LESSON 5.1

98-349 Windows Operating System Fundamentals

Connect Devices/ Understand Storage

Lesson Overview

Connect devices/understand storage.

In this lesson, you will explore:

- Device management
- Connecting printers
- Storage devices
- Storage options

Device Manager

- The Device Manager provides a graphical view of the hardware that is installed on the computer.

- All devices communicate with Windows through device driver software.

- The Device Manager is used to install and update the drivers, modify hardware settings, and troubleshoot problems.

Device Manager (continued)

- Access the Device Manager by typing **Device Manager** in the Search Programs And Files box or through the Computer Management console.
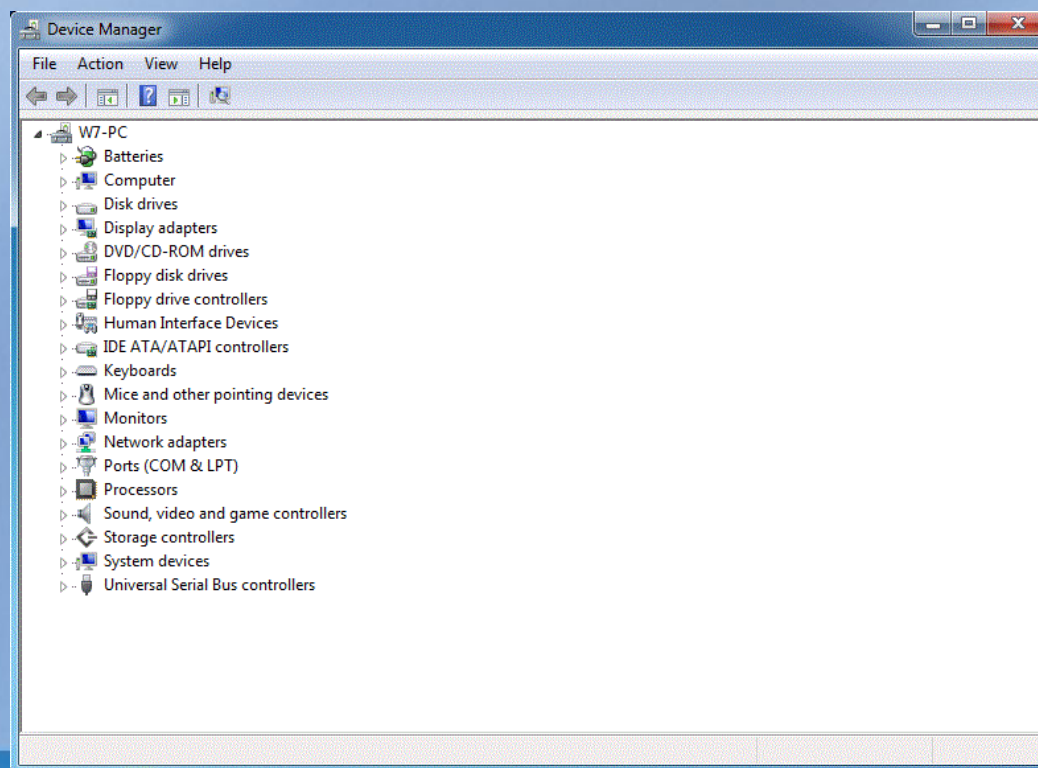
Uses of Device Manager

- Determine if the computer hardware is working properly.

- Identify the device drivers for each device and obtain information about each device driver.

- Change advanced settings and properties for devices. Install updated device drivers.

- Enable, disable, and uninstall devices.

- View the devices based on their type, by their connection to the computer, or by the resources they use.

- Show or hide hidden devices that are not critical to view but might be necessary for advanced troubleshooting.

Plug and Play Technology

▪ Plug and Play provides a combination of software and hardware support that enables Windows to detect and configure hardware with little or no user involvement.

▪ Requires little user knowledge of hardware configurations.

▪ When a new device is detected, the user is prompted with the Found New Hardware dialog box and three driver installation options:

   o Locate And Install Driver Software

   o Ask Me Again Later

   o Don't Show This Message Again For This Device

▪ The user must be a member of the local Administrators group to install devices.

Devices and Printers

- Devices and Printers presents an alternative method for adding peripherals.

- It is accessed by clicking Start and then Devices And Printers.

- Each device has different menu options.

    o Example: Browse Files is an option when an external hard drive is selected.
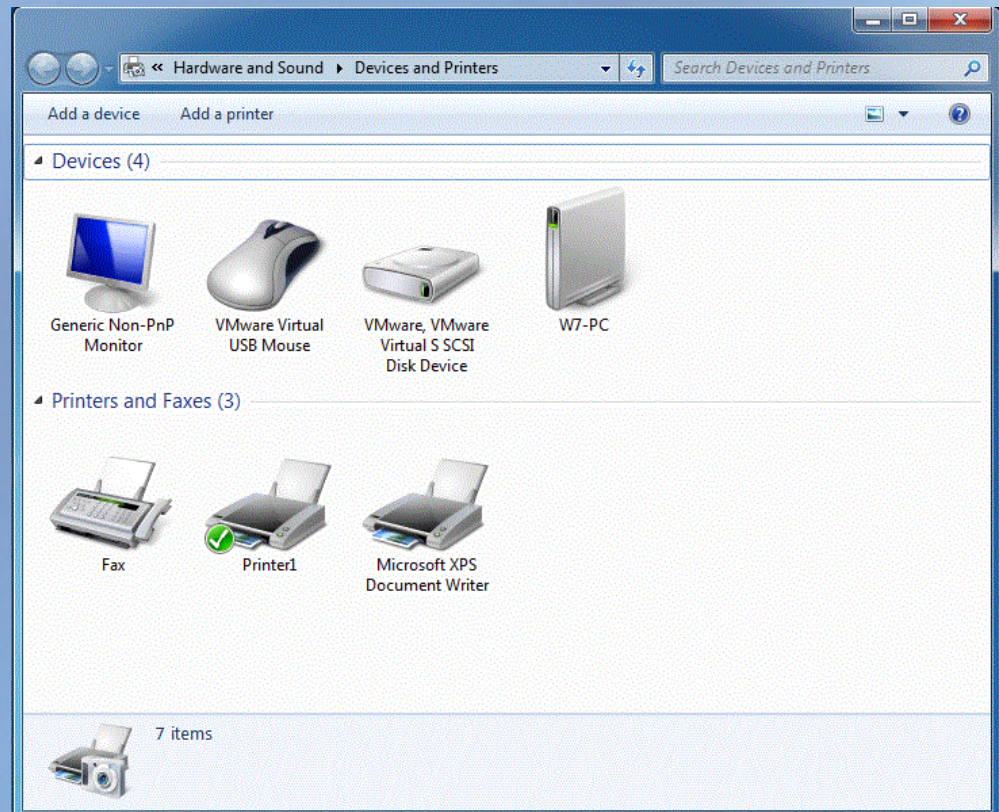
Devices and Printers (continued)

- Devices displayed in Devices and Printers are external devices that can be connected or disconnected through a port or network connection.

- Printer connections:

  o USB—the printer is attached directly to the computer using a USB cable.

  o Network—the printer is attached directly to the network through a network interface card (NIC).

  o Wireless—the printer is attached using a wireless connection and access point.

- To add a printer, click Add A Printer; most physically attached printers will be detected automatically or can be installed using the third-party printer software that may enhance the printer management.

- To remove a printer (or device), click Remove Device.

Devices and Printers (continued)

- To manage a printer from the Devices and Printers console, do the following:

    - Click the device and use the menu options at the top of the window.

    - Alternatively, right-click the device for extended management options.
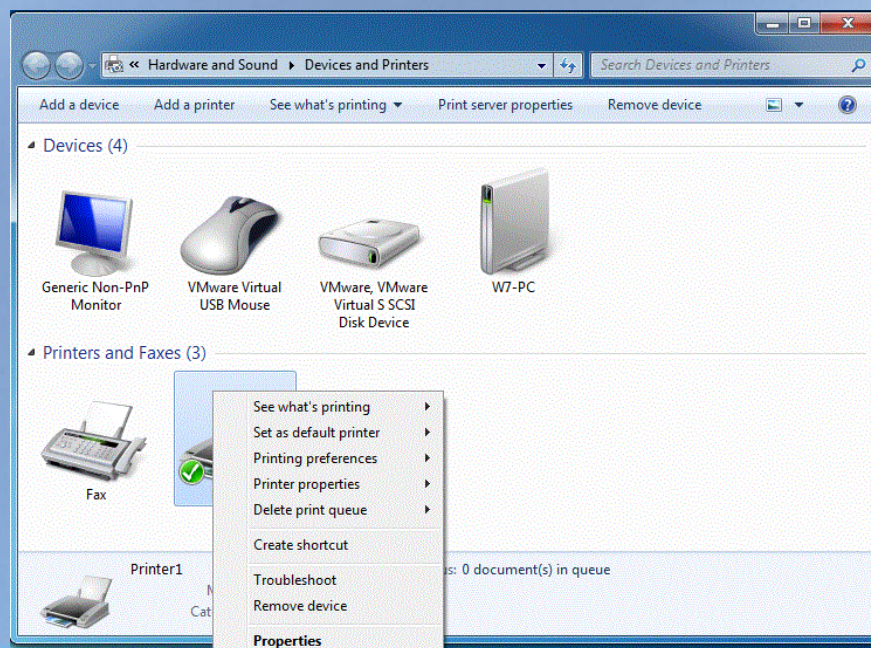
Storage Devices

- Connection types:
    - External Serial Advanced Technology Attachment (eSATA)
    - Universal serial bus (USB)
    - IEEE 1394 (FireWire)
    - iSCSI
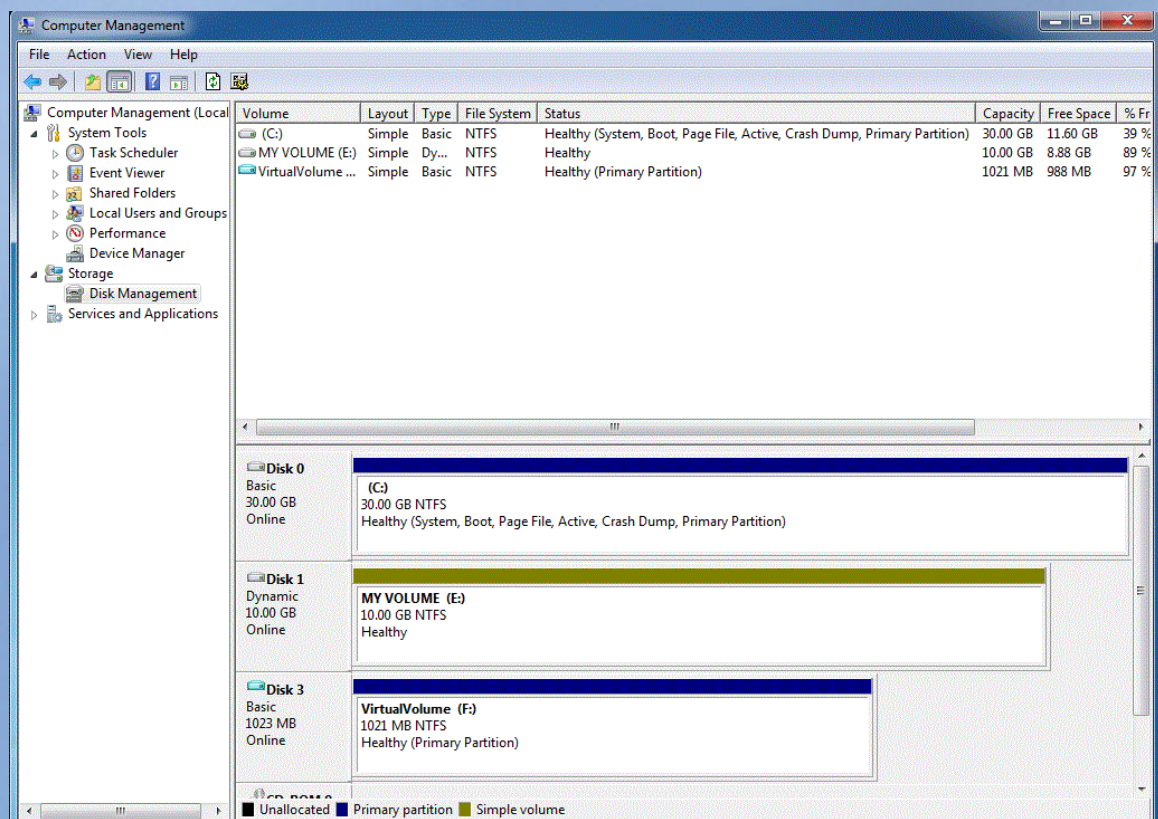
Storage Devices (continued)

▪ Storage Drive Types

○ **basic disk**—a physical disk that contains primary partitions, extended partitions, or logical drives. Partitions and logical drives on basic disks are known as *basic volumes.*

○ **dynamic disk**—a disk that provides features that basic disks do not, such as the ability to create volumes that span multiple disks (spanned and striped volumes), and the ability to create fault-tolerant volumes (mirrored/RAID-1 volumes). All volumes on dynamic disks are known as *dynamic volumes.*

○ **virtual hard disk (VHD)**—a publicly available image format specification that specifies a virtual hard disk encapsulated in a single file, capable of hosting native file systems while supporting standard disk and file operations.

Storage Devices (continued)

- Storage Drive Types

Storage Devices (continued)

- Cloud storage
  - Using the cloud to store files provides several benefits:
    - Store files for access from anywhere.
    - Create backups of important files.
    - Share files with others.
  - Examples of cloud solutions include:
    - Windows Live SkyDrive (*http://explore.live.com/windows-live-skydrive*)
    - OneNote to SkyDrive
    - Live Mesh (*http://explore.live.com/windows-live-mesh*)

Complete Student Activity 5.1

LESSON 5.2

98-349 Windows Operating System Fundamentals

Understand Printing Devices

98-349 Windows Operating System Fundamentals

Lesson Overview

Understand printing devices

In this lesson, you will explore:

- Printer options

- Managing printers

- Internet printing

Printer Terms

- **port**—a hardware- or software-based interface used to transfer information between a computer and other devices. Hardware ports are physical connections that are visible on the outside of the computer. Software ports are the numbered interfaces in programs that software programs use to exchange information.

- **print driver**—a program that controls or regulates a printer; each print queue requires a printer driver.

- **print queue**—a representation of a printing device in Windows. Opening a print queue displays active print jobs and their status.

- **print spooler**—computer software that intercepts a print job on its way to the printer and sends it to disk or memory instead, where the print job is held until the printer is ready for it. The term *spooler* is an acronym created from the phrase "simultaneous peripheral operations on line."

Printer Types

- **Inkjet printers**—squirt ink on to the page to reproduce text and images.

    o This type of printer is slower and requires frequent ink cartridge replacements.

- **Laser printers**—use toner to reproduce text and graphics. Lasers can print in black and white or color.

    o This type of printer prints faster, and toner cartridges last longer than inkjet cartridges.

- **All-in-one printer**s—devices that can print, scan, make photocopies, and send faxes.

Printer Connections

- **Wired printers**—connect using a cable and a port on the computer.

- **Wireless printers**—connect using radio waves by using either Bluetooth or Wi-Fi technology.

- **Local printers**—are connected directly to computer.

- **Network printers**—are connected through a network. A network printer requires a network adapter.

Managing Printers

- Use the Devices and Printers console to install, view, or manage your printers.

- Open it by clicking Start and then clicking Devices And Printers.
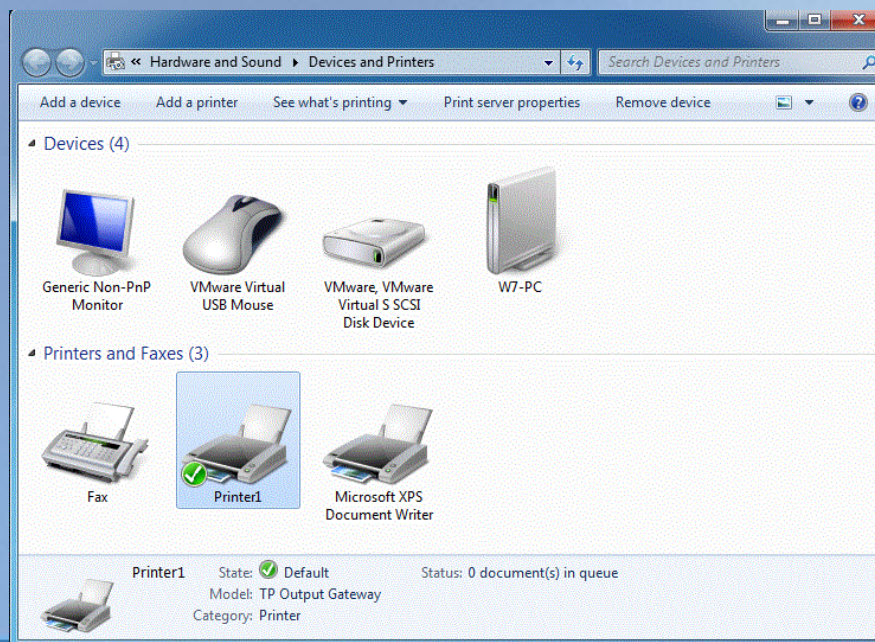
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Managing Printers (continued)

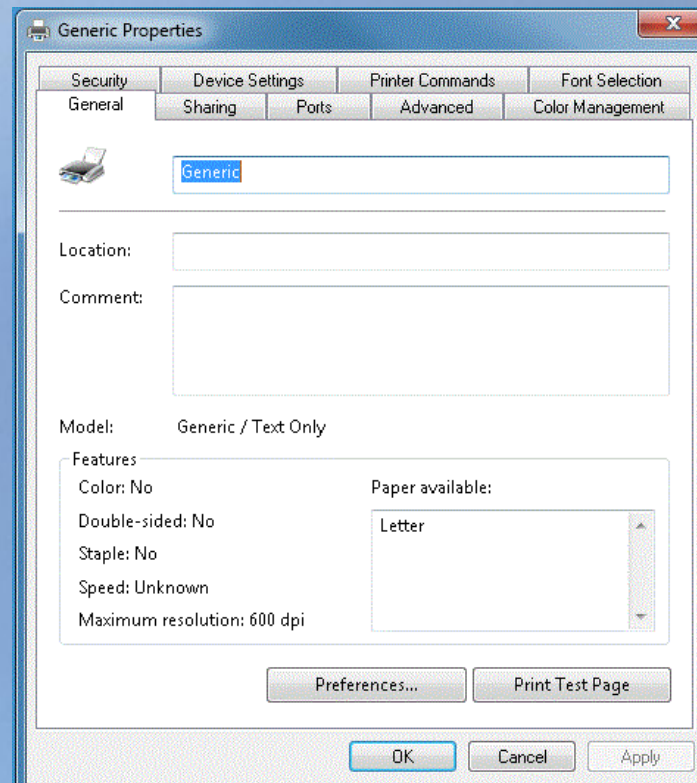- Right-click on a printer icon to manage the printer. Management options include:

  - See what's printing
  - Set as default printer
  - Printing preferences
  - Printer properties
  - Remove device
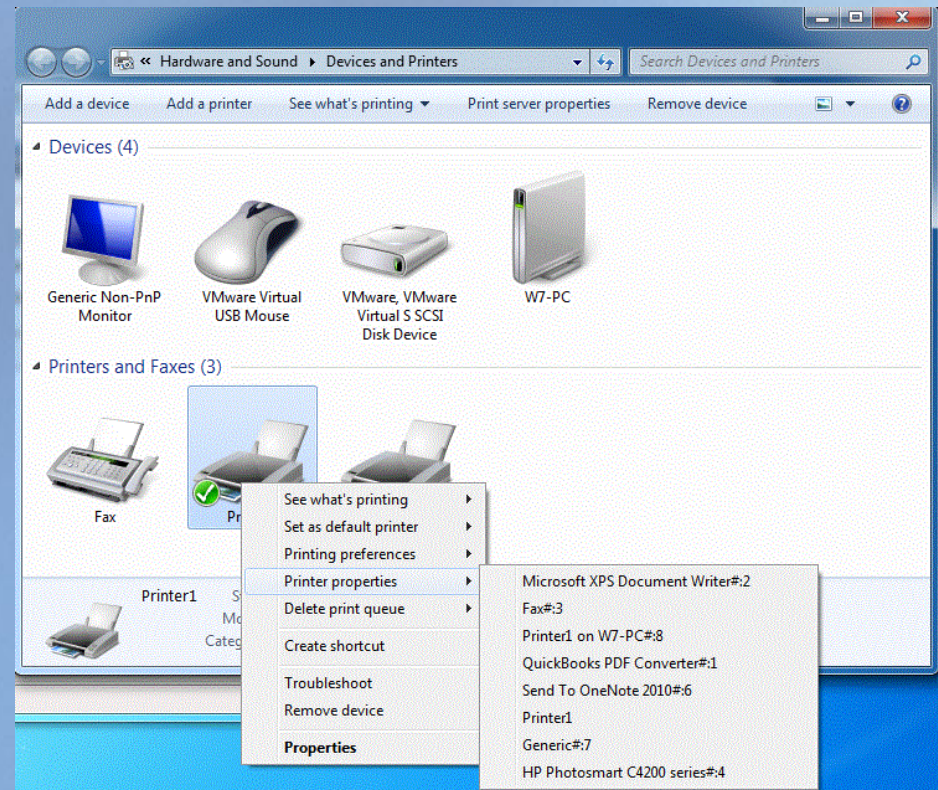
Managing Printers (continued)

- The Generic Properties window contains many options for managing printers.

Installing a Local Printer

1. Connect the printer directly to your computer.

2. Click Start, and then click Devices And Printers.

3. Click Add A Printer.

4. Windows will start the wizard on the Add Printer page, select Add A Local Printer and click Next.

5. On the Choose A Printer Port page, select Use An Existing Port, and then choose the appropriate port and click Next.

6. On the Install The Printer Driver page, select the appropriate driver or choose Have Disk and click Next

7. Provide a name for the printer and click Next.

8. Click Next when asked to share and then click Finish.

Installing a Network Printer

1. Click Start, and then click Devices And Printers.

2. Click Add A Printer.

3. In the Add Printer Wizard, select Add A Network, Wireless. or Bluetooth Printer.

4. Select the printer that you want to use from the list of available printers.

5. Install the appropriate driver if asked to do so and click Next.

6. Provide a name for the printer and click Next.

7. Click Next when asked to share and then click Finish.

8. Print a test page to ensure that setup was done properly.

Print Spooler Service

- The Printer Spooler service manages all print jobs and print queues.
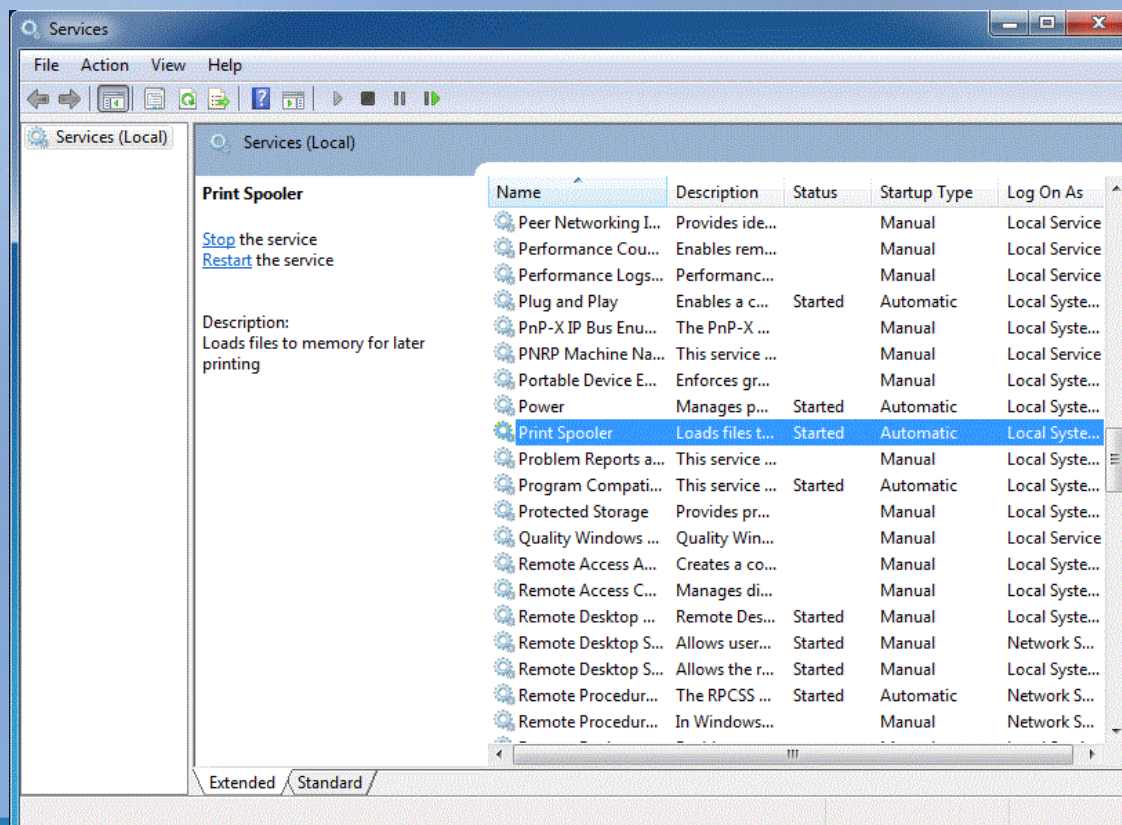
Internet Printing

- Internet printing makes it possible for computers running Windows 7 to use printers that are located anywhere in the world.

- The computer sends the print job by using Hypertext Transfer Protocol (HTTP).

- Consider both the server and client components of Internet printing:

    o Server—Windows Server 2008 R2 runs the Web Server role, Print Services role, and Internet Printing role. When installed, Internet printing can be enabled on the server.

    o Client—a computer running Windows 7 can be used as a client if you install an Internet printer by using a web browser or the Add Printer Wizard.

Internet Printing Process

1. A user types the Uniform Resource Locator (URL) for a print device from a computer running Windows 7.

2. The HTTP request is sent over the Internet to the print server.

3. The print server requires the client to provide authentication information. This ensures that only authorized users print documents on the print server.

4. After the server authenticates the user, the server presents status information to the user by using Active Server Pages (ASPs), which contain information about currently available printers.

5. When the client first begins to connect to any of the printers on the Internet, it attempts to find a driver for the printer locally.

6. After the user connects to an Internet printer, documents can be sent to the print server.

Complete Student Activity 5.2

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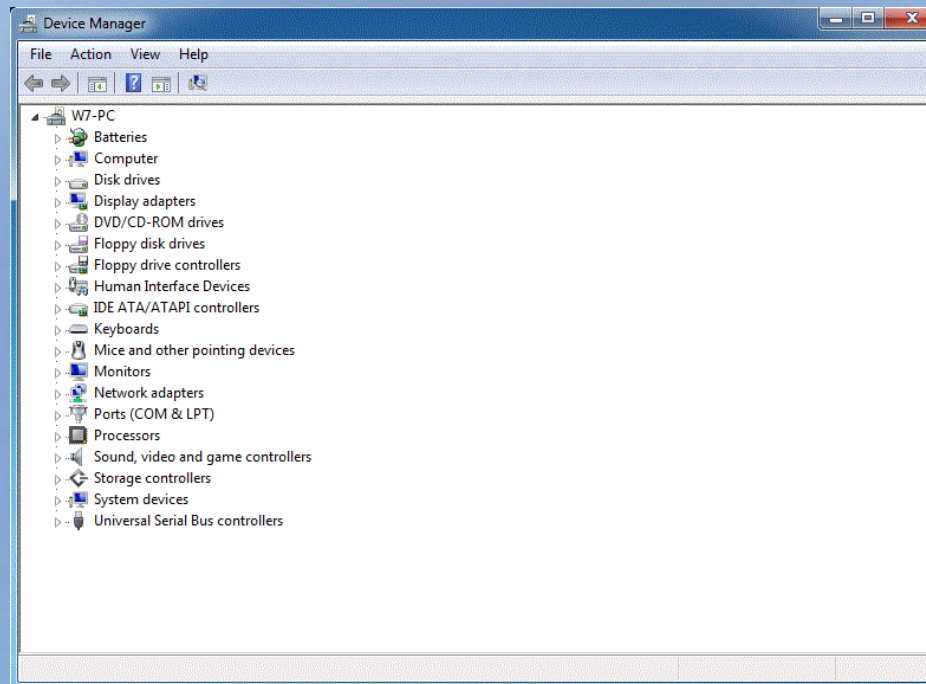
Understand System Devices

Lesson Overview

Understand system devices.

In this lesson, you will explore:

- Device management
- System devices

Device Manager

- Start Device Manager by typing **Device Manager** in the Search Programs And Files field or through the Computer Management console.
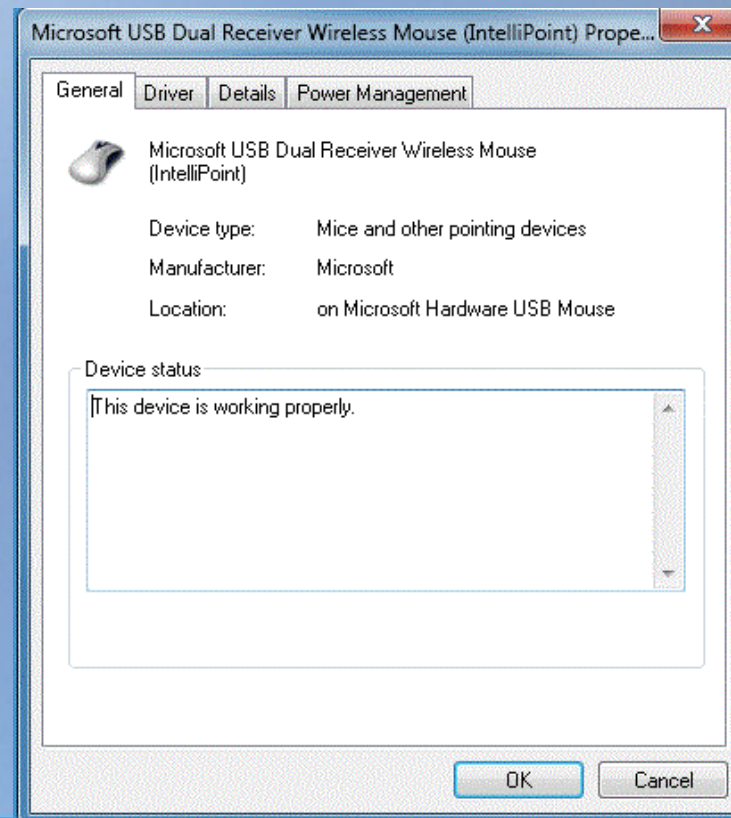
Device Manager (continued)

- Determine if the hardware on the computer is working properly.

- Change the hardware configuration settings.

- Identify the device drivers that are loaded for each device, and obtain information about each device driver.

- Change the advanced settings and properties for devices.

- Install updated device drivers.

- Enable, disable, and uninstall devices.

- Roll back to the previous version of a driver.

- View the devices by type, by connection, or by the resources they use.

- Show or hide devices that typically are not critical to view but might be necessary for advanced troubleshooting.

Device Management

- Double-click a device to access its management features.

Device Management (continued)

▪ Typical driver properties and functions on the Driver tab:

- o Driver Details

- o Update Driver

- o Roll Back Driver
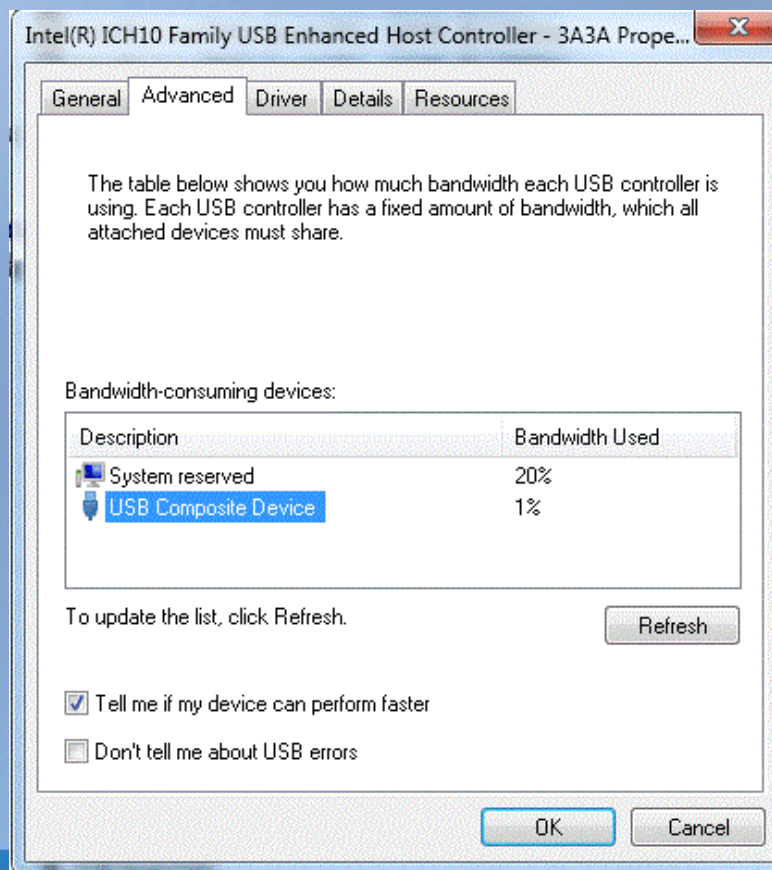
- o Disable

- o Uninstall
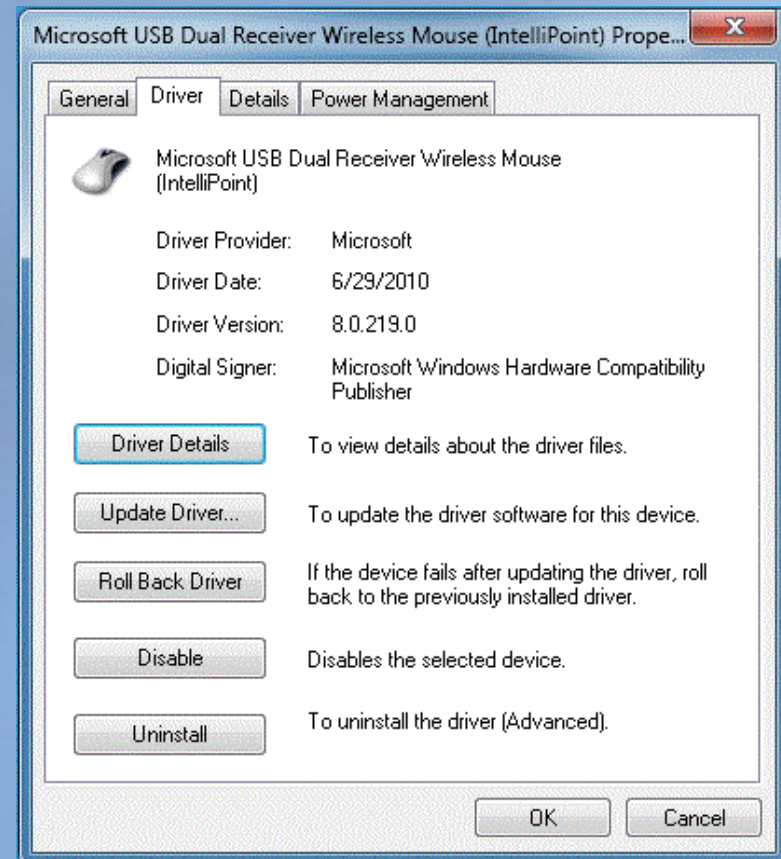
Device Management (continued)

- Some devices have power management features, which are managed by the following options:

  - Allow the computer to turn off the device to save power

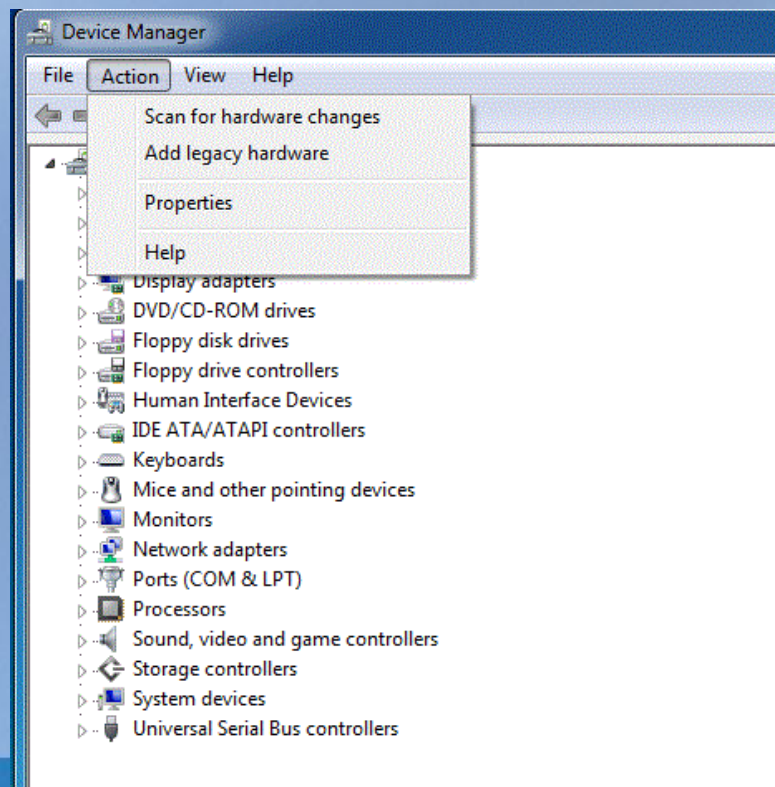 - Allow this device to wake the computer
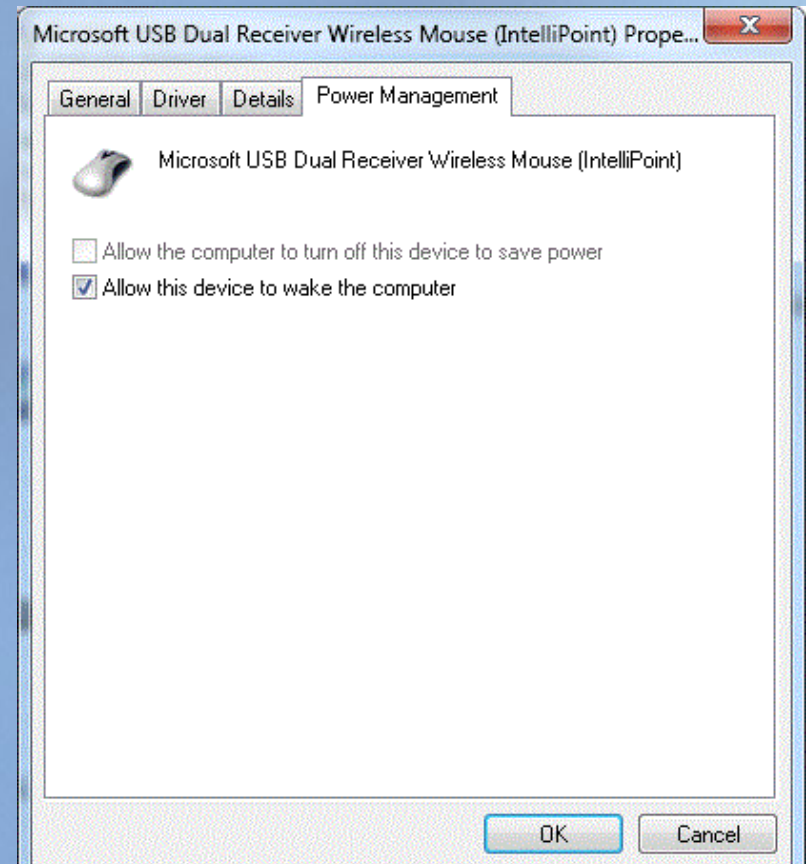
Device Management (continued)

▪ Properties and tabs vary from device to device.

Device Management (continued)

- If a device is not detected automatically or is still present after you remove it, choose Scan for hardware changes from the Action menu within Device Manager.
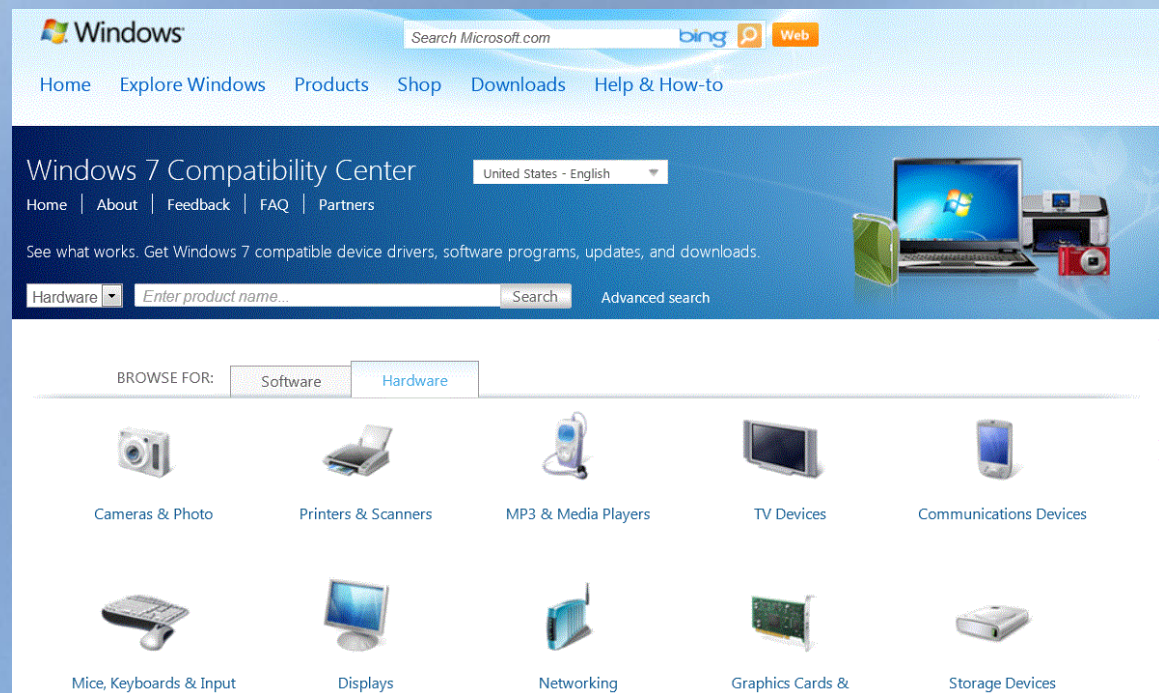
System Devices

▪ System devices can be found in Device Manager.

▪ Devices will vary based on hardware configuration and manufacturer.
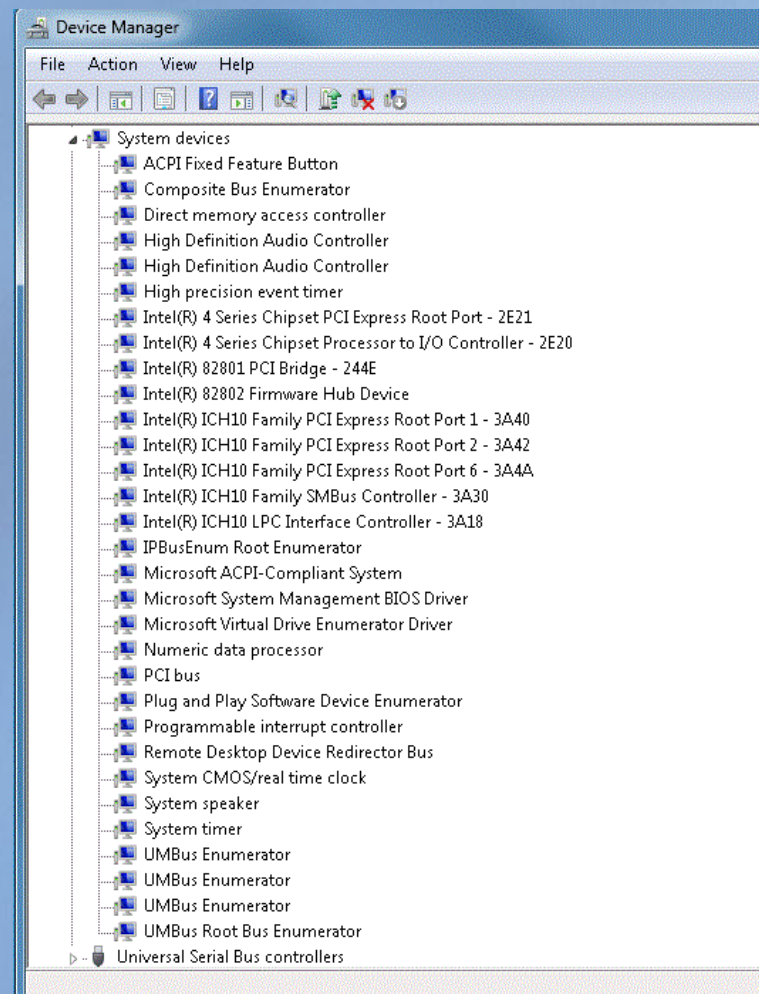
System Devices (continued)

- Microsoft's Compatibility Center can help identify compatible devices.

http://www.microsoft.com/windows/compatibility/windows-7/en-us/default.aspx

Complete Student Activity 5.3