

REVIEW LESSON

MTA Course: 98-365 Windows Server® Administration Fundamentals

Lesson name: Understanding Server Roles 2.4

Topic: Understanding file and print services

(One 50-minute class period)

File name: WinServerFund_RL_2.4

Lesson Objective

2.4: Understand file and print services. *This objective may include but is not limited to:* local printers; network printers; printer pools; Web printing; Web management; driver deployment; file, folder, and share permissions vs. rights; auditing; print job management.

Preparation Details

Prerequisite student experiences and knowledge

This MTA certification exam review lesson is written for students who have learned about Windows® Server administration fundamentals. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the Microsoft® resources and Web links at the end of this review lesson.

Students should have successfully created a workgroup environment and created folder shares.

Students should have a fundamental understanding of share permissions and NTFS rights.

Instructor preparation activities

- Make copies of Student Activity WinServerFund_SA_2.4
- If available, use three virtual machines with the following specifications:
 - One with Windows Server 2008® R2 installed
 - One with Windows Server 2008 R2 and Active Directory Domain Services installed
 - One with Windows 7® installed

- All three virtual machines should be members of the same Active Directory® Domain.
- Include a network printer deployed via the print server

Note: The demonstration can also be performed on one system with all roles consolidated.

- If available, the classroom should be equipped with a network printer. The printer's IP address will be needed for review purposes. If a network-based printer is not available, it is possible to demonstrate and perform the activity with locally attached printers.

Resources, software, and additional files needed for this lesson

- WinServerFund_PPT_2.4
- WinServerFund_SA_2.4

Teaching Guide

Essential Vocabulary

Internet printing protocol (IPP)—a specification for the transmission of documents to printers via the Internet. IPP covers both printing and printer management (printer status, job cancellation, etc.). It is applicable to print servers and network-capable printer devices.

file server—provides file sharing services to users in a network environment.

permission—determines the type of access a particular user has to the resource (file, folder, or share) that is being accessed. Permissions are assigned via the resource's property sheet. Permissions are granted by the system administrator, owner of the resource, or other authorized person.

print queue—a buffer for documents and images waiting to be printed. When an application places a document in a print queue, it spools it to a file on the disk, where it waits until the printer is ready to print it.

print server—a server that manages print services in a network environment. The print server can be any workstation on the network.

printer spooler—computer software that intercepts a print job on its way to the printer and sends it to disk or memory instead. The spooler is where the print job is held until the printer is ready to print the job.

printing pool—two or more identical printers that are connected to one computer and act as a single printer. In this case, when you print a document, the print job will be sent to the first available printer in the pool.

share—to make files and folders (directories) accessible to other users over a network.

Lesson Sequence

Activating prior knowledge/lesson staging (Anticipatory Set: 10 minutes)

1. Student prompts (see PowerPoint® slide 3): On a sheet of paper, describe the role a network administrator would need to add to be able to share files and folders on a Windows Server 2008 R2 system.
2. Give students a few minutes to respond, allowing them to work until they have finished.

Lesson activity (40 minutes)

1. Teacher Instruction (20 minutes)
 - Use the included PowerPoint slideshow to review the requirements and configuration of file and print services.
 - At the end of the slideshow, ask the students to answer the Review Questions. Small group discussions or a “think-pair-share” approach may be beneficial.
 - Show the question and give the students 1 minute to process the question and come up with answers.
 - Then give the students 2 minutes to discuss answers with a partner.
 - Finally, have each pair of students share their answers with the whole group.
 - Repeat for each additional review question.
2. Guided Practice (20 minutes; please see the “Additional notes to the instructor” section regarding this assignment)
 - Students should work in groups of two and complete WinServerFund_SA_2.4
 - If time allows, you may review all or part of the worksheet, discussing student responses to the questions.

Assessment/lesson reflection (10 minutes)

1. At the bottom of the activity’s page, have the students write any questions they have or topics about which they would like more assistance.
2. After class, look through the student responses and follow up with any student requiring additional help.

Microsoft resources and Web links

- **Microsoft: Distributed File System: Frequently Asked Questions**
<http://www.microsoft.com/windowsserversystem/dfs/dfsfaq.msp>
- **Microsoft TechNet: BranchCache**
[http://technet.microsoft.com/en-us/library/dd996641\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/dd996641(WS.10).aspx)
- **Microsoft TechNet: Introduction to File Server Resource Manager**
[http://technet.microsoft.com/en-us/library/cc770906\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc770906(WS.10).aspx)
- **Microsoft TechNet: Services for Network File System**
[http://technet.microsoft.com/en-us/library/cc782783\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc782783(WS.10).aspx)

Suggested best practices

- It is beneficial for the students to see a fully configured file and print server. Due to time constraints, the student will not have the opportunity to completely revisit all there is to know about file and print services. If available, a network printer presents an excellent example of “real world” networking and the various networking designs available. It is an excellent “show and tell” model to demonstrate configuring the interface of the printer through web services or by using the telnet protocol.
- Time permitting; discuss the concepts of hidden shares and why they are used. Also have the students do some command line exercises mapping virtual drives to shared folders using the **net use** command as follows:

```
net use <drive letter>: \\computername\sharename\folder /persistent:no
```

Additional notes to the instructor:

- The worksheet WinServerFund_SA_2.4 asks students to create folders and to share those folders using basic best practices. Due to time constraints, the students will log in as Administrator with a generic password, which will allow them to access their partner’s server for this activity without providing credentials. The students should know how to create local users and groups prior to this review; however, it may be beneficial to have the students follow the instructor’s lead and create a test user and group if time permits.
- The worksheet requires access to a network printer. Provide the students with the IP address to this printer. If the classroom does not have a network printer, then the students will have to share a locally attached printer.