

REVIEW LESSON

MTA Course: 98-365 Windows Server® Administration Fundamentals

Lesson name: Understanding Active Directory 3.3

Topic: Understand Active Directory infrastructure

(One 50-minute class period)

File name: WinServerFund_RL_3.3.

Lesson Objective

3.3: Understand Active Directory infrastructure. *This objective may include but is not limited to:* domain controllers; forests; operation masters roles; domain vs. workgroup; child domains; trusts; functional levels; namespace; sites; replication.

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.

Instructor preparation activities

- Make copies of Student Activity WinServerFund_SA_3.3
- If available, have one virtual machine:
 - Windows Server 2008® R2 configured as an Active Directory® Domain Controller

Resources, software, and additional files needed for this lesson

- WinServerFund_PPT_3.3
- WinServerFund_SA_3.3
- WinServerFund_SA_3.3_Key

Teaching Guide

Essential Vocabulary

domain tree—the tree structures for the entire Windows forest are stored in Active Directory in the form of parent-child and tree-root relationships. These relationships are stored as trust account objects (class trusted domain) in the System container within a specific domain directory partition. For each domain in a forest, information about its connection to a parent domain (or, in the case of a tree root, to another tree root domain) is added to the configuration data that is replicated to every domain in the forest.

forest—a collection of one or more domains trees in Microsoft® Windows that share a common schema, configuration, and global catalog and are linked with two-way transitive trusts.

global catalog server—a distributed data repository that contains a searchable, partial representation of every object in every domain in a multidomain Active Directory Domain Services (AD DS) forest. The global catalog is stored on domain controllers that have been designated as global catalog servers and is distributed through multimaster replication. Searches that are directed to the global catalog are faster because they do not involve referrals to different domain controllers.

operation masters—Active Directory Domain Services (AD DS) defines five operations master roles: the schema master, domain naming master, relative identifier (RID) master, primary domain controller (PDC) emulator, and infrastructure master. The domain controllers that hold operations master roles are designated to perform specific tasks to ensure consistency and to eliminate the potential for conflicting entries in the AD DS database.

schema—the component of the Active Directory service that defines all the objects and attributes that the directory service uses to store data.

transitive trust—the standard type of trust relationship between Windows domains in a domain tree or forest.

Lesson Sequence

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

1. Student prompt (see PowerPoint® slide 3): On a sheet of paper, write the five operation roles.
2. Give students a few minutes to respond, allowing them to work until they have finished.
3. As time permits, call on a few students to report to the group with their responses.

Lesson activity (40 minutes)

1. Teacher Instruction (20 minutes)
 - Use the included PowerPoint slideshow to review the Active Directory Infrastructure.
 - 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; see “Additional notes to the instructor” section regarding this assignment)
 - Students complete WinServerFund_SA_3.3, reviewing the Active Directory infrastructure and operations roles.
 - If time allows, you may review all or part of the worksheet by discussing students’ responses to the questions.

Assessment/lesson reflection (10 minutes)

1. At the bottom of the activity 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 TechNet: Active Directory**
([http://technet.microsoft.com/en-us/library/cc780856\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc780856(WS.10).aspx))
- **Microsoft TechNet: Creating a New Forest: Active Directory**
([http://technet.microsoft.com/en-us/library/cc755450\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc755450(WS.10).aspx))
- **Microsoft TechNet: Delegate Control of an Organizational Unit**
(<http://technet.microsoft.com/en-us/library/cc732524.aspx>)
- **Microsoft TechNet: What Are Operations Masters?: Active Directory**
([http://technet.microsoft.com/en-us/library/cc779716\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc779716(WS.10).aspx))
- **Microsoft: Using NTDSUTIL to transfer or seize FSMO roles to a domain controller**
(<http://support.microsoft.com/kb/255504>)

Suggested best practices

- Use the NTDSUTIL command to demonstrate how to transfer or seize roles.

Additional notes to the instructor

- This lesson plan is more theory and less hands-on. It is important to stress how critical it is to determine which systems have which roles defined for disaster recovery purposes.