

LESSON 2.1

98-349 Windows Operating System Fundamentals

# Identify Windows Editions and Upgrade Paths

## Lesson Overview

Identifying Windows editions and upgrade paths.

In this lesson, you will:

- Identify Windows editions
- Identify operating system requirements
- Identify upgrade paths

## Windows Editions

Windows 7 has several editions designed to support your computing needs. Each edition has features that distinguishes it from the others.

- Starter
- Home Premium
- Professional
- Ultimate
- Enterprise

## Windows Editions (continued)

A complete list of features, including Starter edition, can be found at:

<http://windows.microsoft.com/en-US/windows7/products/compare?T1=tab15>

Essential features:

| Features                           | Home Premium | Professional | Ultimate |
|------------------------------------|--------------|--------------|----------|
| XP Mode                            |              | X            | X        |
| Domain Join                        |              | X            | X        |
| Backup to home or business network |              | X            | X        |
| BitLocker                          |              |              | X        |
| Language of Choice                 |              |              | X        |

## OS Requirements for Windows 7

- 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor
- 1 gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)
- 16 GB available hard disk space (32-bit) or 20 GB (64-bit)
- DirectX 9 graphics device with WDDM 1.0 or higher driver



## Identify Operating System Requirements

System requirements may vary based upon the desired functionality.

For example:

- For some Windows Media Center functionalities, a TV tuner card may be required.
- Some games and programs might require a graphics card that is compatible with DirectX 10 or later.
- Windows XP Mode requires an additional 1 GB of RAM and an additional 15 GB of hard disk space.

## Operating System Requirements

PCs with multiple processors (CPUs):

- Commercial servers, workstations, and other high-end PCs may have more than one physical processor.
- Windows 7 Professional, Enterprise, and Ultimate editions allow for two physical processors, providing the best performance on these computers.
- Windows 7 Starter, Home Basic, and Home Premium editions recognize only one physical processor.

## Upgrade Paths

- A computer can be successfully upgraded to Windows 7 from:
  - Windows XP
    - Windows 7 does not support an in-place upgrade from Windows XP.
  - Windows Vista
- Microsoft offers several tools to assist with the upgrade process:
  - Windows 7 Upgrade Advisor scans a PC for potential issues with hardware, devices, and installed programs, and recommends what to do before upgrading to Windows 7.
  - Windows Easy Transfer helps transfer your files, email, pictures, and settings.



## **Upgrade Path: Windows XP to Windows 7**

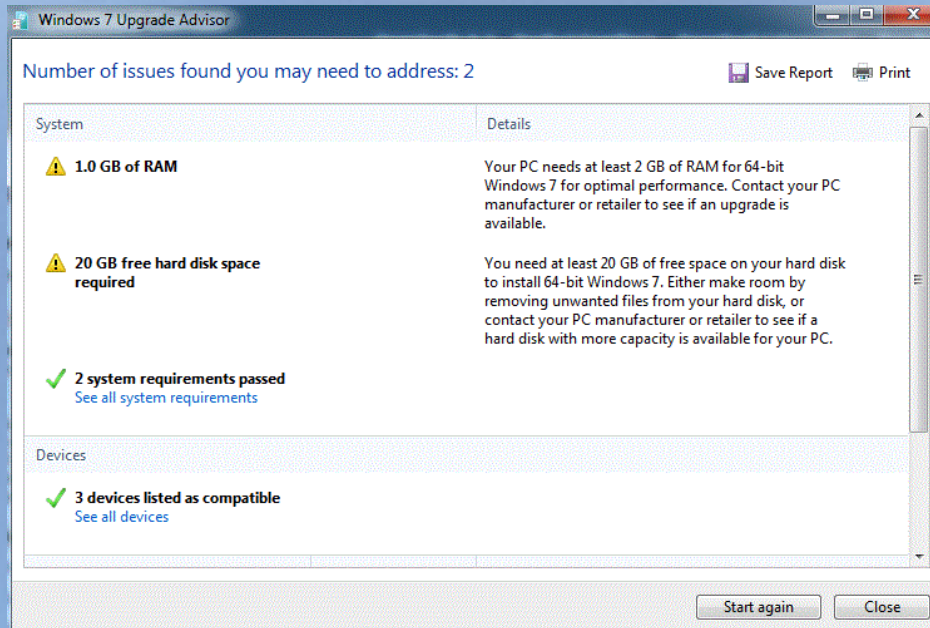
Items required for upgrading:

- An external hard disk to move files from the PC before installing Windows 7. Windows Easy Transfer can help move these files.
- Original setup disks of applications to reinstall on Window 7.

# Upgrade Path: Windows XP to Windows 7 (continued)

Steps to perform the upgrade:

1. Verify that your programs and devices will work with Windows 7. Windows 7 Upgrade Advisor can assist with this step.



# Upgrade Path: Windows XP to Windows 7 (continued)

2. Move files and settings for safekeeping. Windows Easy Transfer can be used for this process.



## **Upgrade Path: Windows XP to Windows 7 (continued)**

3. Install Windows 7. The process has two options:

- Upgrade: Upgrades the current installation of Windows to a newer version, which cannot be done when upgrading from Windows XP to Windows 7. If you are upgrading from Windows XP, you must choose Custom instead.
- Custom: installs a clean copy of Windows 7.

4. Move files and settings back to your computer. Use Windows Easy Transfer again for this step to restore files.

5. Reinstall programs and update your drivers.



## Upgrade Path: Windows Vista to Windows 7

Windows 7 Upgrade Advisor is needed to do this upgrade.

Steps to perform the upgrade:

1. Determine what versions of Windows 7 you can upgrade to:

- Note: These are in-place upgrades.

| If you're running Windows Vista: | Upgrade to Windows 7 Home Premium | Upgrade to Windows 7 Professional | Upgrade to Windows 7 Ultimate |
|----------------------------------|-----------------------------------|-----------------------------------|-------------------------------|
| Home Basic                       | X                                 |                                   | X                             |
| Home Premium                     | X                                 |                                   | X                             |
| Business                         |                                   | X                                 | X                             |
| Ultimate                         |                                   |                                   | X                             |



## **Upgrade Path: Windows Vista to Windows 7 (continued)**

2. Install Windows 7 using either of two options:

- Upgrade: When you upgrade to Windows 7, you keep your files, settings, and programs from Windows Vista.
- Custom: Installs a clean copy of Windows 7 (files, settings, and programs are erased).

## LESSON 2.1

98-349 Windows Operating System Fundamentals

# Complete Student Activity 2.1

LESSON 2.2

98-349 Windows Operating System Fundamentals

# Understand Installation Types

## Lesson Overview

Understanding installation types

In this lesson, you will:

- Identify installation media.
- Explore installation methods.
- Identify product identification keys.

## Installation Media

- Windows 7 can be installed using several types of media:
  - DVD: a traditional method using a DVD containing the Windows 7 installation files.
  - USB: a method in which you create a bootable USB and copy the Windows installation files to the USB drive.
  - Network: used in conjunction with Windows Deployment Services on Windows Server 2008 R2 to perform multiple installations rapidly and simultaneously.



## Installation Methods

- **High Touch Installation (HTI)**—this method is a manual deployment in which Windows is installed on each client using the retail installation DVD and manually configured on each computer.
- **Lite Touch Installation (LTI)**—this method requires limited interaction during deployment. Interaction occurs at the beginning of the installation, but the remainder of the process is automated.
- **Zero Touch Installation (ZTI)**—this method requires no interaction during deployment. The process is fully automated through System Center Configuration Manager 2007 R2.

## Installation Methods (continued)

- Several tools are available to create rapid deployments such as LTI and ZTI.
  - **Windows Automated Installation Kit (WAIK)**
    - A set of tools and documentation that support the configuration and deployment of Windows.
    - You can automate Windows installations, capture Windows images with ImageX, configure and modify images using Deployment Imaging Servicing and Management (DISM), create Windows PE images, and migrate user profiles and data with the User State Migration Tool (USMT).
  - **System Preparation (Sysprep)**
    - Prepares an installation for duplication, auditing, and customer delivery.
    - Duplication, also called *imaging*, enables you to capture a customized Windows image that you can reuse throughout an organization.

## Installation Methods (continued)

- Sysprep benefits:
  - It removes system-specific data from an installed Windows image, including the computer security identifier (SID). The Windows installation can be captured and installed throughout an organization.
  - It configures Windows to boot to Audit mode, enables installation of third-party applications and device drivers, and tests the functionality of the computer.
  - It configures Windows to boot to Windows Welcome immediately before delivering the computer to a customer.
  - It can reset Windows Product Activation up to three times.

## Installation Methods (continued)

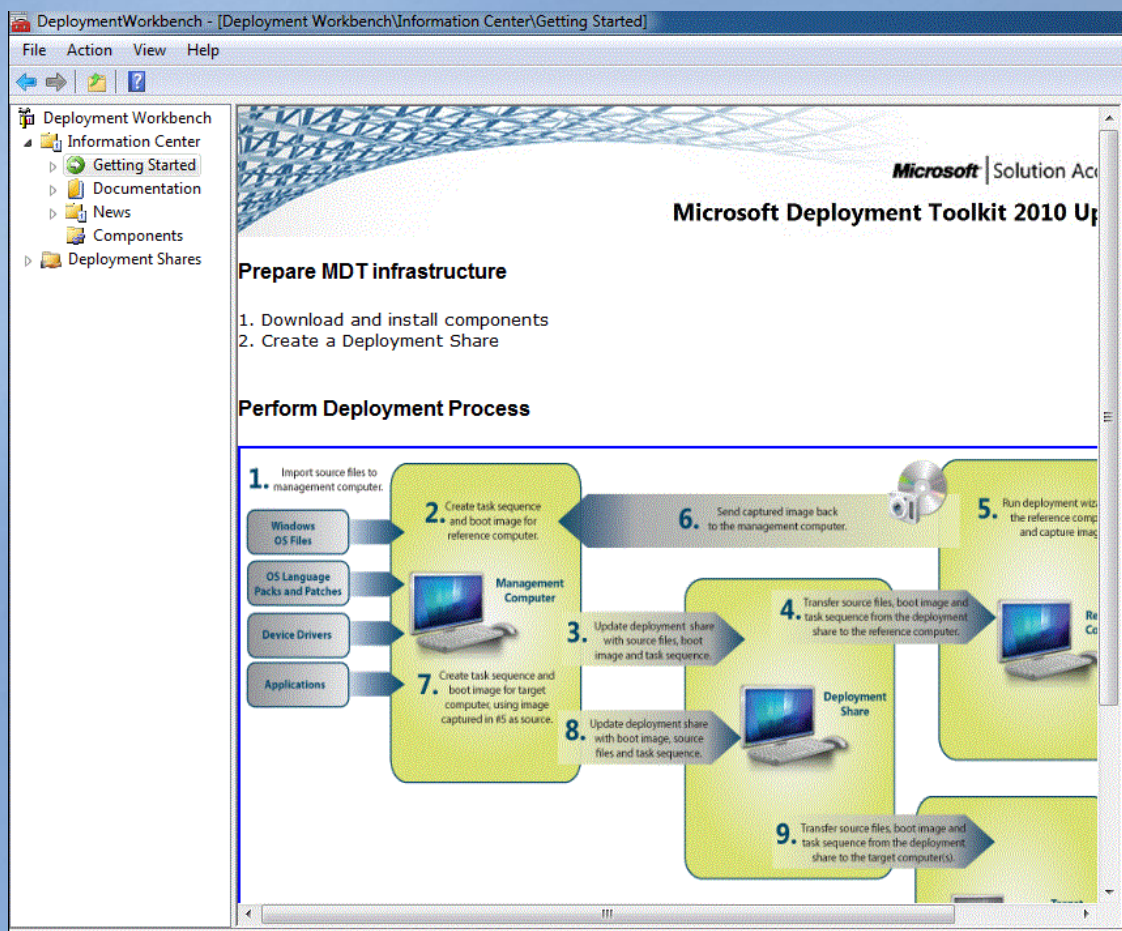
- **answer file**
  - Contains all the settings that are required for an unattended installation. During installation, you will not be prompted with user interface pages.
- **Windows System Image Manager (Windows SIM)**
  - A utility for creating and modifying unattended answer files and configuration sets.
- **Microsoft Deployment Toolkit 2010**
  - Provides a common console with the comprehensive tools and guidance needed to manage the deployment of Windows 7 and Windows Server 2008 R2 efficiently.



## LESSON 2.2

### 98-349 Windows Operating System Fundamentals

# Microsoft Deployment Toolkit (MDT) 2010



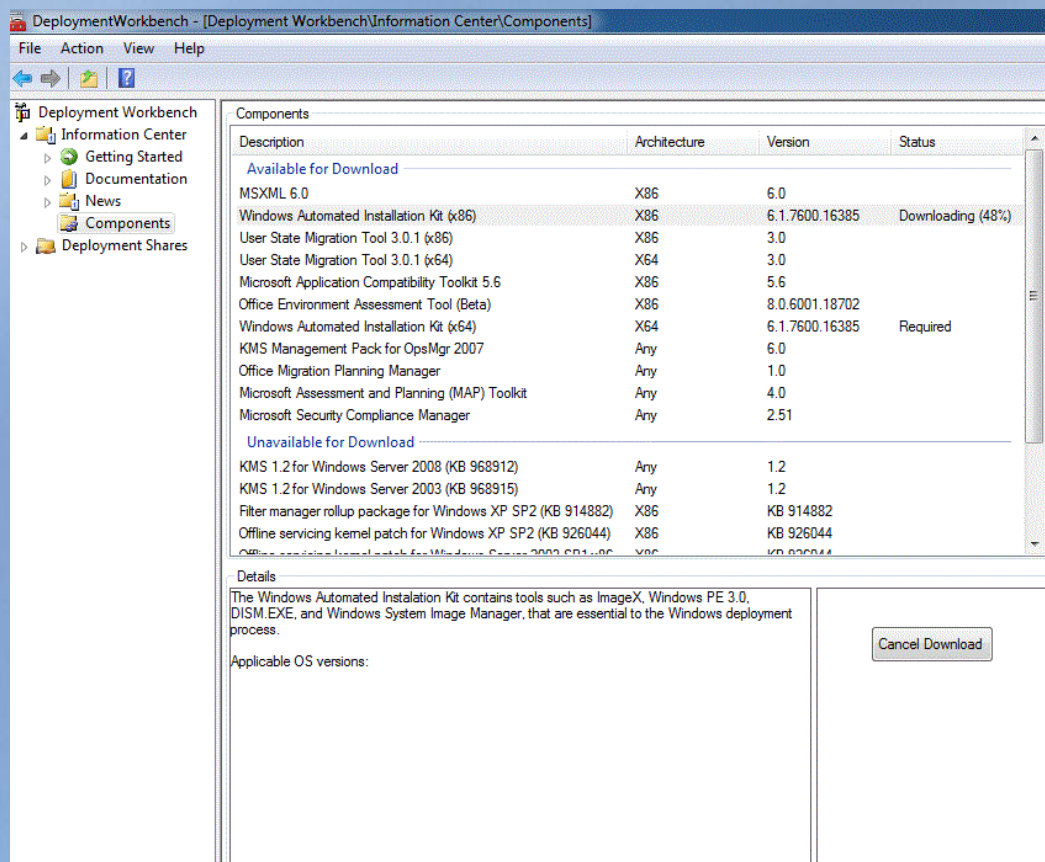


## LESSON 2.2

### 98-349 Windows Operating System Fundamentals

# Microsoft Deployment Toolkit (MDT) 2010

- MDT 2010 enables the download of additional deployment tools.



## Product Identification Keys

- A product identification key is a sequence of 25 letters and numbers that must be entered to activate Windows.
- The product key can be found on the computer or inside the Windows 7 package.
- Determine if Windows is activated successfully by opening Control Panel, System and Security, System. Windows activation is located towards the bottom of your system information screen.
- If Windows is not activated, basic functions and Windows updates are not functional.

See also

Action Center

Windows Update

Performance Information and  
Tools

### Windows activation

Windows is activated

Product ID: 00392-918-5000002-85046 [Change product key](#)



[Learn more online...](#)

## LESSON 2.2

### 98-349 Windows Operating System Fundamentals

- **Complete Student Activity 2.2**

LESSON 2.3

98-349 Windows Operating System Fundamentals

# Understand Virtualized Clients



## Lesson Overview

Understanding virtualized clients

In this lesson, you will:

- Identify virtualization options.
- Identify Remote Desktop Services (RDS).
- Identify Microsoft Virtual Desktop Infrastructure (VDI).
- Configure Windows XP Mode.



## Virtualization Options

- A virtual machine is software that mimics the performance of a hardware device.
- Microsoft Virtual PC allows you to create and run one or more virtual machines, each with its own operating system, on a single computer. This provides the flexibility to use different operating systems on one physical computer.
- Windows XP Mode comes as a separate download and works only with Windows 7 Professional, Ultimate, and Enterprise editions.
  - Windows XP Mode also requires virtualization software such as Windows Virtual PC.
- VDI is a centralized desktop delivery solution.

## Remote Desktop Services (RDS)

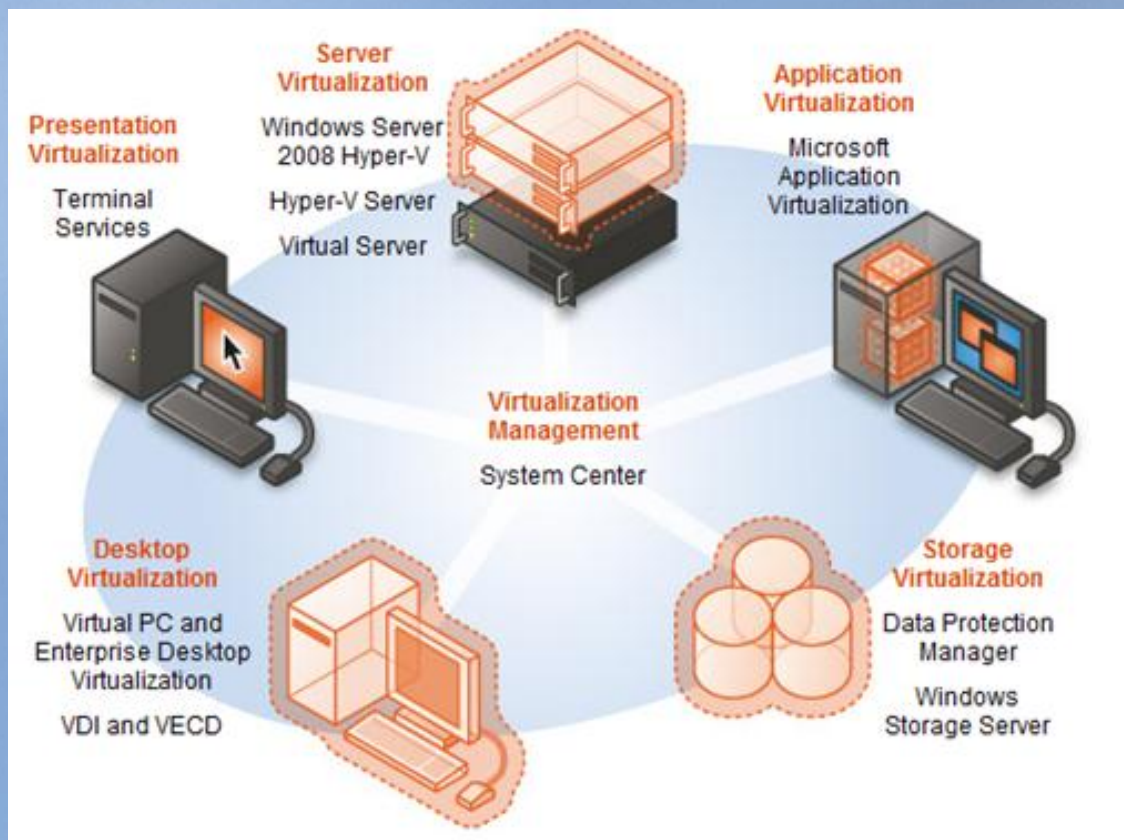
- RDS is a centralized desktop and application platform solution that uses session virtualization and VDI technologies.
  - RDS makes it possible to run an application or an entire desktop remotely in one location but have it be controlled and managed in another.
- Benefits:
  - Application deployment: You can quickly deploy Windows-based programs to computing devices. RDS is especially useful when you have programs that are frequently updated, infrequently used, or difficult to manage.
  - Application consolidation: Programs are installed and run from an RD Session Host server, eliminating the need for updating programs on clients.
  - Remote access: Users can access programs that are running on an RD Session Host server from devices such as home computers, kiosks, low-powered hardware, and operating systems other than Windows.

## Virtual Desktop Infrastructure (VDI)

- VDI is an alternative desktop delivery model that allows users to access desktops running in the data center.
- VDI is not an isolated architecture, but one of many technologies available to optimize enterprise desktops.
- Benefits:
  - Integrated management
  - Enhanced security and compliance
  - Anywhere access from connected devices
  - Increase business continuity

## VDI (continued)

- Virtualization in the enterprise can take many forms.





## **VDI (continued)**

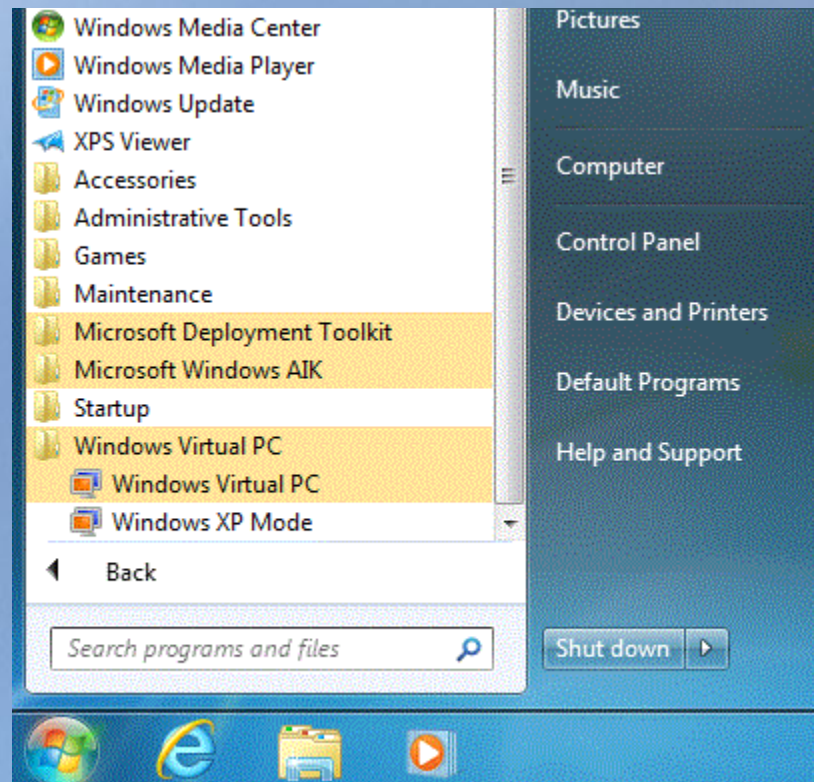
- VDI has several options, including session virtualization, which delivers session-based desktops or applications and is suitable for low complexity or task scenarios.
- Allows for a high number of users
- A limited degree of personalization or isolation

## Configure Windows XP Mode

- Windows XP Mode can be used in environments to support legacy applications that are supported only on Windows XP.
  1. Download XP Mode and Windows Virtual PC from this link:
    - <http://www.microsoft.com/windows/virtual-pc/download.aspx>.
  2. Install XP Mode.
  3. Install Windows Virtual PC.
  4. Restart your system.
  5. Install the XP Mode update.
  6. Restart your system.

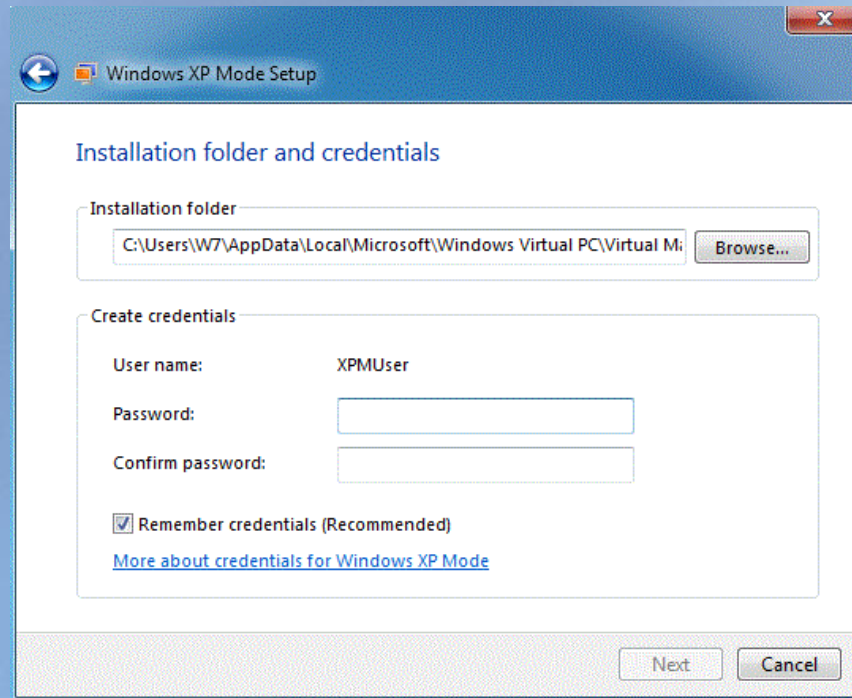
## Configure Windows XP Mode (continued)

- After installation completes, you can start XP Mode by clicking Start, All Programs, Windows Virtual PC and Windows XP Mode.



## Configure Windows XP Mode (continued)

- After accepting the Windows XP Mode license agreement, provide a password for your XP Mode user, XPMUser.
- Click Next on the update settings and allow XP Mode to set up sharing on system drives.



The screenshot shows the 'Windows XP Mode Setup' window. The title bar includes a back arrow icon and the text 'Windows XP Mode Setup'. The main content area is titled 'Installation folder and credentials'. It contains two sections: 'Installation folder' and 'Create credentials'. The 'Installation folder' section has a text box with the path 'C:\Users\W7\AppData\Local\Microsoft\Windows Virtual PC\Virtual Mi' and a 'Browse...' button. The 'Create credentials' section has fields for 'User name:' (pre-filled with 'XPMUser'), 'Password:', and 'Confirm password:'. Below these fields is a checked checkbox labeled 'Remember credentials (Recommended)' and a link that says 'More about credentials for Windows XP Mode'. At the bottom right of the window are 'Next' and 'Cancel' buttons.

Windows XP Mode Setup

Installation folder and credentials

Installation folder

C:\Users\W7\AppData\Local\Microsoft\Windows Virtual PC\Virtual Mi Browse...

Create credentials

User name: XPMUser

Password:

Confirm password:

☒ Remember credentials (Recommended)

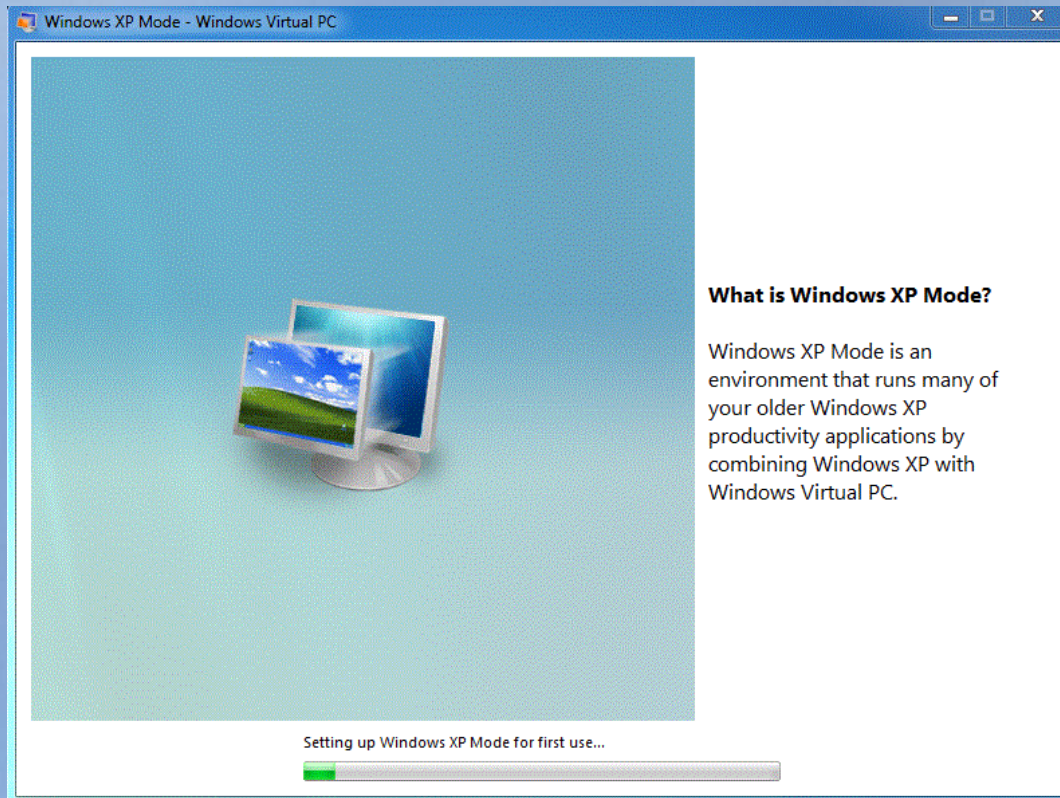
[More about credentials for Windows XP Mode](#)

Next Cancel



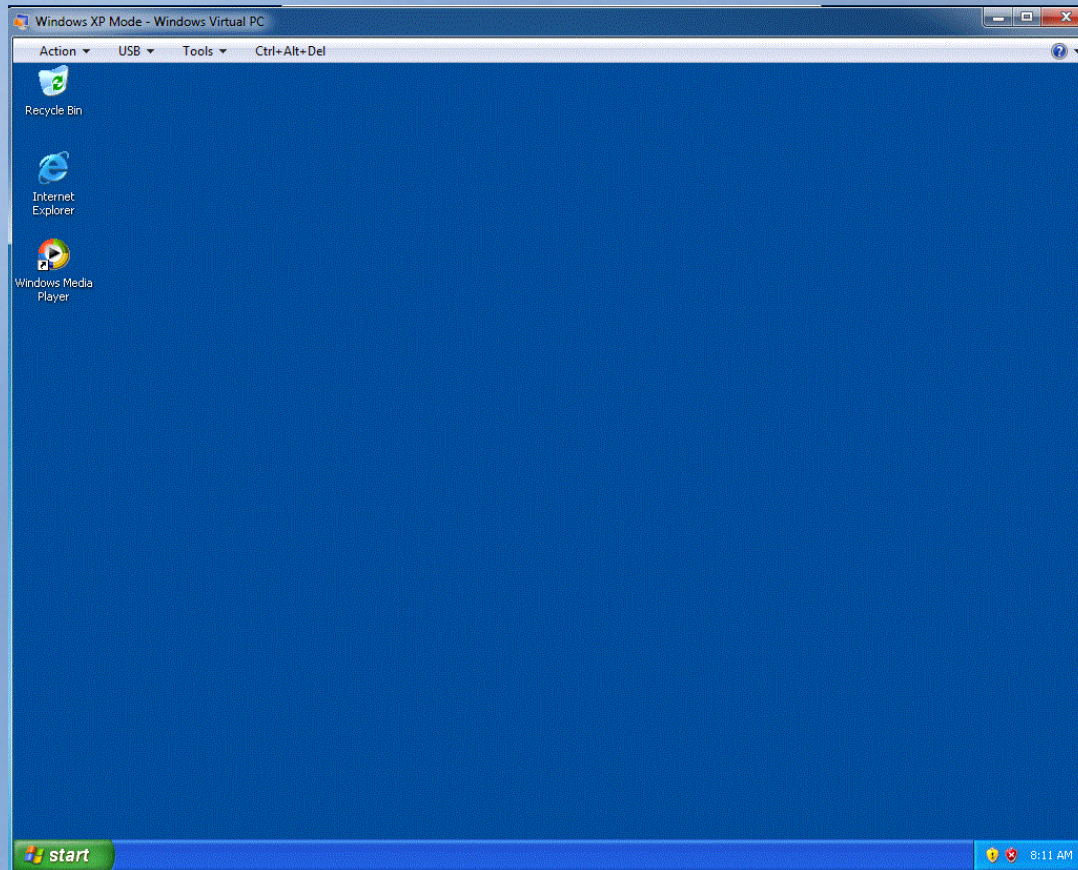
## Configure Windows XP Mode (continued)

- After answering the initial setup questions, XP Mode will continue setup for first use. This step will take several minutes, depending upon the system.



## Configure Windows XP Mode (continued)

- After the installation completes, you should have access to Windows XP.



## LESSON 2.3

98-349 Windows Operating System Fundamentals

# **Complete Student Activity 2.3**