



Operating System Fundamentals

Module 5:

Command Line Usage

The following slides are an outline for the discussion about command line usage, particularly using the Command Shell for Windows.

It is not an exhaustive presentation, rather, it is an outline of the topics that are relevant.

As a practitioner, you should be comfortable with a number of these commands. You can only learn them by using them.

A few words...

- To Start
 - Use the GUI
 - cmd.exe at Run
- Use “exit” to close (or Close button)
- Administrator privileges useful for added functions
- Use Shortcut to C:\Windows\System32\cmd.exe to customize

Invoking the Command Shell (Prompt)

- Syntax:

command [parameters] [switches]

where [] are optional (depending on the command) and switches are indicated by starting with a slash (/)

- Getting help:

- Use the *help* command, or
- Use the */?* switch for a command

General Syntax

- Categories of commands include support for:
 - File system
 - Environment
 - Network
 - Security
 - Task management
 - Batch files (scripting)
- Note that all programs in the GUI can also be invoked from the command prompt
 - Many have switches that are interesting/useful
- See the following for a complete list:
 - <http://technet.microsoft.com/en-us/library/bb490890.aspx>

List of commands

Character	Syntax	Description
& [...]	cmd1 & cmd2	Run commands sequentially.
&& [...]	cmd1 && cmd2	Run cmd2 only if cmd1 is successful.
[...]	cmd1 cmd2	Run cmd2 only if cmd1 fails.
() [...]	(cmd1 & cmd2)	Groups or nests multiple commands.
; or ,	cmd1 parm1;parm2	Parameter separator (also use spaces)

Conditional Command Execution

- .exe, .bat or any other associated file
- Enclose in quotes if spaces are in the pathname

Types of commands that can be executed

- “Global” variables to be used by the operating system and programs running in the operating system
- Use the “SET” command to assign or clear values
- Many variables are system related
- You may create your own variables
- Referenced in script (or command line) by enclosing in percentage signs
 - Eg. echo %UserProfile%

Environment Variables

- Standard input and output can be “redirected” from/to a file
- Less-Than (<) symbol is redirected input
- Greater-Than (>) symbol is redirected output
- For example,
C:\>date <inp uses the text file called “inp” as input to the *date* command
C:\> dir >outfile creates a file called outfile and writes the output of the *dir* command to it

Redirection and Pipes

- Output of a command can be redirected to the input of another one using the pipe (|) symbol

For example,

```
C:\> dir >log
```

```
C:\> more <log
```

can be replace by a single line instruction:

```
C:\> dir | more
```

Redirection and Pipes

- Commands that can take redirected input, manipulate the content in some way, and send output to the standard output device, is known as a “Filter”
- Common filters are:
 - More
 - Find
 - Sort

(Please look up the filters and how they are used.)

Useful filters

- <http://technet.microsoft.com/en-us/library/bb490890.aspx>

References
