MICROSOFT
TRAINING
AND CERTIFICATION

Microsoft® Official Curriculum

Module 1: Installing Microsoft Windows XP Professional

Contents

Microsoft®

Instructor Notes

Presentation:
60 Minutes

Lab:
90 Minutes

This module provides students with the knowledge and skills needed to plan and perform a new installation of Microsoft® Windows® XP Professional, and to perform an upgrade to Windows XP Professional. It also provides students with solutions to common installation errors.

After completing this module, students will be able to:

- Plan an installation of Windows XP Professional.
- Install Windows XP Professional from a compact disc (CD).
- Install Windows XP Professional from a server.
- Upgrade to Windows XP Professional.
- Transferring User Files and Settings by Using the USMT.
- Perform post-installation tasks.
- Troubleshoot failed installations.

Materials and Preparation

This section provides the materials and preparation tasks that you need to teach this module.

Required Materials

To teach this module, you need the following materials:

- Microsoft PowerPoint® file 2272A_01.ppt
- The Microsoft Windows XP Professional Installation Simulation located in *StudentCD*\Simulations\Windows XP Professional Boot Process, on the Student Materials CD.
- Internet access to demonstrate the Microsoft Hardware Compatibility Site and the download site for the Microsoft Readiness Analyzer.
- The Microsoft Windows XP Professional Pre-installation Checklist, located in Appendix A in this course.

Preparation Tasks

To prepare for this module, you should:

- Read all of the materials for this module.
- Complete the labs.
- Study the review questions and prepare alternative answers for discussions.
- Anticipate student questions about material and write out answers to those questions.

Module Strategy

Use the following strategy to present this module:

- Planning an Installation of Windows XP Professional

  In this section, present the issues that students must consider before they install Microsoft Windows XP Professional. First, present the system requirements, emphasizing that while Windows XP Professional can run on a computer that meets the minimum requirements, it will run more efficiently on a computer that has the recommended system levels. Next, present the information on checking hardware and software compatibility by demonstrating how to generate a compatibility report by downloading and running the Windows Readiness Analyzer, which is the checkupgrade.exe file. You can gain access to the Windows Readiness Analyzer at http://www.microsoft.com/windows2000/upgrade/compat/RAread.asp, or by using the Winnt32/checkupgradeonly utility on the product CD.

  Next, present the information on disk partitioning options and choosing file systems. Emphasize that the NTFS file system should be used unless there are compelling reasons to use a FAT system, such as the use of legacy applications that will not function on an NTFS partition. Present the Deciding on a Workgroup or Domain Installation topic, and take time to discuss where the accounts are stored, and how the location of the accounts affects security. Finally, demonstrate completing a pre-installation checklist, by using the Windows XP Professional Installation Checklist job aid in Appendix A.

- Installing Windows XP Professional from a Product CD

  In this section, you will use the Windows XP Professional Installation Simulation to demonstrate installing Windows XP Professional from a CD. Explain that this is a new installation, referred to as a clean install, and then explain circumstances under which a clean install can occur. First, demonstrate the tasks for running the Setup program, and emphasize that during setup, some pre-installation planning decisions are implemented. Next, demonstrate how to complete the Setup Wizard, and emphasize the use of strong passwords. Finally, demonstrate how to install the network components, and explain that only domain installations require configuring the network ID. When you have finished the simulation, show students where the simulation appears on their Student Materials CDs.

- Installing Windows XP Professional from a Server

  In this section, present the requirements for installing Windows XP Professional from a server. Emphasize the need to prepare the client computer for the installation, and to connect to the distribution server to run the Setup program. Explain that once the files are copied to the client computer, and the Setup Program is run, the rest of the installation is performed exactly like a CD installation.

- Upgrading to Windows XP Professional

  In this section, present the preparation necessary for upgrading to Windows XP Professional, and the procedures for doing so. First, present the information on the upgrade paths, and emphasize that users can directly upgrade most versions of Microsoft Windows that are installed on computers that meet the minimum system requirements for Windows XP Professional. Next, present the information on preparing the system for an upgrade, and remind students how to generate and read a compatibility report. Mention that these preparation steps are in addition to the planning steps presented in the Planning an Installation topic.

  Finally, demonstrate the steps to upgrade a computer from Microsoft Windows 98. Compare the Windows 98 upgrade process to the upgrade process from Microsoft Windows 2000 or Microsoft Windows NT®, emphasizing that it is easier to upgrade from Windows 2000 and Windows NT.

- Transferring User Files and Settings by Using the USMT

  In this section, present the introduction to the User State Migration Tool (USMT), and explain that this tool will reduce the work, and therefore the costs associated with deploying a new operating system. Next, present the settings, folders, and file types that are transferred by default. Specifically explain that the settings that are transferred are settings for both the operating system and for certain Microsoft applications. Next, demonstrate how to create a USMT disk by running the Files and Settings Transfer Wizard on your Windows XP Professional computer. Next, discuss running the USMT from the command line, and explain that because this method enables them to customize the process, and to perform multiple migrations, IT professionals are more likely to use this method. Explain to students that because the USMT process has two parts (scanning the source computer and loading the destination computer), they will perform the first part of the process (scanning the source computer) in this lab, and they will perform the second part of the lab in a later module, after joining a domain.

- Performing Post-Installation Tasks

  In this section, first present the concept of preparing for disaster recovery by creating Automated System Recovery (ASR) disks. Explain that the ASR Wizard backs up the entire partition. Demonstrate how to run the ASR Wizard, and discuss the importance of preparing for a possible system disaster. Next, present the information on the activation process, and emphasize that a failure to activate Windows XP Professional will result in the operating system becoming unusable and remaining unusable until it is activated.

- Troubleshooting Failed Installations

  In this section, discuss the common setup errors that are listed, some of the causes for each error, and possible ways to resolve them.

Customization Information

This section identifies the lab setup requirements for a module and the configuration changes that occur on student computers during the labs. This information is provided to assist you in replicating or customizing Microsoft Official Curriculum (MOC) courseware.

This module includes computer-based interactive lab exercises, and as a result, there are no lab setup requirements or configuration changes that affect replication or customization.

Important Lab 1A in this module is also dependent on the classroom configuration that is specified in the Customization Information section at the end of the Manual Classroom Setup Guide for Course 2272A, *Implementing and Supporting Microsoft Windows XP Professional (Course Beta)*.

Lab Setup

The following list describes the setup requirements for the lab in this module.

Setup Requirement 1

Lab C Exercise 1 in this module requires the creation of 24 user accounts in the Microsoft Active Directory™ directory service, which the students will use to log on to the domain.

- Create the 24 user accounts using the information from the Classroom Setup Guide.

Lab Results

Performing Lab C Exercise 1 in this module does not introduce any configuration changes.

Overview

Topic Objective
To provide an overview of the module topics and objectives.

Lead-in
In this module, you will learn about installing and upgrading to Windows XP Professional.

- **Planning an Installation of Windows XP Professional**
- **Installing Windows XP Professional from a Product CD**
- **Installing Windows XP Professional Over a Network**
- **Upgrading to Windows XP Professional**
- **Transferring User Settings and Files by Using the USMT**
- **Performing Post-Installation Tasks**
- **Troubleshooting Failed Installations**

As a Microsoft® Windows® XP Professional support professional, one of your tasks may be to install the operating system. There are a number of ways to install Windows XP Professional, and each installation method requires that you carefully plan for the installation and choose correct setup options during the installation. Familiarity with the available options and setup procedures will help you deploy Windows XP Professional efficiently.

After completing this module, you will be able to:

- Plan an installation of Windows XP Professional.
- Install Windows XP Professional from a CD.
- Install Windows XP Professional over a network.
- Upgrade to Windows XP Professional.
- Transfer user settings and files by using the USMT.
- Perform important post-installation tasks.
- Troubleshoot failed installations.

Planning an Installation of Microsoft Windows XP Professional

Topic Objective
To introduce the steps in planning an installation.

Lead-in
Thorough planning is essential to an efficient installation of Microsoft Windows XP Professional.

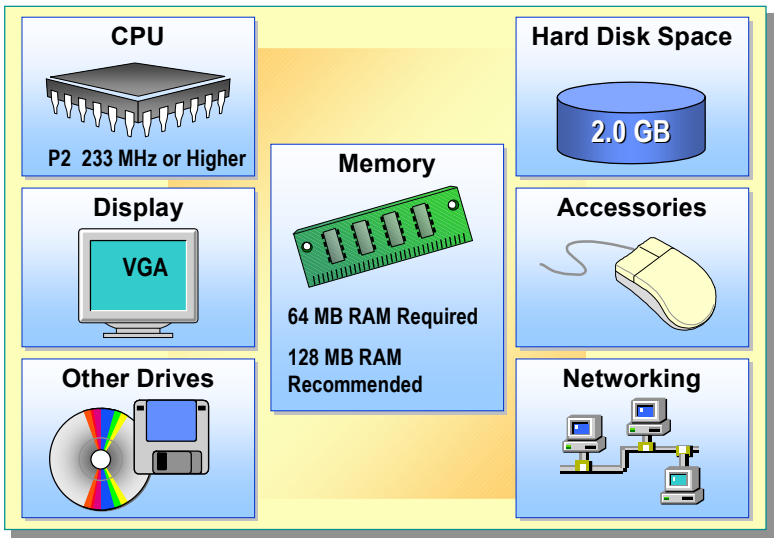
- Checking System Requirements
- Checking Hardware and Software Compatibility
- Determining Disk Partition Options
- Choosing the Appropriate File System: FAT, FAT32, NTFS
- Deciding on a Workgroup or a Domain Installation
- Completing a Pre-Installation Checklist

When you run the Windows XP Professional Setup program, you must provide information about how to install and configure the operating system. Thorough planning can make your installation of Windows XP Professional more efficient by helping you to avoid potential problems during installation. An understanding of the configuration options will also help to ensure that you have properly configured your system.

Checking System Requirements

Topic Objective
To introduce minimum system requirements.

Lead-in
Windows XP Professional can only be run on computers that meet the minimum hardware requirements.



Before installing Windows XP Professional, it is important to make sure that your system meets the minimum requirements. The following table lists the minimum system requirements and the recommended system levels for Windows XP Professional.

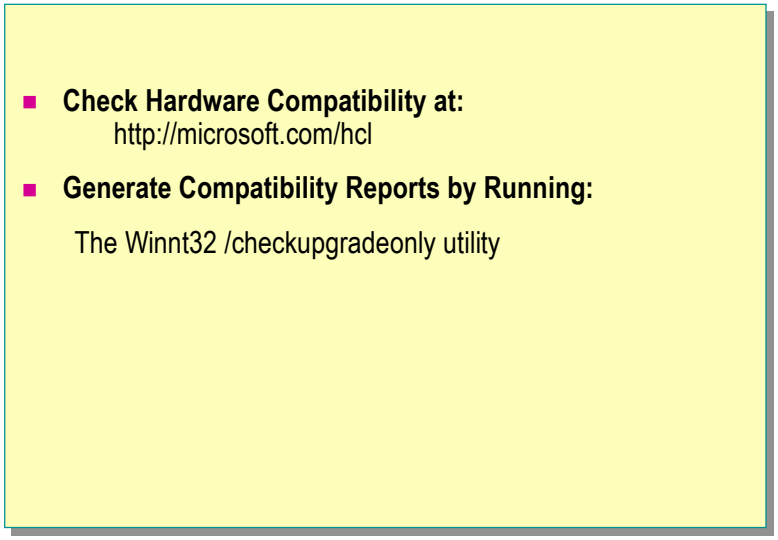
Component	Minimum system requirements	Recommended system levels
CPU (up to two)	P2 233 megahertz (MHz) or equivalent	P2 300 MHz or equivalent
RAM (minimum and maximum)	64 megabytes (MB) / 4 gigabytes (GB)	128 MB / 4 GB
Partition size	2 GB	2 GB
Maximum hard disk space on partition	2 terabytes	2 terabytes
Free hard disk space	1.5 GB	2 GB
Monitor	VGA resolution or higher	VGA resolution or higher
Accessories	Keyboard and mouse or other pointing device	Keyboard and mouse or other pointing device
For CD-ROM installation	12x or faster CD-ROM drive	12x or faster CD-ROM drive
For network installation	Network client or boot disk	Network client or boot disk

The recommended additional free disk space on the partition on which you install Windows XP Professional is used for optional components such as user accounts, logs, future service packs, and also for the paging file used by the operating system. A *partition* is a dedicated space on the hard drive. The recommended 2 GB partition allows for additional space for files that applications installed on the computer may require in the Windows directory.

Checking Hardware and Software Compatibility

Topic Objective
To describe how to determine whether hardware and software are compatible with Windows XP Professional.

Lead-in
The HCL and the **checkupgradeonly** utility will help you ensure that your hardware and software are compatible with Windows XP Professional.



After you determine that your system meets the minimum requirements, you must verify that your hardware and software are compatible with Windows XP Professional. You can check hardware by using the Hardware Compatibility List (HCL), or by generating a compatibility report.

Verifying Hardware Compatibility by Using the HCL

You can ensure that your hardware is compatible with Windows XP Professional by verifying that all hardware devices are listed on the HCL. Microsoft provides tested device drivers for those devices that are listed on the HCL. Using hardware that is not on the HCL may result in problems during or after installation. For a copy of the Windows XP Professional HCL, see the hcl.txt file in the support folder on the Windows XP Professional CD. For the most up-to-date version of the HCL, see the Microsoft Windows XP Professional HCL Web site at Microsoft.com/hcl.

Important Microsoft supports only those devices listed on the HCL. If you have hardware that is not listed on the HCL, contact the hardware manufacturer to determine if there is a manufacturer-supported driver that is compatible with Windows XP Professional.

Generating a Compatibility Report

Key Point
Setup provides a report-only mode that can generate compatibility reports. These reports provide you with information about incompatible hardware and software before you install or upgrade.

Windows XP Professional provides a report-only mode that can generate compatibility reports. To generate a report, an operating system must be installed on the computer. These reports provide you with information about incompatible hardware and software before you perform an installation or an upgrade. You can analyze these reports to determine whether your hardware is compatible with Windows XP Professional, or whether you need to install update packs or new versions of applications.

Using the Readiness Analyzer

You can generate a compatibility report by running the Microsoft Windows Readiness Analyzer. The Readiness Analyzer checks the existing hardware and software to determine if any unrecognized or incompatible hardware or software is installed on your system.

To run the Readiness Analyzer, insert the product CD and then run winnt32, using the /checkupgradeonly switch. For example, if your CD-ROM is the E: drive, you would type **E:\I386\Winnt32 /checkupgradeonly**. The Readiness Analyzer will display a system compatibility report, which can then be viewed in detail or saved. The default name is compat.txt, and the default save location is the Windows folder on the local drive.

Software Compatibility

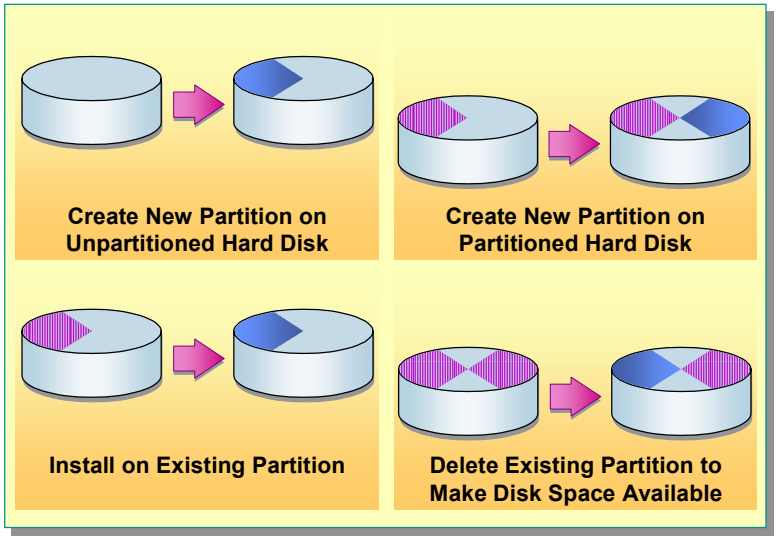
If you perform a new installation, you might not need the information on software compatibility; in fact, there may not be any existing software. However, the software information is essential during an upgrade.

Note Because of the differences in the system registry and setup procedures, many applications install differently on computers running Windows 98 than they do on computers running Microsoft Windows NT® Workstation, Windows 2000 Professional, and Windows XP Professional. Therefore, if you are upgrading from Windows 98, you may need to reinstall certain software.

Determining Disk Partitioning Options

Topic Objective
To explain disk partitioning options.

Lead-in
There are four disk partitioning options to choose from during installation.



Disk partitioning is a way of dividing the physical disk so that each section functions as a separate unit. When you create partitions on a disk, you divide the disk into one or more areas that can be formatted for use by a file system, such as FAT (file allocated table), FAT32, or the NTFS file system. In accordance with the minimum system requirements, the partition on which you install Windows XP Professional must have no less than 650 MB free space. It is strongly recommended that the partition be at least 2 GB.

When you perform an installation from a CD, the Setup program examines the hard disk to determine its existing configuration. After the configuration is determined, Setup will offer the following options if available:

- Create a new partition on an unpartitioned hard disk.

  If the hard disk is unpartitioned, you can create and size the partition on which you will install Windows XP Professional.

For Your Information
One example of a third-party disk partitioning tool is Partition Magic.

Important If you make the entire disk one partition, you will not be able to repartition the disk later without either reinstalling the operating system, or using a third-party tool.

- Create a new partition on a partitioned hard disk.

  If the hard disk is already partitioned, but has enough unpartitioned disk space, you can create an additional partition in the unpartitioned space.

- Install on an existing partition.

  If the hard disk already has a partition that is large enough, you can install Windows XP Professional on that partition. If the partition has an existing operating system, you will overwrite that operating system if you accept the default installation path.

- Delete an existing partition.

  If the hard disk has an existing partition, you can delete it to create more unpartitioned space for the new partition. Deleting an existing partition erases all data on that partition.

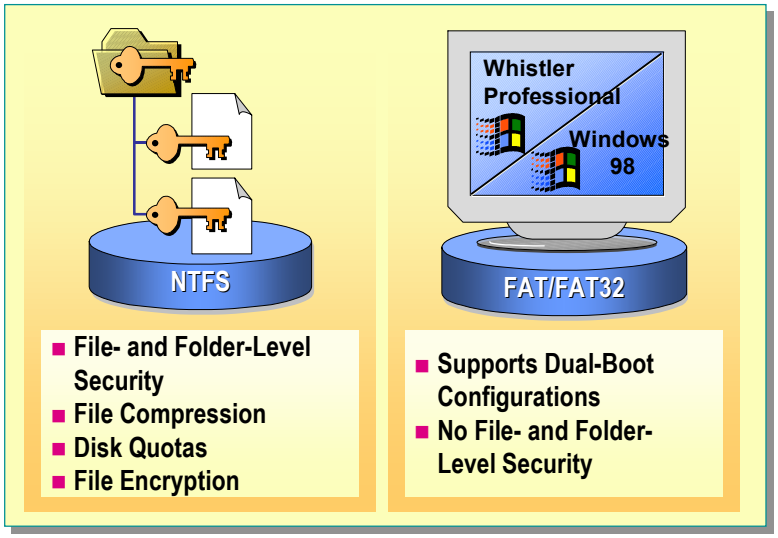
If you select a new partition during Setup, create and size only the partition on which you will install Windows XP Professional. After installation, use Disk Management to partition the remaining space on the hard disk.

Note Disk Management is a system utility for managing hard disks and the volumes or partitions that they contain. For more information about disk management, see Module 12, "Managing Disks," in Course 2272A, *Implementing and Supporting Microsoft Windows XP Professional (Course Beta)*.

Choosing the Appropriate File System: FAT, FAT32, NTFS

Topic Objective
To describe the differences between file systems, and how to choose among them.

Lead-in
You should usually format the partition on which you install Windows XP Professional as NTFS unless you require a dual-boot configuration.



After you create the partition on which you will install Windows XP Professional, you can use Setup to select the file system with which to format the partition. Windows XP Professional supports the NTFS file system as well as the file allocation table (FAT) and FAT32 file systems.

NTFS

NTFS is the recommended file system for Windows XP Professional because it provides a higher level of security and enables file compression. Use NTFS for partitions that require:

- File and folder level security.
- You can control access to files and folders.
- File compression.
- You can compress files to create more storage space.
- Disk quotas.
- You can control disk usage on a per-user basis.
- File encryption.
- You can transparently encrypt file data.

Windows XP Professional, Windows 2000, and Windows NT are the only Microsoft operating systems that you can use to gain access to data on a local hard disk that is formatted with NTFS. If you plan to gain access to files that are on a local Windows XP Professional partition with the Windows 95 or Windows 98 operating systems, you should format the partition with a FAT or FAT32 file system.

FAT and FAT32

Normally, you would not use FAT to format the partition on which Windows XP Professional resides because it does not have the file and folder level security that NTFS provides. However, if you do not require the security and compression features that are available with NTFS, or if you require a dual boot configuration to run applications that are not compatible with Windows XP Professional, you might need to use FAT 32.

FAT and FAT32 do not provide file and folder level security, and FAT does not support partitions larger than 2 GB. If you attempt to use FAT to format a partition larger than 2 GB, Setup automatically formats the partition with FAT32.

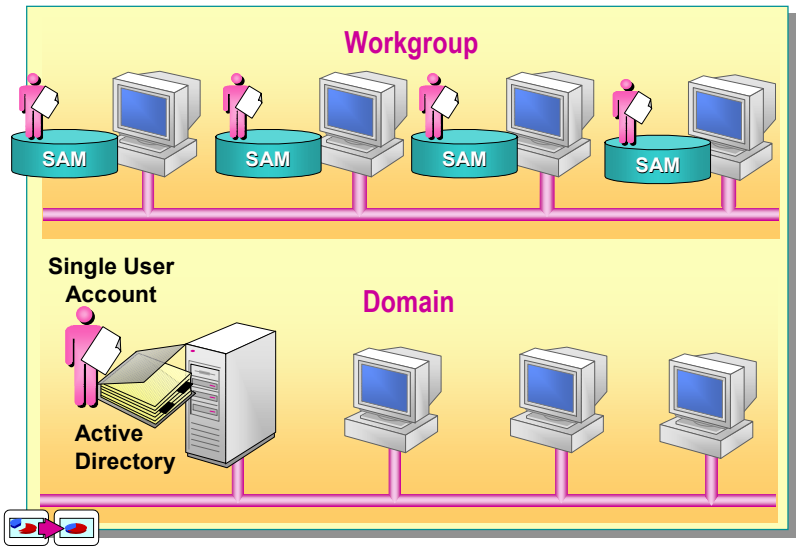
Note When you upgrade an operating system on an existing FAT or FAT32 partition to Windows XP Professional, you have the option to use NTFS or FAT32. If you choose NTFS, you can convert the partition to NTFS or format the partition using NTFS. If the partition contains data that you want to keep after the installation, do *not* format the partition. Instead, choose to convert the partition to NTFS to preserve the data.

Important Some operating systems, such as Microsoft MS-DOS® 6.22 or earlier and Microsoft Windows 95, do not recognize partitions that are formatted with FAT32 or NTFS file systems.

Deciding on a Workgroup or Domain Installation

Topic Objective
To discuss the differences between workgroups and domains.

Lead-in
Before installation, you need to decide whether you will join a workgroup or domain.



Before installing Windows XP Professional, you must decide if you will install the operating system in a workgroup or domain configuration.

Workgroup Characteristics

A workgroup is a small group of computers on a network that enable users to work together and does not support centralized administration.

A workgroup has the following characteristics:

- Resources can be located on each computer in the workgroup.
- Administration and authentication of users are performed on each computer in the workgroup.
- Each computer has its own local Security Accounts Manager (SAM) database. A user must have a user account on each computer to which that user needs to gain access to resources.
- A workgroup becomes more difficult to manage as it becomes larger. Windows XP Professional can support only ten simultaneous incoming connections.

Note If you are installing Windows XP Professional on a stand-alone computer, you will install it into a workgroup configuration.

Domain Characteristics

A domain is a logical grouping of computers on a network that has a central security database for storing security information. Centralized security and administration are important for computers in a domain because they enable an administrator to easily manage computers that are geographically distant from each other. A domain is administered as a unit with common rules and procedures. Each domain has a unique name, and each computer within a domain has a unique name.

Key Point
A user only needs one user account to gain access to network resources that reside on multiple computers in the domain.

A domain has the following characteristics:

- Resources, administration, and authentication are centralized.
- One directory database in Microsoft Windows 2000 environments, which stores all of the user and computer accounts for the domain. This database is used by the Microsoft Active Directory™ directory service. A user needs only one domain user account in Active Directory to gain access to shared network resources in the domain.
- Easily supports a small group of computers to many thousands of computers.

Key Points
To add a computer to a domain, you must have a domain user account, and the computer must have an existing domain computer account, or you must have the ability to create a domain computer account during installation.

Joining a Domain

In a domain, each computer has a computer account. When a computer joins a domain, the appropriate user and computer accounts must exist. Before you can add a computer to a domain:

- The person performing the installation must have a user account in Active Directory. This account does not need to be the domain Administrator account.

  –and–

- The computer must have an existing computer account in the Active Directory database of the domain that the computer is joining, and the computer must be named exactly as its domain account is named.

  –or–

- The person performing the installation must have appropriate permission to create a domain account for the computer during installation.

Note All users with user accounts in Active Directory can create up to ten domain computer accounts without having additional permissions.

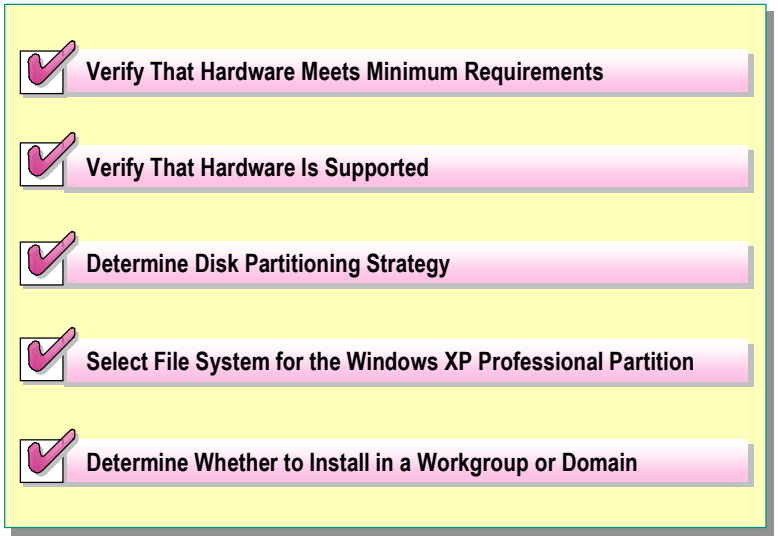
Workgroup vs. Domain

Typically the Network Administrator or Architect decides whether to install Windows XP Professional in a workgroup or domain. If the Network Administrator or Architect does not make the decision, the Windows XP Professional Pre-Installation Checklist, located in Appendix A, may help you decide whether to install Windows XP Professional in a workgroup or domain. However, if you review the checklist and are still unsure, join a workgroup, because you can join the domain after completing the installation.

Completing a Pre-Installation Checklist

Topic Objective
To introduce how to complete a pre-installation checklist.

Lead-in
One way to ensure that you are prepared for your installation is to complete a pre-installation checklist.



Before installing Windows XP Professional, use the pre-installation checklist to help you complete the following:

Delivery Tip
Show the students the pre-installation checklist located in Appendix A.

- Verify that the computer hardware meets the minimum system requirements.
- Verify that all hardware appears on the HCL, or that the hardware manufacturer provides drivers that are compatible with Windows XP Professional.
- Determine how you will partition the hard disk during installation.
- Select the file system that is appropriate for your installation. It is recommended that you use NTFS, unless you have specific reasons not to do so.
- Decide whether you will install Windows XP Professional in a workgroup or a domain, and ensure that the appropriate accounts are created prior to installation.

Lab 1A: Planning a Microsoft Windows XP Professional Installation

Topic Objective
To introduce the lab.

Lead-in
In this lab, you will complete the planning process to install Windows XP Professional.

Objectives

After completing this lab, you will be able to:

- Plan an installation of Microsoft Windows XP Professional

Lab Setup

To complete this lab, you need the following:

- A computer running Windows 98.
- A Windows XP Professional CD.
- The Windows XP Professional Pre-Installation Checklist found in Appendix A.

Scenario

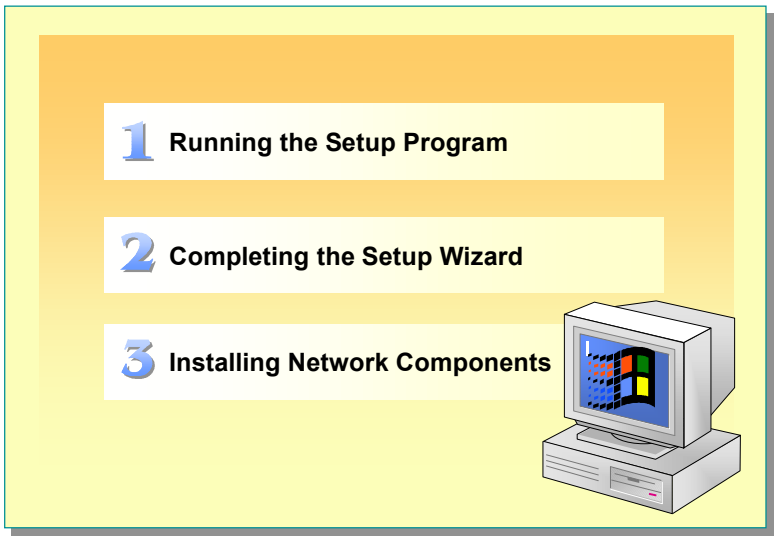
Your organization has just received 10 evaluation copies of Windows XP Professional. As a member of the Desktop Support team, you have the responsibility of upgrading 10 existing computers running Windows 98 to computers running Windows XP Professional.

Estimated time to complete this lab: 15 minutes

Installing Windows XP Professional from a Product CD

Topic Objective
To identify the steps for installing Windows XP Professional from a CD.

Lead-in
There are three tasks to perform when you install Windows XP Professional from a CD: run the Setup program, complete the Setup Wizard, and install network components.



You will perform a new installation, sometimes called a “clean install,” when:

- There is no existing operating system on the partition on which you will install Windows XP Professional.

  –or–

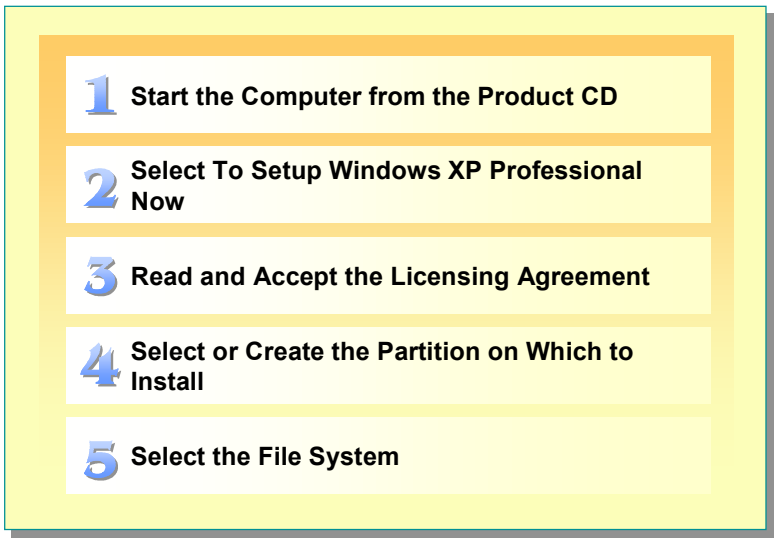
- You want to completely remove and replace the existing operating system on the partition.

Becoming familiar with the tasks that are necessary for installation and the most common post-installation tasks will help ensure that Windows XP Professional is successfully installed on client computers so that users' work will not be impeded by operating system problems.

Running the Setup Program

Topic Objective
To identify the tasks that are involved in running the Setup program.

Lead-in
The first part of the Setup program is text-based, and is accessed from the product CD.



Delivery Tip
Use the Windows XP Professional Installation simulation to demonstrate this topic and the following two topics, rather than presenting the Topics.

Mention to students that the simulation is on the Student Materials CD.
To view the Windows XP Professional Installation, they open the Web page on the Student Materials CD, click **Lab Simulations**, and then click the title of the simulation.

The first part of the Setup program is text-based, not a wizard. To run the Setup program, perform the following steps:

1. Start the computer from the CD.
2. Select **To Setup Windows XP Professional Now**.
3. Read and accept the licensing agreement.
4. Select or create the partition on which you will install Windows XP Professional.

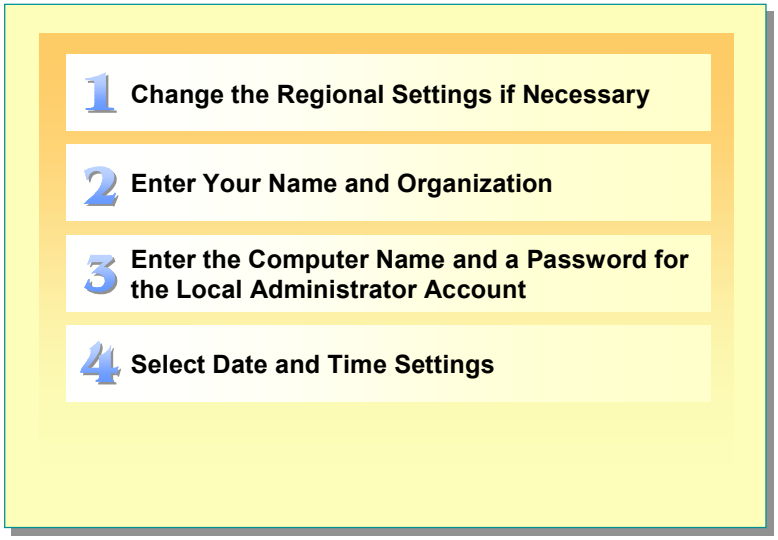
Important To have a choice of partitions, on the **Install Options** page, click **Advanced Options**, select **I want to choose my drive letter or partition during Setup**, click **OK**, and then finish the Setup

5. Select a file system for the installation partition.

Completing the Setup Wizard

Topic Objective
To identify the tasks involved in completing the Setup Wizard.

Lead-in
After you finish the text-based portion of the installation, you then complete the Setup Wizard.



Delivery Tip
Continue using the Windows XP Professional Installation simulation to demonstrate the steps.

After running the text-based portion of the Setup program, complete the Setup Wizard by performing the following steps:

1. Click **Customize** to change regional settings, if necessary. The settings are described in the following table.

Setting	Description
Current System Locale	Affects how programs display dates, times, currency, and numbers. Choose the locale that matches your location, for example, French (Canada).
Current Keyboard Layout	Accommodates the special characters and symbols used in different languages. Your keyboard layout determines which characters appear when you press keys on the keyboard.

2. Type your name and organization.
3. Type the product key.

4. Type the computer name and a password for the local Administrator account. The local Administrator account resides in the SAM of the computer, not in Active Directory. If you will be installing in a domain, you need either a pre-assigned computer name for which a domain account has been created, or the right to create a computer account within the domain.

Mention the Tip to the students. Define complex passwords and stress the importance of using them to enhance network security.

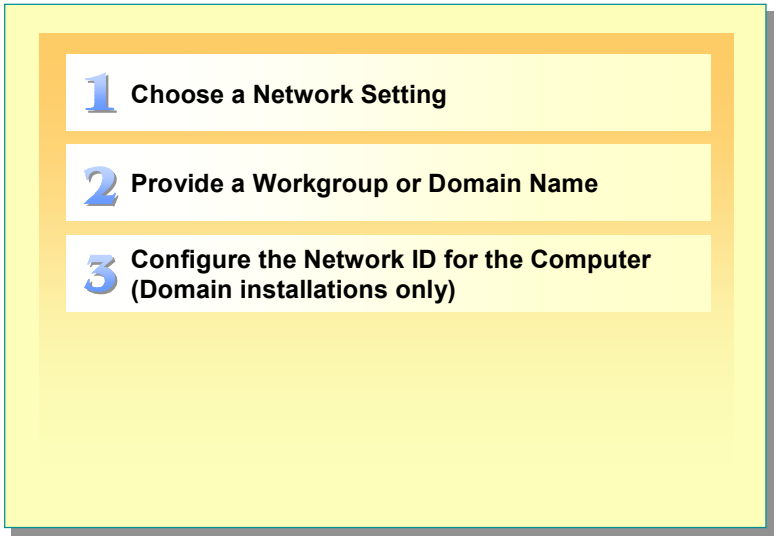
Tip To increase security on your network, it is recommended that you require complex passwords that are hard for anyone else to guess. For best practices in password policies, see Module 5, "Configuring Microsoft Windows XP Professional to Operate in Microsoft Networks" in Course 2272A, *Implementing and Supporting Microsoft Windows XP Professional (Course Beta)*.

5. Select the date, time, and time zone settings.

Installing Network Components

Topic Objective
To identify the tasks involved in installing network components.

Lead-in
The final step in the installation of Windows XP Professional is to install the network components.



Delivery Tip
Continue using the Windows XP Professional Installation simulation to demonstrate the steps.

After completing the Setup Wizard, the computer will restart. Install network components by performing the following steps:

1. Choose a network setting, and then click **Next**. The network settings are described in the following table.

Setting	Description
Typical	Installs Client for Microsoft Networks, File and Printer Sharing for Microsoft Networks, and Transmission Control Protocol/Internet Protocol (TCP/IP) using Dynamic Host Configuration Protocol (DHCP) assigned addresses.
Custom	Creates custom network connections; for example, configuring a static IP address, configuring the computer as a Windows Internet Naming Service (WINS) client, or adding additional protocols.

2. Provide a workgroup or domain name, and then click **Next** to begin installation. If you are installing into a domain, go to step three; if you are installing into a workgroup, you are finished.
3. If you are installing to a domain, configure the network ID for the computer.

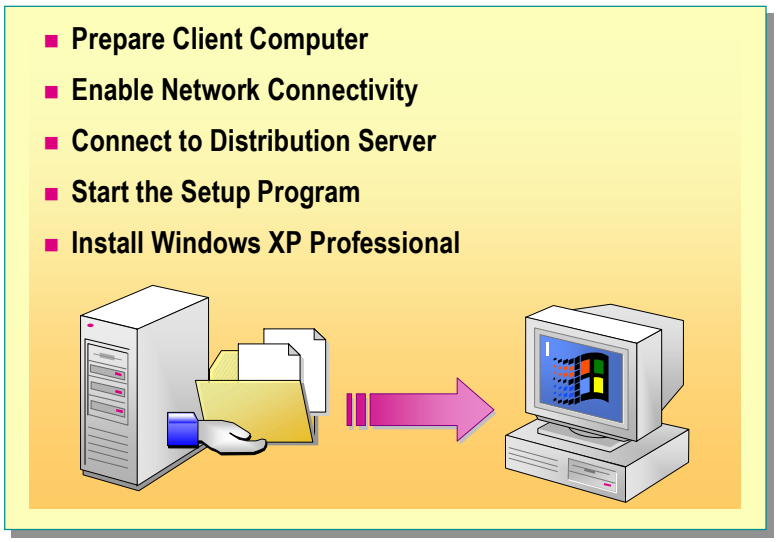
   Windows XP Professional displays the Network ID Wizard. In this wizard, you can do one of the following:

   - Configure a local user account and password for the computer.
   - Choose not to configure a specific user account for the computer. When a user starts the computer, the **Log On to Windows** dialog box appears.

Installing Windows XP Professional Over a Network

Topic Objective
To describe the requirements for an installation over a network.

Lead-in
Windows XP Professional can also be installed over a network.



If you are installing Windows XP Professional from a networked server, the computer on which you will install Windows XP Professional must be able to connect to that server. Once the computer is connected, you run the Setup program, and the installation is performed in the same way as an installation from a CD.

1. Prepare the client computer.

   The client computer requires a formatted partition on which to copy the installation files. Create a partition of at least 650 MB (2 GB recommended) and format it by using the FAT32 file system. You should use the FAT32 file system because a Windows 98 or MS-DOS network boot disk cannot read a partition that is formatted with NTFS.

2. Enable network connectivity.

   If the client computer has an existing operating system, install a network client. If it does not have an operating system, boot from a client disk that includes a network client that enables the target computer to connect to the distribution server. Start the client computer by using the network client.

3. Connect to the distribution server.

   A distribution server contains the installation files from the i386 folder on the Windows XP Professional CD. These files must reside in a shared folder.

Delivery Tip
Explain the difference between 16-bit and 32-bit applications, and their relationships to the winnt.exe and winnt32.exe commands.

4. Run the Setup Program.

   If the client computer is running Windows 98, Windows Millennium Edition, or Windows NT, run Winnt32.exe from the shared folder to start the Setup program. If you are booting by using an MS-DOS-based network boot disk, run Winnt.exe. Setup will restart the computer after copying all files from the i386 folder to a temporary folder on the target computer.

5. Install Windows XP Professional.

   From this point, installation from the server is the same as an installation from a CD-ROM.

Lab 1B: Installing Windows XP Professional (Simulation)

Topic Objective
To introduce the lab.

Lead-in
In this lab, you will use a simulation to gain the experience of installing Windows XP Professional.

Objectives

After completing this lab, you will be able to:

- Perform a new installation of Microsoft Windows XP.

Lab Setup

To complete this lab, you need the following:

- A computer running Windows 98, Windows NT 4.0, Windows 2000, or Windows XP.
- Simulation files located on the Student CD.

Estimated time to complete this lab: 15 minutes

◆ Upgrading to Windows XP Professional

Topic Objective
To introduce the tasks associated with upgrading to Windows XP Professional

Lead-in
When performing an upgrade, you must perform all of the planning tasks as well as these additional tasks.

- **Identifying Upgrade Paths**
- **Preparing Your System**
- **Choosing an Installation Type**
- **Upgrading Computers Running Windows 98**
- **Upgrading Computers Running Windows 2000 or Windows NT 4.0 SP 6.0**
- **Installing Windows XP Professional in a Dual Boot Configuration**

You can upgrade most Windows client operating systems directly to Windows XP Professional. If you upgrade instead of doing a new installation, you will not lose the existing settings and applications on the partition.

When preparing for an upgrade, you should first complete the tasks listed on the pre-installation checklist that appears in the "Planning Your Installation" section of this module, and then prepare your system for the upgrade.

Preparing for an upgrade consists of these additional tasks:

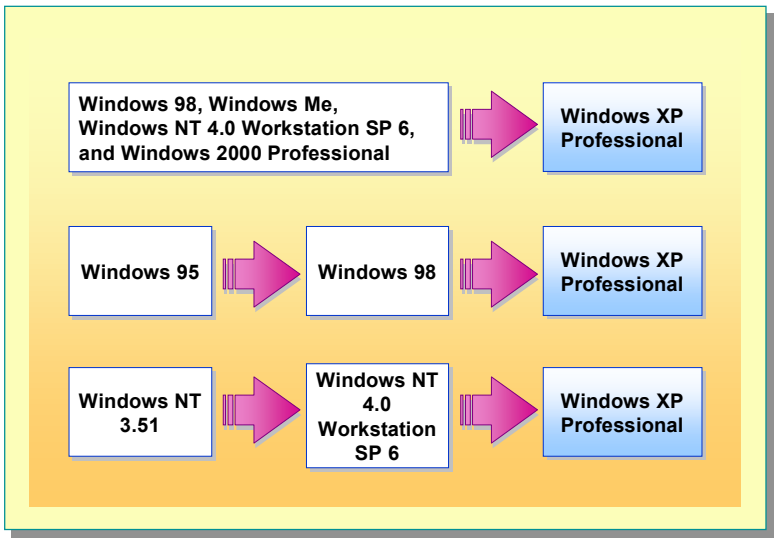
- Identifying the upgrade path
- Preparing your system

When you upgrade, you can choose an Express Upgrade, or the Custom option. The Custom option enables you to select the partition on which Windows XP Professional will be installed, and to select special other non-standard options.

Identifying Upgrade Paths

Topic Objective
To identify the upgrade paths for Windows XP Professional.

Lead-in
Windows 98, Windows Millennium Edition, Windows NT 4.0 SP 6, and Windows 2000, can all be upgraded directly to Windows XP Professional.



Key Point
Consumer versions of Windows earlier than Windows 98, and business versions of Windows earlier than Windows NT 4.0 SP 6a, will require an intermediate upgrade.

The following operating systems can be upgraded directly to Windows XP Professional:

- Windows 98
- Windows Millennium Edition
- Windows NT Workstation 4.0 SP 6
- Windows 2000 Professional

The following table shows the operating systems that require an additional step to be upgraded to Windows XP Professional.

If you are running	Upgrade to this operating system first
Versions of Microsoft NT workstation earlier than version 4.0 SP 6	Windows NT 4.0 SP 6
Windows 95	Windows 98

Preparing Your System

Topic Objective
To introduce the steps in preparing the computer for an upgrade.

Lead-in
Preparing a system for an upgrade is as important as planning an installation.

- Determine Hardware and Software Compatibility
- Install Hardware and Software Updates as Necessary
- Back Up Files
- Scan for Viruses
- Uncompress Compressed Drives
- Uninstall Incompatible Software

Preparing your system for an upgrade is as important as planning an installation. Systems that are not properly prepared may have problems during or after the upgrade. Use the following tasks to prepare your system for upgrade.

Delivery Tip
Remind students of the compatibility report that was generated during the planning lab, and visit the sites listed in this topic to demonstrate how they work.

- Determine hardware and software compatibility.

  Microsoft provides a compatibility tool at: Microsoft.com/hcl.

  You can also run the Windows Readiness Analyzer (Winnt32 \checkupgradeonly)
- Install hardware and software updates as necessary.

  Review your current system information and compatibility reports, and then obtain hardware and software updates from your hardware or software manufacturer. It is particularly important to ensure that you have the latest BIOS (basic input/output system) that is available from your computer manufacturer.
- Back up your files.

  Use the Backup Wizard to back up your files to a disk, a tape drive, or another computer on your network.
- Scan for viruses.

  Use anti-virus software to scan for and eradicate any viruses on your hard disk.
- Uncompress drives.

  Uncompress any DriveSpace, DoubleSpace, or otherwise compressed volumes before upgrading to Windows XP Professional. Do not upgrade to Windows XP Professional on a compressed drive unless the drive was compressed with the Windows NT file system (NTFS) compression feature.

- Uninstall incompatible software.

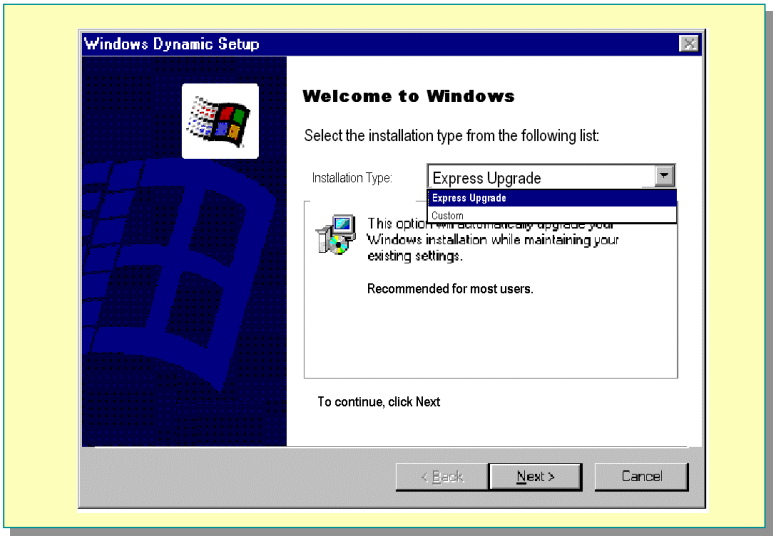
  Certain types of software may be incompatible with Windows XP Professional, and should be removed prior to upgrading. While not every instance of the following types of software will be incompatible, these software types may be incompatible.

  - Third-party networking protocols and third-party client software that do not have an update in the i386\Winntupg folder on the Windows XP Professional CD-ROM.
  - Anti-virus applications and disk quota software because of the changes in the version of NTFS used in Windows NT 4.0 and later versions.
  - Custom power management software or tools, because the Advanced Configuration and Power Interface (ACPI) and Advanced Power Management (APM) features in Windows XP Professional replace these tools.

Choosing an Installation Type

Topic Objective
To explain the differences between the upgrade installation types: express upgrade and custom upgrade.

Lead-in
During setup, you can choose the type of upgrade that you want to perform.



When you perform an upgrade to Windows XP Professional, you can select an express upgrade or a custom upgrade.

Express Upgrade

An express upgrade will automatically upgrade your Windows installation in the existing operating system folder, and maintains all existing settings. An express upgrade is the recommended type of upgrade.

Custom Upgrade

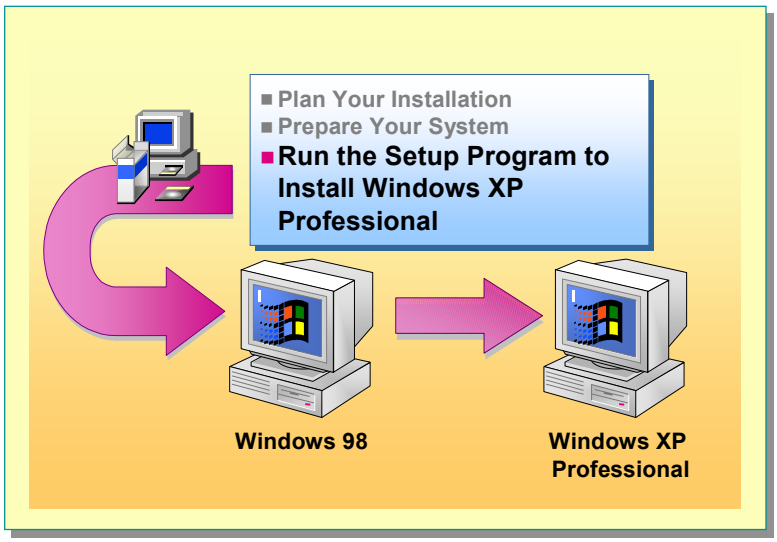
A Custom upgrade performs an upgrade of your existing Windows installation and enables you to customize the installation by:

- Changing the installation folder.
- Changing the language options.
- Converting the file system on the installation partition to NTFS.

Upgrading Computers Running Windows 98

Topic Objective
To identify the steps in the upgrade process.

Lead-in
When upgrading from Windows 98, you must be aware of software compatibility.



To upgrade from Windows 98 to Windows XP Professional, perform the following steps:

Delivery Tip
Demonstrate this process.

1. Insert the product CD.
2. Select the **Upgrade to Windows XP Professional (Recommended)** check box, and then click **Next**.
3. Read and accept the licensing agreement.
4. Specify any update packs that are required to make your applications work properly with Windows XP Professional.

   Update packs contain migration dynamic-link libraries (DLLs) that update an application so that it works in Windows XP Professional. They are available from the software vendor.
5. Select the partition on which to install Windows XP Professional.

   If you are installing the system onto an existing FAT partition, specify whether you want to convert the partition to NTFS.

Important Windows XP Professional provides an uninstall tool when upgrading from Windows 98 on a drive formatted as FAT or FAT32. Therefore, when upgrading this type of drive, you will not have the option to upgrade to NTFS, as this would negate the uninstall option. However, you can convert the drive to NTFS after installation if you choose.

6. Review the upgrade report.

   Setup generates an upgrade report to alert you to any compatibility problems. Every application on the computer is scanned for known problems, and upgrade packs are recommended as needed.

Note Stop the installation process only if the compatibility problems would prevent the user from operating the computer. In most cases, these errors are associated with a specific application and you can resolve them after completing setup. You can print or save the upgrade report to help you resolve the errors after the upgrade is complete.

Explain that an administrator can also create a computer account prior to users performing the upgrade, to control the names given to computers.

7. Join a domain.

   Client computers running Windows 98 do not have domain computer accounts. If the computer that is being upgraded is going to join a domain, a computer account must exist or you must create the domain computer account.

8. Finish running the Setup program, which converts as much information as possible from the Windows 98 registry and installs Windows XP Professional.

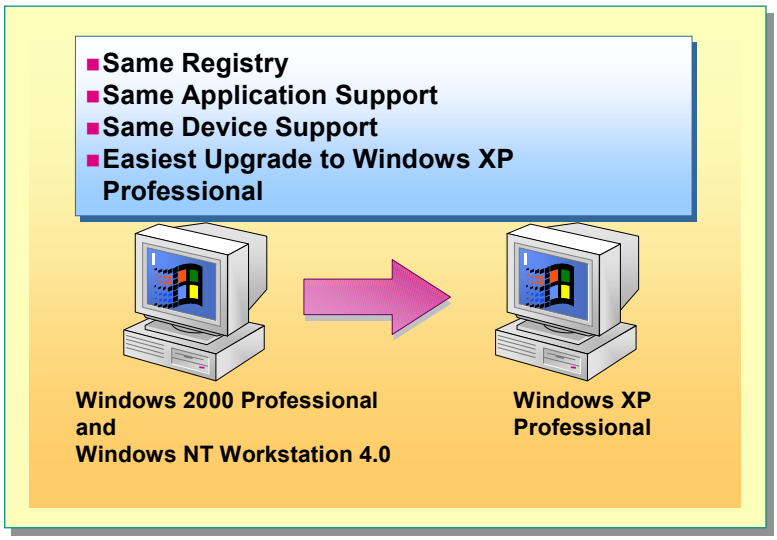
When the upgrade is complete, log on as the local administrator to review any errors that may have occurred.

Note Windows XP Professional has a **Run in Compatibility Mode** tool that enables applications to be run in an environment that emulates either Windows 98 or Windows NT 4.0. For more information about this tool, see Module 6, "Configuring the Desktop Environment," in Course 2272A, *Implementing and Supporting Microsoft Windows XP Professional (Course Beta)*.

Upgrading Computers Running Windows 2000, or Windows NT Workstation 4.0 SP 6

Topic Objective
To detail the steps necessary to upgrade from Windows 2000 or Windows NT Workstation.

Lead-in
Because Windows 2000 Professional and Windows NT workstation use the same file systems, upgrading from these operating systems is easier.



Key Point
Upgrading from Windows NT Workstation to Windows XP Professional is easier than any other upgrade to Windows XP Professional.

Because Windows 2000, Windows NT Workstation 4.0 SP 6 and Windows XP Professional share common registry, file system, security, and operating system kernel structures, nearly all applications that run on Windows 2000 and Windows NT Workstation 4.0 SP 6 will run without modification on Windows XP Professional. Upgrading from these operating systems to Windows XP Professional is easier than upgrading from other Windows operating systems because:

- Almost all peripherals and devices that worked with Windows 2000 Professional and Windows NT Workstation 4.0 will work with Windows XP Professional.
- The version of NTFS used in Windows NT Workstation 4.0 is automatically upgraded to the version of NTFS used in Windows XP Professional during the upgrade process.

Note A few minor incompatibilities exist between the version of NTFS used in Windows NT Workstation 4.0 and the version of NTFS used in Windows 2000 and Windows XP Professional. For example, file system filters used by anti-virus software and third-party networking software that were originally written for Windows NT no longer function between the two versions of the file system.

Mention that when upgrading from Windows NT Workstation, an administrator can install the operating system onto a converted NTFS partition.

The upgrade process for client computers running Windows 2000, or Windows NT workstation 4.0 SP 6 is similar to the upgrade process for client computers running Windows 98. To upgrade clients running Windows NT Workstation 4.0, perform the following tasks:

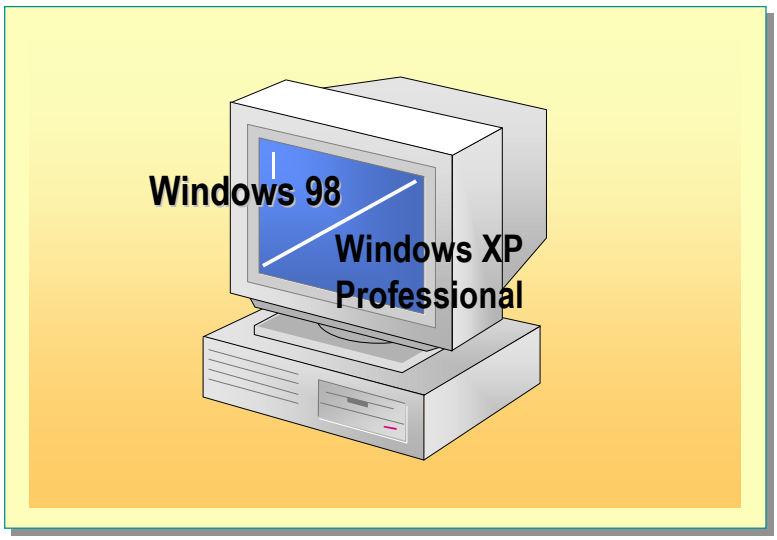
1. Start the computer from the product CD.
2. Select the **Upgrade to Windows XP Professional (Recommended)** check box, and then click **Next**.
3. Read and accept the licensing agreement.
4. If you are installing the system onto an existing FAT partition, specify whether you want to convert the partition to NTFS.

The files are copied, the computer restarts, and the upgrade finishes without further user intervention.

Installing Windows XP Professional in a Dual-Boot Configuration

Topic Objective
To describe the process for installing Windows XP Professional in a dual-boot configuration.

Lead-in
There might be times when you will want to install Windows XP Professional in a dual boot configuration.



A dual boot configuration allows you to choose between two or more operating systems each time you start the computer. By using this type of configuration, you can run applications that are not compliant with Windows XP Professional on an existing operating system, while using Windows XP Professional for all other applications.

Important Some operating systems, for example MS-DOS, do not recognize partitions formatted with FAT32 or NTFS file systems.

The active partition is the partition from which the computer starts, and it must be formatted with a file system that is recognized by both operating systems. For example, the active partition must be formatted with FAT when you have a dual boot configuration with MS-DOS and Windows XP Professional, or FAT32 when you have a dual boot configuration with Windows 98 and Windows XP Professional.

The other operating system must be installed first, and then you can install Windows XP Professional on the active partition or on another primary or extended partition.

When you choose to install Windows XP Professional on a partition other than the active partition, Windows XP Professional will copy the necessary files to start the boot process to the active partition, which is referred to as the Windows XP Professional system partition. This enables Windows XP Professional to begin the boot process. The remainder of the operating system files will be copied to the non-active partition, which is referred to as the Windows XP Professional boot partition.

Transferring User Settings and Files Using the USMT

Topic Objective
To introduce the USMT and its function.

Lead-in
The User State Migration Tool (USMT) transfers a user's files and settings to a new computer, eliminating the need to manually transfer files, or to reconfigure the operating system.

- **Settings, Folders, and File Types Transferred by Default**
- **Using the Files and Settings Transfer Wizard**
- **Transferring a User State by Using Command Line Tools**
- **Changing the Files or Settings Transferred by Modifying the .inf Files**

A *user state* on a computer consists of that user's files, operating system settings, and certain settings associated with applications. The *User State Migration Tool (USMT)* helps users and IT professionals transfer users' files and settings to a new computer running Windows XP Professional or to a new installation of Windows XP Professional on an existing computer. You can use the USMT to transfer the user state from computers running Windows 95 or later to a computer running Windows XP Professional

Using the USMT enables IT professionals to quickly and easily include transfer of employee files and settings as a part of operating system deployment efforts or computer replacement. Consequently, users spend little or no time reconfiguring a new operating system, or searching for lost files. Also, calls to the help desk regarding reconfiguration are reduced. The reduction in time for IT professionals, help desk staff, and users can significantly reduce the costs associated with deploying a new operating system or new computers. Additionally, using the USMT can reduce training costs and improve the user's experience with the new operating system by presenting a familiar, already configured, operating system that requires little in the way of user adjustment.

Settings, Folders, and File Types Transferred by Default

Topic Objective
To list the setting groups, folders, and file types transferred by default.

Lead-in
Certain settings, folders, and file types are transferred by default.

- **Settings Transferred by Default**
- **Folders Transferred by Default**
- **File Types Transferred by Default**

The following sections describe the files, folders, and settings that are transferred by default when you run the USMT. Note that by default the only application settings that are transferred are those for specific Microsoft applications. However, the USMT is fully customizable, and it is expected that most IT professionals will customize what is transferred.

Settings Transferred by Default

The following table contains the setting groups transferred by default.

Accessibility Options	Browser and Mail Settings
Display Properties	Folder and Taskbar Options
Fonts	Mouse and Keyboard Options
Network Printers and Mapped Network Drives	Regional Settings

Microsoft Office	Microsoft Excel
Microsoft Outlook®	Stored Mail and Contacts
Microsoft Word	Microsoft PowerPoint®

Folders Transferred by Default

The following table contains the folders transferred by default.

My Documents	Desktop
My Pictures	Favorites

File Types Transferred by Default

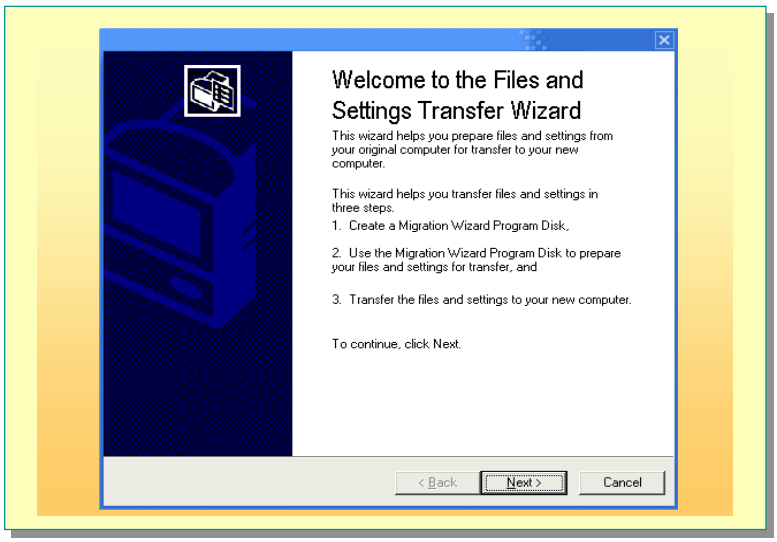
File types are defined by their extensions. Files that have the following extensions are transferred to the new My Documents folder by default.

*.ch3
*.csv
*.dif
*.doc
*.dot
*.dqy
*.iqy
*.mcw
*.oqy
*.pot
*.ppa
*.pps
*.ppt
*.pre
*.rqy
*.rtf
*.scd
*.sh3
*.txt
*.wpd
*.wps
*.wq1
*.wri
*.xls

Using the Files and Settings Transfer Wizard

Topic Objective
To describe the process for transferring the user state by using the Files and Settings Transfer Wizard.

Lead-in
One way to transfer a user's state is to use the Files and Settings Transfer Wizard.



One method to transfer a user's state is by using the Files and Settings Transfer (FAST) Wizard. This wizard enables you to transfer the user's files, folders, and settings to a new computer, or to a clean installation of Windows XP Professional on an existing computer.

The wizard method is most likely to be used when replacing or performing a new installation of Windows XP Professional on a single computer, and when end users are responsible for upgrading their own operating systems.

Because previous versions of Windows do not contain the Files and Transfer Settings Wizard, you must have access to a computer running Windows XP Professional on which you can create a wizard disk, or have access to a Windows XP Professional installation CD, which contains the wizard as a choice during Setup. The wizard enables you to collect the files and settings to be transferred. The transferred data may be saved to either a server or removable media such as a disk or a compact disc. However, depending on the amount of data transferred, you may need a very large number of disks. If possible, you should save the data to a server or a large format removable media.

Before beginning the transfer process to a new computer, you will need:

- A destination computer running Windows XP Professional.
- Space on a server to which both computers can gain access, or removable media on which to store the user's system state.
- A blank disk for the wizard, or a Windows XP Professional CD containing the wizard.
- The account name and password of the user whose state you are transferring, also called the migrating user.

Using the wizard to transfer the user state to a new computer occurs in three stages: Stage one occurs when you do not have access to the Windows XP Professional installation CD.

1. On the destination computer, you will log on as the migrating user, open the Files and Transfer Settings Wizard, and then create a Files and Transfer Settings Wizard disk.
2. On the source computer, you will log on as the migrating user, use the disk to run the wizard, and then store the user state on either a server or removable media.
3. On the destination computer, you will complete the wizard to transfer the user state to the new computer.

Important This process transfers the state of only the user that is logged on. To transfer additional users' states from the same computer, you must repeat the process for each user.

During an upgrade from a previous version of Windows to Windows XP Professional, the user's state is automatically transferred, so there is no need to complete this process.

Transferring a User State by Using Command Line Tools

Topic Objective
To describe the process for running the USMT by using the command-line tools.

Lead-in
IT professionals are more likely to use the command-line tools to run the USMT.

- **Preparing the Server**
- **Scanning the Source Computer**
- **Loading the Destination Computer**

Another way to transfer users' states is by using the command-line tools **scanstate**, which captures information, and **loadstate**, which restores or deploys information. This method can be used to transfer a single user's state, or to transfer multiple users' states. If you are deploying Windows XP Professional on more than one computer at a time, use the command-line method. When running the USMT as part of a mass installation, the **scanstate** and **loadstate** tools are included as batch files.

Note For more information on using the command line tools, see Chapter 7 of *The Change and Configuration Management Deployment Guide* in the Windows XP Professional Resources Kit.

To transfer a single user's state to a new computer by using the command-line tools, you will need:

- A server to which both the source and destination computers can gain access, and which has adequate space to save the migrating user's state.
- A source computer containing a user's account to be transferred.
- A destination computer running Windows XP Professional that does not contain a profile for the user whose state you will be transferring.
- An account with administrative privileges on the destination computer. The account cannot have the same name as the migrating user account.
- The account name and password of the user whose settings and files are to be transferred.

Transferring the user state to a new computer by using the command-line tools occurs in three stages.

Preparing the Server

Both the source and destination computers must have access to the same server, and you must prepare the server for the transfer process. To prepare the server:

1. Create a folder called USMT on the server, and share the folder as USMT.
2. Give the migrating user Read access.
3. Give the administrator account on the destination computer Read/Write access.
4. Create a folder on the server called MigStore, and share it as MigStore, giving the migrating user and the administrator Read/Write access. Ensure that the folder is on a drive with a large amount of free space.
5. Create a folder in the USMT folder called Scan.
6. Create a folder in the USMT folder called Load.
7. Insert the Windows XP Professional CD, and navigate to the ValueAdd/USMT folder.
8. Copy the following files to the USMT/Scan folder: Scanstate.exe, *.inf, *.dll.
9. Copy the following files to the USMT/Load folder: Loadstate.exe. *.dll, MigUser.inf.

Scanning the Source Computer

To scan the user state on the source computer, perform these steps.

1. Log on as the migrating user.
2. Map a drive to the shared USMT folder on the server.
3. Open a command prompt, and go to the mapped USMT drive on the server.
4. Change directories to the Scan folder.
5. Run Scanstate.exe by using the default command line of:

   scanstate /i .\migapp.inf /i .\migsys.inf /i .\migfiles.inf /i .\sysfiles.inf \\<server>\MigStore
6. When **scanstate** has finished running, move to the destination computer.

Loading the Destination Computer

To load the user state on the destination computer, perform these steps.

1. Log on as a user with administrative user rights; however, this user cannot be the migrating user.
2. Confirm that the migrating user does not have a profile on the destination computer. To do so, click **Start**, click **Control Panel**, and then double-click **User Accounts**. If the user you are migrating to this computer is listed, delete the user account, and confirm that you want to delete the user's files.
3. Map a drive to the USMT folder on the server.
4. Open a command prompt and go to the mapped USMT drive on the server.
5. Change directories to the Load folder.
6. Run Loadstate.exe by using the default command line of:

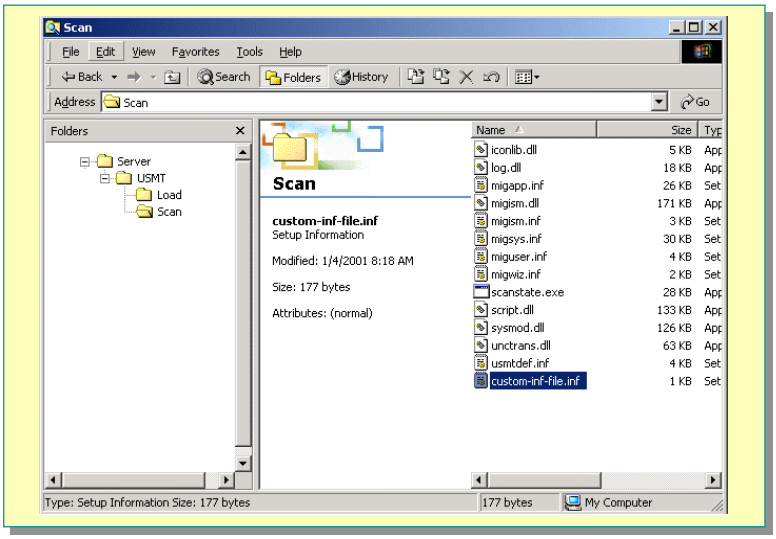
   loadstate /i .\miguser.inf \\<server>\MigStore
7. When **loadstate** has finished running, log off as the user with administrative user rights, and log on as the user whose files and settings were just transferred.
8. Verify that the users files and settings were transferred by verifying that the classic desktop appears. When using the command-line method, the old shell is automatically transferred.

Note The USMT process can be incorporated in large-scale operating system deployments by using automated scripts. For more information about this process, see Appendix B, "Adding USMT to Deployment" on the Student Materials CD.

Changing the Files or Settings Transferred by Modifying the .inf Files

Topic Objective
To introduce the concept of customizing the data and settings to be transferred during the USMT process.

Lead-in
You can change, delete, or add settings, files, and folders to be transferred by creating custom .inf files.



The default file types, folders, and settings that are transferred by using the USMT can be altered or augmented by using .inf files.

If you want to add or remove file types, folders, or settings to be transferred, use Notepad to create an .inf file and save that file in the USMT/Scan folder you created on the server. You then add the name of the .inf file that you have created to the default command line when you run Scanstate.exe.

Some of the additional objects that can be transferred include files, file types, folders, and registry keys or values.

INF scripts use an object specification syntax. The syntax is:

<obj type>, <object> [, <attribute> [, . . .]]

Note For more information about this process, see, “Adding USMT to Deployment” in the Additional Reading folder on the Student Materials CD.

Performing Post-Installation Tasks

Topic Objective
To introduce two important post-installation tasks.

Lead-in
Activation and preparing for the ASR process are two important post-installation tasks.

- **Activating Windows XP Professional**
- **Preparing for Automated System Recovery**

After completing an installation of Windows XP Professional, you must activate the software, and prepare the computer for the Automated System Recovery (ASR) process.

Activating Windows XP Professional

Product Activation is an anti-piracy measure that will be included in all future Microsoft software applications. Anti-piracy measures protect organizations from having their software stolen. Windows XP Professional and Microsoft Office XP are the first applications to include mandatory activation.

The first time that a user logs on to a computer running Windows XP Professional, the **Activate Windows** dialog box appears, and the user is prompted to activate the installed copy of Windows XP Professional. A user can choose not to activate the software, in which case reminders to activate will periodically appear until the user activates the software.

The easiest way to activate the software is to select the **Yes, let's activate Windows over the Internet now** option, and then click **Next**. If the computer is not connected to the Internet, the user can instead click the **Telephone** button, and then follow the directions for activating Windows XP Professional over the telephone.

Important Users must activate Windows XP Professional within seven days of installation. If not activated within seven days, users are prevented from gaining access to Windows XP Professional until activation occurs.

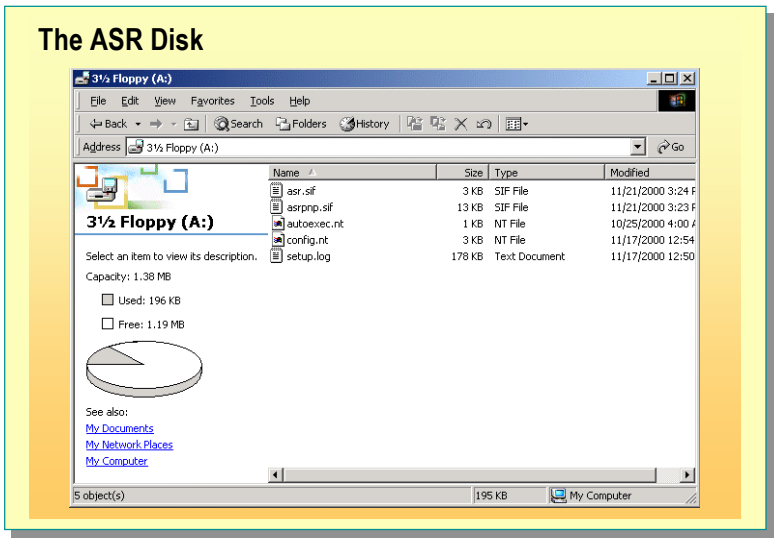
Users in large organizations can use a Volume License Product Key that will eliminate the need to individually activate each installation of Windows XP Professional. Additionally, users can automatically activate Windows XP Professional as part of an automated installation.

Note For more information about automated installations, see Module 2, "Automating an Installation of Windows XP Professional," in Course 2272A, *Implementing and Supporting Microsoft Windows XP Professional (Course Beta)*.

Preparing for Automated System Recovery

Topic Objective
To introduce the ASR process for creating an ASR disk.

Lead-in
The ASR Wizard will create a backup and a disk to recover the system in case of disaster.



The Automated System Recovery (ASR) process prepares you to recover a system that is unable to start because of a hardware malfunction, the loss of a storage device, or another system disaster.

After verifying that the installation of Windows XP Professional was successful, prepare for the ASR process by running the Automated System Recovery Preparation Wizard and creating an ASR Disk. By using the wizard, you can back up an entire partition. The ASR disk enables you to gain access to that backed up data.

The data must be backed up to a tape drive or writable CD-ROM, or backed up to a file and then burned to a CD or tape. The file will be as large as the partition you are backing up, so be sure that your backup medium is large enough to contain it. The floppy disk created at the end of the backup process contains the ASR state file, named Asr.sif, and other files needed to restore the system to its original state.

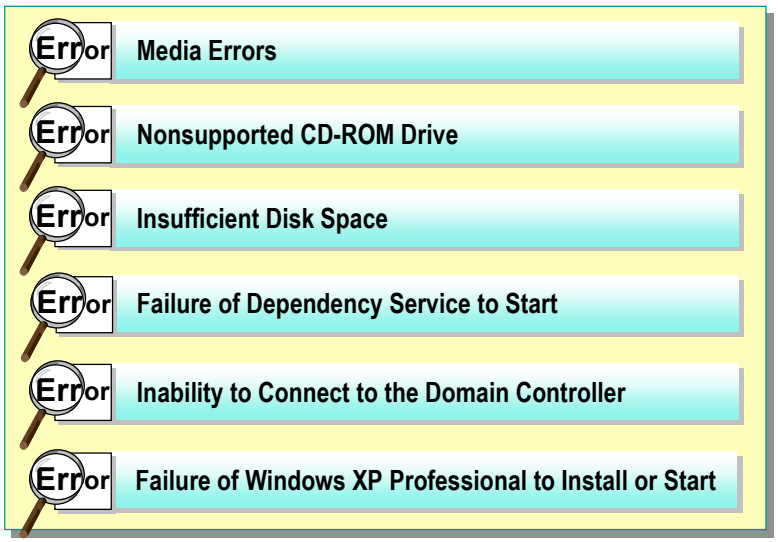
To run the Automated System Recovery Wizard, perform these tasks:

1. Click **Start**, click **All Programs**, point to **Accessories**, point to **System Tools**, and then click **Backup**.
2. Click **Advanced Mode**.
3. On the **Welcome** tab, click **Automated System Recovery Wizard**.
4. On the Wizard page, click **Next**.
5. Type a destination drive and name for the backup, and click **Next**.
6. Click **Finish** to start the backup.
7. When prompted, insert an empty, high-density 3.5-inch floppy disk into the floppy disk drive.
8. When the process is complete, remove the disk, label it “Automated System Recovery Disk,” date it, and then store it in a safe location.

Troubleshooting Failed Installations

Topic Objective
To introduce common setup errors and their resolutions.

Lead-in
To troubleshoot a failed setup, it is important to recognize common setup errors and know their solutions.



The following table lists common setup errors and possible solutions.

Problem	Solution
Compact disc errors	Use a different Windows XP Professional compact disc. To request a replacement CD, contact Microsoft or your vendor.
Nonsupported CD-ROM drive	Replace the CD-ROM drive with one that is supported. Try another method of installing Windows XP Professional, such as installing over the network, and then add the CD-ROM driver.
Insufficient disk space	Use the Setup program to create a partition that uses existing free space on the hard disk. You can also delete and create partitions as necessary to create a partition that is large enough for installation.
Failure of dependency service to start	In the Windows XP Professional Setup Wizard, return to the **Network Settings** page and verify that you installed the correct protocol and network adapter. Verify that the network adapter has the proper configuration settings, such as transceiver type, and that the local computer name is unique on the network.

(*continued*)

Problem	Solution
Inability to connect to the domain controller	Verify that the domain name is correct and the IP address is correct. Verify that the server running the DNS Server service and the domain controller are both online. If you cannot locate a domain controller, join a workgroup, and then join the domain after installation. Verify that the network adapter and protocol settings are set correctly. If you are reinstalling Windows XP Professional and using the same computer name, delete and then recreate the computer account.
Failure of Windows XP Professional to install or start	Verify that Windows XP Professional is detecting all of the hardware and that all of the hardware is listed on the HCL.

Lab 1C: Upgrading Windows 98 to Windows XP Professional

Topic Objective
To introduce the lab.

Lead-in
In this lab, you will upgrade your computers from Windows 98 to Windows XP Professional.

Objectives

After completing this lab, you will be able to:

- Successfully upgrade a computer running Windows 98 to Windows XP Professional.

Prerequisites

Before working on this lab, you must have:

- Experience logging on and off Windows 98 in a domain.

Lab Setup

To complete this lab, you need the following:

- A computer running Windows 98 with logon validation to a Windows NT domain.
- Access to a computer running Windows 2000 Advanced Server configured as a Domain Controller.
- 1 blank 3 1/2 inch floppy disk.

Estimated time to complete this lab: 60 minutes

Review

Topic Objective
To review information from the module, and ensure understanding.

Lead-in
Please take a few minutes to record your answers to these review questions before a class discussion of the module.

- Planning an Installation of Windows XP Professional
- Installing Windows XP Professional from a Product CD
- Installing Windows XP Professional Over a Network
- Upgrading to Windows XP Professional
- Transferring User Settings and Files by Using the USMT
- Performing Post-Installation Tasks
- Troubleshooting Failed Installations

1. Your organization is planning to install Windows XP Professional on new computers that will be purchased for desktop users. What should you do before the computers are purchased to ensure that Windows XP Professional can be installed and run without difficulty?

   Verify that the computers' components meet the minimum system requirements, and that all hardware is listed on the Windows XP Professional HCL. If components are not listed on the HCL, contact the manufacturers to find out if a Windows XP Professional driver is available.

2. Your organization wants to upgrade all existing desktop systems from Windows 98 to Windows XP Professional. All of the systems have compatible hardware and meet the minimum system requirements. You will need to run existing applications after the upgrade. What should you consider as you make disk partitioning and file system decisions?

   Verify that the existing applications are compatible with Windows XP Professional.

   If the applications are compatible, and data on the Windows XP Professional partition will only be accessed by using Windows XP Professional, Windows 2000, or Windows NT, then the existing partition should be upgraded and formatted as NTFS.

   If the applications are not compatible, and cannot be made compatible, then Windows XP Professional should be installed on another partition in a dual boot configuration,

3. Name two ways in which you can determine hardware or software compatibility before you upgrade to Windows XP Professional.

   Check the HCL on the Installation CD or at http://microsoft.com/hwtest/hcl

   Run the Winnt32 /checkupgradeonly utility from the CD.

4. Discuss why it is important to prepare for Automated System Recovery, and the process for doing so. What is restored in the Automated System Recovery process? What is not restored?

   It is important to run the ASR Wizard and create a system backup and ASR Disk so that a system that has become corrupted may be restored. The process consists of running the ASR Wizard, storing the backup on an acceptable medium, and creating the ASR disk. Only the system state data and a minimal copy of the Windows XP Professional operating system are restored. No applications or data are restored. The Backup Wizard should be used with the ASR Wizard to back up data and applications.

5. You have a computer with a 10 GB hard drive, 5 GB of available space, and 32 MB of RAM running Microsoft Windows NT 3.51. What must you do to prepare this computer to upgrade to Windows XP Professional?

   Add at least 32 MB more RAM, and upgrade to Windows NT 4.0