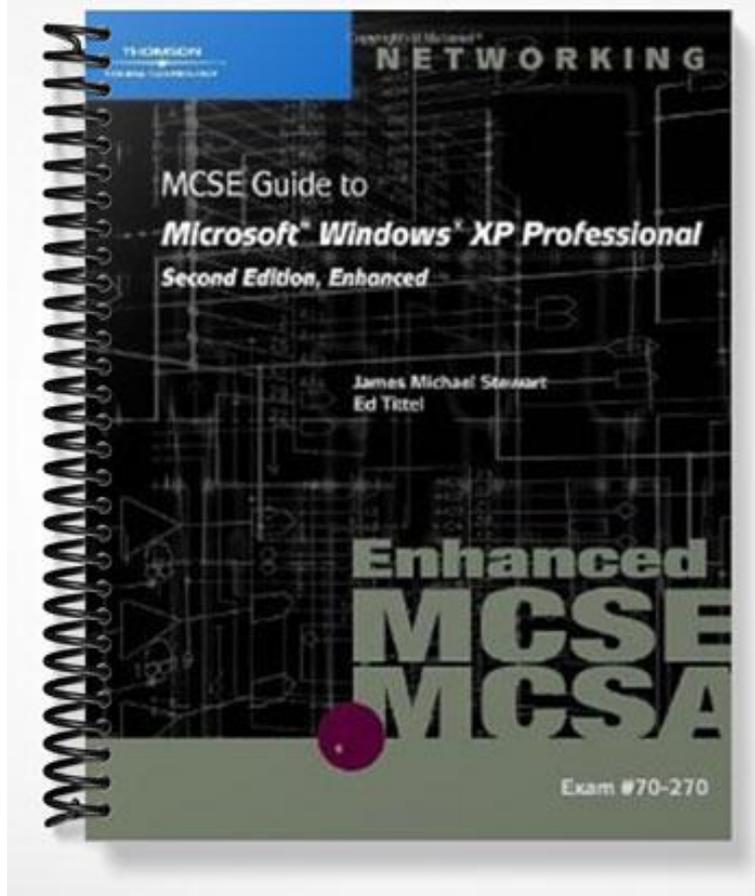
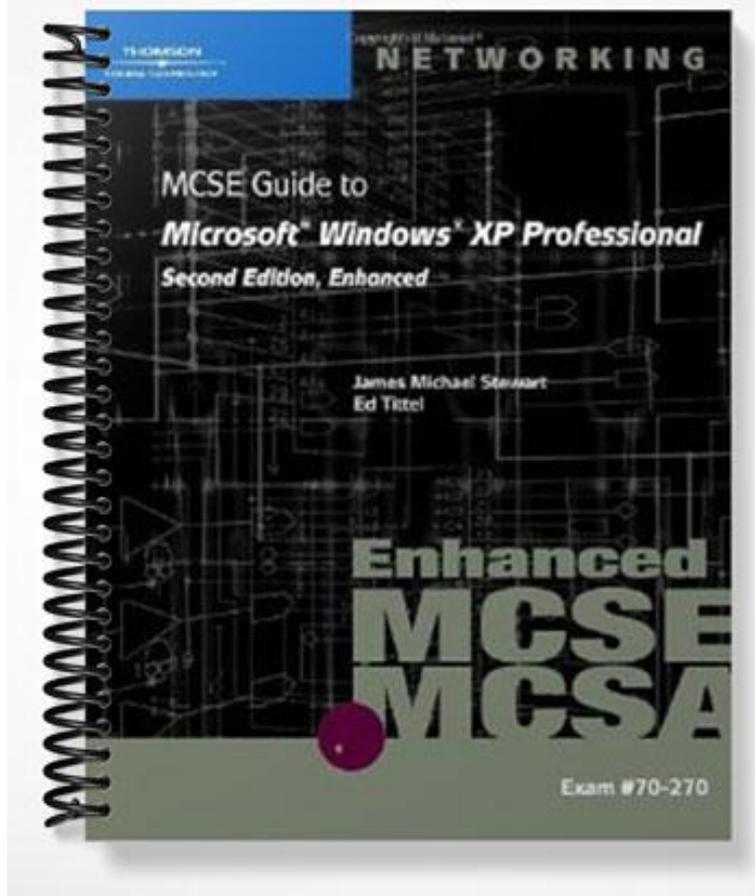


SOLUTIONS MANUAL



SOLUTIONS MANUAL



Chapter 2: Installing Windows XP Professional

Objectives

After reading this chapter and completing the exercises, you will be able to:

- Determine if an upgrade is possible
- Boot multiple operating systems
- Plan an installation or upgrade
- Understand the types of installations available
- Work with important setup and advanced installation options
- Work with WINNT and WINNT32
- Understand partitioning, volume licensing, and activating Windows XP
- Set up Windows XP Professional and upgrade to multiple processors
- Remove Windows XP Professional

Teaching Tips

Upgrading Versus Installing

1. Discuss the fact that, although in most situations you will probably desire a clean installation, there are definitely possibilities and scenarios in which upgrading your machine is the best option. For example, upgrading is easier for those not technologically savvy. By upgrading, there is a lesser chance that the user will do something wrong and accidentally destroy all data stored on the machine.
2. The next couple of sections describe the two installation options in more detail.

Upgrading

1. Explain some of the benefits of upgrading. The main benefit is the ability to retain settings and other information from a previous Windows installation. Settings that can be retained include password files, desktop settings, and other general configuration.
2. Discuss which operating systems can be upgraded. The list of operating systems that can be upgraded differs based upon whether you desire to upgrade to Windows XP Professional or Home Edition.
3. Windows XP Professional can upgrade: Windows 95 OSR2, Windows 98, Windows 98 SE, Windows ME, Windows NT 4.0 Workstation, Windows 2000 Professional, Windows XP Home Edition, and Windows 95.
4. Windows XP Home Edition can upgrade Windows 98, Windows 98 SE and Windows ME.
5. Server versions of the Windows operating system cannot be used to upgrade a system.
6. Explain what settings are not retained when upgrading. System utilities and drivers specific to the existing OS are not retained during an upgrade.
7. Discuss the problem with compressed backups and their incompatibilities between older versions of Windows and Windows XP.

Clean Installation

1. A clean installation is probably the method of choice for most people. Explain that anytime the configuration settings of your old operating system are unimportant, a clean installation is the best choice. This rule also applies to the cases in which there are known configuration problems or corruptions in your old installation. Upgrading may actually make the problem worse. A clean install would ensure that all previous corruptions were erased before the new operating was applied.

Windows XP Upgrade Advisor

1. Describe the Upgrade Advisor utility and how it determines whether or not a system can be upgraded to Windows XP.
2. The Upgrade Advisor utility is easy to use and can be downloaded from the address www.microsoft.com/windowsxp/pro/howtobuy/upgrading/advisor.asp.
3. Make sure everyone knows that they will probably need a high-speed Internet access to download the utility as it is 50 MB in size.
4. Discuss how this utility can be useful in determining the problems that will be encountered during an upgrade before actually performing the upgrade itself.

Booting Multiple Operating Systems

1. Discuss the fact that more than one operating system can exist concurrently on a computer and that each operating system will reside in its own partition.
2. Explain that Windows XP will not try to overwrite or destroy your existing operating systems unless it is told to through the deletion or modification of partition information.
3. Whenever you install multiple operating systems on a computer, they should always be installed in chronological order by release date. This is easy if installing multiple Windows operating systems but is more difficult when Windows is mixed with other operating systems such as Linux.
4. Discuss the fact that third party boot managers are required when dual booting Windows XP with Linux operating systems.

Teaching Tip

Anytime you install multiple operating systems, you should always assume that the worst will happen, as it often does. Back up all data before attempting the procedure. If something is done incorrectly, you may not be able to boot your machine or prevent data loss.

Planning the Installation

1. Discuss the numerous considerations for preparing an operating system introduced in this section of the text. They are repeated here for convenience.
2. Before installing an operating system, always consider the following: type of installation, partition on which the OS files will be stored, the minimum hardware requirements of the operating system, and planning ahead for multiple CPUs.

3. You may install an upgrade if: the current OS is supported as a platform that Windows XP Professional can upgrade, you want to replace your current OS with Windows XP, or you are prepared to handle possible problems with incompatibilities.
4. You may perform a clean installation if: your system has a freshly formatted hard drive, you want to install Windows XP Professional but have no upgradeable operating systems installed, you want to replace your OS, or you want to create a dual-boot configuration.

Types of Attended Installations

1. Discuss that the term attended in this case refers to manual.
2. Explain the difference between a network and CD installation if necessary.
3. Discuss the different options available for installation. These include: CD-ROM, network share, or a local folder on the hard disk. Most people will install the operating system using a CD-ROM device.

Installing over the Network

1. Explain that an existing OS must exist for this type of installation to be possible. Using a network share is very similar to using a local device.
2. Discuss the permission requirements necessary to install the operating system over the network and the two commands WINNT and WINNT32 used to initiate the installation process.

Activity 2-1: Network Installation Setup

1. In this activity, students will prepare a Windows 2000 Server or a Windows 2003 Server as a network installation point for Windows XP Professional.

CD-ROM Installation Launched from Setup Boot Floppies

1. Describe this very common method of initiating an installation. Once extremely popular, this method is becoming less and less popular as bootable CD support becomes prevalent. Explain that multiple floppy disks are used to instruct Windows XP to start the installation process from a CD-ROM locally available.
2. If needed, a utility to create bootable floppy disks can be found at the URL www.microsoft.com/downloads.

Using a Bootable CD

1. The Windows XP Professional CD is self-booting. Therefore, whenever possible, you this method in place of having to create floppy disks.
2. Explain that this method of installation is the most common type for individual installations.

Quick Quiz

1. (T/F) The Windows XP Professional CD is self-booting.
Answer: True
2. If multiple Windows operating systems are to be installed on the same computer, in what order should they be installed?
Answer: By release date
3. Can a clean installation of Windows XP be uninstalled assuming it is the lone operating system on the machine?
Answer: No

CD-ROM Launch from Existing OS

1. Explain that this method of initiating installation is as simple as putting the CD in the CD-ROM device and executing the proper program. That program will either be WINNT or WINNT32.

Important Setup Option Differences

1. Depending on the method used to install the operating system, one of two setup initializations will result. These setup initializations are text mode and GUI setup mode. Both are described in the following two sections.

Text Mode Setup

1. Explain that text mode setup is used whenever you initialize setup from any method other than launching it from a preexisting Windows OS.

GUI Setup Method

1. Explain that the GUI setup method uses a wizard to predefine several setup options. Options include whether or not to perform an upgrade or clean installation.
2. If you select an upgrade installation, the GUI will reboot the computer, start up in text mode and then proceeds to the GUI portion.
3. If you select a clean installation, you are asked to specify a number of different settings related to the new installation. Then, the computer is rebooted into text mode. Installation proceeds from there.

Advanced Customized Installation Options

1. Explain that Windows XP supports both unattended and customized installation options. Both of these are often used in enterprise network deployments.
2. Describe the amount of effort that is saved when utilizing automatic installation of Windows XP on a huge network of computers. Creating the initial configuration script may take some time, but the amount of time saved will be well worth it.
3. Explain that unattended installations work in a similar manner to attended installations. An answer file is used in place of a person. This answer file can install additional applications upon completion of the OS installation.
4. Customized installations are exactly as they sound. They are modified configurations used to fit a specific hardware or software configuration. An answer file may also be used with a custom configuration.

Automated Installations

1. This section reiterates much of what has already been explained in previous sections.
2. Explain the concept of a uniqueness database file (UDF). This file works along with the answer file and is capable of overriding some of the settings in an answer file. The UDF saves you from having to create a new answer file for every change to the installation. A setting in the UDF will take precedence over a setting in an answer file.

Unattended Installations

1. Explain that an unattended installation can be initiated by executing the WINNT command with the /U and /S options or executing the WINNT32 command with the /UNATTEND and /S options. The /S switch allows you to specify the files to be used for the unattended installation.
2. It is important to note that if an unattended installation from CD-ROM is desired, the supporting files must be located on a floppy disk available to the system in the case that no prior operating system exists
3. Describe the Setup Manager Wizard that is provided to create UNATTEND.TXT files.
4. Refer to the text for example UNATTEND.TXT and UDF files.

Activity 2-2: Windows XP Support Tools

1. In this activity, students will install the Windows XP support tools.

Activity 2-3: Unattended Installation Preparation

1. In this activity, students will create an answer file for an unattended installation of Windows XP using the Setup Manager Wizard.

Using Remote Installation Service (RIS)

1. Describe RIS. RIS is fancy Windows-based service that allows operating systems to be automatically installed onto target systems with nothing more in the target system than a NIC and possibly a boot floppy.
2. Explain that RIS can install Windows XP on clients that have a DHCP PXE-based remote boot ROM, an RIS boot disk-supported network adapter, or an existing OS.
3. Explain that RIS is a very complicated process. Students will have to read this section carefully to understand all of the details. Further reading on the Microsoft Web page is also necessary before students fully understand how to use and set up such a service.
4. The average user will have no need for this service. Therefore, you may skip the complexities of this section if desired.

Using Windows Installer Service (WIS)

1. Describe the overall purpose of WIS. The purpose of WIS is to simplify the deployment of multiple applications onto new clients.
2. Multiple applications are installed through as single administrative action.
1. Tell students that more information concerning this subject is available on the Microsoft Windows .NET Server or Windows XP Professional Resource Kit.

Using Remote Installation Preparation (RIPrep)

1. RIPrep is used to create RIS distributable images of a fully configured prototype computer. It operates in conjunction with RIS.
2. Explain the process of using RIPrep: install the OS using RIS, install applications and fully customize, and create an image of the result.
3. The computer hardware for each installed system should match as closely as possible if this technique is expected to work.

Using SYSPREP

1. Describe SYSPREP as a duplication tool for an entire hard drive.
2. Explain that to install Windows XP on multiple machines using this technique practically requires that each of those machines have identical hardware.
3. Explain this important concept: SYSPREP prepares a system for duplication but does not perform the duplication itself. A third-party application must be used to create the disk image!
4. The rest of this section goes into significant amounts of detail concerning this tool. If you feel that your students will not have use for this feature, you may elect to summarize the details.

WINNT AND WINNT32

1. Introduce the two programs as each having a unique and specific purpose. The details are provided in the next two sections.

WINNT

1. This is a 16-bit setup tool and designed to be launched from DOS and those operating systems that rely on DOS. It is designed for standard and automated installations.
2. A number of switches are presented in the section of the text. Have students read through and understand the various switches and their purposes carefully.

WINNT32

1. This is a 32-bit setup tool that is designed to run from a 32-bit operating system such as most versions of Windows. It is designed for both standard and automatic installation.
2. A number of switches are presented in the section of the text. Have students read through and understand the various switches and their purpose carefully. There are too many to reproduce here.

Partitioning the Hard Disk

1. Explain the reasons for disk partitioning. They include: separating the data and operating system files, creating a multiboot system, and creating other partitions for diagnostic purposes.
2. Make sure it is understood that the DOS FDISK utility has limited support for NTFS.
3. Ensure students are familiar with the terminology: active partition, system partition, and boot partition. The active partition houses the Windows XP boot files. The system partition is the active partition from which the computer initially boots. The boot partition holds the main Windows XP OS files.
4. Make sure students understand that a boot partition and a system partition can both refer to the same partition.

Activity 2-4: Disk Partitioning

1. In this activity, students will remove and create partitions using the FDISK command.

Volume Licensing

1. Explain that volume licenses are issued to the buyer who wishes to install Windows XP on multiple machines. These kinds of licensing are typically cheaper than buying individual licenses.
2. You will have to check the Microsoft Web page for further licensing information. Just make sure that students know this is the best and cheapest method of acquiring multiple licenses.

Activating Windows XP

1. In order to reduce software piracy, Windows introduced a new feature referred to as Activation. Upon installation, Windows XP will only operate for 30 days before requiring a registration. This registration collects information about your computer in order to prevent the same key being used on multiple systems.
2. Explain that the drawbacks of activation outweigh the benefits. The benefit is an assurance that you've purchased a fully licensed and valid product. The drawbacks include having to reactivate the product by phone in the event of hardware alterations. Furthermore, those without Internet access are required to activate by phone as well.

Windows XP Professional Setup: Step by Step from Floppies or from a Bootable CD

1. This section explains the assumptions made for the installation process that will proceed in the next activity. Students should be instructed to look over this section before attempting the following activity.

Activity 2-5: Manual Install of Windows XP

1. In this activity, students will install Windows XP without using any automated features.
2. This activity is very long. Therefore, if students already know how to install an operating system, then this activity should be skipped. Alternatively, you may wish to only review those steps in the activity that students do not understand.

Upgrading to Multiple Processors

1. Explain that multiprocessor systems are becoming increasingly popular.
2. Explain that if you are increasing the number of processors in the system, the HAL needs to be updated before installing the second CPU.
3. Use the provided Web page given in the text as a guide to updating HAL.

Removing Windows XP Professional

1. A relatively unique feature of Windows XP is its ability to uninstall itself. Explain that this will only work for an upgraded installation for obvious reasons.
2. Explain that Windows XP keeps backup copies of modified files in order to undo the installation if desired.

Activity 2-6: Removing Windows XP

1. In this activity, students will remove Windows XP and prepare the computer for another operating system.

Quick Quiz

1. Should Windows XP be installed on a multiprocessor system before or after the second CPU is installed?
Answer: After
2. What sort of license should be purchased if a large number of copies of Windows XP are required?
Answer: Volume license
3. Can the terms imaging, cloning, and ghosting be used interchangeably
Answer: Yes

Class Discussion Topics

1. How many operating systems can be installed on a single computer system?
2. Why must operating system installation through disk images involve computers with similar hardware?
3. What is the proper way to partition a computer that will contain only one Windows XP operating system?
4. What kind of third-party disk imaging software have you heard of or used before?

Additional Activities

1. You have a small office network consisting of three computers: two identical Dell computers and a Hewlett Packard machine. You wish to install Windows XP Professional on all three systems. To try and make this process as quick as possible you borrow a disk containing a disk image of a fully-configured computer installed with Windows XP. The images were taken from company laptops. What are the problems with this scenario? What are some other suggestions for him?
2. How do you know which command to execute: WINNT or WINNT32?

Solutions to Additional Activities

1. You cannot rely on installing an operating system using a disk imaged from a computer with drastically different hardware than the computer to which the image is being applied. This person has just a few options available to him. If the appropriate services are available and the computers are equipped with the necessary network hardware, an automatic network installation could be performed. Otherwise the administrator might as well perform the installations individually as the number of computers in the network is small. Finally, he may also look for imaged devices that match his system's hardware. However, this may take longer than individually installing the operating systems.
2. The command chosen essentially depends upon the environment in which the command will be executed. The WINNT command is a 16-bit program designed to run on DOS and DOS-based operating systems. The command WINNT32 is a 32-bit program designed to run on most Windows platforms.

Chapter 2 SOLUTIONS

Activities

Activity 2-1

The student will have worked through a network installation setup.

Activity 2-2

The student will have worked with the Windows XP support tools.

Activity 2-3

The student will have prepared for an unattended installation.

Activity 2-4

The student will have worked with disk partitioning.

Activity 2-5

The student will have done a manual install of Windows XP.

Activity 2-6

The student will have removed an installation of Windows XP.

Review Questions

1. a, b, d, e
2. False
3. c, d, e, g
4. False
5. d, the correct location is \i386
6. read-only
7. a, b, c, d
8. True
9. d
10. FDISK
11. False
12. a, d
13. False. FAT32 volume size limit is 32 GB. NTFS has a 2 Terabyte limit.
14. b, c
15. False. FDISK can only delete primary NTFS partitions.
16. d
17. SYSPREP -quiet
18. c
19. /dudisable
20. a
21. True

22. a, b, c, d

23. b

24. a, d

25. c

Case Projects

Case 1

a and c. A SYSPREP.INF file and the SYSPREP utility are all useful for deploying Windows XP Professional quickly to multiple computers. SYSPREP can be used with a SYSPREP.INF file, which contains the same information and uses the same structure and syntax as the UNATTEND.TXT file created by the Setup Manager. When a customized SYSPREP.INF file is provided to the target system, the installation process will not prompt for setup information. A uniqueness database file is used with a command line automated setup with WINNT32. WINNT32 is the 32-bit setup tool. Since only DOS is present on the systems to begin with, WINNT will be used.

Case 2

The Setup Manager can be used to create several types answer files of types:

Fully automated (no user interaction)

Read-only (user can view settings on each page but no changes can be made)

GUI (text portion is automated)

Provide defaults (recommended settings are defined, but user can change during setup), or

Hide some configuration setup pages

The fully automated answer file would be useful when deploying numerous identical systems so that the least amount of administrator action on each client is required. The read-only answer file is useful when training users. A GUI automated answer file is useful when similar deployments are desired but the hardware varies on each client. The provide defaults answer file is useful when deploying a few similar clients that each require a slight variant to the install settings. The hide configuration pages answer file is useful when employing the aid of other users/administrators to perform installations when you want to force some settings but allow the installer to manipulate all others. This is especially useful when the clients vary in hardware.

Case 3

Answers will vary.

LAB 2.2 PERFORMING AN ATTENDED INSTALL

Student Answer Sheet

Name: Computer ID:

Step 11d: Record the partition size.

Size of Windows XP partition: Answers will vary

Step 12c: Record the following Regional Options.

Negative number formats: Answers will vary

Measurement systems:

Currency symbols:

Time formats:

Short date formats:

Long date formats:

Step 12g: Record the keyboard layouts.

Keyboard layout options: Answers will vary

Step 14:

Instructor Sign-off: Date:

LAB 2.5 CREATING AN UNATTENDED INSTALLATION FILE

Student Answer Sheet

Step 3: Identify product options.

Windows Unattended Installation

Sysprep Install

Remote Installation Services

Step 6: Identify the default User Interaction Level and description.

Default user interaction level: Provide defaults

Description: The answer you supply in the answer file are the default answers and Windows Setup prompts the users to review them. The user may change any answer that you supply.

Step 19: Regional Settings

Default setting: Use the default regional settings from the windows version you are installing

Step 20: Regional Settings

Default language: US English

Three language options:

Language for menus and messages

Locale for numbers, time, currency, and dates

Input Locale

Step 30: Unattend Command Line

```
E:\i386\winnt32 /s:f:\i386 /unattend:unattend.txt /udf:computername,unattend.udb  
\makelocalsource
```

Step 32: Record the [UserData] heading contents.

Answers may vary.

Step 33: Record the Unattend.txt headings.

Record the sections included in the *unattend.udb* file you created.

Record the value that would be substituted into the Unattend.txt file when using the command: winnt32 /unattend:unattend.txt /udf:Acct2,unattend.udb

LAB 2.2 PERFORMING AN ATTENDED INSTALL

Student Answer Sheet

Name: Computer ID:

Step 11d: Record the partition size.

Size of Windows XP partition:

Step 12c: Record the following Regional Options.

Negative number formats:

Measurement systems:

Currency symbols:

Time formats:

Short date formats:

Long date formats:

Step 12g: Record the keyboard layouts.

Keyboard layout options:

Step 14:

Instructor Sign-off: Date:

LAB 2.5 CREATING AN UNATTENDED INSTALLATION FILE

Student Answer Sheet

Step 3: Identify product options.

Step 6: Identify the default User Interaction Level and description.

Default user interaction level:

Description:

Step 19: Regional Settings

Default language:

Default setting:

Step 20: Regional Settings

Three language options:

Step 30: Unattend Command Line.

Step 32: Record the [UserData] heading contents.

Step 33: Record the Unattended.txt headings.