Lesson 6: Understanding File and Print Sharing

# Learning Objectives

Students will learn to:

* Understand file and printer sharing basics
* Configure HomeGroup connections
* Create public, basic, and advanced shares
* Configure printer sharing

# Objective Domain Skills

* Understanding file and printer sharing 4.2

# Lesson Summary — Lecture Notes

Lesson 6 helps students understand the concepts of sharing files and printers.

Begin the lecture by explaining that Windows 10 provides many ways to share files or printers on a network. The first step is to ensure that file and printer sharing is turned on in the advanced sharing settings in Network and Sharing Center. Some networking methods, such as HomeGroup, also require that your network location be set to Home network.

When you run Windows 10 within a domain, Windows servers and clients have several tools and mechanisms available to share files and printers. Today, many households have multiple computers. A homegroup is a group of computers on a home network that can share files and printers. To protect your homegroup, you use a password. Similar to share permissions, other people cannot change the files that you share unless you give them permission to do so. Homegroups are relatively limited, when compared to folder sharing, because you can only share the contents of the libraries in the user’s profile.

Next, you'll explain that Windows 10 provides Public folders and traditional file sharing capabilities to meet your networking needs. Public folders are a quick-and-easy way to share files with network users and with other users on your computer. Basic and advanced sharing allows you to control who may access specific files and folders located in your libraries. Advanced sharing offers the most options and is therefore the best choice for protecting confidential information.

The Public folder is an easy and convenient way to share files on your computer. You can share files in your Public folders with other people using the same computer and with people using other computers on your network. Any file or folder you put in a Public folder is automatically shared with the people who have access to your Public folders.

Most users are not going to log on to a server directly to access their data files. Instead, a drive or folder will be shared (known as a shared folder), and they will access the data files over the network. To help protect against unauthorized drive or folder access, you should use share permissions along with NTFS permissions (if the shared folder is on an NTFS volume). When a user needs to access a network share, she will use the universal naming convention (UNC), which is \\*servername*\*sharename*.

In the next section, you'll explain how to configure file system permissions. The NTFS file permission tool is powerful and enables you to control access to your files and folders whether they are accessed across the network or by someone logging on to the computer locally.

The folder and file structure on an NTFS drive can be complicated, with many folders and nested folders. In addition, because you can assign permissions to groups and at different levels on an NTFS volume, figuring out the effective permissions of a particular folder or file for a particular user can be tricky.

There are two types of permissions used in NTFS:

* Explicit permissions: Permissions granted directly to a file or folder
* Inherited permissions: Permissions that are granted to a folder (parent object or container) that flow into child objects (subfolders or files inside the parent folder)

In Windows 10, the Effective Access tab enables you to view the effective NTFS permissions for a user, group, or device account on a resource. To access this tab, right-click the file or folder, choose Properties, click the Security tab, and then click Advanced.

It is very common to combine share and NTFS permissions when providing access to resources on NTFS volumes. When this happens, you must have a good understanding of the cumulative effects to ensure that your resources remain protected. Now that you have a better understanding of NTFS permissions and share permissions, you need to understand what happens when you combine the two permissions on the same resource.

Next, you'll explain how to map drives. Drive mapping allows you to create a shortcut to a shared folder across a network. Instead of finding and connecting to the shared drive each time you log on, you can create a mapped drive that is available at all times. Just double-click the mapped drive to access the shared folder.

Lastly, students will learn how to configure printer sharing. Printers are considered objects. Therefore, as with NTFS files and folders, you can assign permissions to a printer so that you can specify who can use the printer, who can manage the printer, and who can manage the print jobs.

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

**advanced sharing** – A Windows feature that enables users to control who may access specific files and folders located in the user’s libraries. Advanced sharing offers more options than basic sharing and is therefore the best choice for protecting confidential information.

**basic sharing** – A Windows feature that enables users to control who may access specific files and folders located in the user’s libraries.

**effective permissions** – Permissionsfor an object, such as a folder, granted to a user or group based on the permissions granted through group membership and any permissions inherited from the parent object. Windows does not include share permissions as part of the effective permissions.

**explicit permissions** – Permissions granted directly to a file or folder.

**homegroup** – Enables sharing of files and printers across a small office/home office network.

**inherited permissions** – Permissions that are granted to a folder (parent object or container) that flow into child objects (subfolders or files inside the parent folder).

**mapping a drive** – A method of creating a logical drive letter that allows easy access to a shared folder or drive on a computer.

**network discovery** – A Windows feature that enables a computer to find other computers and devices (such as printers) on a connected network. Network discovery also lets a user control whether other computers can see the user’s computer on the same network.

**network location** – A collection of security settings that’s appropriate for the type of network a user wants to connect to. Windows 10 offers three broad categories of network locations: Public, Private, and Domain.

**NTFS permissions** – Permissions that apply to users who log on locally or from across a network. NTFS file permissions are set using the options on the Security tab in the Properties dialog box.

**printer permissions** – Permissions granted when sharing printers, including Print (allows users to send documents to the printer); Manage this printer (allows users to modify printer settings and configurations, including the access control list itself); and Manage documents (provides the ability to cancel, pause, resume, or restart a print job).

**Public folder** – A Windows folder that’s set up for sharing files and folders with other users on an attached network. Windows 7 Public folders include Public Documents, Public Music, and others.

**shared folder** – Most users are not going to log on to a server directly to access data files. Instead, a drive or folder will be shared (known as a shared folder), and users will access the files over the network.

# Knowledge Assessment

## Multiple Choice

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

1. Which of the following is *not* a network location in Windows 10?

a. Private

b. Office

c. Domain

d. Public

2. Which of the following should be used for file sharing when a peer-to-peer network has a mix of Windows 10, Windows 8/8.1, and Windows 7 computers?

a. Public folders

b. HomeGroup

c. A workgroup

d. A domain

3. Which of the following actions can be performed with a homegroup? (Choose all that apply.)

a. Share libraries

b. Share attached printers

c. Allow users to view but not modify or copy shared files

d. Choose which folders users may access

4. After sharing a folder on a Windows 10 computer with other users, which of the following can be done to make it easy for those users to access the shared folder?

a. Create a workgroup

b. Create effective permissions

c. Create NTFS permissions

d. Map a drive

5. Which of the following statements is *not* true regarding NTFS permissions?

a. Copied files and folders inherit permissions of the destination folder.

b. Copied files and folders retain permissions of the source folder.

c. Files and folders moved within the same partition retain their permissions.

d. Files and folders moved to a different partition inherit the permissions of the destination folder.

6. Which of the following Windows 10 permissions allows users to view and change files and folders, create new files and folders, and run programs in a folder?

a. Write

b. Modify

c. Read and execute

d. Full control

7. Which of the following Public folders is *not* created by default?

a. Public Documents

b. Public Music

c. Public Pictures

d. Public Projects

8. Which Windows 10 feature is used to turn Public folders on or off?

a. Advanced sharing settings

b. The This PC window

c. Network and Sharing Center window

d. Devices and Printers window

9. Which Windows 10 feature is used to add a printer?

a. Devices and Printers

b. Device Manager

c. Printer troubleshooter

d. Programs and Features

10. When sharing a folder, which share permission should be configured?

a. Deny Full Control

b. Allow Full Control

c. Allow Read

d. Allow Modify

## Fill in the Blank

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

1. A network location is a collection of security settings that’s appropriate for the type of network to which a user wants to connect.

2. Each default library in Windows 10 has Public folders, created to easily share documents, music, and so on with network users.

3. Basic sharing allows a user to share a file or folder with another user and restrict that user to Read or Read/Write actions.

4. After setting permissions on a parent folder, new files and subfolders that are created in the folder inherit these permissions.

5. NTFS permissions apply to users who log on locally or remotely.

6. The public network is a network location that has the most restrictive firewall rules, including blocking file sharing and network discovery.

7. Advanced sharing allows users to share files, folders, or an entire drive, and set permissions on shared files and folders (Read, Change, or Full Control).

8. HomeGroup is the built-in file and printer sharing feature in Windows 10 that’s designed for small office or home office networks.

9. When users connect to the share over the network, both the share and NTFS permissions combine, and the most restrictive set is applied.

10. Effective permissions for an object, such as a folder, are permissions granted to a user or group based on the permissions granted through group membership and   
any permissions inherited from the parent object.

## True / False

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

**T F** 1. Network users can join two or more homegroups at a time.

**T F** 2.When creating a homegroup, a user can share libraries but not printers.

**T F** 3. Public folder sharing in Windows 10 is turned off by default, except on a homegroup.

**T F** 4. Share permissions apply to users who connect to a shared folder over a network.

**T F** 5. A user has full permissions over his own print jobs.

# Business Case Scenarios

## Scenario 6-1: Picking an Appropriate File-Sharing Method

Arnie, a supervisor in a small content translation company, wants to share a status spreadsheet with seven co-workers on a regular basis. His computer runs Windows 10. The peer computers all run Windows 10 and are connected through a wireless network. What method of file sharing should you set up for the supervisor?

Because Arnie wants to share only one file, the easiest method is to have him use Public folders. You should ensure that Public folders are enabled on Arnie’s computer and have him move the spreadsheet to his Public Documents folder. Then ensure that the three co-workers’ computers can access Arnie’s Public Documents folder.

## Scenario 6-2: Creating and Configuring a Homegroup

A local pet shop has three computers in the back office, all running Windows 10. For all three computers, the owner wants to share all files in their Documents and Pictures libraries and share a printer attached to one of the computers. Describe your recommended solution.

Meredith should create a homegroup on the computer with the attached printer. When using the Create a Homegroup Wizard, she should deselect the Music option and the Videos option so that those libraries are not shared.

## Scenario 6-3: Restricting Permissions

You are setting permissions on a network share named Marketing. Currently, the accounts for Bob and Aileen have Full Control over the Marketing folder. However, you want to restrict both users so that they can revise files within the Marketing folder and create new ones, but they cannot execute programs. What permissions should you apply?

The Full Control permission gives Bob and Aileen permission to execute programs, in addition to all other rights. You should change their permissions to Read, Write, and Modify. In that way, they can read files, change files, and create new files, but they cannot execute programs.

## Scenario 6-4: Mapping a Network Drive

Samuel needs to be able to access the \Projects\Documents\98-349\ folder on the network often and quickly. He doesn’t want to click through several folders to get to the one he needs. What can you do to help Samuel?

Map a drive to the \Projects\Documents\98-349\ folder on the network. Use a drive letter that is not already in use on Samuel’s computer.