CHAPTER THREE

Upgrading to Windows XP Professional

Objectives

This chapter helps you to prepare for the exam by covering the following Microsoft-specified objectives for the Installing Windows XP Professional section of the Installing, Configuring, and Administering Microsoft Windows XP Professional exam:

Upgrade from a previous version of Windows to Windows XP Professional.

► Prepare a computer to meet upgrade requirements.

► Migrate existing user environments to a new installation.

► Microsoft provides several upgrade paths for computers running recent versions of Windows. This objective is included to ensure that you know how and when to upgrade these versions of Windows to Windows XP Professional.

Perform post-installation updates and product activation.

► After you have installed Windows XP Professional, you need to know how to activate the product with the Microsoft Clearing House. This objective also ensures that you know how to perform various types of updates to Windows XP, including Service Pack 2.
Study Strategies

When studying the contents of this chapter, pay attention to the various methods of upgrading older Windows computers to Windows XP, and of upgrading Windows XP to include software updates, such as Service Pack 2, patches, and hotfixes. You should practice the various procedures several times, including updates from various older Windows operating systems and different means of installing Service Pack 2. Be sure you know when you can upgrade directly to Windows XP and when you can install the various post-installation upgrades.
Introduction

As Microsoft introduces new versions of its Windows operating system, many users around the world want to take advantage of the features included in the new version without purchasing new computers. Consequently, Microsoft has made available upgrade paths that enable users to upgrade older versions of Windows. By upgrading earlier versions of Windows to Windows XP Professional, you can retain registry settings and account information contained in the older operating system.

Upgrading from a Previous Version of Windows to Windows XP Professional

Upgrade paths from previous Windows versions depend on the operating system version currently installed. Table 3.1 lists the available upgrade paths for older operating systems.

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Upgrade Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 98</td>
<td>Can be upgraded directly to Windows XP Professional.</td>
</tr>
<tr>
<td>Windows Me</td>
<td></td>
</tr>
<tr>
<td>Windows NT 4.0 Workstation</td>
<td></td>
</tr>
<tr>
<td>Windows 2000 Professional</td>
<td></td>
</tr>
<tr>
<td>Windows 3.1x</td>
<td>Upgrade to Windows 98, and then upgrade to Windows XP Professional.</td>
</tr>
<tr>
<td>Windows 95</td>
<td></td>
</tr>
<tr>
<td>Windows NT 3.x Workstation</td>
<td>Upgrade to Windows NT 4.0 Workstation, and then upgrade to Windows XP Professional</td>
</tr>
<tr>
<td>Windows NT Server</td>
<td>Cannot be upgraded. You need to perform a clean installation of Windows XP Professional.</td>
</tr>
<tr>
<td>Windows 2000 Server</td>
<td></td>
</tr>
<tr>
<td>Non-Windows operating systems (Unix, Linux, OS/2)</td>
<td>Cannot be upgraded. You need to perform a clean installation of Windows XP Professional.</td>
</tr>
</tbody>
</table>

Preparing a Computer to Meet Upgrade Requirements

Objective:
Upgrade from a previous version of Windows to Windows XP Professional.

- Prepare a computer to meet upgrade requirements.

In addition to running one of the supported versions of Windows mentioned here, a computer to be upgraded to Windows XP Professional must meet the hardware requirements outlined in Chapter 1, “Manually Installing Windows XP Professional.” In addition, all hardware components
should be found in the Windows Catalog (http://www.microsoft.com/windows/catalog/), which is replacing the Hardware Compatibility List (HCL) for Windows XP and Windows Server 2003. Older software applications also may not be compatible with Windows XP Professional. Such applications may need to be upgraded or replaced to work properly after you have upgraded your operating system. Review the information provided in Chapter 1 when preparing your computers for upgrading to Windows XP Professional.

Testing System Compatibility
Microsoft includes a compatibility tool on the Windows XP CD-ROM that generates reports describing hardware and software components that may not be compatible with Windows XP. This report identifies any hardware or software problems associated with the computer to be upgraded.

Step by Step 3.1 shows you how to obtain a system compatibility report from the computer to be upgraded.

**STEP BY STEP**

**3.1 Checking System Compatibility**

1. Insert the Windows XP Professional CD-ROM.

2. When the Welcome to Microsoft Windows XP screen appears, select Check System Compatibility.


4. The compatibility program provides two choices, as shown in Figure 3.1. If you are connected to the Internet you should select Yes, Download the Updated Setup Files to ensure that you are checking compatibility against the latest version of Windows. Otherwise, click No, Skip This Step and Continue Installing Windows, and then click Next.

![Microsoft Windows Upgrade Advisor](image)

**FIGURE 3.1** If you are connected to the Internet, you should choose to download the updated files before preparing your compatibility report.
5. If you have so chosen, Dynamic Update connects to Microsoft, downloads software, and updates Setup. Click Next to continue.

6. The Preparing an Upgrade Report screen charts the progress of report creation and displays the location of the report file (usually C:\WINDOWS\Upgrade.txt or C:\WINNT\Upgrade.txt). This may take several minutes.

7. The Microsoft Windows Upgrade Advisor displays a window indicating what items may be incompatible with Windows XP Professional (see Figure 3.2). To open the report file and display information about incompatible items, click Full Details.

8. Click Finish and exit the Welcome window.

![Microsoft Windows Upgrade Advisor](image)

**FIGURE 3.2** The Upgrade Report window informs you of any hardware or software that may be incompatible with Windows XP.

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**NOTE**

You can also check hardware and software compatibility from the command line You can open a command prompt and type `d:\i386\winnt32 /checkupgradeonly`, where `d:` is the CD-ROM drive, to start the compatibility check procedure. The window shown in Figure 3.1 appears and you can proceed from step 4 of Step by Step 3.1.

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**Additional Preparatory Tasks**

Before you upgrade the computer to Windows XP Professional, you should perform several additional tasks. The following tasks depend on the operating system currently installed on the computer, and include the following:

- Check the BIOS manufacturer's website for any available BIOS upgrades, and upgrade the computer's BIOS to the latest available functional version if necessary. You should perform this step before a clean install or an upgrade to Windows XP.
Scan and eliminate any viruses from the computer, using an antivirus program that has been updated with the latest antivirus signatures. You should then remove or disable the antivirus program because it may interfere with the upgrade process. In addition, you should use a third-party program to scan for and remove malicious software (malware).

Install any upgrade packs that may be required to render older software applications compatible with Windows XP. Consult software manufacturers for details.

If you are running Windows 98 or Windows Me and used applications such as DriveSpace or DoubleSpace to compress any partitions, you should uncompress these partitions and remove the compression software. However, you do not need to uncompress partitions that are compressed with Windows NT or Windows 2000 file compression.

If you are running Windows NT 4.0 and have created any volume sets or stripe sets, back up their contents and remove these sets before you upgrade to Windows XP. If you are running Windows 2000 and have similar disk configurations on basic disks, convert these disks to dynamic configuration. Windows XP does not support volume sets or stripe sets on basic disks. For more information, refer to Chapter 7, “Implementing, Managing, Monitoring, and Troubleshooting Hardware Devices.”

Upgrading the Computer to Windows XP Professional

After you have checked system compatibility and performed all tasks required to prepare your computer for upgrading, you are ready to proceed. The upgrade takes place in a similar fashion to a new installation, except that answers to some questions asked by the setup wizard are taken from the current installation. Step by Step 3.2 shows you how to upgrade a Windows 98 or Me computer to Windows XP Professional.

STEP BY STEP

3.2 Upgrading to Windows XP Professional

1. If it is not in the drive from the compatibility check process, insert the Windows XP Professional CD-ROM.

2. When the Welcome to Microsoft Windows XP screen appears, select Install Windows XP.

3. On the Welcome to Windows Setup screen (see Figure 3.3), select Upgrade (Recommended) and then click Next.

4. Accept the license agreement and then click Next.

5. Type the product key in the spaces provided and then click Next.

6. On the Upgrade Report screen (see Figure 3.4) (displayed when upgrading from Windows 98 or Windows Me), leave the default selected and then click Next.
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7. Windows Setup displays the Get Updated Setup Files screen. If you are connected to the Internet, select Yes, Download the Updated Setup Files (Recommended) option. Otherwise, select No, Skip This Step, and continue installing Windows. Click Next.

8. If you have selected the Yes option, Setup downloads updated files from Microsoft and analyzes the computer. Setup next copies installation files and restarts the computer.

9. Press Enter to accept the default selection from the boot menu (Windows XP Professional Setup). Windows XP Setup proceeds in similar fashion to that described in Chapter 1, but only asks for any information it cannot retrieve from the previous Windows installation.

10. After installation has completed and the computer has rebooted, the Welcome to Microsoft Windows screen appears. Click Next and follow the instructions provided, and provide a password when requested.
Uninstalling Windows XP Professional

If you have upgraded a Windows 98 or Windows Me computer to Windows XP Professional and later decide to revert to the previous operating system, it is possible to uninstall Windows XP. The uninstallation process restores your previous operating system without changing any files you have created while running Windows XP. However, applications that were installed or modified while Windows XP was running may need to be reinstalled afterward. Step by Step 3.3 shows you how.

**EXAM ALERT**

You can create a dual-boot system instead of upgrading If you select New Installation (Advanced) in step 3 of Step by Step 3.2, you can select a different partition on which to install Windows XP Professional. Doing so creates a dual-boot system, which enables you to start either operating system. You can select the operating system to start from the boot loader menu, which is displayed by the Boot.ini file after you turn the computer on.

If you are considering a dual-boot system, you should be aware of several facts. First, ensure that you are using the proper file system on your partitions. When dual-booting with Windows 9x or Me, you should ensure that the system partition is formatted with FAT32. Configure the Windows XP boot partition (the partition containing the operating system files) with the NTFS file system only if it does not contain any files that you need to access from Windows 9x/Me. If you are dual-booting with Windows NT 4.0, install Service Pack 5 or later on Windows NT 4.0 to ensure that this operating system can read all data on NTFS partitions. In addition, you should be aware that the oldest operating system should be installed first.

Uninstalling Windows XP Professional

If you have upgraded a Windows 98 or Windows Me computer to Windows XP Professional and later decide to revert to the previous operating system, it is possible to uninstall Windows XP. The uninstallation process restores your previous operating system without changing any files you have created while running Windows XP. However, applications that were installed or modified while Windows XP was running may need to be reinstalled afterward. Step by Step 3.3 shows you how.

**STEP BY STEP**

3.3 Uninstalling Windows XP Professional

1. Click Start, Control Panel, Add or Remove Programs.

2. If Uninstall is available, the Add or Remove Programs dialog box will contain a Windows XP Uninstall entry, as shown in Figure 3.5. Select this entry and click Change/Remove.

**FIGURE 3.5** If you upgraded to Windows XP from Windows 98 or Windows Me and did not convert to the NTFS file system, the Add or Remove Programs dialog box contains a Windows XP Uninstall entry.
3. In the Uninstall Windows XP dialog box that opens, select Uninstall Windows XP and then click Continue.

4. If any programs have been modified since you upgraded to Windows XP, a Windows XP Uninstall dialog box will inform you of the changes (see Figure 3.6). Click Continue to proceed.

5. Another message box confirms that you want to restore the previous operating system. Click Yes to uninstall Windows XP and revert to Windows 98 or Me.

6. Windows shuts down and the uninstall proceeds. This process takes several minutes. During the uninstall process, you are informed that if you installed programs after upgrading to Windows XP, you may need to reinstall them.

7. When the uninstall process is complete, the computer reboots again and restores Windows 98 or Windows Me.

**EXAM ALERT**

Uninstall is available only if you have upgraded from Windows 98 or Windows Me. You cannot revert to your previous operating system if you have upgraded from Windows NT 4.0 or Windows 2000.

**EXAM ALERT**

Do not convert to NTFS if you might need to uninstall Windows XP. Do not convert your disk to NTFS if you think you may want to revert to your previous operating system. Neither Windows 98 nor Windows Me supports NTFS; consequently, the uninstall is not available if you convert to NTFS.
Challenge

You are a consultant who is responsible for upgrading all workstation computers in your client’s office to Windows XP Professional. You have available the installation media for Windows XP Professional as well as the older operating systems currently in use on these computers. In addition, all servers have already been upgraded to Windows Server 2003.

The following table describes the computers in your client’s office:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Number of Computers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows for Workgroups 3.11</td>
<td>4</td>
</tr>
<tr>
<td>Windows 95</td>
<td>15</td>
</tr>
<tr>
<td>Windows 98</td>
<td>50</td>
</tr>
<tr>
<td>MS-DOS</td>
<td>3</td>
</tr>
<tr>
<td>Windows NT 3.5 Workstation</td>
<td>2</td>
</tr>
<tr>
<td>Windows NT 3.51 Workstation</td>
<td>23</td>
</tr>
<tr>
<td>Windows NT 4.0 Workstation</td>
<td>38</td>
</tr>
<tr>
<td>Windows 2000 Professional</td>
<td>76</td>
</tr>
</tbody>
</table>

Your task is to upgrade all these computers to Windows XP Professional by performing as few steps as possible. If possible, you must not remove any user settings, data, or applications from any of these computers. Draw up a plan for upgrading these computers while adhering to these specifications.

Try to complete this exercise on your own, listing your conclusions on a sheet of paper. After you have completed the exercise, compare your results to those given here.

1. You can upgrade all computers running Windows 98, Windows NT 4.0 Workstation, and Windows 2000 Professional directly to Windows XP Professional. This involves a total of 164 computers.

2. You must upgrade computers running Windows 3.1x or Windows 95 to Windows 98 first. You can then upgrade these computers to Windows XP Professional. This involves a total of 19 computers.

3. You must upgrade computers running Windows NT 3.51 or earlier to Windows NT 4.0 first. You can then upgrade these computers to Windows XP Professional. This involves a total of 25 computers.

4. You must install Windows XP Professional as a clean installation on the three computers that run only MS-DOS.

Alternatively, you can upgrade computers running either Windows 95 or Windows NT 3.51 to Windows 2000 Professional and then to Windows XP Professional. However, this upgrade path is not available for the older Windows versions specified in this exercise.
Migrating Existing User Environments to a New Installation

Objective:

Upgrade from a previous version of Windows to Windows XP Professional.

- Migrate existing user environments to a new installation.

Windows XP Professional includes the following two tools that assist administrators and users in migrating application settings and data files to a new computer running Windows XP.

- **User State Migration Tool (USMT)**—Designed for administrators who are deploying large numbers of Windows XP Professional computers in a corporate setting.

- **Files and Settings Transfer Wizard**—Designed for users in home or small business environments that need to migrate files and settings on a small number of computers.

**EXAM ALERT**

Be sure you know when and how to use USMT and the Files and Settings Transfer Wizard. Each of these tools has its benefits and limitations. Know that USMT can be scripted for migrating large numbers of computers and that the Files and Settings Transfer Wizard is more suited for individual users migrating their data to a new computer.

**User State Migration Tool**

The USMT enables you to quickly and easily transfer user files and settings when deploying new computers to a large number of users. It can transfer files and settings from source computers running Windows 95, Windows 98, Windows Me, Windows NT 4.0, or Windows 2000 to destination computers containing a clean installation of Windows XP Professional. This tool reduces the cost of computer deployments by addressing the following issues:

- Technician time associated with migration
- Lost employee productivity searching for missing files and other data
- Lost employee productivity and help desk calls associated with configuring the desktop
- Reduced time spent by employees on becoming familiar with the new operating system
- Improved employee satisfaction with the migration experience
USMT consists of two executable files, Scanstate.exe and Loadstate.exe, and several migration information files, including Migapp.inf, Miguser.inf, Migsys.inf, and Sysfiles.inf. Scanstate.exe is used to collect user information and files based on settings in the .inf files, and Loadstate.exe is used to place this information on a new Windows XP computer. These files are all located in the Valueadd\Msft\Usmt folder on the Windows XP Professional CD-ROM.

By default, USMT migrates the My Documents, My Pictures, Desktop, Favorites, and Cookies folders. USMT also migrates settings found in settings groups such as Internet Explorer, Outlook and Outlook Express, dial-up connections, phone and modem options, accessibility settings, screen savers, fonts, folder options, network drives and printers, and other Control Panel settings such as sounds, mouse, keyboard, taskbar, and regional settings. You can modify the set of data collected by USMT by editing the information found in the .inf files.

To transfer files and settings by means of the USMT, you run Scanstate.exe on the source computer to collect the data to be migrated and transfer it to a shared folder on a server to which both the source and destination computers have access. Then you run Loadstate.exe on the destination computer to place the collected data on that computer. You can employ a script to automate this process when migrating multiple users.

Preparation of the server involves the creation and sharing of several folders. Follow Step by Step 3.4 to complete this procedure.

### STEP BY STEP

#### 3.4 Preparing the Server for the Transfer Process

1. At the server, create and share a folder named USMT. Configure this folder with the Read permission for the migrating user and at least the Change permission for the local administrator at the destination computer.

2. Create two subfolders named Scan and Load in the USMT shared folder.

3. Create and share a folder named MigStore. Configure this folder with the Change permission for both the migrating user and the local administrator at the destination computer.

4. Copy Scanstate.exe and all .dll and .inf files from the Valueadd\Msft\Usmt folder on the Windows XP Professional CD-ROM to the USMT\Scan folder.

5. Copy Loadstate.exe, Miguser.inf, and all .dll files from the Valueadd\Msft\Usmt folder on the Windows XP Professional CD-ROM to the USMT\Load folder.
Having prepared the server for the transfer process, you can now scan source computers to collect their data and settings. Step by Step 3.5 shows you how.

**STEP BY STEP**

3.5 Collecting Data and Settings from the Source Computer

1. Log on to the source computer as the migrating user.
2. Map a drive to the USMT share on the server.
3. Start a command prompt and navigate to the Scan folder on the mapped drive.
4. Type the following command:
   
   ```
   scanstate /i:migapp.inf /i:migsys.inf /i:migfiles.inf /i:sysfiles.inf \server\MigStore
   ```
   
   where `server` is the name of the server used in the procedure.

Now you can place the collected information on the destination computer by following the procedure outlined in Step by Step 3.6.

**STEP BY STEP**

3.6 Placing the Collected Information on the Destination Computer

1. Log on to the destination computer as the local administrator. A standard user cannot run the Loadstate tool, as described in Microsoft Knowledge Base article 870624.
2. Click Start, Control Panel, User Accounts. Ensure that the migrating user does not have a user account listed; if such an account exists, delete it and confirm that you want to delete the user's files.
3. Map a drive to the USMT share on the server.
4. Start a command prompt and navigate to the Load folder on the mapped drive.
5. Type the following command:
   
   ```
   loadstate /i:miguser.inf \server\MigStore
   ```
   
   6. When the procedure completes, log off and log on as the migrating user.
7. Verify that the files and settings have been transferred properly. The classic desktop should appear because the old user shell is contained in the settings transferred by USMT.

**NOTE**

Additional parameters available with Loadstate and Scanstate

Loadstate.exe and Scanstate.exe have additional parameters that you can specify for modifying their actions. At the command prompt, type the command followed by `/?` to obtain further information.
Files and Settings Transfer Wizard

The Files and Settings Transfer Wizard enables you to transfer files, folders, and settings belonging to a user to a new computer or an existing computer on which a clean installation of Windows XP Professional exists. It is a simple means of transferring these settings when only a few computers are involved, or when users are individually responsible for migrating information to a new computer. It is automatically installed on Windows XP Professional computers during operating system installation.

This wizard operates by creating a Migration Wizard Program disk, using this disk to prepare data on the source (old) computer for transfer, and then transferring them to the destination (new) computer. To perform this procedure, you need to have the following items available:

- Removable media such as CD-R disks to store the migrated information. You can also use a shared folder on a server or a serial cable to connect the two computers directly.
- A blank floppy disk for the wizard, or the Windows XP Professional CD-ROM.
- The user name and password of the user whose information is being migrated.

To run the Files and Settings Transfer Wizard, you start the wizard at the destination computer and create a wizard floppy disk. Then you take this disk to the source computer and migrate the data to removable media or a shared folder. Finally, you return to the destination computer and import the migrated data. Step by Step 3.7 provides a detailed procedure.

STEP BY STEP

3.7 Using the Files and Settings Transfer Wizard to Transfer Data to a New Computer

1. At the destination computer, click Start, All Programs, Accessories, System Tools, Files and Settings Transfer Wizard.

2. The wizard displays a welcome screen that describes its actions. Click Next.

3. The wizard asks whether you are at the new computer or the old one. Ensure that the New Computer option is selected, and then click Next.

4. To create a floppy disk for running the wizard on the source computer, select the I Want to Create a Wizard Disk in the Following Drive option, and select the drive letter of your floppy drive. See Figure 3.7.

5. Insert a blank, formatted floppy into the selected drive, and then click OK. When this step is completed, the wizard instructs you to go to the old computer. Leave this screen of the wizard visible on the new computer.

6. Go to the source (old) computer, insert the floppy disk, and type `a:fastwiz` in the Run dialog box. The wizard copies files and displays the welcome screen.

7. Click Next to display the Select a Transfer Method screen.
The Files and Settings Transfer Wizard provides several options for collecting data from the old computer.

8. Select the media type being used for the transfer, and then click Next to display the What Do You Want to Transfer screen.

9. Select the types of data (files, settings, or both) to be transferred. As shown in Figure 3.8, the information to be transferred is displayed on the right side of this screen. Click Next.

10. The wizard collects the information to be transferred. This may take several minutes. When data collection is complete, it displays a message box asking for the first disk.

11. If using removable media such as recordable CDs or Zip disks, insert the first disk and then click Next. The wizard transfers information to the media and asks for additional disks as required.

12. When the wizard displays a completion screen, click Finish and return to the new computer.
13. At the new computer, click Next on the screen you received in step 5 of this procedure.

14. Specify the location of the items being transferred, and then click Next.

15. If using removable media, insert the first disk and then click Next.

16. Insert additional disks as required until the completion screen appears.

17. Click Finish, and then click Yes to log off and apply the settings.

**Deploying Service Pack 2 (SP2)**

Chapter 1 introduced you to the concept of service packs, and in particular, the features included in SP2. Microsoft has simplified the procedures available for installing SP2 on new computers and computers being updated from previous versions of Windows. In this section, we discuss the following methods for deployment of SP2 on multiple computers:

- Slipstreaming SP2 into Windows installation media
- Use of Group Policy for deployment of SP2 on existing Windows XP Professional computers
- Manual installation of service packs and updates
- Using Software Update Services (SUS) for installing SP2

**NOTE**

These procedures should apply to later service packs. If Microsoft has released additional service packs since this book was written, the procedures described should be applicable to the latest available service pack. Check with Microsoft's website for any changes.

**Preparation for Installing SP2**

Microsoft recommends that you perform several procedures before installing SP2, regardless of the method used for installation:

- Ensure that your computer is free of viruses and malware by running a complete antivirus scan. As we mentioned earlier in this chapter, you should use a third-party program to scan for and remove malware.

- Ensure that you have updated device drivers to the latest version. Also ensure that any mission-critical software is supported by SP2.

- Some brand-name computers such as HP and Compaq have experienced compatibility problems with Windows XP SP2. Check with your computer manufacturer for any required compatibility updates.
Ensure that you have adequate free disk space available (about 1GB) on your system-root partition.

Disconnect from the Internet and disconnect peripherals such as scanners or printers.

After you have performed all these tasks, you should be aware that considerable time (at least one hour) is required for the installation of SP2.

**Slipstreaming SP2 Pre-Installation**

The concept of *slipstreaming* service packs refers to the inclusion of the service pack files directly in the installation media so that a new installation of the operating system contains the service pack, and no additional installation procedure is required.

**NOTE**

SP2 installation files include previous service pack files  You do not need to slipstream SP1 files before slipstreaming SP2. This will likely continue to be true as Microsoft introduces future service packs.

Follow Step by Step 3.8 to slipstream SP2 into Windows XP Professional installation files located on a shared folder on a server.

**STEP BY STEP**

**3.8 Slipstreaming SP2 into Windows XP Installation Files**

1. Create a shared folder on the root of a partition on a server’s hard disk and copy the i386 folder from the Windows XP Professional CD-ROM to this folder. Use an appropriate name such as XPSP2 for this folder. For this example, we assume you have selected the E: drive.

2. Copy the Xpsp2.exe file from Windows XP SP2 CD-ROM to the same partition root.

3. Open a command prompt, navigate to the partition containing the Xpsp2.exe file, and type `xpsp2 -x` to extract the service pack files.

4. In the message box that appears, specify a folder to which files are to be extracted and then click OK. As shown in Figure 3.9, you can extract the files to the root of the drive containing the xpsp2.exe file.

**FIGURE 3.9** Specifying a folder for extracting Windows XP SP2 files.
5. This process creates a subfolder named i386 in the folder or root specified in the message box, which in turn contains a subfolder named update. Click OK when informed that the extraction is complete.

6. From the command prompt, navigate to the update subfolder created in the previous step.

7. Type `update -integrate:e:\xpsp2` where `<xpsp2>` is the folder name you specified in step 1, and wait while the service pack files are integrated into this folder (see Figure 3.10). If you have used a drive other than E:, substitute the appropriate drive letter.

8. When you are informed that the integrated install is completed (see Figure 3.11), click OK.

![Windows Service Pack 2 Setup Wizard](image1)

**FIGURE 3.10** Windows integrates the service pack files into the installation folder.

![Service Pack 2 Setup](image2)

**FIGURE 3.11** You are informed when the integration of SP2 with the installation files is completed.

Computers to be installed with Windows XP SP2 can now access the shared folder for slipstreamed installation. Alternatively, you can burn the installation files to a CD-ROM for use in installing Windows XP with SP2.

**NOTE**

The CD-ROM prepared by this procedure is not bootable. You can make a bootable CD-ROM containing the installation files for Windows XP with SP2, but third-party software is required. For details, see “Slipstreaming Windows XP with Service Pack 2 (SP2)” in the “Suggested Readings and Resources” section.
Using Group Policy to Deploy SP2 Post-Installation

In an Active Directory domain containing computers that are already running Windows XP Professional, it is easy to use Group Policy to deploy SP2 to these computers. In this way, you can deploy SP2 to all computers in the domain or an organizational unit (OU) simply by restarting the computers.

Deployment of SP2 involves the use of the Software Installation and Maintenance and Windows Installer technologies. We discuss the use of Windows Installer and Group Policy for deploying software packages further in Chapter 10, “Configuring and Troubleshooting the Desktop Environment.”

Before you can use Group Policy to deploy SP2 to domain controllers, you need to prepare the installation share on a server and create a Group Policy object (GPO). Step by Step 3.9 shows you how.

### EXAM ALERT

Understand the benefits of slipstreaming Windows XP SP2 installation files

Be sure you understand when, how, and why you would slipstream service pack installation files with the Windows XP operating system installation.

### Step by Step

#### 3.9 Using Group Policy to Deploy SP2

1. Log on to a domain controller running Windows 2000 Server or Windows Server 2003 as an administrator.

2. Create and share a folder named XPSP2 on the server, and copy the contents of the Windows XP SP2 CD-ROM to this share.

3. Open a command prompt, navigate to the folder used in step 2, and type `xpsp2 -x` to extract the service pack files.

4. Click OK to extract the service pack files to the shared folder. This process creates a subfolder named `i386` containing the service pack files.

5. Click Start, Administrative Tools, Active Directory Users and Computers.

6. In the console tree of the Active Directory Users and Computers snap-in, right-click the domain or OU containing the computers to which SP2 is to be applied, and choose Properties.

7. Select the Group Policy tab.

8. Select an appropriate GPO and click Edit. If no appropriate GPO exists, click New to create one and then click Edit.
Deploying Service Pack 2 (SP2)

9. In the Group Policy Object Editor console, navigate to Computer Configuration\Software Settings\Software Installation.

10. Right-click Software Installation and choose New, Package.

11. Use My Network Places in the Open dialog box to navigate to the i386\update subfolder of the shared folder created in this procedure, select Update.msi, and then click Open.

12. Accept the deployment method of Assigned, and then click OK. As shown in Figure 3.12, the service pack appears in the details pane of the Group Policy Object Editor console, together with the path to the distribution files.

13. Close the Group Policy Object Editor.

![Figure 3.12 Using Group Policy to deploy Windows XP SP2.](image)

Users can install SP2 on their computers simply by restarting them, as Step by Step 3.10 shows.

**STEP BY STEP**

**3.10 Installing SP2 by Means of Group Policy**

1. Shut down and restart the computer.

2. Before the logon dialog box appears, you are informed that SP2 is being installed, as shown in Figure 3.13. This process takes several minutes.

![Figure 3.13 Group Policy automatically installs SP2 when the computer is restarted.](image)
When the installation process is complete, Windows displays the Windows Security dialog box, enabling you to press Ctrl+Alt+Delete and log on.

You may receive a message informing you that installation of SP2 is still proceeding. Click OK.

After several minutes, the computer automatically shuts down and restarts.

Log back on. SP2 is now installed and functional.

Applying Service Packs and Updates Manually

In a small office or other non-domain situation, you can manually install SP2 from the installation media simply by inserting the SP2 CD-ROM and following the instructions presented by the installation wizard. You can use this procedure if you have obtained a CD-ROM from Microsoft or downloaded the ISO image (image file that represents a one-to-one copy of a specific set of files or folders) available from the Microsoft website and burned the image to a CD-ROM. See Step by Step 3.11.

STEP BY STEP

3.11 Installing SP2 Manually

1. Insert the Windows XP SP2 CD-ROM.

2. SP2 displays a welcome screen. Click Continue.

3. SP2 displays a screen that introduces you to new features and provides a link to information about installation. See Figure 3.14. Click Install Now to proceed.
Deploying Service Pack 2 (SP2)

4. SP2 extracts files and performs the installation.

5. Follow the instructions presented by the Service Pack 2 Setup Wizard, and restart your computer when prompted.

EXAM ALERT

You can uninstall SP2 if you choose to do so If you select the option to create backup files from the Service Pack 2 Setup Wizard, you can uninstall SP2 later. Doing so creates the %systemroot%$NtServicePackUninstall$ folder, which contains the requisite backup information. This folder contains a subfolder named Spuninst, which in turn contains the Spuninst.exe command, which uninstalls SP2. You can also uninstall SP2 from the Add or Remove Programs applet in Control Panel.

Using Software Update Services (SUS)

SUS enables you to deploy and manage updates, including SP2, that are downloaded from the Microsoft Windows Update website to SUS servers running on your own network. Client computers simply connect to the local SUS server to download and install SP2.

Using SUS for deployment of SP2 for Windows XP offers the following benefits:

- Administrators can control the deployment of SP2 across networks containing a large number of Windows XP computers.
- Users can disable direct access to Windows Update or Automatic Updates from individual computers, although these computers can receive the necessary updates.
- SUS can silently install SP2 on Windows XP computers without user or administrator interaction.
- The amount of network traffic into a company is considerably reduced, because it is necessary to download updates to a small number of servers, rather than download them individually to each computer requiring the update.

Installing and configuring the SUS servers to provide SP2 and other updates to Windows XP client computers is beyond the scope of this book. For information on server configuration and factors you should consider when using SUS for SP2 deployment, refer to Deploying Windows XP Service Pack 2 using Software Update Services listed in the “Suggested Readings and Resources” section.
Performing Post-Installation Updates and Product Activation

Objective:
Perform post-installation updates and product activation.

Chapter 1 introduced the concept of product activation, and it explained how Microsoft uses activation to combat software piracy. Computers updated from earlier versions of Windows require product activation in the same manner unless they are updated using a volume licensed version of Windows XP. You should note that product activation (which is required) is not the same as registration (which is optional). Windows XP ceases to function after the grace period unless you activate the product. Registering your copy of Windows XP allows you to receive updates and other offers from Microsoft, and provides ready information to Microsoft tech support personnel should you ever need their services.

After you have completed installation or upgrading, you can activate Windows XP immediately or up to 30 days later. Follow Step by Step 3.12 to complete product activation.

STEP BY STEP
3.12 Performing Product Activation

1. If you perform product activation immediately after installing Windows XP, the Let’s Activate Windows screen shown in Figure 3.15 automatically appears. To display this window later, click the reminder balloon when it appears in the notification area, or the keys icon that is present in this area.

FIGURE 3.15 The Let’s Activate Windows screen provides two choices for activating Windows.
Performing Post-Installation Updates and Product Activation

2. If you are connected to the Internet, select Yes, Let's Activate Windows over the Internet Now, and then click Next.

3. The Register with Microsoft page allows you to register your computer with Microsoft if you desire. This step is optional. Click Yes to register; otherwise, click No, and then click Next.

4. If you have clicked Yes, provide the requested information. Then click Next.

5. The computer accesses the Microsoft Windows Product Activation website using a secure connection and displays a Thank You message that confirms successful activation. If the product key has already been used, you are so informed and given an opportunity to provide a new product key.

If you are not connected to the Internet, you can telephone a customer support representative at Microsoft. Select the option shown in Figure 3.15 to generate an installation ID that you can give to the support representative, who will provide you with a confirmation ID that you type into the activation wizard to complete the procedure.

Installing Updates and Hotfixes

Updates, hotfixes, and patches are designed to repair specific problems that are uncovered from time to time after the release of a new operating system or major update such as a service pack. Their purpose is to correct security-related or performance-related problems and maintain the operating system in an up-to-date condition at all times.

Microsoft's SUS (to be replaced in 2005 by Windows Update Services) is designed to automatically update Windows XP computers that are configured to receive updates directly from the Microsoft Windows Update website or from an SUS server installed on your network.

Managing Automatic Updates

The Automatic Updates feature in Windows XP enables computers to automatically connect to the Microsoft Windows Update website and download the latest updates, hotfixes, and patches. You can specify how and when your computers are updated, and updates can be downloaded and installed in the background while you are working.

To configure your computer to automatically receive updates, follow the procedure outlined in Step by Step 3.13.

STEP BY STEP

3.13 Configuring Automatic Updates

1. Click Start, right-click My Computer, and choose Properties.
2. Select the Automatic Updates tab.
3. As shown in Figure 3.16, this tab provides the following four options for configuring automatic updates:

- **Automatic (Recommended)**—Automatically downloads and installs updates at the time specified in the drop-down list boxes provided. You should ensure that your computer is on and connected to the Internet at the time you specify.

- **Download Updates for Me, but Let Me Choose When to Install Them**—Downloads updates when they are available and informs you by means of an icon in the notification area. You can install them by clicking this icon and choosing Install.

- **Notify Me but Don’t Automatically Download or Install Them**—Provides an icon in the notification area to inform you that updates are available from the Windows Update website. You can download these updates by clicking this icon and choosing Start Download. After the updates are installed, you can select Install to install them.

- **Turn off Automatic Updates**—You are not informed of any available updates, and need to access the Windows Update website regularly to check for updates. You can do this by means of the link provided.

4. Make your selection. If you select Automatic, select a convenient option for the day and time. Then click OK.
Administrators can configure Automatic Updates for all computers in an Active Directory domain or OU by means of Group Policy, which offers the same options as outlined here. In this way, you can ensure that all computers automatically receive the required updates. In addition, you can specify that the client computers download their updates from an SUS server on your network. By doing so, you can reduce the Internet bandwidth required for downloading updates, and you can test updates in a lab environment to ensure that they do not cause problems with services or applications on the client computers.

NOTE

You should visit the Windows update website regularly even if you have configured Automatic Updates. The Windows Update website downloads only high-priority updates in an automatic manner. This site also contains optional updates, including recommended software and hardware updates, which can help improve your computer's performance.

Always test the updates on one or more computers that are representative of your production computers in a lab environment before rolling out the updates.
Chapter Summary

In this chapter, you learned how to upgrade previous versions of Windows to Windows XP Professional. You learned about the requirements for upgrading previous versions and the tasks that you should perform before you upgrade a computer.

You also learned how to migrate user settings and data from an old computer to a new computer running Windows XP Professional. You can use USMT to script the migration of settings on a large number of computers at once. The Files and Settings Transfer Wizard walks you through the steps of migrating files and settings on a single computer, and can be used by a regular user.

Next you learned several methods that you can use to deploy SP2 to computers running either Windows XP Professional or a previous version of Windows. You can upgrade older computers to Windows XP with SP2 in a single step by preparing a slipstreamed installation that contains the SP2 files integrated with the installation files. You can also perform a clean install of Windows XP with SP2 from the slipstreamed installation files. You can use Group Policy or SUS to deploy SP2 to multiple computers, and you can also perform manual installation of SP2 on individual computers.

Key Terms

- checkupgradeonly
- dual-boot
- Files and Settings Transfer Wizard
- product activation
- slipstreaming
- Software Update Services (SUS)
- User State Migration Tool (USMT)
- Windows Catalog

Apply Your Knowledge

You have seen the conditions under which older Windows operating systems can be upgraded to Windows XP Professional and how to install SP2 either at the same time as you install Windows XP or later.

Here you upgrade a computer running Windows NT 4.0 Workstation to Windows XP Professional with SP2 across the network. To perform this exercise you need two computers, one running Windows NT 4.0 Workstation and the other running any Windows 2000 or later operating system, either a server or client.
Exercises

3.1 Preparing a Slipstreamed Windows XP Installation

By slipstreaming the Windows XP SP2 files into the Windows XP installation media, you can prepare installation files that can be utilized for a direct installation or upgrade of Windows XP Professional. Perform this exercise on any computer running Windows 2000 or later.

**Estimated Time:** 20 minutes.

1. Create and share a folder named XPSP2 in the root of the C: drive.
2. Insert the Windows XP Professional CD-ROM.
4. Select Browse This CD.
5. Select all the files on the CD-ROM and copy them to the XPSP2 shared folder.
6. Remove the Windows XP Professional CD-ROM and insert the Windows XP SP2 CD-ROM. Alternatively, you can access a network location containing the SP2 files downloaded from the Microsoft website.
7. Open a My Computer window focused on the CD-ROM or network share, and copy the xpsp2.exe file to the root of the C: drive.
8. Open a command prompt, navigate to the root of the C: drive, and type `xpsp2 -x`.
9. Accept C: as the location to which files are to be extracted, and then click OK.
10. From the command prompt, navigate to the subfolder named i386\update that was created in step 9.
11. Type `update -integrate:c:\xpsp2` and wait while the service packs are integrated into the files located in the Windows installation folder.
12. Click OK when you are informed that the integration is completed.

3.2 Upgrading a Windows NT 4.0 Computer to Windows XP Professional SP2

In this exercise you upgrade a computer running Windows NT 4.0 Workstation to Windows XP SP2 in a single step, using the slipstreamed installation files you prepared in Exercise 3.1.

**Estimated Time:** 50 minutes.

1. If the Windows NT 4.0 computer is not upgraded to SP5 or later, you need to upgrade to SP6a before you can upgrade to Windows XP. Navigate to [http://www.microsoft.com/ntserver/nts/downloads/recommended/sp6/allsp6.asp](http://www.microsoft.com/ntserver/nts/downloads/recommended/sp6/allsp6.asp) and follow the instructions provided to download the service pack and install it.
2. Right-click Network Neighborhood and choose Map Network Drive. Map a drive to the shared folder you created in Exercise 3.1.
3. Open a command prompt, change to the drive you mapped, and type `winnt32 /checkupgradeonly`.

4. Review the results of the upgrade check and make any changes required.

5. Return to the command prompt and type `winnt32`.

6. On the Welcome to Windows Setup screen, ensure that Upgrade (Recommended) is selected and then click Next.

7. Accept the license agreement and then click Next.

8. Type the product key in the spaces provided and then click Next.

9. On the Get Updated Setup Files screen, select Yes, Download the Updated Setup Files (Recommended) and then click Next.

10. Windows downloads any available updated files, copies installation files, and restarts the computer. Press Esc to manually restart the computer when prompted.

11. Select Windows XP Professional Setup from the boot loader menu and then press Enter.

12. Take a coffee break while the Windows XP Professional installation takes place. You should not need to provide additional information.

13. When installation is complete, the Welcome to Microsoft Windows dialog box opens. Click Next.

14. On the Help Protect Your PC screen, select Help Protect My PC by Turning On Automatic Updates Now, and then click Next.

15. Make a choice on the optional registration screen, and then click Next.

16. Add user names if desired, and then click Next. You can click Skip to skip this step.

17. Click Finish and then log on, using your user name and password that you used with Windows NT.

18. Click Start, Control Panel, and verify the existence of the Security Center, which is included with Service Pack 2 but not with previous editions of Windows XP.

**Review Questions**

1. Which operating systems can be upgraded directly to Windows XP Professional without being upgraded to another operating system first?

2. Name several tasks that you should perform before upgrading a computer to Windows XP Professional.

3. Under which situations should you use USMT or the Files and Settings Transfer Wizard to migrate files and settings from an old computer to a new Windows XP computer?

4. How can you install Windows XP Professional with SP2 in a single operation?

5. Name two benefits achieved by using a SUS server for managing automatic updates of Windows XP computers.
Exam Questions

1. Peter wants to upgrade his computer from Windows 98 to Windows XP Professional. He is concerned that his computer's hardware may be somewhat outdated and will not support the upgrade. Which of the following can he do to determine whether the computer will support Windows XP Professional? (Each answer represents part of the solution. Choose two.)

   ○ A. Check to see whether his hardware is in the Windows Catalog.
   ○ B. Run the winnt /checkupgradeonly command.
   ○ C. Run the winnt32 /checkupgradeonly command.
   ○ D. Simply install Windows XP and hope that everything is compatible.

2. Kevin is a help desk technician for his company, which is currently deploying Windows XP Professional to all client computers, including those that previously were running either Windows 98 or Windows NT 4.0 Workstation.

   Kevin upgrades a Windows 98 computer for a user named Elaine to Windows XP Professional. After the upgrade, she reports that several older software applications no longer work properly. In addition, a hardware device on her computer is not supported by Windows XP. Elaine requests that Kevin restore her computer to its former state without removing any of the applications, documents, and personal data.

   How should Kevin accomplish this task in the minimum amount of time?

   ○ A. Use a third-party disk-imaging software to apply a disk image containing Windows 98 and Elaine's applications.
   ○ B. Open the Add or Remove Programs applet in Control Panel. In the list that appears, select Windows XP Uninstall.
   ○ C. Run Scanstate.exe on Elaine's computer to transfer her personal data and settings to a shared folder on a network server. Format the disk in her computer, reinstall Windows 98 and her applications, and then run Loadstate.exe on her computer to transfer the documents and settings back to the computer.
   ○ D. Copy Elaine's documents and personal data to a shared folder on a network server. Format the disk in her computer, reinstall Windows 98 and her applications, and then copy the documents and personal data back to the computer.
3. Phil is the desktop administrator for his company. He performs a clean installation of Windows XP Professional on 18 computers that are configured to be part of a workgroup named WG1. These computers are all configured to require a user name and password for logon. A month later, Phil receives calls from users in the WG1 workgroup reporting that they are unable to log on to their computers. What should Phil do to correct this problem?

- A. On each computer, log on as a local administrator and reset the password. Then specify that all users are required to change their password at the next logon.
- B. Run the Windows Product Activation Wizard on all computers to activate Windows XP Professional with the Microsoft Clearing House.
- C. Restart each computer in Safe Mode. Use System Restore to specify the first restore point created after the clean installation.
- D. Restart each computer in Safe Mode. Log on as a local administrator and join all computers to an Active Directory domain. Then create new domain user accounts for all users and specify that all users are required to change their passwords at the next logon.

4. You have copied the Windows XP Professional installation and SP2 files to a shared folder on the D: drive of a server that will be accessed by users for installing Windows XP Professional with SP2. You extract the service pack files to a subfolder. What should you do next to ensure that the SP2 files are included in any installation performed from this share?

- A. Run the *slipstream -integrate:d:* command.
- B. Run the *update -slipstream:d:* command.
- C. Run the *update -integrate:d:* command.
- D. You do not need to do anything further. By extracting the service pack files, you ensure that they will be included with Windows XP installations.

5. You are the desktop administrator for your company. A user named Jason has installed SP2 on his Windows XP Professional desktop computer. The next day, he discovers that a critical application required for his job does not work properly. He wants to uninstall SP2 so he comes to you for assistance. In which of the following ways can he uninstall SP2 from his computer? (Each answer presents a complete solution. Choose two.)

- A. Open the Add or Remove Programs applet in Control Panel. In the list that appears, select Windows XP Service Pack 2, and then click Remove.
- B. Open a command prompt and navigate to the "%systemroot%\$NtServicePackUninstall$spuninst folder. Then type *update -u.*
- C. Open the Add or Remove Programs applet in Control Panel. Select Add/Remove Windows Components, clear the check box associated with the Windows XP Service Pack 2 entry, and then click Next.
- D. Open a command prompt and navigate to the "%systemroot%\$NtServicePackUninstall$spuninst folder. Then type *spuninst.exe*.
6. **SP2** Tom is upgrading a computer from Windows 98 to Windows XP Professional. The computer is a 1.6GHz Pentium IV, and has 192MB of RAM and a 30GB hard disk. He is using a CD-ROM containing the Windows XP installation files with SP2 slipstreamed. After the computer restarts following the text mode installation phase, Tom is informed that the computer is infected with a master boot record virus. What should he do before continuing with the installation?

❍ A. Boot from a Windows 98 startup disk and modify the Boot.ini file to include a signature parameter in the ARC path of the system partition.

❍ B. Remove or disable any antivirus software installed in Windows 98.

❍ C. Run winnt32 /checkupgradeonly and follow any recommendations provided.

❍ D. Run fixmbr.exe from the Windows XP Professional CD-ROM.

7. You are installing Windows XP Professional on a computer running Windows 2000 Professional. The hard disk has three partitions: C, D, and E. Windows 2000 Professional is installed on partition C. When Setup gives you a choice of partition on which to install Windows XP Professional, you choose partition D. What happens?

❍ A. You create a dual-boot system.

❍ B. You upgrade Windows 2000 Professional to Windows XP Professional.

❍ C. The Windows XP Professional installation fails.

❍ D. You wipe out Windows 2000 Professional.

8. Jim is deploying 150 new Windows XP Professional computers to users in his company. These users have old computers running either Windows 98 or Windows NT 4.0 Workstation that are to be donated to a charity that refurbishes the computers for use by school children. Jim must ensure that documents, personal data, and settings for all users are copied from their old computers to their new computers. What should he do?

❍ A. Run the Sysprep utility on each old computer. Use a third-party disk imaging utility to create an image of the hard disk. After installing Windows XP Professional, apply each user’s disk image to his or her new computer.

❍ B. Use My Computer to copy all documents and personal data from each user’s old computer to the new computer. Run the regedit command to export the computer’s registry to a .reg file. In the installation script for each new computer, copy the documents and personal data to the computer, and import the .reg file.

❍ C. Use the Recovery Console to start each old computer. Copy the registry files, documents, and personal data to a network share. In the installation script for each new computer, copy the information from the network share to each new computer.

❍ D. Run the Scanstate.exe utility on each user’s old computer. Save the information created by the utility to a network share. Run the Loadstate.exe utility in the installation script for each new computer, and specify the network share as the data source.
Chapter 3: Upgrading to Windows XP Professional

9. **SP2** Susan is the systems administrator for a company that operates an Active Directory domain. She has tested Windows XP Professional SP2 on computers in a test lab and determined that no problems exist with hardware and software that are representative of those used by her company. She now needs to deploy SP2 to 450 Windows XP Professional client computers. What should she do to deploy SP2 to these computers with the least administrative effort?

   - **A.** Create a shared folder on a server and copy all Windows XP Professional and SP2 files to this folder. Then extract the SP2 files and integrate them with the Windows XP Professional files. Instruct all users to connect to this folder and restart their computers.
   - **B.** Create a shared folder on a server and copy all SP2 files to this folder. Extract the SP2 files and then create a GPO that assigns the Update.msi file to all users in the domain. Then instruct all users to restart their computers.
   - **C.** Create a shared folder on a server and copy all SP2 files to this folder. Extract the SP2 files and then create a GPO that assigns the Update.msi file to all computers in the domain. Then instruct all users to restart their computers.
   - **D.** Create a shared folder on a server and copy all SP2 files to this folder. Extract the SP2 files and send all users an email notifying them of the path to the shared folder. Instruct all users to connect to the shared folder and run the Update.exe command.

10. You are the desktop administrator for a company that operates a Windows Server 2003 network. A group of researchers perform hardware and software testing and upgrades on computers located on a separate departmental network that is not connected to the company's main network. A researcher named Jason currently uses a computer running Windows 2000 Professional. He purchased a new computer running Windows XP Professional and wants to transfer his data and settings to the new computer. He has asked you for help. Which of the following should you advise Jason to do?

   - **A.** Copy his user profile from the Windows 2000 computer’s Documents and Settings folder to the new computer.
   - **B.** Copy the My Documents folder and the Ntuser.dat file to the new computer.
   - **C.** Use the Scanstate and Loadstate command-line tools.
   - **D.** Use the Files and Settings Transfer Wizard.

**Answers to Review Questions**

1. You can upgrade Windows 98, Windows Me, Windows NT 4.0 Workstation, or Windows 2000 Professional directly to Windows XP Professional. Older operating systems must be upgraded to Windows 98 or Windows NT 4.0 first. For more information, see the section “Upgrading from a Previous Version of Windows to Windows XP Professional.”

2. You should first check hardware or software compatibility by running winnt32 /checkupgradeonly. In addition, you should perform additional tasks such as scanning for viruses, removing antivirus software, installing software updates, uncompressing drives compressed with
Windows 9x software, and removing volume sets or stripe sets created on basic disks. For more information, see the sections “Testing System Compatibility” and “Additional Preparatory Tasks.”

3. You should use USMT to migrate the files and settings on large numbers of computers to Windows XP because you can script this method easily across many computers. You should use the Files and Settings Transfer Wizard to move a relatively small number of computers or when users are migrating their own files and settings because the wizard interface facilitates the transfer of information. For more information, see the section “Migrating Existing User Environments to a New Installation.”

4. **SP2** You can use a process known a slipstreaming to integrate SP2 files with the rest of the Windows XP installation files, thereby creating an installation set that permits the installation of Windows XP Professional with SP2 in a single operation. For more information, see the section “Deploying Service Pack 2 (SP2).”

5. When you employ a SUS server for installing updates, you can save Internet bandwidth by downloading the update files only once for a large number of client computers. You can also test the updates before deploying them to the clients. For more information, see the section “Managing Automatic Updates.”

**Answers to Exam Questions**

1. **A and C.** Peter can check to see whether his hardware is on the Windows Catalog or HCL. This is a list of hardware that has been certified as compatible with Windows XP. The Windows XP Professional CD-ROM contains a copy of the HCL, but Peter should go to the Microsoft website to obtain the most recent copy, because new devices are added to this list as new drivers are created and they become compatible. Peter can also run `winnt32 /checkupgradeonly` to produce a compatibility report that outlines any hardware or software that may not function properly with Windows XP. The `winnt` command does not include the `/checkupgradeonly` switch, so answer B is incorrect. The `/dudisable` switch prevents Dynamic Update from running, and performs a Windows XP installation with only the original Setup files, so answer D is incorrect. Because Peter can check the Windows Catalog and run `winnt32 /checkupgradeonly`, he should not simply install Windows XP and hope that everything is compatible. Therefore answer E is incorrect. For more information, see the section “Preparing a Computer to Meet Upgrade Requirements.”

2. **B.** Provided you have not converted the hard disk to the NTFS file system, the Add or Remove Programs applet will contain an Windows XP Uninstall item that can be used to uninstall Windows XP on a computer that was upgraded from Windows 98 or Me. This is the simplest manner to remove Windows XP in this scenario. A third-party disk-imaging software application might also work but would take more administrative effort; it would also need to create the image before the upgrade. Therefore answer A is incorrect. It is not possible to transfer data to a Windows 98 computer using `Loadstate.exe`, so answer C is incorrect. The solution in answer D would work, but takes far more administrative effort, so answer D is incorrect. Note that you would need to follow this procedure to restore the computer to Windows NT 4.0 or Windows 2000, or to Windows 98 or Me if you had converted the disk to NTFS. For more information, see the section “Uninstalling Windows XP Professional.”
3. **B.** To help reduce software piracy, Microsoft has implemented a system of product activation that requires that computers be activated with the Microsoft Clearing House within 30 days of installing Windows XP. If computers have not been activated within this period, users are unable to log on until the activation process is completed. Resetting users’ passwords, using System Restore, or joining computers to a domain do not help, so answers A, C, and D are incorrect. For more information, see the section “Performing Post-Installation Updates and Product Activation.”

4. **SP2 C.** You can include the SP2 files in the Windows XP Professional installation by slipstreaming them with the installation files from the Windows XP CD-ROM. To perform this slipstreaming, you need to run the command `update -integrate:d:` where d: is the drive letter containing the installation files. The commands `slipstream -integrate:d:` and `update -slipstream:d:` do not exist, so answers A and B are incorrect. Merely extracting the service pack files is insufficient to ensure their integration with the Windows XP installation, so answer D is incorrect. For more information, see the section “Slipstreaming SP2 Pre-Installation.”

5. **A and D.** If you have accepted the option presented by the Service Pack 2 Installation Wizard to enable the service pack to be uninstalled, the wizard creates the `%systemroot%\$NIS\ServicePackUninstall\spininst` folder. You can navigate to this folder and execute the `Spininst.exe` command to uninstall Service Pack 2. You can also uninstall Service Pack 2 from the Add or Remove Programs applet, where it appears as an entry provided you have accepted the option described here. The Update command is used for manually installing SP2, so answer A is incorrect. Service Pack 2 does not appear in the list of Windows components in the Windows Components Wizard, so answer C is incorrect. For more information, see the section “Deploying Service Pack 2 (SP2).”

6. **B.** Antivirus (AV) software is known to cause problems during installation of or upgrading to Windows XP. On the first reboot, these programs may falsely report that the installation files contain a virus and halt the installation. You should uninstall the AV software and disable any AV checking in the computer’s BIOS before installing or upgrading to XP. You can always re-enable or reinstall antivirus software after you have completed the upgrade. The `Boot.ini` file is not found on a Windows 98 startup disk because it is not used with that operating system, so answer A is incorrect. `Winnt32 /checkupgradeonly` is used to check a computer for software or hardware incompatibility before upgrading to Windows XP. These problems do not cause the false reporting of a virus, so answer C is incorrect. `Fixmbr.exe` is used to recover corrupted master boot records on existing Windows XP installations. You cannot use it in this scenario when Windows XP has not yet been installed, so answer D is incorrect. For more information, see the section “Additional Preparatory Tasks.”

7. **A.** On a computer that is running Windows 98, Windows Me, Windows NT 4.0 Workstation, or Windows 2000 Professional, you can either upgrade the current Windows installation by installing Windows XP Professional on the same partition holding the current Windows operating files, or create a dual-boot system by installing Windows XP Professional on a different partition. You do not upgrade Windows 2000 in this scenario because you installed to a different partition, so answer B is incorrect. This type of installation does not wipe another instance of Windows out, nor does it fail for this particular reason, so answers C and D are incorrect. For more information, see the section “Upgrading the Computer to Windows XP Professional.”
8. **D.** Scanstate.exe and Loadstate.exe are components of the User State Migration Tool (USMT), which can be used for migrating user files and settings from an old computer to a new Windows XP Professional computer. These utilities can be scripted and provide an automated method of transferring files and settings from one computer to another as required by this scenario. Sysprep is used to create an image of a reference computer for duplicating to a series of new computers, and not for imaging old computers, so answer A is incorrect. You should not copy or import registry files, so answer B is incorrect. The Recovery Console is not available on Windows 98 or NT computers, so answer C is incorrect. For more information, see the section “Migrating Existing User Environments to a New Installation.”

9. **C.** Susan can use Group Policy to apply SP2 to a series of Windows XP Professional computers that are joined to a domain by creating a GPO that assigns the Update.msi file to all affected computers. Integrating the SP2 files with the Windows XP Professional files creates an installation share that enables users to reinstall Windows XP with SP2 but not update current Windows XP installations, so answer A is incorrect. To use a GPO for installing SP2 on client computers, Susan must assign the Update.msi file to all computers and not to all users, so answer C is incorrect. It would be possible for users to connect to a shared folder and run Update.exe, but this would take more administrative effort, so answer D is incorrect. For more information, see the section “Using Group Policy to Deploy SP2 Post-Installation.”

10. **D.** The Files and Settings Transfer Wizard facilitates the transfer of a user’s documents and settings from an old computer to a new one. By creating a wizard floppy disk, you can gather data from an old computer running any Windows operating system from 95 and NT 4.0 or more recent, and transfer this data to removable media or to a network share, from which it can be transferred to the new computer. The user profile would not contain all the required information, so answer A is incorrect. The Ntuser.dat file contains the user portion of the registry settings. You cannot transfer registry settings directly from one computer to another, so answer B is incorrect. The Scanstate and Loadstate tools are designed more for transferring data and settings from a series of older computers to new Windows XP Professional computers. It is easier in this scenario with only one computer involved to use the Files and Settings Transfer Wizard; therefore answer C is incorrect. For more information, see the section “Files and Settings Transfer Wizard.”

**Suggested Readings and Resources**

The following are some recommended readings on the subject of upgrading to Windows XP Professional and deployment of Service Pack 2:

   - Chapter 2, “Installing Windows XP Professional”
2. Websites