**WINDOWS 7 CMD COMMAND & SYNTEX**

**Collected by G. Chittaranjan Mishra**

**1. APPEND Allows programs to open data files in specified directories as if they were in**

**the current directory**.

APPEND [[drive:]path[;...]] [/X[:ON | :OFF]] [/PATH:ON | /PATH:OFF] [/E]

APPEND ;

 [drive:]path Specifies a drive and directory to append.

 /X:ON Applies appended directories to file searches and

 application execution.

 /X:OFF Applies appended directories only to requests to open files.

 /X:OFF is the default setting.

 /PATH:ON Applies appended directories to file requests that already

 specify a path. /PATH:ON is the default setting.

 /PATH:OFF Turns off the effect of /PATH:ON.

 /E Stores a copy of the appended directory list in an environment

 variable named APPEND. /E may be used only the first time

 you use APPEND after starting your system.

Type APPEND ; to clear the appended directory list.

Type APPEND without parameters to display the appended directory list.

**2. ARP Displays and modifies the IP-to-Physical address translation tables used by**

**address resolution protocol (ARP).**

ARP -s inet\_addr eth\_addr [if\_addr]

ARP -d inet\_addr [if\_addr]

ARP -a [inet\_addr] [-N if\_addr] [-v]

 -a Displays current ARP entries by interrogating the current

 protocol data. If inet\_addr is specified, the IP and Physical

 addresses for only the specified computer are displayed. If

 more than one network interface uses ARP, entries for each ARP

 table are displayed.

 -g Same as -a.

 -v Displays current ARP entries in verbose mode. All invalid

 entries and entries on the loop-back interface will be shown.

 inet\_addr Specifies an internet address.

 -N if\_addr Displays the ARP entries for the network interface specified

 by if\_addr.

 -d Deletes the host specified by inet\_addr. inet\_addr may be

 wildcarded with \* to delete all hosts.

 -s Adds the host and associates the Internet address inet\_addr

 with the Physical address eth\_addr. The Physical address is

 given as 6 hexadecimal bytes separated by hyphens. The entry

 is permanent.

 eth\_addr Specifies a physical address.

 if\_addr If present, this specifies the Internet address of the

 interface whose address translation table should be modified.

 If not present, the first applicable interface will be used.

Example:

 > arp -s 157.55.85.212 00-aa-00-62-c6-09 .... Adds a static entry.

 > arp -a .... Displays the arp table.

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

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.

**4. AT The AT command schedules commands and programs to run on a computer at**

**a specified time and date. The Schedule service must be running to use**

**the AT command.**

AT [\\computername] [ [id] [/DELETE] | /DELETE [/YES]]

AT [\\computername] time [/INTERACTIVE]

 [ /EVERY:date[,...] | /NEXT:date[,...]] "command"

\\computername Specifies a remote computer. Commands are scheduled on the

 local computer if this parameter is omitted.

id Is an identification number assigned to a scheduled

 command.

/delete Cancels a scheduled command. If id is omitted, all the

 scheduled commands on the computer are canceled.

/yes Used with cancel all jobs command when no further

 confirmation is desired.

time Specifies the time when command is to run.

/interactive Allows the job to interact with the desktop of the user

 who is logged on at the time the job runs.

/every:date[,...] Runs the command on each specified day(s) of the week or

 month. If date is omitted, the current day of the month

 is assumed.

/next:date[,...] Runs the specified command on the next occurrence of the

 day (for example, next Thursday). If date is omitted, the

 current day of the month is assumed.

"command" Is the Windows NT command, or batch program to be run.

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

ATTRIB [+R | -R] [+A | -A ] [+S | -S]

 [drive:][path][filename] [/S [/

 + Sets an attribute.

 - Clears an attribute.

 R Read-only file attribute.

 A Archive file attribute.

 S System file attribute.

 H Hidden file attribute.

 I Not content indexed file attribu

 [drive:][path][filename]

 Specifies a file or files for at

 /S Processes matching files in the

 and all subfolders.

 /D Processes folders as well.

 /L Work on the attributes of the Sy

 the target of the Symbolic Link

**6. AuditPol command [<sub-command><options>]**

Commands (only one command permitted per execution)

 /? Help (context-sensitive)

 /get Displays the current audit policy.

 /set Sets the audit policy.

 /list Displays selectable policy elements.

 /backup Saves the audit policy to a file.

 /restore Restores the audit policy from a file.

 /clear Clears the audit policy.

 /remove Removes the per-user audit policy for a user account.

 /resourceSACL Configure global resource SACLs

Use AuditPol <command> /? for details on each command

**7. BREAK Sets or clears extended CTRL+C checking.**

 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.

**8. Bcdboot - Bcd boot file creation and repair tool.**

The bcdboot.exe command-line tool is used to copy critical boot files to the

system partition and to create a new system BCD store.

bcdboot <source> [/l <locale>] [/s <volume-letter>] [/v]

 [/m [{OS Loader ID}]]

 source Specifies the location of the windows system root.

 /l Specifies an optional locale parameter to use when

 initializing the BCD store. The default is US English.

 /s Specifies an optional volume letter parameter to designate

 the target system partition where boot environment files are

 copied. The default is the system partition identified by

 the firmware.

 /v Enables verbose mode.

 /m If an OS loader GUID is provided, this option merges the

 given loader object with the system template to produce a

 bootable entry. Otherwise, only global objects are merged.

Examples: bcdboot c:\windows /l en-us

 bcdboot c:\windows /s h:

 bcdboot c:\windows /m {d58d10c6-df53-11dc-878f-00064f4f4e08}

**9. BCDEDIT Sets properties in boot database to control boot loading.**

 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

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/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**

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/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

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/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

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/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

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/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

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/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

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/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.

**10. Bdehdcfg This command prepares your hard drive for BitLocker Drive Encryption.**

Usage:

BdeHdCfg[.exe]

 [-driveinfo]

 [-target {default | unallocated |

 TargetDriveLetter {shrink | merge}}]

 [-newdriveletter DriveLetter]

 [-size SizeInMegabytes]

 [-quiet] [-restart] [{-? | /?}]

 Command line parameters are not case-sensitive.

Parameters:

 -driveinfo

 Displays information about valid target drives.

 -target

 Specifies the target and operation.

 Specify 'shrink' to create a new active partition.

 Specify 'merge' to make an existing partition active.

 Specify 'unallocated' to use unformatted space on disk.

 Specify 'default' for the target to be chosen automatically.

 Examples: -target D: merge

 -target C: shrink

 -target unallocated

 -target default

 -newdriveletter

 Specifies the desired drive letter for the new drive. This option is

 only valid when a new drive is created.

 Example: -newdriveletter S:

 -size

 Specifies the desired size of the new drive. This option is only valid

 when a new drive is created.

 If not specified, the Drive Preparation Tool assumes the required

 minimum size of 300 megabytes.

 Example: -size 700

 -quiet

 Specifies operation in quiet mode. No output from the drive preparation

 tool is displayed.

 -restart

 Enables an automatic restart after drive preparation.

 You must restart your computer before enabling BitLocker.

 -? or /?

 Displays help for this command.

Examples:

 BdeHdCfg -target c: shrink -newdriveletter x: -size 300 -quiet -restart

 BdeHdCfg -target d: merge -quiet -restart

 BdeHdCfg -target unallocated -newdriveletter s:

 BdeHdCfg -target default

**11. Bootcfg This command line tool can be used to configure, query, change or**

 **delete the boot entry settings in the BOOT.INI file.**

BOOTCFG /parameter [arguments]

 Parameter List:

 /Copy Makes a copy of an existing boot entry.

 /Delete Deletes an existing boot entry from the BOOT.INI file.

 /Query Displays the current boot entries and their settings.

 /Raw Allows the user to specify any switch to be added.

 /Timeout Allows the user to change the Timeout value.

 /Default Allows the user to change the Default boot entry.

 /EMS Allows the user to configure the /redirect switch

 for headless support.

 /Debug Allows the user to specify the port and baudrate for

 remote debugging.

 /Addsw Allows the user to add predefined switches.

 /Rmsw Allows the user to remove predefined switches.

 /Dbg1394 Allows the user to configure 1394 port for debugging.

 /? Displays this help message.

Examples:

 BOOTCFG /Copy /?

 BOOTCFG /Delete /?

 BOOTCFG /Query /?

 BOOTCFG /Raw /?

 BOOTCFG /Timeout /?

 BOOTCFG /EMS /?

 BOOTCFG /Debug /?

 BOOTCFG /Addsw /?

 BOOTCFG /Rmsw /?

 BOOTCFG /Dbg1394 /?

 BOOTCFG /Default /?

 BOOTCFG /?

WARNING: BOOT.INI is used for boot options on Windows XP and earlier

 operating systems. Use the BCDEDIT command line tool to modify

 Windows Vista boot options.

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

 NOTE: Cacls is now deprecated, please use Icacls.

 Displays or modifies access control lists (ACLs) of files

 CACLS filename [/T] [/M] [/L] [/S[:SDDL]] [/E] [/C] [/G user:perm]

 [/R user [...]] [/P user:perm [...]] [/D user [...]]

 filename Displays ACLs.

 /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.

**13. CALL Calls one batch program from another.**

CALL [drive:][path]filename [batch-parameters]

 batch-parameters Specifies any command-line information required by the batch program.

If Command Extensions are enabled CALL changes as follows:

CALL command now accepts labels as the target of the CALL. The syntax is:

 CALL :label arguments

A new batch file context is created with the specified arguments and control is passed to the statement after the label specified. You must "exit" twice by reaching the end of the batch script file twice. The first time you read the end, control will return to just after the CALL statement. The second time will exit the batch script.

Type GOTO /? for a description of the GOTO :EOF extension that will allow you to "return" from a batch script.

In addition, expansion of batch script argument references (%0, %1, etc.) have been changed as follows:

 %\* in a batch script refers to all the arguments (e.g. %1 %2 %3 %4 %5 ...)

 Substitution of batch parameters (%n) has been enhanced. You can now use the following optional syntax:

 %~1 - expands %1 removing any surrounding quotes (")

 %~f1 - expands %1 to a fully qualified path name

 %~d1 - expands %1 to a drive letter only

 %~p1 - expands %1 to a path only

 %~n1 - expands %1 to a file name only

 %~x1 - expands %1 to a file extension only

 %~s1 - expanded path contains short names only

 %~a1 - expands %1 to file attributes

 %~t1 - expands %1 to date/time of file

 %~z1 - expands %1 to size of file

 %~$PATH:1 - searches the directories listed in the PATH environment variable and expands %1 to the fully qualified name of the first one found. If the environment variable name is not defined or the file is not found by the search, then this modifier expands to the empty string

 The modifiers can be combined to get compound results:

 %~dp1 - expands %1 to a drive letter and path only

 %~nx1 - expands %1 to a file name and extension only

 %~dp$PATH:1 - searches the directories listed in the PATH environment variable

for %1 and expands to the drive letter and path of the first one found.

 %~ftza1 - expands %1 to a DIR like output line

 In the above examples %1 and PATH can be replaced by other valid values. The %~ syntax is terminated by a valid argument number. The %~ modifiers may not be used with %\*

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

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.

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

CHCP [nnn]

 nnn Specifies a code page number.

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

**16. CertReq The certreq command is used to perform various certification authority (CA) certificate functions.**

Usage:

 CertReq -?

 CertReq [-v] -?

 CertReq [-Command] -?

 CertReq [-Submit] [Options] [RequestFileIn [CertFileOut [CertChainFileOut [Ful

lResponseFileOut]]]]

 Submit a request to a Certification Authority.

 Options:

 -attrib AttributeString

 -binary

 -PolicyServer PolicyServer

 -config ConfigString

 -Anonymous

 -Kerberos

 -ClientCertificate ClientCertId

 -UserName UserName

 -p Password

 -crl

 -rpc

 -AdminForceMachine

 -RenewOnBehalfOf

 CertReq -Retrieve [Options] RequestId [CertFileOut [CertChainFileOut [FullResp

onseFileOut]]]

 Retrieve a response to a previous request from a Certification Authority.

 Options:

 -binary

 -PolicyServer PolicyServer

 -config ConfigString

 -Anonymous

 -Kerberos

 -ClientCertificate ClientCertId

 -UserName UserName

 -p Password

 -crl

 -rpc

 -AdminForceMachine

 CertReq -New [Options] [PolicyFileIn [RequestFileOut]]

 Create a new request as directed by PolicyFileIn

 Options:

 -attrib AttributeString

 -binary

 -cert CertId

 -PolicyServer PolicyServer

 -config ConfigString

 -Anonymous

 -Kerberos

 -ClientCertificate ClientCertId

 -UserName UserName

 -p Password

 -user

 -machine

 -xchg ExchangeCertFile

 CertReq -Accept [Options] [CertChainFileIn | FullResponseFileIn | CertFileIn]

 Accept and install a response to a previous new request.

 Options:

 -user

 -machine

 CertReq -Policy [Options] [RequestFileIn [PolicyFileIn [RequestFileOut [PKCS10

FileOut]]]]

 Construct a cross certification or qualified subordination request

 from an existing CA certificate or from an existing request.

 Options:

 -attrib AttributeString

 -binary

 -cert CertId

 -PolicyServer PolicyServer

 -Anonymous

 -Kerberos

 -ClientCertificate ClientCertId

 -UserName UserName

 -p Password

 -noEKU

 -AlternateSignatureAlgorithm

 -HashAlgorithm HashAlgorithm

 CertReq -Sign [Options] [RequestFileIn [RequestFileOut]]

 Sign a certificate request with an enrollment agent or qualified

 subordination signing certificate.

 Options:

 -binary

 -cert CertId

 -PolicyServer PolicyServer

 -Anonymous

 -Kerberos

 -ClientCertificate ClientCertId

 -UserName UserName

 -p Password

 -crl

 -noEKU

 -HashAlgorithm HashAlgorithm

 CertReq -Enroll [Options] TemplateName

 CertReq -Enroll -cert CertId [Options] Renew [ReuseKeys]

 Enroll for or renew a certificate.

 Options:

 -PolicyServer PolicyServer

 -user

 -machine

**17. CHANGE The change command changes various terminal server settings like install modes, COM port mappings, and logons**

CHANGE { LOGON | PORT | USER }

**18. CHDIR Displays the name of or changes the current directory.**

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.

**19. CHG LOGON The chglogon command enables, disables, or drains terminal server session logins**

CHANGE LOGON {/QUERY | /ENABLE | /DISABLE | /DRAIN | /DRAINUNTILRESTART}

 /QUERY Query current session login mode.

 /ENABLE Enable user login from sessions.

 /DISABLE Disable user login from sessions.

 /DRAIN Disable new user logons, but allow reconnections to existing session

s.

 /DRAINUNTILRESTART Disable new user logons until the server is restarted, b

ut allow reconnections to existing sessions.

**20. CHGPORT The chgport command can be used to display or change COM port mappings for DOS compatibility.**

CHANGE PORT [portx=porty | /D portx | /QUERY]

 portx=porty Map port x to port y.

 /D portx Delete mapping for port x.

 /QUERY Display current mapping ports.

**21. CHGUSER The chgusr command is used to change the install mode for the terminal server.**

CHANGE USER {/EXECUTE | /INSTALL | /QUERY}

 /EXECUTE Enable execute mode (default).

 /INSTALL Enable install mode.

 /QUERY Display current settings.

**22. CHKDSK Checks a disk and displays a status report.**

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

 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).

 /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)

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

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

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.

**24. CHOICE This tool allows users to select one item from a list**

 **of choices and returns the index of the selected choice.**

CHOICE [/C choices] [/N] [/CS] [/T timeout /D choice] [/M text]

Parameter List:

 /C choices Specifies the list of choices to be created.

 Default list is "YN".

 /N Hides the list of choices in the prompt.

 The message before the prompt is displayed

 and the choices are still enabled.

 /CS Enables case-sensitive choices to be selected.

 By default, the utility is case-insensitive.

 /T timeout The number of seconds to pause before a default

 choice is made. Acceptable values are from 0 to

 9999. If 0 is specified, there will be no pause

 and the default choice is selected.

 /D choice Specifies the default choice after nnnn seconds.

 Character must be in the set of choices specified

 by /C option and must also specify nnnn with /T.

 /M text Specifies the message to be displayed before

 the prompt. If not specified, the utility

 displays only a prompt.

 /? Displays this help message.

 NOTE:

 The ERRORLEVEL environment variable is set to the index of the

 key that was selected from the set of choices. The first choice

 listed returns a value of 1, the second a value of 2, and so on.

 If the user presses a key that is not a valid choice, the tool

 sounds a warning beep. If tool detects an error condition,

 it returns an ERRORLEVEL value of 255. If the user presses

 CTRL+BREAK or CTRL+C, the tool returns an ERRORLEVEL value

 of 0. When you use ERRORLEVEL parameters in a batch program, list

 them in decreasing order.

Examples:

 CHOICE /?

 CHOICE /C YNC /M "Press Y for Yes, N for No or C for Cancel."

 CHOICE /T 10 /C ync /CS /D y

 CHOICE /C ab /M "Select a for option 1 and b for option 2."

 CHOICE /C ab /N /M "Select a for option 1 and b for option 2."

**25. CIPHER Displays or alters the encryption of directories [files] on NTFS partitions.**

 CIPHER [/E | /D | /C]

 [/S:directory] [/B] [/H] [pathname [...]]

 CIPHER /K [/ECC:256|384|521]

 CIPHER /R:filename [/SMARTCARD] [/ECC:256|384|521]

 CIPHER /U [/N]

 CIPHER /W:directory

 CIPHER /X[:efsfile] [filename]

 CIPHER /Y

 CIPHER /ADDUSER [/CERTHASH:hash | /CERTFILE:filename | /USER:username]

 [/S:directory] [/B] [/H] [pathname [...]]

 CIPHER /FLUSHCACHE [/SERVER:servername]

 CIPHER /REMOVEUSER /CERTHASH:hash

 [/S:directory] [/B] [/H] [pathname [...]]

 CIPHER /REKEY [pathname [...]]

 /B Abort if an error is encountered. By default, CIPHER continues

 executing even if errors are encountered.

 /C Displays information on the encrypted file.

 /D Decrypts the specified files or directories.

 /E Encrypts the specified files or directories. Directories will be

 marked so that files added afterward will be encrypted. The

 encrypted file could become decrypted when it is modified if the

 parent directory is not encrypted. It is recommended that you

 encrypt the file and the parent directory.

 /H Displays files with the hidden or system attributes. These files

 are omitted by default.

 /K Creates a new certificate and key for use with EFS. If this

 option is chosen, all the other options will be ignored.

 Note: By default, /K creates a certificate and key that conform

 to current group policy. If ECC is specified, a self-signed

 certificate will be created with the supplied key size.

 /N This option only works with /U. This will prevent keys being

 updated. This is used to find all the encrypted files on the

 local drives.

 /R Generates an EFS recovery key and certificate, then writes them

 to a .PFX file (containing certificate and private key) and a

 .CER file (containing only the certificate). An administrator may

 add the contents of the .CER to the EFS recovery policy to create

 the recovery key for users, and import the .PFX to recover

 individual files. If SMARTCARD is specified, then writes the

 recovery key and certificate to a smart card. A .CER file is

 generated (containing only the certificate). No .PFX file is

 generated.

 Note: By default, /R creates an 2048-bit RSA recovery key and

 certificate. If ECC is specified, it must be followed by a

 key size of 256, 384, or 521.

 /S Performs the specified operation on the given directory and all

 files and subdirectories within it.

 /U Tries to touch all the encrypted files on local drives. This will

 update user's file encryption key or recovery keys to the current

 ones if they are changed. This option does not work with other

 options except /N.

 /W Removes data from available unused disk space on the entire

 volume. If this option is chosen, all other options are ignored.

 The directory specified can be anywhere in a local volume. If it

 is a mount point or points to a directory in another volume, the

 data on that volume will be removed.

 /X Backup EFS certificate and keys into file filename. If efsfile is

 provided, the current user's certificate(s) used to encrypt the

 file will be backed up. Otherwise, the user's current EFS

 certificate and keys will be backed up.

 /Y Displays your current EFS certificate thumbnail on the local PC.

 /ADDUSER Adds a user to the specified encrypted file(s). If CERTHASH is

 provided, cipher will search for a certificate with this SHA1

 hash. If CERTFILE is provided, cipher will extract the

 certificate from the file. If USER is provided, cipher will

 try to locate the user's certificate in Active Directory Domain

 Services.

 /FLUSHCACHE

 Clears the calling user's EFS key cache on the specified server.

 If servername is not provided, cipher clears the user's key cache

 on the local machine.

 /REKEY Updates the specified encrypted file(s) to use the configured

 EFS current key.

 /REMOVEUSER

 Removes a user from the specified file(s). CERTHASH must be the

 SHA1 hash of the certificate to remove.

 directory A directory path.

 filename A filename without extensions.

 pathname Specifies a pattern, file or directory.

 efsfile An encrypted file path.

 Used without parameters, CIPHER displays the encryption state of the

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

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

**26. CLIP Redirects output of command line tools to the Windows clipboard.**

 **This text output can then be pasted into other programs.**

CLIP

Parameter List:

 /? Displays this help message.

Examples:

 DIR | CLIP Places a copy of the current directory

 listing into the Windows clipboard.

 CLIP < README.TXT Places a copy of the text from readme.txt

 on to the Windows clipboard.

**27. CLS Clears the screen.**

**28. CMD Starts a new instance of the Windows command interpreter.**

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:

 1. If all of the following conditions are met, then quote characters on the command line are preserved:

 - no /S switch

 - exactly two quote characters

 - no special characters between the two quote characters, where special is one of: &<>()@^|

 - there are one or more whitespace characters between the two quote characters

 - the string between the two quote characters is the name of an executable file.

 2. Otherwise, old behavior is to see if the first character is a quote character and if so, strip the leading character and remove the last quote character on the command line, preservingany text after the last quote character.

If /D was NOT specified on the command line, then when CMD.EXE starts, itlooks for the following REG\_SZ/REG\_EXPAND\_SZ registry variables, and if either or both are present, they are executed first.

 HKEY\_LOCAL\_MACHINE\Software\Microsoft\Command Processor\AutoRun

 and/or

 HKEY\_CURRENT\_USER\Software\Microsoft\Command Processor\AutoRun

Command Extensions are enabled by default. You may also disable extensions for a particular invocation by using the /E:OFF switch. You can enable or disable extensions for all invocations of CMD.EXE on a machine and/or user logon session by setting either or both of the following REG\_DWORD values in the registry using REGEDIT.EXE:

 HKEY\_LOCAL\_MACHINE\Software\Microsoft\Command Processor\EnableExtensions

 and/or

 HKEY\_CURRENT\_USER\Software\Microsoft\Command Processor\EnableExtensions

to either 0x1 or 0x0. The user specific setting takes precedence over the machine setting. The command line switches take precedence over the registry settings.

In a batch file, the SETLOCAL ENABLEEXTENSIONS or DISABLEEXTENSIONS arguments takes precedence over the /E:ON or /E:OFF switch. See SETLOCAL /? for details.

The command extensions involve changes and/or additions to the following commands:

 DEL or ERASE

 COLOR

 CD or CHDIR

 MD or MKDIR

 PROMPT

 PUSHD

 POPD

 SET

 SETLOCAL

 ENDLOCAL

 IF

 FOR

 CALL

 SHIFT

 GOTO

 START (also includes changes to external command invocation)

 ASSOC

 FTYPE

To get specific details, type commandname /? to view the specifics.

Delayed environment variable expansion is NOT enabled by default. You can enable or disable delayed environment variable expansion for a particular invocation of CMD.EXE with the /V:ON or /V:OFF switch. You can enable or disable delayed expansion for all invocations of CMD.EXE on a

machine and/or user logon session by setting either or both of the following REG\_DWORD values in the registry using REGEDIT.EXE:

 HKEY\_LOCAL\_MACHINE\Software\Microsoft\Command Processor\DelayedExpansion

 and/or

 HKEY\_CURRENT\_USER\Software\Microsoft\Command Processor\DelayedExpansion

to either 0x1 or 0x0. The user specific setting takes precedence over the machine setting. The command line switches take precedence over the registry settings.

In a batch file the SETLOCAL ENABLEDELAYEDEXPANSION or DISABLEDELAYEDEXPANSION arguments takes precedence over the /V:ON or /V:OFF switch. See SETLOCAL /? for details.

If delayed environment variable expansion is enabled, then the exclamation character can be used to substitute the value of an environment variable at execution time.

You can enable or disable file name completion for a particular invocation of CMD.EXE with the /F:ON or /F:OFF switch. You can enable or disable completion for all invocations of CMD.EXE on a machine and/or user logon session by setting either or both of the following REG\_DWORD values in the registry using REGEDIT.EXE:

 HKEY\_LOCAL\_MACHINE\Software\Microsoft\Command Processor\CompletionChar

 HKEY\_LOCAL\_MACHINE\Software\Microsoft\Command Processor\PathCompletionChar

 and/or

 HKEY\_CURRENT\_USER\Software\Microsoft\Command Processor\CompletionChar

 HKEY\_CURRENT\_USER\Software\Microsoft\Command Processor\PathCompletionChar

with the hex value of a control character to use for a particular function (e.g. 0x4 is Ctrl-D and 0x6 is Ctrl-F). The user specific settings take precedence over the machine settings. The command line

switches take precedence over the registry settings.

If completion is enabled with the /F:ON switch, the two control characters used are Ctrl-D for directory name completion and Ctrl-F for file name completion. To disable a particular completion character in the registry, use the value for space (0x20) as it is not a valid control character.

Completion is invoked when you type either of the two control characters. The completion function takes the path string to the left of the cursor appends a wild card character to it if none is already

present and builds up a list of paths that match. It then displays the first matching path. If no paths match, it just beeps and leaves the display alone. Thereafter, repeated pressing of the same control character will cycle through the list of matching paths. Pressing the Shift key with the control character will move through the list backwards. If you edit the line in any way and press the control

character again, the saved list of matching paths is discarded and a new one generated. The same occurs if you switch between file and directory name completion. The only difference between the two control characters is the file completion character matches both file and directory names,

while the directory completion character only matches directory names. If file completion is used on any of the built in directory commands (CD, MD or RD) then directory completion is assumed.

The completion code deals correctly with file names that contain spaces or other special characters by placing quotes around the matching path. Also, if you back up, then invoke completion from within a line, the text to the right of the cursor at the point completion was invoked is discarded.

The special characters that require quotes are:

 <space>

 &()[]{}^=;!'+,`~

**29. CMDKEY Creates, displays, and deletes stored user names and passwords.**

The syntax of this command is:

CMDKEY [{/add | /generic}:targetname {/smartcard | /user:username {/pass{:passwo

rd}}} | /delete{:targetname | /ras} | /list{:targetname}]

Examples:

 To list available credentials:

 cmdkey /list

 cmdkey /list:targetname

 To create domain credentials:

 cmdkey /add:targetname /user:username /pass:password

 cmdkey /add:targetname /user:username /pass

 cmdkey /add:targetname /user:username

 cmdkey /add:targetname /smartcard

 To create generic credentials:

 The /add switch may be replaced by /generic to create generic credentials

 To delete existing credentials:

 cmdkey /delete:targetname

 To delete RAS credentials:

 cmdkey /delete /ras

**30. CMSTP The cmstp command installs or uninstalls a Connection Manager service profile.**

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

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

**32. COMMAND Starts a new instance of the MS-DOS command interpreter.**

COMMAND [[drive:]path] [device] [/E:nnnnn] [/P] [/C string] [/MSG]

 [drive:]path Specifies the directory containing COMMAND.COM file.

 device Specifies the device to use for command input and output.

 /E:nnnnn Sets the initial environment size to nnnnn bytes.

 /P Makes the new command interpreter permanent (can't exit).

 /C string Carries out the command specified by string, and then stops.

 /MSG Specifies that all error messages be stored in memory. You

 need to specify /P with this switch.

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

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

 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.

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

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

COMPACT [/C | /U] [/S[:dir]] [/A] [/I] [/F] [/Q] [filename [...]]

 /C Compresses the specified files. Directories will be marked so that files added

afterward will be compressed.

 /U Uncompresses the specified files. Directories will be marked so that files added

afterward will not be compressed.

 /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. 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.

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

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.

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

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).

**37. CSCRIPT The cscript command is used to execute scripts via Microsoft Script Host.**

Usage: CScript scriptname.extension [option...] [arguments...]

Options:

 //B Batch mode: Suppresses script errors and prompts from displaying

 //D Enable Active Debugging

 //E:engine Use engine for executing script

 //H:CScript Changes the default script host to CScript.exe

 //H:WScript Changes the default script host to WScript.exe (default)

 //I Interactive mode (default, opposite of //B)

 //Job:xxxx Execute a WSF job

 //Logo Display logo (default)

 //Nologo Prevent logo display: No banner will be shown at execution time

 //S Save current command line options for this user

 //T:nn Time out in seconds: Maximum time a script is permitted to run

 //X Execute script in debugger

 //U Use Unicode for redirected I/O from the console

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

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.

**39. DEBUG Runs Debug, a program testing and editing tool.**

DEBUG [[drive:][path]filename [testfile-parameters]]

 [drive:][path]filename Specifies the file you want to test.

 testfile-parameters Specifies command-line information required by

 the file you want to test.

After Debug starts, type ? to display a list of debugging commands.

**40. DEFRAG Locates and consolidates fragmented files on local volumes to**

 **improve system performance.**

Syntax:

 defrag <volumes> | /C | /E <volumes> [/H] [/M | [/U] [/V]]

 defrag <volumes> | /C | /E <volumes> /A [/H] [/M | [/U] [/V]]

 defrag <volumes> | /C | /E <volumes> /X [/H] [/M | [/U] [/V]]

 defrag <volume> /T [/H] [/U] [/V]

Parameters:

 Value Description

 /A Perform analysis on the specified volumes.

 /C Perform the operation on all volumes.

 /E Perform the operation on all volumes except those specified.

 /H Run the operation at normal priority (default is low).

 /M Run the operation on each volume in parallel in the background.

 /T Track an operation already in progress on the specified volume.

 /U Print the progress of the operation on the screen.

 /V Print verbose output containing the fragmentation statistics.

 /X Perform free space consolidation on the specified volumes.

Examples:

 defrag C: /U /V

 defrag C: D: /M

 defrag C:\mountpoint /A /U

 defrag /C /H /V

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

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

 - 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.

**42. DIANTZ Cabinet Maker - Lossless Data Compression Tool**

MAKECAB [/V[n]] [/D var=value ...] [/L dir] source [destination]

MAKECAB [/V[n]] [/D var=value ...] /F directive\_file [...]

 source File to compress.

 destination File name to give compressed file. If omitted, the

 last character of the source file name is replaced

 with an underscore (\_) and used as the destination.

 /F directives A file with MakeCAB directives (may be repeated). Refer to

 Microsoft Cabinet SDK for information on directive\_file.

 /D var=value Defines variable with specified value.

 /L dir Location to place destination (default is current directory).

 /V[n] Verbosity level (1..3).

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

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 - 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.

**44. DISKCOMP Compares the contents of two floppy disks.**

DISKCOMP [drive1: [drive2:]]

**45. DISKCOPY Copies the contents of one floppy disk to another.**

DISKCOPY [drive1: [drive2:]] [/V]

 /V Verifies that the information is copied correctly.

The two floppy disks must be the same type.

You may specify the same drive for drive1 and drive2.

**46. DISKPART Displays or configures Disk Partition properties.**

**47. DISKPERF The diskperf command is used to manage disk performance counters remotely.**

DISKPERF [-Y[D|V] | -N[D|V]] [\\computername]

 -Y Sets the system to start all disk performance counters

 when the system is restarted.

 -YD Enables the disk performance counters for physical drives.

 when the system is restarted.

 -YV Enables the disk performance counters for logical drives

 or storage volumes when the system is restarted.

 -N Sets the system to disable all disk performance counters

 when the system is restarted.

 -ND Disables the disk performance counters for physical drives.

 -NV Disables the disk performance counters for logical drives.

 \\computername Is the name of the computer you want to

 see or set disk performance counter use.

 The computer must be a Windows 2000 system.

 NOTE: Disk performance counters are permanently enabled on

 systems beyond Windows 2000.

**48. DISKRAID The diskraid command starts the DiskRAID tool which is used to manage and configure RAID arrays.**

**49. DISPDIAG Logs display information to a file in the current directory.**

Usage: dispdiag [-testacpi] [-d] [-delay <seconds>] [-out <FilePath>]

 -testacpi runs hotkey diagnostics test

 -d generates a dmp file as well with additional data.

 -delay delays the collection of data by specified time in

seconds.

 -out <FilePath> path where the dispdiag file should be saved, inclu

ding filename. This must be the last parameter

Output:

 Name of the saved file.

**50. DJOIN The djoin command is used to create a new computer account in a domain.**

Usage: djoin.exe [/OPTIONS]

 /PROVISION - Provision a computer account in the domain

 /DOMAIN <Name> - <Name> of the domain to join

 /MACHINE <Name> - <Name> of the computer joining the domain

 /MACHINEOU <OU> - Optional <OU> where the account is created

 /DCNAME <DC> - Optional <DC> to target for account creation

 /REUSE - Reuse any existing account (password will be reset)

 /SAVEFILE <FilePath> - Save provisioning data to a file at <FilePath>

 /NOSEARCH - Skip account conflict detection, requires DCNAME (faster)

 /DOWNLEVEL - Support using a Windows Server 2008 DC or earlier

 /PRINTBLOB - Return base64 encoded metadata blob for an answer file

 /DEFPWD - Use default machine account password (not recommended)

 /REQUESTODJ - Request offline domain join at next boot

 /LOADFILE <FilePath> - <FilePath> specified previously via /SAVEFILE

 /WINDOWSPATH <Path> - <Path> to the Windows directory in an offline image

 /LOCALOS - Allows /WINDOWSPATH to specify the locally running OS.

 This command must be run as a local Administrator.

 This option requires a reboot for changes to be applied.

Examples:

To provision a computer account in the domain:

djoin.exe /PROVISION /DOMAIN <DomainName> /MACHINE <MachineName>

 /SAVEFILE <FilePath>

 Note: Other parameters are optional

To request the local machine to perform an offline domain join:

djoin.exe /REQUESTODJ /LOADFILE <FilePath> /WINDOWSPATH <Path>

 Note: Other parameters are optional

**51. 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.

**52. DRIVERQUERY Displays current device driver status and properties.**

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

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

 ECHO [ON | OFF]

 ECHO [message]

Type ECHO without parameters to display the current echo setting.

**54. EDIT The edit command starts the MS-DOS Editor tool which is used to create and modify text files.**

EDIT [/B] [/H] [/R] [/S] [/<nnn>] [/?] [file(s)]

 /B - Forces monochrome mode.

 /H - Displays the maximum number of lines possible for your hardware.

 /R - Load file(s) in read-only mode.

 /S - Forces the use of short filenames.

 /<nnn> - Load binary file(s), wrapping lines to <nnn> characters wide.

 /? - Displays this help screen.

 [file] - Specifies initial files(s) to load. Wildcards and multiple

 filespecs can be given.

**55. EDLIN Starts Edlin, a line-oriented text editor.**

EDLIN [drive:][path]filename [/B]

 /B Ignores end-of-file (CTRL+Z) characters.

**56. 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.

**57. ERASE Deletes one or more files.**

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

 - 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.

**58. ESENTUTL Database utilities for the Extensible Storage Engine for Microsoft**

**(R) Windows(R).**

MODES OF OPERATION:

 Defragmentation: ESENTUTL /d <database name> [options]

 Recovery: ESENTUTL /r <logfile base name> [options]

 Integrity: ESENTUTL /g <database name> [options]

 Checksum: ESENTUTL /k <file name> [options]

 Repair: ESENTUTL /p <database name> [options]

 File Dump: ESENTUTL /m[mode-modifier] <filename>

 Copy File: ESENTUTL /y <source file> [options]

D=Defragmentation, R=Recovery, G=inteGrity, K=checKsum,

P=rePair, M=file duMp, Y=copY file

=>

**59. EVENTCREATE This command line tool enables an administrator to create**

 **a custom event ID and message in a specified event log.**

EVENTCREATE [/S system [/U username [/P [password]]]] /ID eventid

 [/L logname] [/SO srcname] /T type /D description

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.

 /L logname Specifies the event log to create

 an event in.

 /T type Specifies the type of event to create.

 Valid types: SUCCESS, ERROR, WARNING, INFORMATION.

 /SO source Specifies the source to use for the

 event (if not specified, source will default

 to 'eventcreate'). A valid source can be any

 string and should represent the application

 or component that is generating the event.

 /ID id Specifies the event ID for the event. A

 valid custom message ID is in the range

 of 1 - 1000.

 /D description Specifies the description text for the new event.

 /? Displays this help message.

Examples:

 EVENTCREATE /T ERROR /ID 1000

 /L APPLICATION /D "My custom error event for the application log"

 EVENTCREATE /T ERROR /ID 999 /L APPLICATION

 /SO WinWord /D "Winword event 999 happened due to low diskspace"

 EVENTCREATE /S system /T ERROR /ID 100

 /L APPLICATION /D "Custom job failed to install"

 EVENTCREATE /S system /U user /P password /ID 1 /T ERROR

 /L APPLICATION /D "User access failed due to invalid user credentials"

**60. EXE2BIN Converts .EXE (executable) files to binary format.**

EXE2BIN [drive1:][path1]input-file [[drive2:][path2]output-file]

 input-file Specifies the .EXE file to be converted.

 output-file Specifies the binary file to be created.

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

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.

**62. EXIT Quits the CMD.EXE program (command interpreter) or the current batch**

**script.**

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.

**63. EXPAND Expands one or more compressed files.**

EXPAND [-R] Source Destination

EXPAND -R Source [Destination]

EXPAND -I Source [Destination]

EXPAND -D Source.cab [-F:Files]

EXPAND Source.cab -F:Files Destination

 -R Rename expanded files.

 -I Rename expanded files but ignore directory structure.

 -D Display list of files in source.

 Source Source file specification. Wildcards may be used.

 -F:Files Name of files to expand from a .CAB.

 Destination Destination file | path specification.

 Destination may be a directory.

 If Source is multiple files and -r is not specified,

 Destination must be a directory.

**64. EXTRAC32 The extrac32 command is used to extract the files and folders contained in Microsoft Cabinet (CAB) files.**

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

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.

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

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.

**67. FINDSTR Searches for strings in files.**

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.

**68. FINGER Displays information about a user on a specified system running the**

**Finger service. Output varies based on the remote system.**

FINGER [-l] [user]@host [...]

 -l Displays information in long list format.

 user Specifies the user you want information about. Omit the user

 parameter to display information about all users on the

 specifed host.

 @host Specifies the server on the remote system whose users you

 want information about.

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

FOR %variable IN (set) DO command [command-parameters]

 %variable Specifies a single letter replaceable parameter.

 (set) Specifies a set of one or more files. Wildcards may be used.

 command Specifies the command to carry out for each file.

 command-parameters Specifies parameters or switches for the specified command.

To use the FOR command in a batch program, specify %%variable instead of %variable. Variable names are case sensitive, so %i is different from %I.

If Command Extensions are enabled, the following additional forms of the FOR command are supported:

FOR /D %variable IN (set) DO command [command-parameters]

 If set contains wildcards, then specifies to match against directory names instead of file names.

FOR /R [[drive:]path] %variable IN (set) DO command [command-parameters]

 Walks the directory tree rooted at [drive:]path, executing the FOR statement in each directory of the tree. If no directory specification is specified after /R then the current directory is assumed. If set is just a single period (.) character then it will just enumerate the directory tree.

FOR /L %variable IN (start,step,end) DO command [command-parameters]

 The set is a sequence of numbers from start to end, by step amount. So (1,1,5) would generate the sequence 1 2 3 4 5 and (5,-1,1) would generate the sequence (5 4 3 2 1)

FOR /F ["options"] %variable IN (file-set) DO command [command-parameters]

FOR /F ["options"] %variable IN ("string") DO command [command-parameters]

FOR /F ["options"] %variable IN ('command') DO command [command-parameters]

 or, if usebackq option present:

FOR /F ["options"] %variable IN (file-set) DO command [command-parameters]

FOR /F ["options"] %variable IN ('string') DO command [command-parameters]

FOR /F ["options"] %variable IN (`command`) DO command [command-parameters]

 file-set is one or more file names. Each file is opened, read and processed before going on to the next file in file-set. Processing consists of reading in the file, breaking it up into individual lines of text and then parsing each line into zero or more tokens. The body of the for loop is then called with the variable value(s) set to the found token string(s). By default, /F passes the first blank separated token from each line of each file. Blank lines are skipped. You can override the default parsing behavior by specifying the optional "options" parameter. This is a quoted string which contains one or more keywords to specify different parsing options. The keywords are:

 eol=c - specifies an end of line comment character (just one)

 skip=n - specifies the number of lines to skip at the beginning of the file.

 delims=xxx - specifies a delimiter set. This replaces the default delimiter set

of space and tab.

 tokens=x,y,m-n - specifies which tokens from each line are to be passed to the for body for

each iteration. This will cause additional variable names to be allocated. The m-n form is a range, specifying the mth through the nth tokens. If the last character in the tokens= string is an asterisk, then an additional variable is allocated and receives the remaining text on the line after the last token parsed.

 usebackq - specifies that the new semantics are in force, where a back quoted string is

executed as a command and a single quoted string is a literal string command and allows the use of double quotes to quote file names infile-set.

 Some examples might help:

FOR /F "eol=; tokens=2,3\* delims=, " %i in (myfile.txt) do @echo %i %j %k

 would parse each line in myfile.txt, ignoring lines that begin with a semicolon, passing the 2nd and 3rd token from each line to the for body, with tokens delimited by commas and/or spaces. Notice the for body statements reference %i to get the 2nd token, %j to get the 3rd token, and %k to get all remaining tokens after the 3rd. For file names that contain spaces, you need to quote the filenames with double quotes. In order to use double quotes in this manner, you also need to use the usebackq option, otherwise the double quotes will be interpreted as defining a literal string to parse.

 %i is explicitly declared in the for statement and the %j and %k are implicitly declared via the tokens= option. You can specify up to 26 tokens via the tokens= line, provided it does not cause an attempt to declare a variable higher than the letter 'z' or 'Z'. Remember, FOR variables are single-letter, case sensitive, global, and you can't have more than 52 total active at any one time.

 You can also use the FOR /F parsing logic on an immediate string, by making the file-set between the parenthesis a quoted string, using single quote characters. It will be treated as a single line of input from a file and parsed.

 Finally, you can use the FOR /F command to parse the output of a command. You do this by making the file-set between the parenthesis a back quoted string. It will be treated as a command

 line, which is passed to a child CMD.EXE and the output is captured into memory and parsed as if it was a file. So the following example:

 FOR /F "usebackq delims==" %i IN (`set`) DO @echo %i

 would enumerate the environment variable names in the current environment.

In addition, substitution of FOR variable references has been enhanced. You can now use the following optional syntax:

 %~I - expands %I removing any surrounding quotes (")

 %~fI - expands %I to a fully qualified path name

 %~dI - expands %I to a drive letter only

 %~pI - expands %I to a path only

 %~nI - expands %I to a file name only

 %~xI - expands %I to a file extension only

 %~sI - expanded path contains short names only

 %~aI - expands %I to file attributes of file

 %~tI - expands %I to date/time of file

 %~zI - expands %I to size of file

 %~$PATH:I - searches the directories listed in the PATH environment variable and expands %I to

the fully qualified name of the first one found. If the environment variable name is not defined or the file is not found by the search, then this modifier expands to the empty string

The modifiers can be combined to get compound results:

 %~dpI - expands %I to a drive letter and path only

 %~nxI - expands %I to a file name and extension only

 %~fsI - expands %I to a full path name with short names only

 %~dp$PATH:I - searches the directories listed in the PATH environment variable for %I and

expands to the drive letter and path of the first one found.

 %~ftzaI - expands %I to a DIR like output line

In the above examples %I and PATH can be replaced by other valid values. The %~ syntax is terminated by a valid FOR variable name. Picking upper case variable names like %I makes it more readable and avoids confusion with the modifiers, which are not case sensitive.

**70. FORFILES Selects a file (or set of files) and executes a command on that file. This is helpful for batch jobs.**

FORFILES [/P pathname] [/M searchmask] [/S]

 [/C command] [/D [+ | -] {dd-MM-yyyy | dd}]

Parameter List:

 /P pathname Indicates the path to start searching.

 The default folder is the current working

 directory (.).

 /M searchmask Searches files according to a searchmask.

 The default searchmask is '\*' .

 /S Instructs forfiles to recurse into

 subdirectories. Like "DIR /S".

 /C command Indicates the command to execute for each file.

 Command strings should be wrapped in double

 quotes.

 The default command is "cmd /c echo @file".

 The following variables can be used in the

 command string:

 @file - returns the name of the file.

 @fname - returns the file name without

 extension.

 @ext - returns only the extension of the

 file.

 @path - returns the full path of the file.

 @relpath - returns the relative path of the

 file.

 @isdir - returns "TRUE" if a file type is

 a directory, and "FALSE" for files.

 @fsize - returns the size of the file in

 bytes.

 @fdate - returns the last modified date of the

 file.

 @ftime - returns the last modified time of the

 file.

 To include special characters in the command

 line, use the hexadecimal code for the character

 in 0xHH format (ex. 0x09 for tab). Internal

 CMD.exe commands should be preceded with

 "cmd /c".

 /D date Selects files with a last modified date greater

 than or equal to (+), or less than or equal to

 (-), the specified date using the

 "dd-MM-yyyy" format; or selects files with a

 last modified date greater than or equal to (+)

 the current date plus "dd" days, or less than or

 equal to (-) the current date minus "dd" days. A

 valid "dd" number of days can be any number in

 the range of 0 - 32768.

 "+" is taken as default sign if not specified.

 /? Displays this help message.

Examples:

 FORFILES /?

 FORFILES

 FORFILES /P C:\WINDOWS /S /M DNS\*.\*

 FORFILES /S /M \*.txt /C "cmd /c type @file | more"

 FORFILES /P C:\ /S /M \*.bat

 FORFILES /D -30 /M \*.exe

 /C "cmd /c echo @path 0x09 was changed 30 days ago"

 FORFILES /D 01-01-2001

 /C "cmd /c echo @fname is new since Jan 1st 2001"

 FORFILES /D +16-8-2013 /C "cmd /c echo @fname is new today"

 FORFILES /M \*.exe /D +1

 FORFILES /S /M \*.doc /C "cmd /c echo @fsize"

 FORFILES /M \*.txt /C "cmd /c if @isdir==FALSE notepad.exe @file"

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

FORMAT volume [/FS:file-system] [/V:label] [/Q] [/A:size] [/C] [/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 or UDF).

 /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.

 /A:size Overrides the default allocation unit size. Default settings are strongly

recommended for general use.

 NTFS supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K.

 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:passes Zero every sector on the volume passes times. This switch is not valid with /Q

 /S:state Where "state" is either "enable" or "disable"

 Short names are enabled by default

**72. FSUTIL Displays or configures the file system properties.**

**73. FTP Transfers files to and from a computer running an FTP server service**

**(sometimes called a daemon). Ftp can be used interactively.**

FTP [-v] [-d] [-i] [-n] [-g] [-s:filename] [-a] [-A] [-x:sendbuffer] [-r:recvbuf

fer] [-b:asyncbuffers] [-w:windowsize] [host]

 -v Suppresses display of remote server responses.

 -n Suppresses auto-login upon initial connection.

 -i Turns off interactive prompting during multiple file

 transfers.

 -d Enables debugging.

 -g Disables filename globbing (see GLOB command).

 -s:filename Specifies a text file containing FTP commands; the

 commands will automatically run after FTP starts.

 -a Use any local interface when binding data connection.

 -A login as anonymous.

 -x:send sockbuf Overrides the default SO\_SNDBUF size of 8192.

 -r:recv sockbuf Overrides the default SO\_RCVBUF size of 8192.

 -b:async count Overrides the default async count of 3

 -w:windowsize Overrides the default transfer buffer size of 65535.

 host Specifies the host name or IP address of the remote

 host to connect to.

Notes:

 - mget and mput commands take y/n/q for yes/no/quit.

 - Use Control-C to abort commands.

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

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:

 script 1 2 3

**75. GETMAC This tool enables an administrator to display the MAC address**

 **for network adapters on a system.**

GETMAC [/S system [/U username [/P [password]]]] [/FO format] [/NH] [/V]

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.

 /V Specifies that verbose output is displayed.

 /? Displays this help message.

Examples:

 GETMAC /?

 GETMAC /FO csv

 GETMAC /S system /NH /V

 GETMAC /S system /U user

 GETMAC /S system /U domain\user /P password /FO list /V

 GETMAC /S system /U domain\user /P password /FO table /NH

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

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.

**77. GPRESULT Displays Group Policy information for machine or user.**

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 execute.

 Can not be used with /X, /H.

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

Prompts for input if omitted. Can not be used with /X, /H.

/SCOPE scope Specifies whether the user or the computer settings needs 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 above and Windows Server 2008 and a

bove)

 /H <filename> Saves the report in HTML format at the location and with the file name

specified by the <filename> parameter. (valid in Windows Vista SP1 and above and Windows Server 2008 and a

bove)

 /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

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

GRAFTABL [xxx]

GRAFTABL /STATUS

 xxx Specifies a code page number.

 /STATUS Displays the current code page selected for use with GRAFTABL.

**79. GRAPHICS Loads a program that can print graphics.**

GRAPHICS [type] [[drive:][path]filename] [/R] [/B] [/LCD]

 [/PRINTBOX:STD | /PRINTBOX:LCD]

 type Specifies a printer type (see User's Guide and Reference).

 [drive:][path]filename

 Specifies the file containing information on supported printers.

 /R Prints white on black as seen on the screen.

 /B Prints the background in color for COLOR4 and COLOR8 printers.

 /LCD Prints using LCD aspect ratio.

 /PRINTBOX:STD | /PRINTBOX:LCD

 Specifies the print-box size, either STD or LCD.

**80. HELP Provides Help information for Windows commands.**

HELP [command]

 command - displays help information on that command.

**81. HOSTNAME The hostname command displays the name of the current host.**

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

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.

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 previouly 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 supress 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.

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

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.

 )

The following would NOT work because the del command needs to be terminated by a newline:

 IF EXIST filename. del filename. ELSE echo filename. missing

Nor would the following work, since the ELSE command must be on the same line as the end of the

 IF command:

 IF EXIST filename. del filename.

 ELSE echo filename. missing

The following would work if you want it all on one line:

 IF EXIST filename. (del filename.) ELSE echo filename. missing

If Command Extensions are enabled IF changes as follows:

 IF [/I] string1 compare-op string2 command

 IF CMDEXTVERSION number command

 IF DEFINED variable command

where compare-op may be one of:

 EQU - equal

 NEQ - not equal

 LSS - less than

 LEQ - less than or equal

 GTR - greater than

 GEQ - greater than or equal

and the /I switch, if specified, says to do case insensitive string compares. The /I switch can also be used on the string1==string2 form of IF. These comparisons are generic, in that if both string1 and

string2 are both comprised of all numeric digits, then the strings are converted to numbers and a numeric comparison is performed.

The CMDEXTVERSION conditional works just like ERRORLEVEL, except it is comparing against an internal version number associated with the Command Extensions. The first version is 1. It will be incremented by one when significant enhancements are added to the Command Extensions. CMDEXTVERSION conditional is never true when Command Extensions are disabled.

The DEFINED conditional works just like EXIST except it takes an environment variable name and returns true if the environment variable is defined.

%ERRORLEVEL% will expand into a string representation of the current value of ERRORLEVEL, provided that there is not already an environment variable with the name ERRORLEVEL, in which case you will get its value instead. After running a program, the following illustrates ERRORLEVEL use:

 goto answer%ERRORLEVEL%

 :answer0

 echo Program had return code 0

 :answer1

 echo Program had return code 1

You can also use numerical comparisons above:

 IF %ERRORLEVEL% LEQ 1 goto okay

%CMDCMDLINE% will expand into the original command line passed to CMD.EXE prior to any processing by CMD.EXE, provided that there is not already an environment variable with the name CMDCMDLINE, in which case you will get its value instead.

%CMDEXTVERSION% will expand into a string representation of the current value of CMDEXTVERSION, provided that there is not already an environment variable with the name CMDEXTVERSION, in which case you will get its value instead.

**84. IPCONFIG**

USAGE:

 ipconfig [/allcompartments] [/? | /all |

 /renew [adapter] | /release [adapter] |

 /renew6 [adapter] | /release6 [adapter] |

 /flushdns | /displaydns | /registerdns |

 /showclassid adapter |

 /setclassid adapter [classid] |

 /showclassid6 adapter |

 /setclassid6 adapter [classid] ]

where

 adapter Connection name

 (wildcard characters \* and ? allowed, see examples)

 Options:

 /? Display this help message

 /all Display full configuration information.

 /release Release the IPv4 address for the specified adapter.

 /release6 Release the IPv6 address for the specified adapter.

 /renew Renew the IPv4 address for the specified adapter.

 /renew6 Renew the IPv6 address for the specified adapter.

 /flushdns Purges the DNS Resolver cache.

 /registerdns Refreshes all DHCP leases and re-registers DNS names

 /displaydns Display the contents of the DNS Resolver Cache.

 /showclassid Displays all the dhcp class IDs allowed for adapter.

 /setclassid Modifies the dhcp class id.

 /showclassid6 Displays all the IPv6 DHCP class IDs allowed for adapter

.

 /setclassid6 Modifies the IPv6 DHCP class id.

The default is to display only the IP address, subnet mask and

default gateway for each adapter bound to TCP/IP.

For Release and Renew, if no adapter name is specified, then the IP address

leases for all adapters bound to TCP/IP will be released or renewed.

For Setclassid and Setclassid6, if no ClassId is specified, then the ClassId is

removed.

Examples:

 > ipconfig ... Show information

 > ipconfig /all ... Show detailed information

 > ipconfig /renew ... renew all adapters

 > ipconfig /renew EL\* ... renew any connection that has its

 name starting with EL

 > ipconfig /release \*Con\* ... release all matching connections,

 eg. "Local Area Connection 1" or

 "Local Area Connection 2"

 > ipconfig /allcompartments ... Show information about all

 compartments

 > ipconfig /allcompartments /all ... Show detailed information about all

 compartments

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

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.

**86. LOGOFF The logoff command is used to terminate a session.**

LOGOFF [sessionname | sessionid] [/SERVER:servername] [/V] [/VM]

 sessionname The name of the session.

 sessionid The ID of the session.

 /SERVER:servername Specifies the Remote Desktop server containing the user

 session to log off (default is current).

 /V Displays information about the actions performed.

 /VM Logs off a session on server or within virtual machine. Th

e unique ID of the session needs to be specified.

**86. MAKECAB Cabinet Maker - Lossless Data Compression Tool**

MAKECAB [/V[n]] [/D var=value ...] [/L dir] source [destination]

MAKECAB [/V[n]] [/D var=value ...] /F directive\_file [...]

 source File to compress.

 destination File name to give compressed file. If omitted, the

 last character of the source file name is replaced

 with an underscore (\_) and used as the destination.

 /F directives A file with MakeCAB directives (may be repeated). Refer to

 Microsoft Cabinet SDK for information on directive\_file.

 /D var=value Defines variable with specified value.

 /L dir Location to place destination (default is current directory).

 /V[n] Verbosity level (1..3).

**87. MD Creates a directory.**

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.

**88. MEM Displays the amount of used and free memory in your system.**

MEM [/PROGRAM | /DEBUG | /CLASSIFY]

 /PROGRAM or /P Displays status of programs currently loaded in memory.

 /DEBUG or /D Displays status of programs, internal drivers, and other

 information.

 /CLASSIFY or /C Classifies programs by memory usage. Lists the size of

 programs, provides a summary of memory in use, and lists

 largest memory block available.

**89. MKDIR Creates a directory.**

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.

**90. MKLINK Creates Symbolic Links and Hard Links**

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.

**91. MODE Configures a system device.**

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]

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

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

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

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.

**94. MSG Send a message to a user.**

MSG {username | sessionname | sessionid | @filename | \*}

 [/SERVER:servername] [/TIME:seconds] [/V] [/W] [message]

 username Identifies the specified username.

 sessionname The name of the session.

 sessionid The ID of the session.

 @filename Identifies a file containing a list of usernames,

 sessionnames, and sessionids to send the message to.

 \* Send message to all sessions on specified server.

 /SERVER:servername server to contact (default is current).

 /TIME:seconds Time delay to wait for receiver to acknowledge msg.

 /V Display information about actions being performed.

 /W Wait for response from user, useful with /V.

 message Message to send. If none specified, prompts for it

 or reads from stdin.

**95. NBSTAT Displays protocol statistics and current TCP/IP connections using NBT**

**(NetBIOS over TCP/IP).**

NBTSTAT [ [-a RemoteName] [-A IP address] [-c] [-n]

 [-r] [-R] [-RR] [-s] [-S] [interval] ]

 -a (adapter status) Lists the remote machine's name table given its name

 -A (Adapter status) Lists the remote machine's name table given its

 IP address.

 -c (cache) Lists NBT's cache of remote [machine] names and their IP

 addresses

 -n (names) Lists local NetBIOS names.

 -r (resolved) Lists names resolved by broadcast and via WINS

 -R (Reload) Purges and reloads the remote cache name table

 -S (Sessions) Lists sessions table with the destination IP addresses

 -s (sessions) Lists sessions table converting destination IP

 addresses to computer NETBIOS names.

 -RR (ReleaseRefresh) Sends Name Release packets to WINS and then, starts Refr

esh

 RemoteName Remote host machine name.

 IP address Dotted decimal representation of the IP address.

 interval Redisplays selected statistics, pausing interval seconds

 between each display. Press Ctrl+C to stop redisplaying

 statistics.

**96. NET The net command is used to display, configure, and correct a wide variety of network settings.**

NET

 [ ACCOUNTS | COMPUTER | CONFIG | CONTINUE | FILE | GROUP | HELP |

 HELPMSG | LOCALGROUP | PAUSE | SESSION | SHARE | START |

 STATISTICS | STOP | TIME | USE | USER | VIEW ]

**97. NETCFG The netcfg command is used to install the Windows Preinstallation Environment (WinPE), a lightweight version of Windows used to deploy workstations.**

netcfg [-v] [-e] [-winpe] [-l <full-path-to-component-INF>] -c <p|s|c> -i <comp-

id>

 -winpe installs TCP/IP, NetBIOS and Microsoft Client for Windows preinstallat

ion envrionment

 -l provides the location of INF

 -c provides the class of the component to be installed (p == Protocol, s ==

 Service, c == Client)

 -i provides the component ID

 The arguments must be passed in the order shown.

 Examples:

 netcfg -l c:\oemdir\foo.inf -c p -i foo

 ...installs protocol 'foo' using c:\\oemdir\\foo.inf

 netcfg -c s -i MS\_Server

 ...installs service 'MS\_Server'

OR

netcfg [-v] -winpe

 Examples:

 netcfg -v -winpe

 ...Installs TCP/IP, NetBIOS and Microsoft Client for Windows preinstallation

 environment

OR

netcfg [-v] -q <comp-id>

 Example:

 netcfg -q MS\_IPX

 ...displays if component 'MS\_IPX' is installed

OR

netcfg [-v] [-e] -u <comp-id>

 Example:

 netcfg -u MS\_IPX

 ...uninstalls component 'MS\_IPX'

OR

netcfg [-v] -s <a|n>

 where,

 -s\tprovides the type of components to show

 \ta == adapters, n == net components

 Examples:

 netcfg -s n

 ...shows all installed net components

OR

netcfg [-v] -b <comp-id>

 Examples:

 netcfg -b ms\_tcpip

 ...shows binding paths containing 'MS\_TCPIP'

General Notes:\n"

 -v Run in verbose (detailed) mode

 -e Use servicing environment variables during install and uninstall

 -? Displays this help information

**98. NETSTAT Displays protocol statistics and current TCP/IP network connections.**

NETSTAT [-a] [-b] [-e] [-f] [-n] [-o] [-p proto] [-r] [-s] [-t] [interval]

 -a Displays all connections and listening ports.

 -b Displays the executable involved in creating each connection or

 listening port. In some cases well-known executables host

 multiple independent components, and in these cases the

 sequence of components involved in creating the connection

 or listening port is displayed. In this case the executable

 name is in [] at the bottom, on top is the component it called,

 and so forth until TCP/IP was reached. Note that this option

 can be time-consuming and will fail unless you have sufficient

 permissions.

 -e Displays Ethernet statistics. This may be combined with the -s

 option.

 -f Displays Fully Qualified Domain Names (FQDN) for foreign

 addresses.

 -n Displays addresses and port numbers in numerical form.

 -o Displays the owning process ID associated with each connection.

 -p proto Shows connections for the protocol specified by proto; proto

 may be any of: TCP, UDP, TCPv6, or UDPv6. If used with the -s

 option to display per-protocol statistics, proto may be any of:

 IP, IPv6, ICMP, ICMPv6, TCP, TCPv6, UDP, or UDPv6.

 -r Displays the routing table.

 -s Displays per-protocol statistics. By default, statistics are

 shown for IP, IPv6, ICMP, ICMPv6, TCP, TCPv6, UDP, and UDPv6;

 the -p option may be used to specify a subset of the default.

 -t Displays the current connection offload state.

 interval Redisplays selected statistics, pausing interval seconds

 between each display. Press CTRL+C to stop redisplaying

 statistics. If omitted, netstat will print the current

 configuration information once.

**99. NLTEST The nltest command is used to test secure channels between Windows computers in a domain and between domain controllers that are trusting other domains.**

Usage: Netsh [-a AliasFile] [-c Context] [-r RemoteMachine] [-u [DomainName\]Use

rName] [-p Password | \*]

 [Command | -f ScriptFile]

The following commands are available:

Commands in this context:

? - Displays a list of commands.

add - Adds a configuration entry to a list of entries.

advfirewall - Changes to the `netsh advfirewall' context.

branchcache - Changes to the `netsh branchcache' context.

bridge - Changes to the `netsh bridge' context.

delete - Deletes a configuration entry from a list of entries.

dhcpclient - Changes to the `netsh dhcpclient' context.

dnsclient - Changes to the `netsh dnsclient' context.

dump - Displays a configuration script.

exec - Runs a script file.

firewall - Changes to the `netsh firewall' context.

help - Displays a list of commands.

http - Changes to the `netsh http' context.

interface - Changes to the `netsh interface' context.

ipsec - Changes to the `netsh ipsec' context.

lan - Changes to the `netsh lan' context.

mbn - Changes to the `netsh mbn' context.

namespace - Changes to the `netsh namespace' context.

nap - Changes to the `netsh nap' context.

netio - Changes to the `netsh netio' context.

p2p - Changes to the `netsh p2p' context.

ras - Changes to the `netsh ras' context.

rpc - Changes to the `netsh rpc' context.

set - Updates configuration settings.

show - Displays information.

trace - Changes to the `netsh trace' context.

wcn - Changes to the `netsh wcn' context.

wfp - Changes to the `netsh wfp' context.

winhttp - Changes to the `netsh winhttp' context.

winsock - Changes to the `netsh winsock' context.

wlan - Changes to the `netsh wlan' context.

The following sub-contexts are available:

 advfirewall branchcache bridge dhcpclient dnsclient firewall http interface ips

ec lan mbn namespace nap netio p2p ras rpc trace wcn wfp winhttp winsock wlan

**100. NSLOOKUP The nslookup is most commonly used to display the hostname of an entered IP address. The nslookup command queries your configured DNS server to discover the IP address.**

Usage:

 nslookup [-opt ...] # interactive mode using default server

 nslookup [-opt ...] - server # interactive mode using 'server'

 nslookup [-opt ...] host # just look up 'host' using default server

 nslookup [-opt ...] host server # just look up 'host' using 'server'

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

OPENFILES /parameter [arguments]

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

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 /?

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

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.

**103. PATHPING The pathping command functions much like the tracert command but will also report information about network latency and loss at each hop.**

Usage: pathping [-g host-list] [-h maximum\_hops] [-i address] [-n]

 [-p period] [-q num\_queries] [-w timeout]

 [-4] [-6] target\_name

Options:

 -g host-list Loose source route along host-list.

 -h maximum\_hops Maximum number of hops to search for target.

 -i address Use the specified source address.

 -n Do not resolve addresses to hostnames.

 -p period Wait period milliseconds between pings.

 -q num\_queries Number of queries per hop.

 -w timeout Wait timeout milliseconds for each reply.

 -4 Force using IPv4.

 -6 Force using IPv6.

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

**105. PING The ping command sends an Internet Control Message Protocol (ICMP) Echo Request message to a specified remote computer to verify IP-level connectivity.**

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]

 [-r count] [-s count] [[-j host-list] | [-k host-list]]

 [-w timeout] [-R] [-S srcaddr] [-4] [-6] target\_name

Options:

 -t Ping the specified host until stopped.

 To see statistics and continue - type Control-Break;

 To stop - type Control-C.

 -a Resolve addresses to hostnames.

 -n count Number of echo requests to send.

 -l size Send buffer size.

 -f Set Don't Fragment flag in packet (IPv4-only).

 -i TTL Time To Live.

 -v TOS Type Of Service (IPv4-only. This setting has been deprecated

 and has no effect on the type of service field in the IP Head

er).

 -r count Record route for count hops (IPv4-only).

 -s count Timestamp for count hops (IPv4-only).

 -j host-list Loose source route along host-list (IPv4-only).

 -k host-list Strict source route along host-list (IPv4-only).

 -w timeout Timeout in milliseconds to wait for each reply.

 -R Use routing header to test reverse route also (IPv6-only).

 -S srcaddr Source address to use.

 -4 Force using IPv4.

 -6 Force using IPv6.

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

Changes to the directory stored by the PUSHD command.

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.

**107. PRINT Prints a text file.**

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

 /D:device Specifies a print device.

**108. PROMPT Changes the Windows command prompt.**

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.

 $M Displays the remote name associated with the current drive letter or the empty string if current drive is not a network drive.

**109. PUSHD Saves the current directory then changes it.**

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.

**109. QAPPSRY Displays the available Remote Desktop Session Host servers on the network.**

QUERY TERMSERVER [servername] [/DOMAIN:domain] [/ADDRESS] [/CONTINUE]

 servername Identifies a Remote Desktop Session Host server.

 /DOMAIN:domain Displays information for the specified domain (defaults

 to the current domain).

 /ADDRESS Displays network and node addresses.

 /CONTINUE Does not pause after each screen of information.

**110. QPROCESS Displays information about processes.**

QUERY PROCESS [\* | processid | username | sessionname | /ID:nn | programname]

 [/SERVER:servername]

 \* Display all visible processes.

 processid Display process specified by processid.

 username Display all processes belonging to username.

 sessionname Display all processes running at sessionname.

 /ID:nn Display all processes running at session nn.

 programname Display all processes associated with programname.

 /SERVER:servername The Remote Desktop Session Host server to be queried.

**111. QUSER Display information about users logged on to the system.**

QUERY USER [username | sessionname | sessionid] [/SERVER:servername]

 username Identifies the username.

 sessionname Identifies the session named sessionname.

 sessionid Identifies the session with ID sessionid.

 /SERVER:servername The server to be queried (default is current).

**112. QWINSTA Display information about Remote Desktop Sessions.**

QUERY SESSION [sessionname | username | sessionid]

 [/SERVER:servername] [/MODE] [/FLOW] [/CONNECT] [/COUNTER] [/VM]

 sessionname Identifies the session named sessionname.

 username Identifies the session with user username.

 sessionid Identifies the session with ID sessionid.

 /SERVER:servername The server to be queried (default is current).

 /MODE Display current line settings.

 /FLOW Display current flow control settings.

 /CONNECT Display current connect settings.

 /COUNTER Display current Remote Desktop Services counters informati

on.

 /VM Display information about sessions within virtual machines.

**113. RD Removes a directory.**

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

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

RECOVER [drive:][path]filename

Consult the online Command Reference in Windows Help before using the RECOVER command.

**115. REG The reg command is used to manage the Windows Registry from the command line. The reg command can perform common registry functions like adding registry keys, exporting the registry, etc.**

 REG Operation [Parameter List]

 Operation [ QUERY | ADD | DELETE | COPY |

 SAVE | LOAD | UNLOAD | RESTORE |

 COMPARE | EXPORT | IMPORT | FLAGS ]

Return Code: (Except for REG COMPARE)

 0 - Successful

 1 - Failed

For help on a specific operation type:

 REG Operation /?

Examples:

 REG QUERY /?

 REG ADD /?

 REG DELETE /?

 REG COPY /?

 REG SAVE /?

 REG RESTORE /?

 REG LOAD /?

 REG UNLOAD /?

 REG COMPARE /?

 REG EXPORT /?

 REG IMPORT /?

 REG FLAGS /?

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

 REM [comment]

**117. REN Renames a file or files.**

RENAME [drive:][path]filename1 filename2.

REN [drive:][path]filename1 filename2.

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

**118. RENAME Renames a file or files.**

RENAME [drive:][path]filename1 filename2.

REN [drive:][path]filename1 filename2.

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

**119. REPAIR-bde The repair-bde command is used to repair or decrypt a damaged drive that's been encrypted using BitLocker.**

Usage:

repair-bde[.exe] InputVolume

 { OutputVolumeOrImage | {-NoOutputVolume|-nov} }

 { {-RecoveryPassword|-rp} NumericalPassword |

 {-RecoveryKey|-rk} PathToExternalKeyFile }

 [{-KeyPackage|-kp} PathToKeyPackage]

 [{-LogFile|-lf} PathToLogFile]

 [{-?|/?}]

Description:

 Attempts to repair or decrypt a damaged BitLocker-encrypted volume using the

 supplied recovery information.

 WARNING! To avoid additional data loss, you should have a spare hard drive

 available. Use this spare drive to store decrypted output or to back up the

 contents of the damaged volume.

Parameters:

 InputVolume

 The BitLocker-encrypted volume to repair. Example: "C:".

 OutputVolumeOrImage

 Optional. The volume to store decrypted contents, or the file

 location to create an image file of the contents.

 Examples: "D:", "D:\imagefile.img".

 WARNING! All information on this output volume will be

 overwritten.

 -nov or -NoOutputVolume

 Attempt to repair a BitLocker-encrypted volume by modifying the

 boot sector to point to a valid copy of BitLocker metadata.

 WARNING! To avoid additional data loss, use a sector backup

 utility to back up the input volume before using this option.

 If you do not have such a utility available, specify an output

 volume or image instead.

 -rk or -RecoveryKey

 Provide an external key to unlock the volume.

 Example: "F:\RecoveryKey.bek".

 -rp or -RecoveryPassword

 Provide a numerical password to unlock the volume.

 Example: "111111-222222-333333-...".

 -kp or -KeyPackage

 Optional. Provide a key package to unlock the volume.

 Example: "F:\ExportedKeyPackage"

 If this option is blank, the tool will look for the key package

 automatically. This option is needed only if required by the tool.

 -lf or -LogFile

 Optional. Provide a path to a file that will store progress

 information. Example: "F:\log.txt".

 -f or -Force

 Optional. When used, forces a volume to be dismounted even if

 it cannot be locked. This option is needed only if required by

 the tool.

 -? or /?

 Shows this screen.

Examples:

 repair-bde C: -NoOutputVolume -rk F:\RecoveryKey.bek -Force

 repair-bde C: D: -rp 111111-222222-[...] -lf F:\log.txt

 repair-bde C: D: -kp F:\KeyPackage -rp 111111-222222-[...]

 repair-bde C: D:\imagefile.img -kp F:\KeyPackage -rk F:\RecoveryKey.bek

**120. REPLACE Replaces files.**

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.

**130. RESET The reset command, executed as reset session, is used to reset the session subsystem software and hardware to known initial values.**

RESET { SESSION }

**64. RMDIR Removes a directory.**

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

**65. ROBOCOPY Advanced utility to copy files and directory trees**

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

 ROBOCOPY :: Robust File Copy for Windows

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

 Started : Wed Aug 14 10:25:57 2013

 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.

 /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).

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

 /DCOPY:T :: COPY Directory Timestamps.

 /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.

 /SL :: copy symbolic links versus the target.

 /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.

::

:: 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).

 /XJ :: eXclude Junction points. (normally included by default).

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

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

 /XJD :: eXclude Junction points for Directories.

 /XJF :: eXclude Junction points for Files.

::

:: 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).

::

:: 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 existinglog).

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

 /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.

**66. SET Displays, sets, or removes Windows environment variables.**

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.

**67. SETLOCAL Begins localization of environment changes in a batch file.**

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.

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.

**68. SC Displays or configures services (background processes).**

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.

 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.

 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 ar

bitrary 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

Would you like to see help for the QUERY and QUERYEX commands? [ y | n ]:y

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, 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

**69. SCHTASKS Schedules commands and programs to run on a computer.**

SCHTASKS /parameter [arguments]

Description:

 Enables an administrator to create, delete, query, change, run and

 end scheduled tasks on a local or remote system.

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 t

ask name.

 /? Displays this help message.

Examples:

 SCHTASKS

 SCHTASKS /?

 SCHTASKS /Run /?

 SCHTASKS /End /?

 SCHTASKS /Create /?

 SCHTASKS /Delete /?

 SCHTASKS /Query /?

 SCHTASKS /Change /?

 SCHTASKS /ShowSid /?

**70. SHIFT Shifts the position of replaceable parameters in batch files.**

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.

**71. SHUTDOWN Allows proper local or remote shutdown of machine.**

Usage: SHUTDOWN [/i | /l | /s | /r | /g | /a | /p | /h | /e] [/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.

 /r Shutdown and restart the computer.

 /g Shutdown and restart the computer. After the system is

 rebooted, restart any registered applications.

 /a Abort a system shutdown.

 This can only be used during the time-out period.

 /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.

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

 /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 (Planned)

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

E 5 19 Security issue

E P 5 19 Security issue

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

**72. SORT Sorts input.**

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.

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

START ["title"] [/D path] [/I] [/MIN] [/MAX] [/SEPARATE | /SHARED]

 [/LOW | /NORMAL | /HIGH | /REALTIME | /ABOVENORMAL | /BELOWNORMAL]

 [/AFFINITY <hex affinity>] [/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.

 AFFINITY The new application will have the specified processor

 affinity mask, expressed as a hexadecimal number.

 WAIT Start application and wait for it to terminate.

 command/program

 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.

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.

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

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.

**75. SYSTEMINFO Displays machine specific properties and configuration.**

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

Description:

 This tool displays operating system configuration information for

 a local or remote machine, including service pack levels.

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

**76. TASKLIST Displays all currently running tasks including services.**

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

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

Description:

 This tool displays a list of currently running processes on

 either a local or remote machine.

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.

 /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 |

 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 /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"

**77. TASKKILL Kill or stop a running process or application.**

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

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

Description:

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

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 |

 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.

 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

 MODULES eq, ne DLL name

 SERVICES eq, ne Service name

 WINDOWTITLE eq, ne Window title

 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\*"

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

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.

**79. TITLE Sets the window title for a CMD.EXE session.**

TITLE [string]

 string Specifies the title for the command prompt window.

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

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

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

 /A Use ASCII instead of extended characters.

**81. TYPE Displays the contents of a text file.**

 TYPE [drive:][path]filename

**82. VER Displays the Windows version.**

**83. VERIFY Tells Windows whether to verify that your files are written correctly to a disk.**

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

disk.

VERIFY [ON | OFF]

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

**84. VOL Displays a disk volume label and serial number.**

VOL [drive:]

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

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]

 [/EXCLUDE:file1[+file2][+file3]...]

 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.

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

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

**86. WMIC Displays WMI information inside interactive command shell.**

[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 boa

rd) 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 sche

dule service.

LOADORDER - Management of system services that define execution d

ependencies.

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) mana

gement.

NETPROTOCOL - Protocols (and their network characteristics) managem

ent.

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 m

otherboard (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 ne

twork 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 th

e 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 ins

talled on a system.

SOFTWAREFEATURE - Management of software product subsets of SoftwareEle

ment.

SOUNDDEV - Sound Device management.

STARTUP - Management of commands that run automatically when us

ers 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 po

rts, slots and peripherals, and proprietary connections points.

TAPEDRIVE - Tape drive management.

TEMPERATURE - Data management of a temperature sensor (electronic t

hermometer).

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 dis

k 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) /?