

LESSON 3.2

98-365 Windows Server Administration Fundamentals

# Understand Active Directory Infrastructure

## Lesson Overview

In this lesson, you will learn about:

- Domains
- Active Directory® Forests
- The 5 operations masters
- To determine the Operations Masters
- Trust relationships

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#### **Anticipatory Set**

- List the five operations master roles.

## What Is a Domain?

- Domains determine replication boundaries and use hierarchical names.
  - All of the domain controllers within a domain can receive changes and replicate them to other domain controllers in the domain.
- Domains provide several benefits:
  - Organizing objects
  - Publishing resources and information about domain objects
  - Applying a Group Policy object to the domain consolidates management.
  - Delegating authority reduces the need for a number of administrators.
  - Security policies and settings do not cross domains.
  - Each domain stores only the information about the objects located in that domain.



## Active Directory Forests

- When you create the first domain controller in your organization, you are creating the first domain (also called the *forest root* domain) and the first forest.
- The top-level Active Directory container is called a forest.
  - A forest consists of one or more domains that share a common schema and global catalog.
  - A forest is the security and administrative boundary for all objects that reside within the forest.
  - An organization can have multiple forests, but that will increase the administrative overhead.
- In contrast, a domain is the administrative boundary for managing objects, such as users, groups, and computers.
- Each domain can have individual security policies and trust relationships with other domains.

## Operations Masters

- The five operations master roles are assigned automatically when the first domain controller in a given domain is created.
  - Two forest-level roles are assigned to the first domain controller created in a forest .
  - Three domain-level roles are assigned to the first domain controller created in a domain.

## Five Operation Masters

- Schema Master—Responsible for performing updates to the schema.
- Domain Naming Master—Manages the addition and removal of all domains and directory partitions, regardless of the domain, in the forest hierarchy.
- RID Master—The relative identifier (RID) operations master allocates blocks of RIDs to each domain controller in the domain.
- PDC Emulator—Receives preferential replication of password changes performed by other domain controllers in the domain.
- Infrastructure Master—Responsible for updating object references in its domain that point to the object in another domain.



## Operation Master Placement

Follow these guidelines to minimize administrative overhead and ensure the performance of Active Directory:

- Leave the two forest-wide roles on a domain controller in the forest root domain
- Place the two forest-wide roles on a global catalog server
- Place the three domain-wide roles on the same domain controller
- In a forest that contains multiple domains, do not place the domain-wide roles on a global catalog server unless all domain controllers in the domain are also global catalog servers
- Place the domain-wide roles on a higher performance domain controller
- Adjust the workload of the operations master role holder, if necessary



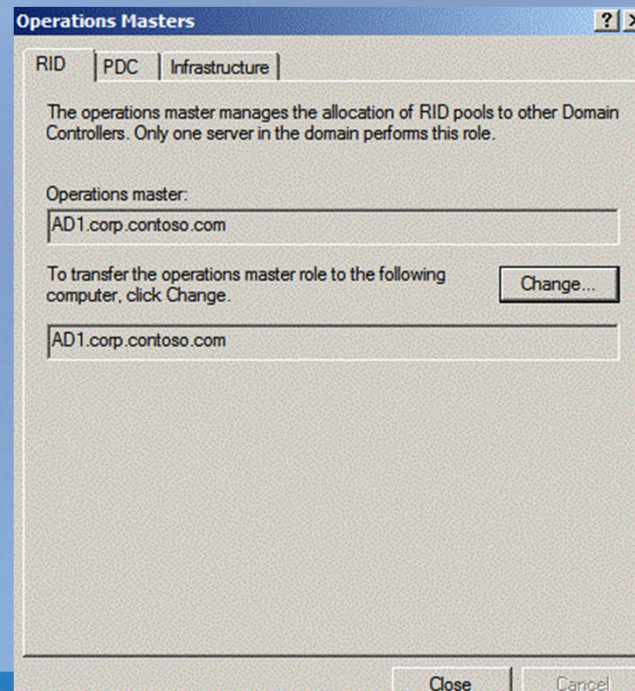
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# How to Determine Operation Roles

## RID, PDC and Infrastructure

- Click Start → All Programs → Administrative Tools → Active Directory Users and Computers.
- Right click on your domain and select **Operations Masters**.



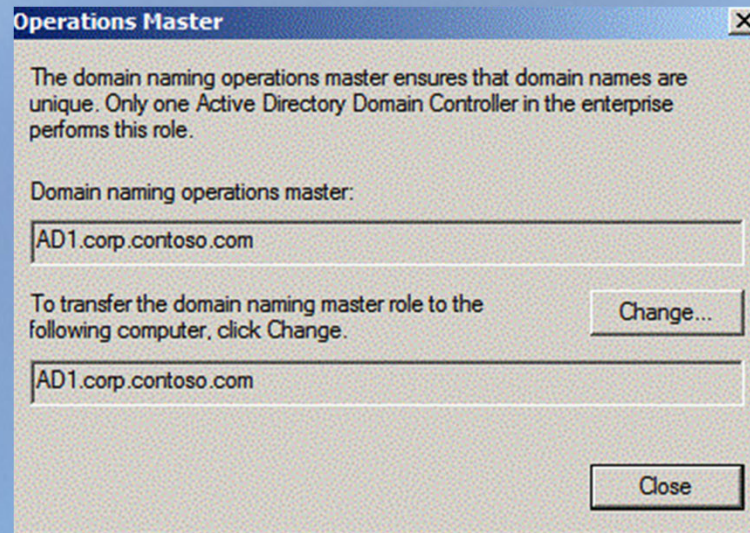
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# How to Determine Operation Roles

## Domain Naming Master

- Click Start → All Programs → Administrative Tools → Active Directory Domains and Trusts.
- Right click on your domain and select **Operations Masters**.

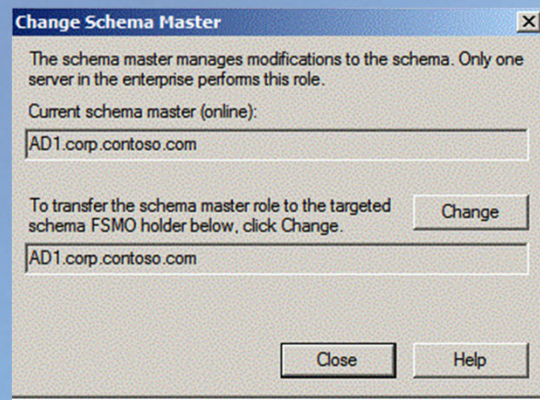




## How to Determine Operation Roles

### Schema Master

- Click Start → Run. Type `regsvr32 schmmgmt.dll` in the Open box, and then click OK. A message states the registration was successful.
- Click Start → MMC.exe in *search programs and files*.
- Click File → Add/Remove Snap-in ... and add the Active Directory Schema snap-in and click OK.
- Right click on your domain and select **Operations Masters ...**





## Trust relationships

- When there are trust relationships between domains, the authentication mechanism for each domain trusts the authentication mechanism for all other trusted domains.
- Users in a trusted domain have access to resources in the trusting domain, subject to the access controls that are applied in the trusting domain.

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## Lesson Review

- What domain controller maintains all 5 operation roles by default?
- What operation role is responsible for password management?
- What are the two forest-wide roles?