F] [/L] [/G] [/H] [/R] [/T] [/U] [/K] [/N] [/O] [/X] [/Y] [/-Y] [/Z] [/B] [/J] [/EXCLUDE:file1[+file2][+file3]...] [/COMPRESS]

source Specifies the file(s) to copy.

destination Specifies the location and/or name of new files.

/A Copies only files with the archive attribute set, doesn't change the attribute.

/M Copies only files with the archive attribute set, turns off the archive attribute.

/D:m-d-y Copies files changed on or after the specified date. If no date is given, copies only those files whose source time is newer than the destination time.

/EXCLUDE:file1[+file2][+file3]... Specifies a list of files containing strings. Each string should be in a separate line in the files. When any of the strings match any part of the absolute path of the file to be copied, that file will be excluded from being copied. For example, specifying a string like \obj\ or .obj will exclude all files underneath the directory obj or all files with the .obj extension respectively.

/P Prompts you before creating each destination file.

/S Copies directories and subdirectories except empty ones.

/E Copies directories and subdirectories, including empty ones. Same as /S /E. May be used to modify /T.

/V Verifies the size of each new file.

/W Prompts you to press a key before copying.

/C Continues copying even if errors occur.

/I If destination does not exist and copying more than one file, assumes that destination must be a directory.

/Q Does not display file names while copying.

/F Displays full source and destination file names while copying.

/L Displays files that would be copied.

/G Allows the copying of encrypted files to destination that does not support encryption.

/H Copies hidden and system files also.

/R Overwrites read-only files.

/T Creates directory structure, but does not copy files. Does not include empty directories or subdirectories. /T /E includes empty directories and subdirectories.

/U Copies only files that already exist in destination.

/K Copies attributes. Normal Xcopy will reset read-only attributes.

/N Copies using the generated short names.

/O Copies file ownership and ACL information.

/X Copies file audit settings (implies /O).

/Y Suppresses prompting to confirm you want to overwrite an existing destination file.

/-Y Causes prompting to confirm you want to overwrite an existing destination file.

/Z Copies networked files in restartable mode.

/B Copies the Symbolic Link itself versus the target of the link.

/J Copies using unbuffered I/O. Recommended for very large files.

/COMPRESS Request network compression during file transfer where applicable.

The switch /Y may be preset in the COPYCMD environment variable.

This may be overridden with /-Y on the command line.

* **WMIC** The ‘WMIC’ command is a Windows command that stands for Windows Management Instrumentation Command-line interface for interacting with the windows management instrumentation (WMI) infrastructure, which provides access to information about the hardware and software configuration of computer

WMIC is deprecated.

SYNTAX 🡪 [global switches] <command>

The following global switches are available:

/NAMESPACE Path for the namespace the alias operate against.

/ROLE Path for the role containing the alias definitions.

/NODE Servers the alias will operate against.

/IMPLEVEL Client impersonation level.

/AUTHLEVEL Client authentication level.

/LOCALE Language id the client should use.

/PRIVILEGES Enable or disable all privileges.

/TRACE Outputs debugging information to stderr.

/RECORD Logs all input commands and output.

/INTERACTIVE Sets or resets the interactive mode.

/FAILFAST Sets or resets the FailFast mode.

/USER User to be used during the session.

/PASSWORD Password to be used for session login.

/OUTPUT Specifies the mode for output redirection.

/APPEND Specifies the mode for output redirection.

/AGGREGATE Sets or resets aggregate mode.

/AUTHORITY Specifies the <authority type> for the connection.

/?[:<BRIEF|FULL>] Usage information.

For more information on a specific global switch, type: switch-name /?

The following alias/es are available in the current role:

ALIAS - Access to the aliases available on the local system

BASEBOARD - Base board (also known as a motherboard or system board) management.

BIOS - Basic input/output services (BIOS) management.

BOOTCONFIG - Boot configuration management.

CDROM - CD-ROM management.

COMPUTERSYSTEM - Computer system management.

CPU - CPU management.

CSPRODUCT - Computer system product information from SMBIOS.

DATAFILE - DataFile Management.

DCOMAPP - DCOM Application management.

DESKTOP - User's Desktop management.

DESKTOPMONITOR - Desktop Monitor management.

DEVICEMEMORYADDRESS - Device memory addresses management.

DISKDRIVE - Physical disk drive management.

DISKQUOTA - Disk space usage for NTFS volumes.

DMACHANNEL - Direct memory access (DMA) channel management.

ENVIRONMENT - System environment settings management.

FSDIR - Filesystem directory entry management.

GROUP - Group account management.

IDECONTROLLER - IDE Controller management.

IRQ - Interrupt request line (IRQ) management.

JOB - Provides access to the jobs scheduled using the schedule service.

LOADORDER - Management of system services that define execution dependencies.

LOGICALDISK - Local storage device management.

LOGON - LOGON Sessions.

MEMCACHE - Cache memory management.

MEMORYCHIP - Memory chip information.

MEMPHYSICAL - Computer system's physical memory management.

NETCLIENT - Network Client management.

NETLOGIN - Network login information (of a particular user) management.

NETPROTOCOL - Protocols (and their network characteristics) management.

NETUSE - Active network connection management.

NIC - Network Interface Controller (NIC) management.

NICCONFIG - Network adapter management.

NTDOMAIN - NT Domain management.

NTEVENT - Entries in the NT Event Log.

NTEVENTLOG - NT eventlog file management.

ONBOARDDEVICE - Management of common adapter devices built into the motherboard (system board).

OS - Installed Operating System/s management.

PAGEFILE - Virtual memory file swapping management.

PAGEFILESET - Page file settings management.

PARTITION - Management of partitioned areas of a physical disk.

PORT - I/O port management.

PORTCONNECTOR - Physical connection ports management.

PRINTER - Printer device management.

PRINTERCONFIG - Printer device configuration management.

PRINTJOB - Print job management.

PROCESS - Process management.

PRODUCT - Installation package task management.

QFE - Quick Fix Engineering.

QUOTASETTING - Setting information for disk quotas on a volume.

RDACCOUNT - Remote Desktop connection permission management.

RDNIC - Remote Desktop connection management on a specific network adapter.

RDPERMISSIONS - Permissions to a specific Remote Desktop connection.

RDTOGGLE - Turning Remote Desktop listener on or off remotely.

RECOVEROS - Information that will be gathered from memory when the operating system fails.

REGISTRY - Computer system registry management.

SCSICONTROLLER - SCSI Controller management.

SERVER - Server information management.

SERVICE - Service application management.

SHADOWCOPY - Shadow copy management.

SHADOWSTORAGE - Shadow copy storage area management.

SHARE - Shared resource management.

SOFTWAREELEMENT - Management of the elements of a software product installed on a system.

SOFTWAREFEATURE - Management of software product subsets of SoftwareElement.

SOUNDDEV - Sound Device management.

STARTUP - Management of commands that run automatically when users log onto the computer system.

SYSACCOUNT - System account management.

SYSDRIVER - Management of the system driver for a base service.

SYSTEMENCLOSURE - Physical system enclosure management.

SYSTEMSLOT - Management of physical connection points including ports, slots and peripherals, and proprietary connections points.

TAPEDRIVE - Tape drive management.

TEMPERATURE - Data management of a temperature sensor (electronic thermometer).

TIMEZONE - Time zone data management.

UPS - Uninterruptible power supply (UPS) management.

USERACCOUNT - User account management.

VOLTAGE - Voltage sensor (electronic voltmeter) data management.

VOLUME - Local storage volume management.

VOLUMEQUOTASETTING - Associates the disk quota setting with a specific disk volume.

VOLUMEUSERQUOTA - Per user storage volume quota management.

WMISET - WMI service operational parameters management.

For more information on a specific alias, type: alias /?

CLASS - Escapes to full WMI schema.

PATH - Escapes to full WMI object paths.

CONTEXT - Displays the state of all the global switches.

QUIT/EXIT - Exits the program.

For more information on CLASS/PATH/CONTEXT, type: (CLASS | PATH | CONTEXT) /?

**ALL CMD COMMANDS IN BRIEF**

ASSOC Displays or modifies file extension associations.

ATTRIB Displays or changes file attributes.

BREAK Sets or clears extended CTRL+C checking.

BCDEDIT Sets properties in boot database to control boot loading.

CACLS Displays or modifies access control lists (ACLs) of files.

CALL Calls one batch program from another.

CD Displays the name of or changes the current directory.

CHCP Displays or sets the active code page number.

CHDIR Displays the name of or changes the current directory.

CHKDSK Checks a disk and displays a status report.

CHKNTFS Displays or modifies the checking of disk at boot time.

CLS Clears the screen.

CMD Starts a new instance of the Windows command interpreter.

COLOR Sets the default console foreground and background colors.

COMP Compares the contents of two files or sets of files.

COMPACT Displays or alters the compression of files on NTFS partitions.

CONVERT Converts FAT volumes to NTFS. You cannot convert the current drive.

COPY Copies one or more files to another location.

DATE Displays or sets the date.

DEL Deletes one or more files.

DIR Displays a list of files and subdirectories in a directory.

DISKPART Displays or configures Disk Partition properties.

DOSKEY Edits command lines, recalls Windows commands, and creates macros.

DRIVERQUERY Displays current device driver status and properties.

ECHO Displays messages, or turns command echoing on or off.

ENDLOCAL Ends localization of environment changes in a batch file.

ERASE Deletes one or more files.

EXIT Quits the CMD.EXE program (command interpreter).

FC Compares two files or sets of files, and displays the differences between them.

FIND Searches for a text string in a file or files.

FINDSTR Searches for strings in files.

FOR Runs a specified command for each file in a set of files.

FORMAT Formats a disk for use with Windows.

FSUTIL Displays or configures the file system properties.

FTYPE Displays or modifies file types used in file extension associations.

GOTO Directs the Windows command interpreter to a labeled line in a batch program.

GPRESULT Displays Group Policy information for machine or user.

GRAFTABL Enables Windows to display an extended character set in graphics mode.

HELP Provides Help information for Windows commands.

ICACLS Display, modify, backup, or restore ACLs for files and directories.

IF Performs conditional processing in batch programs.

LABEL Creates, changes, or deletes the volume label of a disk.

MD Creates a directory.

MKDIR Creates a directory.

MKLINK Creates Symbolic Links and Hard Links

MODE Configures a system device.

MORE Displays output one screen at a time.

MOVE Moves one or more files from one directory to another directory.

OPENFILES Displays files opened by remote users for a file share.

PATH Displays or sets a search path for executable files.

PAUSE Suspends processing of a batch file and displays a message.

POPD Restores the previous value of the current directory saved by PUSHD.

PRINT Prints a text file.

PROMPT Changes the Windows command prompt.

PUSHD Saves the current directory then changes it.

RD Removes a directory.

RECOVER Recovers readable information from a bad or defective disk.

REM Records comments (remarks) in batch files or CONFIG.SYS.

REN Renames a file or files.

RENAME Renames a file or files.

REPLACE Replaces files.

RMDIR Removes a directory.

ROBOCOPY Advanced utility to copy files and directory trees

SET Displays, sets, or removes Windows environment variables.

SETLOCAL Begins localization of environment changes in a batch file.

SC Displays or configures services (background processes).

SCHTASKS Schedules commands and programs to run on a computer.

SHIFT Shifts the position of replaceable parameters in batch files.

SHUTDOWN Allows proper local or remote shutdown of machine.

SORT Sorts input.

START Starts a separate window to run a specified program or command.

SUBST Associates a path with a drive letter.

SYSTEMINFO Displays machine specific properties and configuration.

TASKLIST Displays all currently running tasks including services.

TASKKILL Kill or stop a running process or application.

TIME Displays or sets the system time.

TITLE Sets the window title for a CMD.EXE session.

TREE Graphically displays the directory structure of a drive or path.

TYPE Displays the contents of a text file.

VER Displays the Windows version.

VERIFY Tells Windows whether to verify that your files are written correctly to a disk.

VOL Displays a disk volume label and serial number.

XCOPY Copies files and directory trees.

WMIC Displays WMI information inside interactive command shell.

IMPORTANT :

1). For more information on the tools; see the command-line reference in the online help.

2). For more information of any command you can type “[command] /?” OR “HELP [COMMAND]”

THANK YOU! ❣