Lesson 5: Managing Devices

# Learning Objectives

Students will learn to:

* Understand cloud storage
* Understand printing devices
* Understand system devices and device drivers

# Objective Domain Skills

* Understanding storage 5.2
* Understanding backup and recovery methods 6.1
* Understanding printing devices 5.3
* Connecting devices 5.1
* Understanding file and print sharing 4.2
* Understanding system devices 5.4

# Lesson Summary — Lecture Notes

Lesson 5 helps students understand how to manage devices in Windows 10. Devices include disks and other storage devices, audio cards, video adapters, keyboards, printers, and much more.

Begin the lecture by explaining that cloud services are becoming highly popular, and they provide convenient storage and application hosting for consumers and businesses alike. different types of data storage, and then disk and drive types. Cloud storage is remote data storage with backups but can also include application hosting.

OneDrive is a file hosting service that allows you to store and create files and folders and share them with other users and groups. OneDrive for Business is different from the public version of OneDrive because OneDrive for Business is based on SharePoint.

Next, you will discuss printing devices, which can be local or networked; they can even be available over the internet. You can perform most printer support from Devices and Printers. Microsoft has historically used the term “print device” to refer to the actual hardware but is now using the term “printer” in most consumer-level documentation. You will see both “printer” and “print device” in Microsoft documentation and in this lesson.

A local printer is connected directly to your computer via a cable, using a serial, parallel, USB, infrared, or other port type. Most printers come with a manufacturer’s CD containing the printer software that must be installed for your operating system to talk to the printer. A good rule of thumb is if your printer ships with a manufacturer’s CD, use the setup program on the CD to install the driver. A driver is a small program that enables hardware to interact with the operating system. If the correct print driver is not loaded, you may not be able to print documents, or the documents print strange characters, strange text, or looks distorted.

A network printer generally has a network adapter and is connected to a network. The printer receives an IP address and is a node on the network much like a networked computer. You can share a local (directly connected) printer with others on a network; in this case, the printer is considered to be both local (to the computer to which it is connected) and networked.

The print spooler is an executable file that manages the printing process, which includes retrieving the location of the correct print driver, loading the driver, creating the individual print jobs, and scheduling the print jobs for printing. Some printers can accept multiple pages of data at one time, but larger documents can take a while to print. You can think of a print queue as a holding area until the printer is finished printing the entire document.

Next, students will learn about system devices and device drivers. A computer is a collection of hardware devices, each of which requires a piece of software called a device driver in order to function. Windows 10 includes a large library of device drivers, but it is still sometimes necessary to obtain them yourself. The main video device on a computer is the video adapter or card. The main audio device in a computer is a sound card. Input devices are items such as keyboards, mice, trackballs, touchpads, digital pens, and joysticks (for gaming).

Windows 10 includes the Devices and Printers folder to quickly allow users to see all the devices connected to the computer and to configure and troubleshoot these devices. It will also allow you to view information about the make, model, and manufacturer and give you detailed information about the sync capabilities of a mobile phone or other mobile devices.

The Windows 10 tool for managing devices and their drivers is called Device Manager. You can use Device Manager to get information about the devices installed in the computer, as well as install, update, and troubleshoot device drivers.

Lastly, you'll cover the Action Center, which shows important notifications related to the security and maintenance of your computer. When problems occur, you will be alerted to investigate them further.

TAKE NOTE: In the OneNote portion of this course, we include a blank space between the backward slashes that indicate the beginning of a network path (\\) and a server address (such as server\share\folder), to prevent them from becoming live links. In actual usage, there would be no space after the slashes.

# Key Terms

**audio device** – Primarily, the sound card on a computer. Other audio devices include microphones, headsets, and speakers.

**cloud storage** – Remote data storage with backups; can also include application hosting.

**Device Manager** – A snap-in that displays a list of all devices currently installed on the computer and their status. Device Manager requires administrative credentials for access.

**Devices and Printers folder** – A folder that enables users to quickly see all the devices connected to the computer and to configure and troubleshoot these devices.

**driver** – A small program that enables hardware to interact with the operating system.

**fetching** – If you forget to include a file within your sync folder, you can use OneDrive to connect to your remote computer, locate the file, and then upload it to your OneDrive space. This process is called fetching.

**input device** – An item such as a keyboard, mouse, trackball, touchpad, digital pen, and joystick (for gaming) that sends data to a computer.

**local printer** – A printer that is connected directly to your computer via a cable, using a serial, parallel, USB, infrared, or other port type.

**network printer** – A printer that generally has a network adapter and is connected to a network. The printer receives an IP address and is a node on the network much like a networked computer.

**OneDrive** – A file hosting service that allows you to store and create files and folders and share them with other users and groups.

**OneDrive for Business** – Different from the public version of OneDrive because OneDrive for Business is based on SharePoint.

**OneDrive Recycle Bin** – A temporary storage place of deleted items.

**plug-and-play (PnP) technology** – Devices that are automatically detected by the operating system when plugged into a computer.

**print device** – Microsoft has historically used the term “print device” to refer to the actual hardware but is now using the term “printer” in most consumer-level documentation. You will see both “printer” and “print device” in Microsoft documentation and in this lesson.

**print job** – A file or set of files that have been sent to a printer.

**print queue** – A holding area until the printer is finished printing the entire document.

**print spooler** – An executable file that manages the printing process, which includes retrieving the location of the correct print driver, loading the driver, creating the individual print jobs, and scheduling the print jobs for printing.

**video device** – Primarily, the video adapter or card on a computer. Other types of video devices include webcams, video capture cards, and TV tuners.

# Knowledge Assessment

## Multiple Choice

**Select the correct answer(s) for each of the following questions.**

1. Which of the following actions can be used to recover a file that was accidently deleted in Microsoft OneDrive?

a. Using the Windows Recycle Bin

b. Using the OneDrive Recycle Bin

c. Using the Sync utility

d. Using the OneDrive Recovery utility

2. In OneDrive, by default, how long will a deleted file be available in the OneDrive Recycle Bin?

a. 3 days

b. 5 days

c. 30 days

d. 90 days

3. Which of the following actions is the easiest way to let someone know that a new document is available on OneDrive?

a. Call them on the phone; leave a message if they are not there

b. Send them a document with the link embedded

c. Send a notification after sharing the document or folder

d. Sync your computer with their computer

4. Which of the following is a holding area for print jobs?

a. Print trap

b. Print cache

c. Print drive

d. Print queue

5. Which of the following services allows you to print to a printer via a website?

a. Internet Printing

b. Web Printing

c. Cache Printing

d. HTTP Printing

6. Which of the following tools can be used to quickly determine if a device has a bad device driver?

a. Disk Manager

b. Device Manager

c. Driver Manager

d. Control Panel

7. Which of the following tools is usually used to manage printers on a Windows 10 machine?

a. Device Manager

b. Devices and Printers folder

c. USB Manager

d. Print Queue Manager

8. Which of the following tasks can be completed with Device Manager? (Choose all that apply)

a. Update a driver’s software

b. Disable a driver

c. Uninstall a driver

d. Change a device’s hardware ID

e. Scan for hardware changes

9. Which of the following refers to the set of files sent to the printer that specifies what the printer is supposed to print?

a. Print queue

b. Print job

c. Print spooler

d. Print driver

10. In Device Manager, a white circle with a down arrow indicates which of the following?

a. The device is disabled.

b. The device driver is not loaded.

c. There is a problem with the device.

d. The wrong driver is loaded.

## Fill in the Blank

**Complete the following sentences by writing the correct word or words in the blanks provided.**

1. Device Manager can be used to view device IRQ and DMA settings.

2. A print job is a file or set of files that have been sent to a printer, which are used to produce the document.

3. A device driver is a small program that enables hardware to interact with the operating system.

4. A Windows print queue can be used to pause printing, cancel all documents, and resume, or restart a document.

5. Device Manager can be used to determine the version of files that a device driver installs and their complete paths.

6. Plug-and-play (PnP) technology automatically detects a device and installs the drivers.

7. Microsoft cloud storage is called OneDrive.

8. OneDrive for Business is stored in SharePoint.

9. A network printer is a printer that has a network adapter that is connected to a printer.

10. The print spooler is an executable file that manages the printing process and creates the individual print jobs.

## True / False

**Circle T if the statement is true or F if the statement is false.**

**T F** 1. OneDrive and OneDrive for Business are the same.

**T F** 2. Print jobs can be viewed in the print queue.

**T F** 3. Device Manager can be used to update print drivers.

**T F** 4. In Device Manager, a red X indicates that the driver has not been installed.

**T F** 5.Device Manager is found in the Computer Management console.

# Business Case Scenarios

## Scenario 5-1: Troubleshooting Print Jobs

John is trying to print a large document, but nothing is printing from the printer. You receive several complaints that when others try to print to the same printer, it is not working. What should you do to troubleshoot the printer problem?

First, make sure that the printer is connected properly, and that the printer is on, and has paper. Next, you should open the print queue to see if the print jobs actually got to the print queue. If the print jobs are in the print queue, you can try to restart the printer server service. If the print jobs do not print, delete the print jobs and try reprinting the smaller print jobs. Then, if everything is working properly, try printing John’s large print job.

## Scenario 5-2: Troubleshooting a Printer Driver

Axel runs the warehouse for a beverage distributor. He called you to report that the new wireless laser printer he recently purchased does not work. He connected it to the USB port on his computer running Windows 10 Professional and turned on the printer, but the printer does not appear in the Devices and Printers window. How should you advise Axel to help troubleshoot the problem?

Instruct Axel to install the printer software from the CD or DVD that came with the printer. Better yet, he should visit the printer manufacturer’s web site and download the latest software. Axel should run the installation file from the CD/DVD or the downloaded file just as he would any other application. He could also open Devices and Printers, click Add a printer, and then walk through the wizard to install the latest printer driver from the manufacturer.

## Scenario 5-3: Changing Print Drivers

You have a new printer. Unfortunately, it did not come with any drivers. So, you visit the manufacturer’s website and download the driver. You then print the document, but the printed page contains what looks like programming code. When other users try to print, their documents do not print. Describe your recommended solution.

This is most likely caused by loading the wrong driver. Return to the manufacturer’s site and look for the correct driver. You should then test printing with the new driver.

## Scenario 5-4: Using Cloud Services

The sales and marketing department at your company consists of two salespeople, a graphic designer, a copywriter, and a layout person.

Tonya and Aaron are the salespeople. Tonya is responsible for the western United States and Aaron covers the eastern United States. They tend to use the same files for all sales presentations, client follow-ups, and so on. When one modifies a template, it’s important that the other gets the updated file as soon as possible.

The marketing employees share several Word documents and PowerPoint presentations, in addition to a large folder of graphical images. It’s important for them to have shared access to a Marketing folder that contains the shared files.

What should you do to help the sales and marketing employees work more efficiently?

Store the files on OneDrive, which can be accessed anywhere there is an internet connection. You can create personal folders for their own files that are not meant to be shared with the other users, and you can create a shared folder, which would include the graphical images, and the shared Word documents and PowerPoint presentations.