Study Guide
CompTIA A+ 220-802 - Domain 1 – Operating Systems
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The CompTIA A+ 220-802 Objectives are subject to change without notice.

This is the first in a series of four study guides to help you prepare for the CompTIA A+ 220-802 Certification. The second test required to achieve the CompTIA A+ certification will be provided in the Fall of 2013 and it is much harder than the first test. You should use this study guide as a document to list key important facts about each test objective. Space has been left to allow you write your notes.   Also, the author has added information and questions to help clarify some exam objectives. The author's comments will appear in gray. The CompTIA A+ Objectives are in black and are in general outline form.

The table below lists the domains measured by this examination, as well as the extent to which they are represented. The CompTIA A+ 220-802 certification exam is currently based on these objectives.

Domain #	Percent of Exam
Operating Systems	33 %
Security	22 %
Mobile Devices	9 %
Troubleshooting	36 %
Total	100 %

**Note: The lists of examples provided in bulleted format below each objective are not exhaustive lists. Other examples of technologies, processes or tasks pertaining to each objective may also be included on the exam, even though it is not listed or covered in this objectives document.

Remember the CompTIA A+ 220-802 Objectives are subject to change without notice so you should always check the CompTIA website and review the latest A+ certification Objectives.

The second test 220-802 is much harder than the first test 220-801. There is a lot of material covered, and it definitely requires some hands-on experience. Many questions will be in scenario format requiring you to think and apply knowledge and make decisions based upon the situation, rather than questions that require simple memorization of facts.   Always read the questions carefully.

The first domain is operating system which can prove to be quite difficult especially when you are required to contrast the different operating system features. The first domain objectives are quite extensive and account for 33% of the test objectives. The only domain objective larger is the troubleshooting domain which represents 36 % of the test objectives.

1.0 Operating Systems

1.1 Compare and contrast the features and requirements of various Microsoft Operating Systems.
- Windows XP Home, Windows XP Professional, Windows XP Media Center, Windows XP 64-bit Professional
- Windows Vista Home Basic, Windows Vista Home Premium, Windows Vista Business, Windows Vista Ultimate, Windows Vista Enterprise
- Windows 7 Starter, Windows 7 Home Premium, Windows 7 Professional, Windows 7 Ultimate, Windows 7 Enterprise
- Features:

32-bit vs. 64-bit
Aero, gadgets, user account control, bit-locker, shadow copy, system restore, ready boost, sidebar, compatibility mode, XP mode, easy transfer, administrative tools, defender, Windows firewall, security center, event viewer, file structure and paths, category view vs. classic view
Upgrade paths – differences between in place upgrades, compatibility tools, Windows upgrade OS advisor

Briefly, describe the function or purpose of each item in the list below. Also list which operating systems support the feature, and how do you run/access the feature.

Aero

Gadgets

Shadow Copy

Bit-locker

User Account Control

System Restore

Easy Transfer

Ready Boost

Sidebar

Compatibility mode

 XP mode

Administrative tools

Defender

Windows firewall
Security center

Event viewer

File structure and paths, category view vs. classic view

What are the advantages to 64-bit as compared to 32-bit operating systems?

How do the file directory file structures/paths vary between each operating system? Focus on User files, and System file locations.

What are the different upgrade paths for each operating system.

What is the function of Windows compatibility tools?

What is the function of Windows upgrade OS advisor?

You may want to review some past newsletter at RMRoberts.com articles (links provided below) for the test objective related to "Upgrade paths – differences between in place upgrades, compatibility tools, Windows upgrade OS advisor". Check the following links:

January 2013 Newsletter from RMRoberts.com
http://www.rmroberts.com/FTP_files/Newsletters/NewsletterJanuary2013.pdf

Windows Unattended Installation Methods and Tools, by RMRoberts.com
http://www.rmroberts.com/FTP_files/CSR2012/Windows-Unattended-InstallationMethodsandToolsArticle.pdf

Performing a Windows 7 Upgrade
http://www.rmroberts.com/FTP_files/CSR2012/NewLabUpgradingVistatoWindows7.pdf

Introduction to Windows 7
http://www.rmroberts.com/FTP_files/CSR2012/IntroductiontoWindows7forWebsite.pdf

Windows 7 Installation Pop Quiz
http://www.rmroberts.com/FTP_files/CSR2012/CompTIAWindows7RelatedQuestions.pdf

1.2 Given a scenario, install, and configure the operating system using the most appropriate method.

- Boot methods

USB

CD-ROM

DVD

PXE

- Type of installations

Creating image

Unattended installation

Upgrade

Clean install

Repair installation

Multiboot

Remote network installation

Image deployment

- Partitioning

Dynamic

Basic

Primary

Extended

Logical

- File system types/formatting

FAT
FAT32
NTFS
CDFS
Quick format vs. full format

- Load alternate third party drivers when necessary

Workgroup vs. Domain setup
Time/date/region/language settings
Driver installation, software and windows updates
Factory recovery partition

1.3 Given a scenario, use appropriate command line tools.

- Networking

PING
TRACERT
NETSTAT
IPCONFIG
NET
NSLOOKUP
NBTSTAT
OS
KILL
BOOTREC
SHUTDOWN
TLIST
MD
RD
CD
DEL
FDISK
FORMAT
COPY
XCOPY
ROBOCOPY
DISKPART
SFC
CHKDSK
[command name] /?

- Recovery console

Fixboot

Fixmbr

1.4 Given a scenario, use appropriate operating system features and tools.

- Administrative

Computer management

Device manager

Users and groups

Local security policy

Performance monitor

Services

System configuration

Task scheduler

Component services

Data sources

Print management

Windows memory diagnostics

Windows firewall

Advanced security

- MSCONFIG

General

Boot

Services

Startup

Tools

Task Manager

Applications

Processes

Performance

Networking

Users

- Disk management

Drive status

Mounting

Extending partitions

Splitting partitions

Assigning drive letters

Adding drives

Adding arrays

- Other

User State Migration tool (USMT), File and Settings Transfer Wizard, Windows Easy

Transfer

- Run line utilities

MSCONFIG

REGEDIT

CMD

SERVICES.MSC

MMC

MSTSC

NOTEPAD

EXPLORER

MSINFO32

DXDIAG

1.5 Given a scenario, use Control Panel utilities (the items are organized by "classic view/large icons" in Windows).

Common to all Microsoft Operating Systems

- Internet options

Connections

Security

General

Privacy

Programs

Advanced

Display Resolution

User accounts

- Folder options

Sharing

View hidden files

Hide extensions

Layout

- System

Performance (virtual memory)

Hardware profiles

Remote settings

System protection

Security center

Windows firewall

- Power options

Hibernate

Power plans

Sleep/suspend

Standby

- Unique to Windows XP

Add/remove programs

Network connections

Printers and faxes

Automatic updates

Network setup wizard

- Unique to Vista

Tablet PC settings

Pen and input devices

Offline files

Problem reports and solutions

Printers

- Unique to Windows 7

HomeGroup

Action center

Remote applications and desktop applications

Troubleshooting

1.6 Setup and configure Windows networking on a client/desktop.

- HomeGroup, file/print sharing
- WorkGroup vs. domain setup
- Network shares/mapping drives
- Establish networking connections

VPN

Dialups

Wireless

Wired

WWAN (Cellular)

- Proxy settings
- Remote desktop
- Home vs. Work vs. Public network settings
- Firewall settings

Exceptions

Configuration

Enabling/disabling Windows firewall

- Configuring an alternative IP address in Windows

IP addressing

Subnet mask

DNS

Gateway

- Network card properties

Half duplex/full duplex/auto

Speed

Wake-on-LAN

PoE

QoS

1.7 Perform preventive maintenance procedures using appropriate tools.

- Best practices

Schedules backups

Scheduled check disks

Scheduled defragmentation

Windows updates

Patch management

Driver/firmware updates

Antivirus updates

- Tools

Backup

System restore

Check disk

Recovery image

Defrag

1.8 Explain the differences among basic OS security settings.

- User and groups

Administrator

Power user

Guest

Standard user

- NTFS vs. Share permissions

Allow vs. deny

Moving vs. copying folders and files

File attributes

- Shared files and folders

Administrative shares vs. local shares

Permission propagation

Inheritance

- System files and folders

- User authentication

Single sign-on

1.9 Explain the basics of client-side virtualization.

- Purpose of virtual machines
- Resource requirements
- Emulator requirements
- Security requirements
- Network requirements
- Hypervisor