Chapter 11: Basic Operating Systems

Complete CompTIA A+ Guide to PCs, 6e
Chapter Objectives

- To identify and use common desktop and home screen icons
- To manipulate files and folders in Windows and mobile devices
- How to modify the Start menu and home screen on mobile devices
- How to create a system image in case of emergencies
- About the Windows registry
- To work from a command prompt
- Techniques to stay current in field
CompTIA A+ Exam Objectives Covered in This Chapter

802-1.1: Compare and contrast the features and requirements of various Microsoft operating systems.
802-1.2: Given a scenario, install, and configure the operating system using the most appropriate method.
802-1.3: Given a scenario, use appropriate command line tools.
802-1.4: Given a scenario, use appropriate operating system features and tools.
802-1.5: Given a scenario, use Control Panel utilities.
802-1.7: Perform preventive maintenance procedures using appropriate tools.
802-1.9: Explain the basics of client-side virtualization.
802-3.1: Explain the basic features of mobile operating systems.
802-4.6: Given a scenario, troubleshoot operating system problems with the appropriate tools.
Operating Systems

Apple's Mac OS X and iOS

Windows XP, Vista, Windows 7, and Windows 8

Unix/Linux, such as Sun Solaris, Red Hat, SUSE, Google Chrome OS, and Android
Operating System Terminology

- GUI (Graphical User Interface)
- Command-based Interface
- File
- Folder
Windows Desktop

- Icons
- Start Button
- Quick Launch Bar
- Taskbar
- Systray
Basic Mobile Device Usage

- Home Screen
- System Bar
- Notification Area
<table>
<thead>
<tr>
<th>Mobile Device Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double tap</td>
</tr>
<tr>
<td>Long touch or touch and hold</td>
</tr>
<tr>
<td>Swipe or flick</td>
</tr>
<tr>
<td>Scroll</td>
</tr>
<tr>
<td>Pinch or pinch close</td>
</tr>
<tr>
<td>Spread or pinch open</td>
</tr>
</tbody>
</table>

![Touch gestures](image)

- Pinch or reduce the size
- Spread or increase the size
- Rotate
Mobile Device Applications

- Email and Texting
- Messaging
- Maps
- Photos
- eBooks
- Web Browser
- Contacts
- Music
- Movies and Video
- Calendar
- GPS (Global Positioning System)
- Geo-Tracking
- Gaming
Windows Files and Folders

Library
File Extension
Indexing
Attributes
Compression
Encryption

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Windows Registry Subtrees

- Hkey_Local_Machine
- Hkey_Users
- Hkey_Current_User
- Hkey_Current_Config
- Hkey_Classes_Root
Virtualization Basics

- Virtualization
- Host Machine
- Virtual Machine
- Hypervisor
- Snapshot
# Command Prompt Basics

<table>
<thead>
<tr>
<th>Change</th>
<th>The read-only attribute marks a file or folder so that it cannot be changed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The hidden attribute marks a file or folder so that it is not visible through Computer or Explorer unless you change the default view.</td>
</tr>
<tr>
<td></td>
<td>Some applications use the archive attribute to control which files or folders are backed up.</td>
</tr>
<tr>
<td></td>
<td>The system attribute is placed on certain files used to boot Windows.</td>
</tr>
</tbody>
</table>

- Root Directory
- Directory
- Subdirectory
- Commands
- Command Switch

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Technicians must stay current in the rapidly changing field of computers. Benefits of staying current include:

1. Being able to understand and troubleshoot the latest technologies.
2. Being able to recommend upgrades or solutions to customers.
3. Saving time troubleshooting (and time is money).
4. Being someone considered for promotion.
CompTIA recommends that you have one year of experience before taking the exam. Students have been able to pass this exam right after taking the course, however. You will have to be good in troubleshooting, the Windows environment, commands, networking, and security in order to pass the exam.

Go into every Windows control panel and ensure that you know what configuration items are controlled by the different control panels.

Be familiar with the commands and how to work in the command prompt environment. The following commands are on the certification exam: ping, tracert, netstat, ipconfig, net, nslookup, nbtstat, taskkill, bootrec, shutdown, tasklist, md, rd, cd, del, fdisk, format, copy, xcopy, robocopy, diskpart, sfc, chkdsk, command /?, fixboot, fixmbr, msconfig, regedit, cmd, services.msc, mmc, mstsc, notepad, explorer, msinfo32, regsvr32, defrag, and dxdiag. Practice these commands (and the various switches used with them) the week before taking the 802 exam. Know when to use them.
• An operating system can use a GUI or a command-line environment.
• Important Windows components include icons, the taskbar, the notification area, the Start button, desktop shortcuts, and the Recycle Bin.
• Right-click on a shortcut and select Properties to see the path to the original file.
• Control panels modify the Windows registry. Technicians commonly use control panels to modify how the hardware, software, and operating system environment functions and appears.
• Windows Explorer is commonly used to manipulate files and folders. Windows My Documents or the various Windows Vista/7 libraries (Documents, Music, Pictures, and Videos) are commonly part of the path to stored documents and subfolders.
• Deleted files are stored on the hard drive in a folder called Recycle Bin. The Recycle Bin must be emptied to release hard drive space. This is relevant only to original files stored on hard drives.
Windows supports encryption and compression. Encrypted files that are moved or copied on NTFS volumes remain encrypted. If an encrypted file or folder is moved to a FAT16 or FAT32 volume, the file/folder is decrypted and the person doing the copying must have authorization to perform encryption.

The Windows registry is a database of everything within the Windows environment. Configuring Control Panel settings modifies the registry. Use regedit or regedt32 to manually modify the registry.

You can recover the operating system by using a Windows or manufacturer-provided recovery disc, a recovery partition, a previously created image, a reload of the operating system and service packs, and using the System Restore tool.

Commands are used in two environments: (1) a command prompt environment used when the GUI tools do not or cannot correct a problem and (2) when using a scripting environment to deploy the operating system and/or updates to multiple computers. Command switches alter the way the command performs or outputs information. Use the command /? or help to receive help on any particular command.

Technicians must stay current in the IT field to move up or maintain their current job status. Methods used to stay current include associations, magazines, classes, books, and peers.