



BATCH	:	146 - 149
LESSON	:	Windows Server
DATE	:	17.07.2023
SUBJECT	:	Intro & Config.

ZOOM GİRİŞLERİNİZİ LÜTFEN **LMS** SİSTEMİ ÜZERİNDEN YAPINIZ





Windows Server Day 1

- Bugünkü dersin pre-class materyalini incelediniz mi?

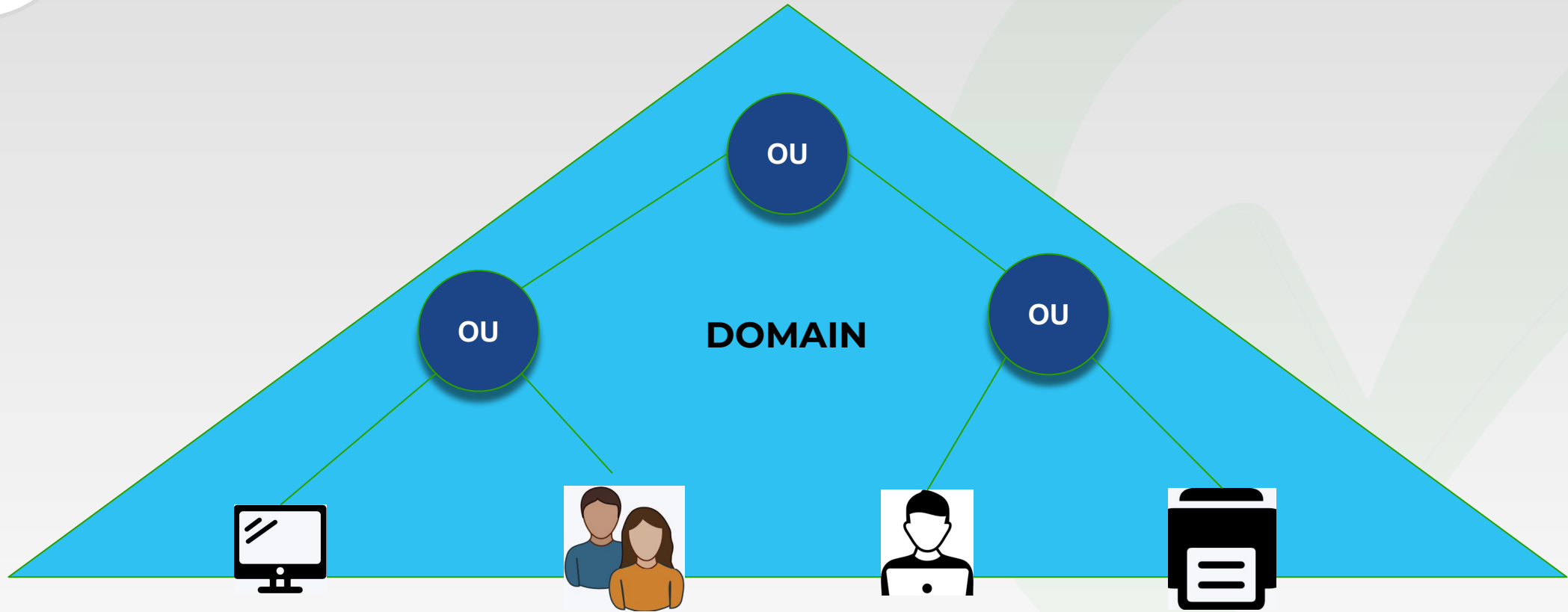
Contents

- Active Directory
- AD Domain
- Tree
- Forest
- OU, User, Computer
- Domain Controller
- Roles and Features
- Post-Installation Configuration
- Server
- Server Manager
- Virtual Machine





What is AD Domain?



Active Directory domain (AD domain) is a **collection of objects** within a Microsoft Active Directory network. An object can be a single **user or a group**, or it can be a hardware component, such as a **computer or printer**.



Overview of AD DS

AD DS is composed of both logical and physical components

Logical components

- Partitions
- Schema
- **Domains**
- **Domain trees**
- **Forests**
- **OUs**
- **Containers**

Physical components

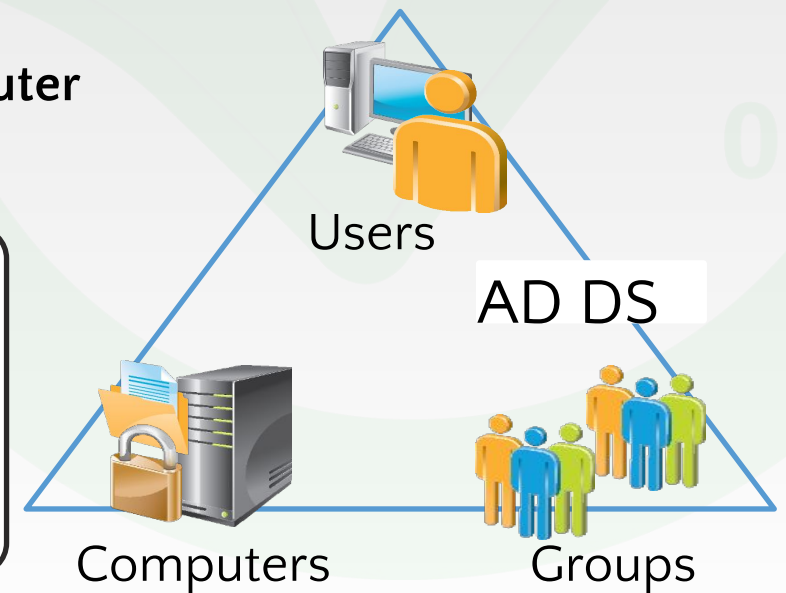
- **Domain controllers**
- Data stores
- **Global catalog servers**
- **Sites**
- RODCs



What is AD DS?

- A kind of **database**
- **Manage** your remote **resources** centrally
- Since Windows NT (1993)
- AD DS requires one or more **domain controllers**
- All domain controllers hold a copy of the **domain database, which is continually synchronized**
- The domain is the context within which **user accounts, computer accounts, and groups** are created

- Any domain controller can authenticate any sign-in anywhere in the domain
- The domain provides authorization



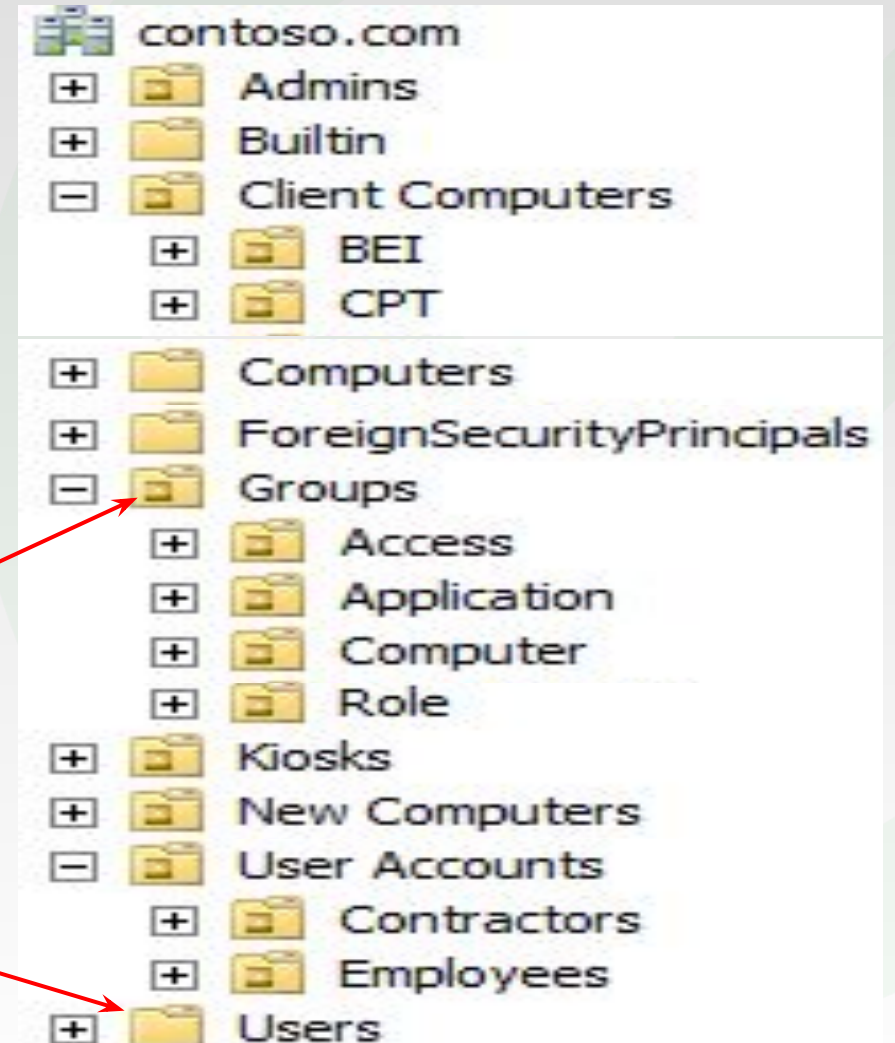


What Are OUs?

- Containers/Folders that can be used to **group objects** within a domain
- Create OUs to:
 - **Configure objects** by assigning **GPOs**
 - **Delegate** administrative **permissions**

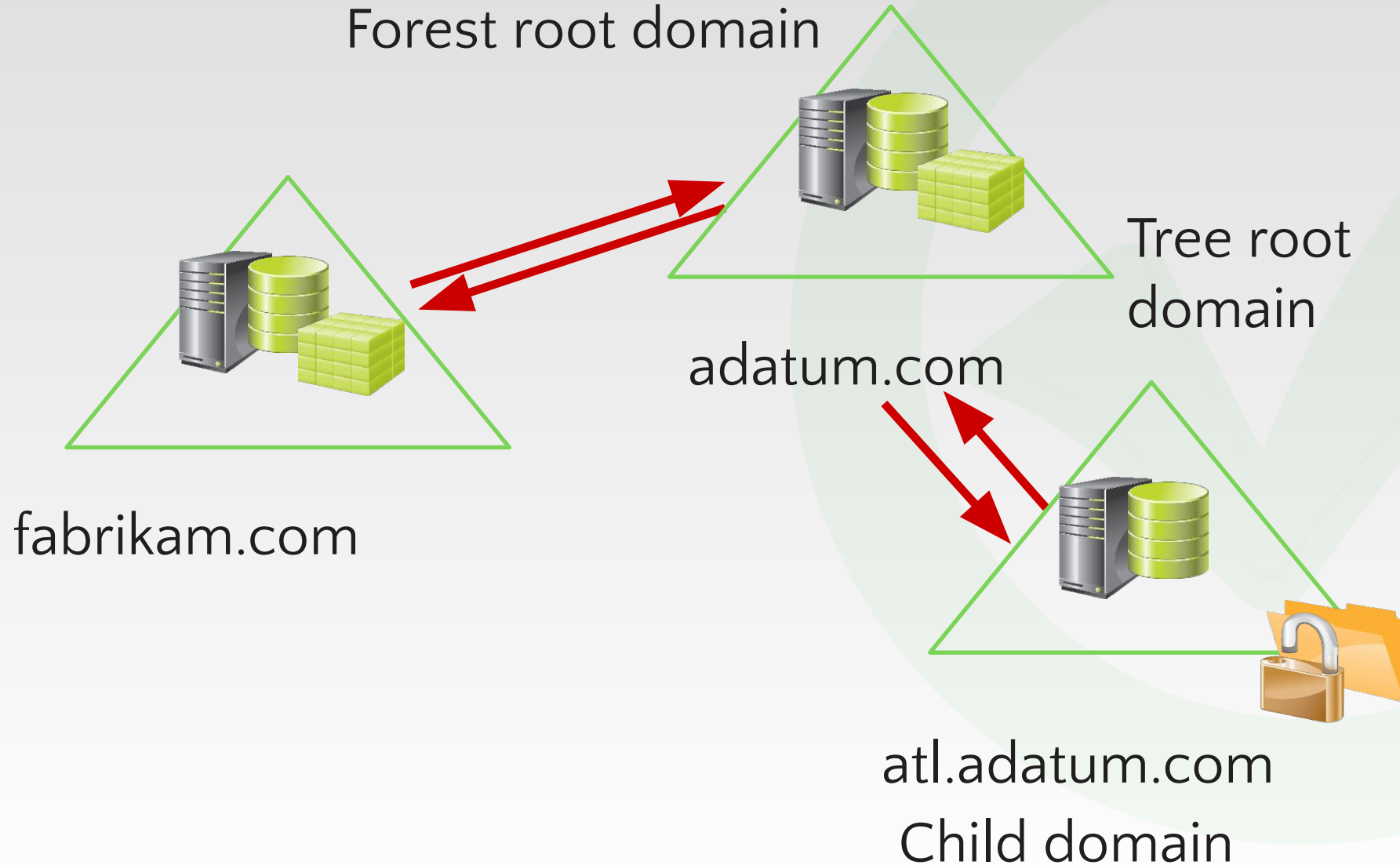
OU's are represented by a folder with a book on it

Containers are represented by a blank folder





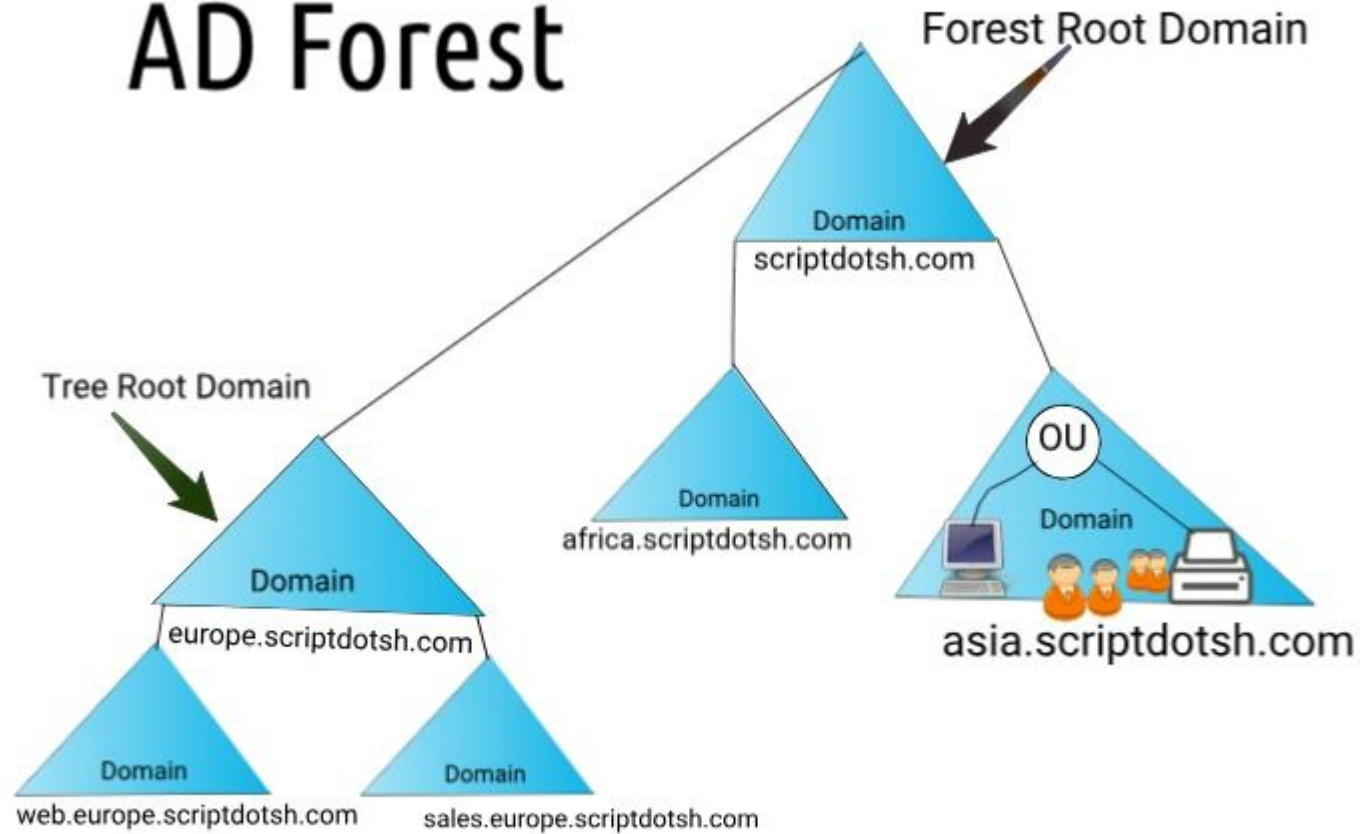
What is AD DS Forest?





What Is AD DS Forest?

AD Forest





What is a Domain Controller?

Domain controllers

- A **domain controller** is a **server** that **responds to authentication requests** and **verifies users on computer networks**. Domains are a hierarchical way of organizing users and computers that work together on the same network.
- Servers that host the AD DS **database (Ntds.dit)** and SYSVOL
- Kerberos (MIT 1980s, UDP 88) **authentication protocol** and KDC services perform authentication
- Best practices:
 - Availability:
At least two domain controllers in a domain
 - Security:
RODC and BitLocker

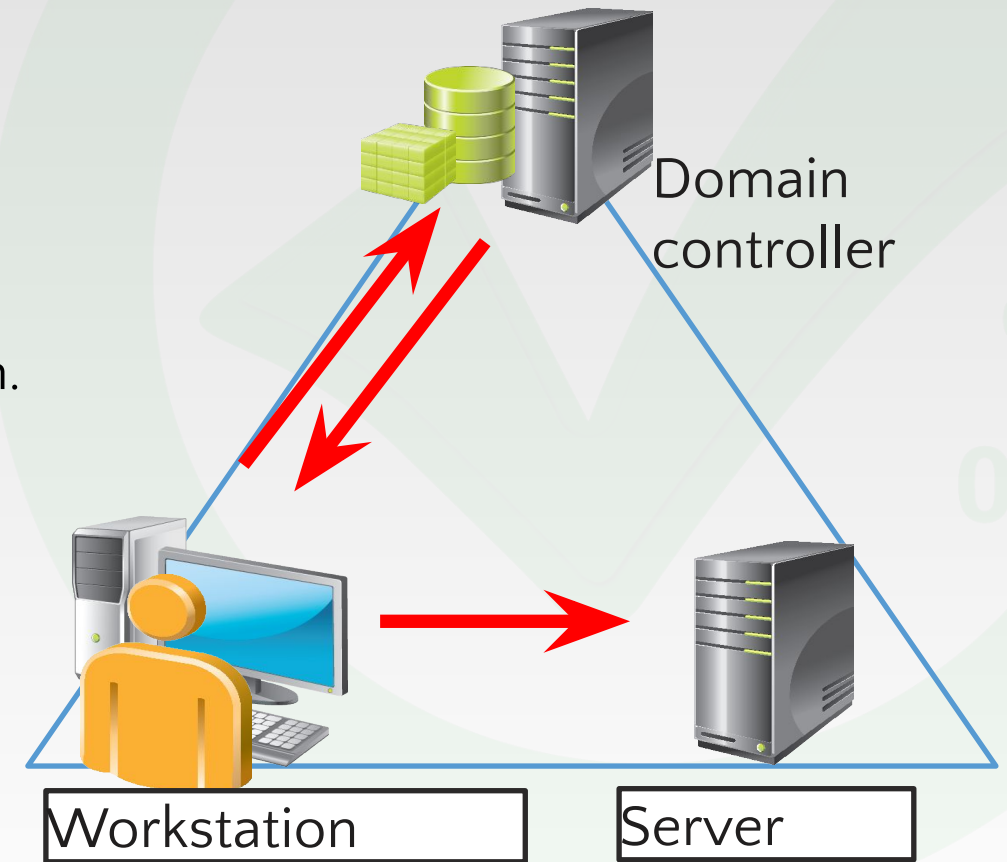
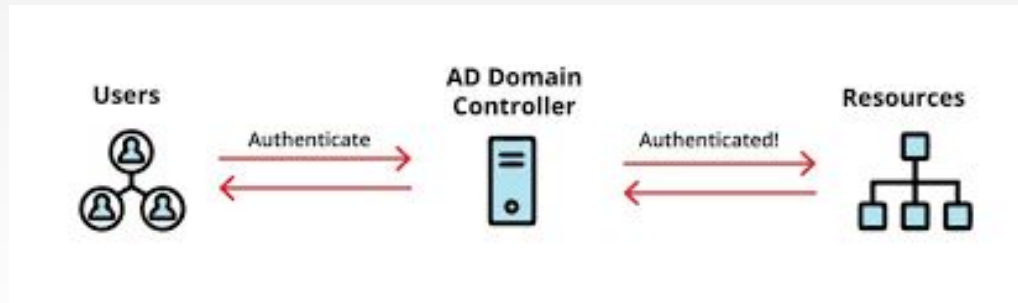




The AD DS Sign-in Process

The AD DS sign-in process:

1. The user account is authenticated to the domain controller.
2. The domain controller returns a **TGT** (Ticket Granting Ticket) back to client.
3. The client uses **TGT** to apply for access to the workstation.
4. The domain controller grants access to the workstation.
5. The client uses **TGT** to apply for access to the server.
6. The domain controller returns access to the server.



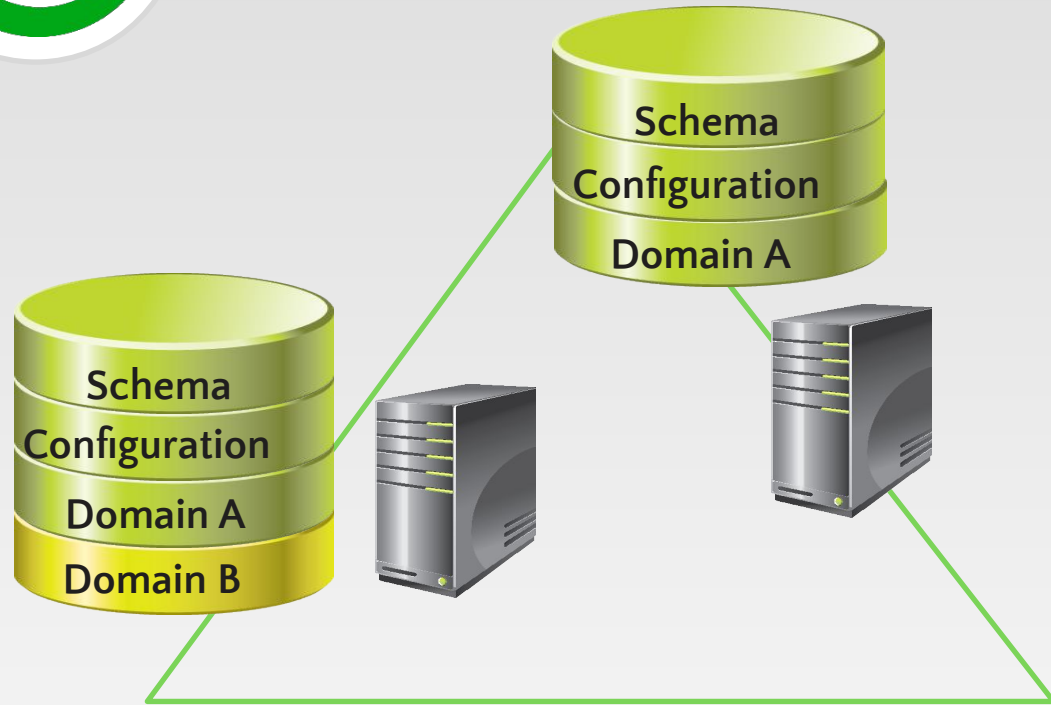


What is the Global Catalog?

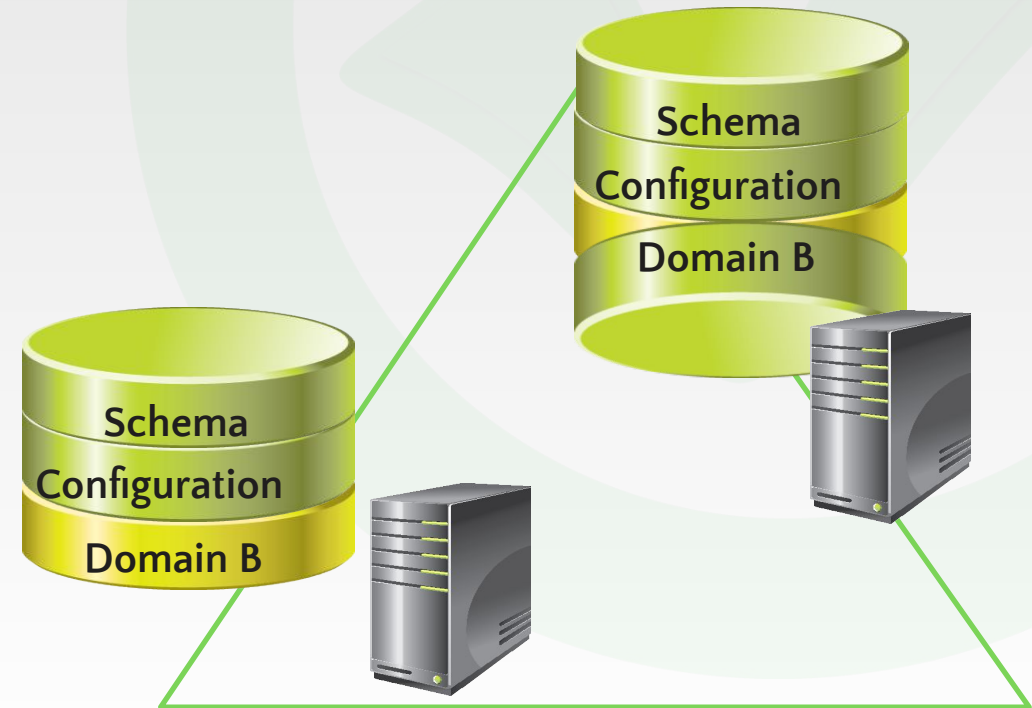
The global catalog:

Hosts a partial attribute set for other domains in the forest

Supports queries for objects throughout the forest



Global catalog server





Installing a Domain Controller

Deployment Configuration section of the
Active Directory Domain Services Configuration Wizard

Select the deployment operation

☒ Add a domain controller to an existing domain

☐ Add a new domain to an existing forest

☐ Add a new forest

Specify the domain information for this operation

Domain:

Supply the credentials to perform this operation

<No credentials provided>



Installing a Domain Controller

Installing AD DS is a two-step process regardless of which installation method you use

- Method 1, use Server Manager on a Windows 2012 server with a GUI interface to connect to the system
 1. Install the files by installing the Active Directory Domain Services role
 2. Install the domain controller role by running the Active Directory Domain Services Configuration Wizard
- Method 2, Use Windows PowerShell locally, or remotely using WinRM
 1. Install the files by running the command **Install-WindowsFeature AD-Domain-Services**
 2. Install the domain controller role by running the command **Install-ADDSDomainController**



Deploying and Managing Windows Server 2012

Windows Server 2012 Overview
Installing Windows Server 2012
Post-Installation Configuration of Windows
Server 2012
Overview of Windows Server 2012 Management
PowerShell



What Is Server Core?

Server Core:

- Is a more **secure, less resource-intensive** installation option
- Can be converted to full graphical shell version of Windows Server 2012
- Is the default installation option for Windows Server 2012
- Is managed locally using `sconfig.cmd`

With remote management enabled, you rarely will need to sign in locally



Windows Server 2012 R2 Roles

Roles

- Services that you can add to a Windows Server
- **DNS, DHCP** Roles
- Roles are made up of role services components that provide additional functionality associated with the role
- In Server Manager 2012, console servers with a similar role are grouped together
- Role deployment also includes the configuration of dependencies



What Are the Windows Server 2012 Features?

Features:

- Are **components** that support the server such as Windows Server Backup or Failover clustering
- Usually do not provide a service directly to clients on the network

Keep in mind the following points:

- **Roles can have features as dependencies**
- Features on Demand are features that need to be installed using a mounted image as a source



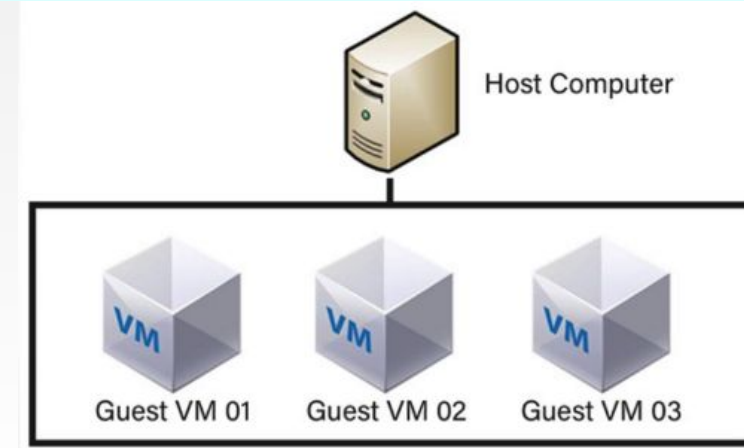
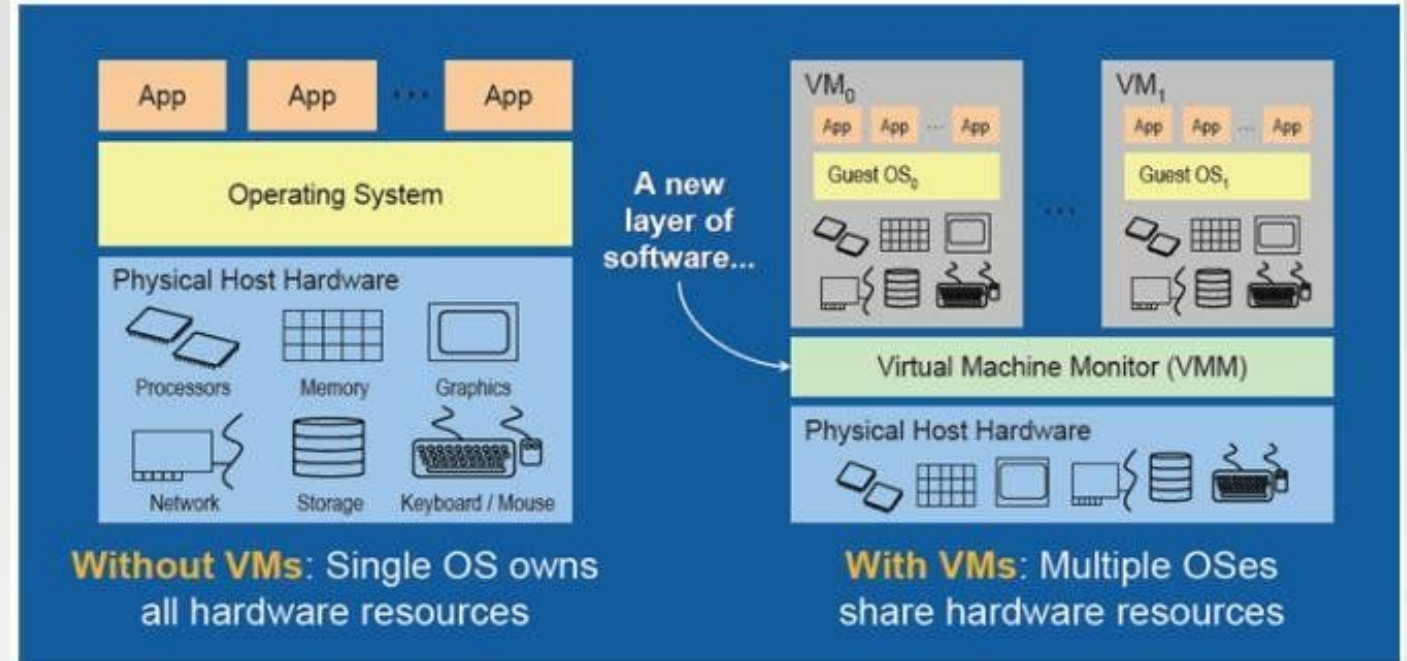
Recap

- An AD Domain allows **management of large computer networks**
- Use **at least ONE Windows Server** called a **DC (Domain Controller)**
- A **DC** is any **server with the AD DS role**
- **DCs respond to authentication requests** across the domain
- DCs have the tools **AD (Active Directory)** and **GP (Group Policy)**
- **AD** contains **Objects and OUs'** (Organizational Units)
- **GP** contains **GPOs** (Group Policy Objects) that manage AD objects



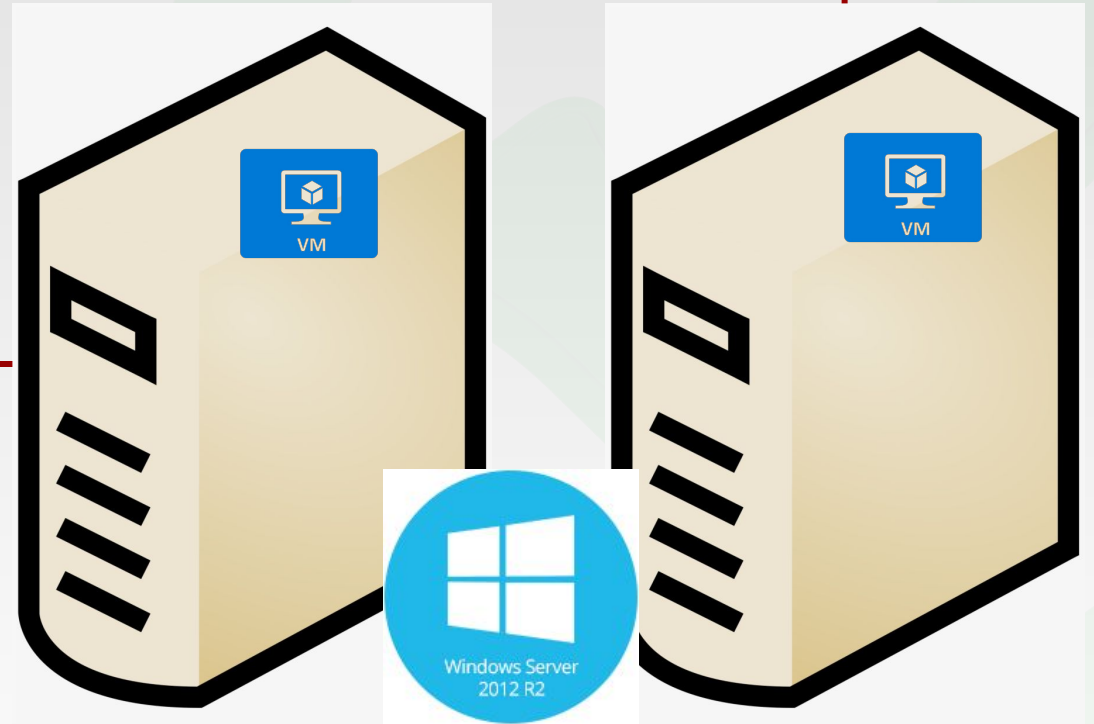
VirtualBox

Oracle VM VirtualBox is cross-platform virtualization software. It allows users to extend their existing computer to run multiple operating systems including Microsoft Windows, Mac OS X, Linux, and Oracle Solaris, at the same time.





Lab Environment





Overview of Post-Installation Configuration



PROPERTIES


For WIN-GRUSOCV22M4

TASKS

Computer name	WIN-GRUSOCV22M4	Last installed updates	Never
Workgroup	WORKGROUP	Windows Update	Not configured
		Last checked for updates	Never
Windows Firewall	Private: On	Windows Error Reporting	Off
Remote management	Enabled	Customer Experience Improvement Program	Not participating
Remote Desktop	Disabled	IE Enhanced Security Configuration	On
NIC Teaming	Disabled	Time zone	(UTC-08:00) Pacific Time (US & Canada)
Ethernet	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	00252-90000-00000-AA632 (activated)
Operating system version	Microsoft Windows Server 2012 R2 Datacenter Evaluation	Processors	AMD FX(tm)-8120 Eight-Core Processor
Hardware information	Microsoft Corporation Virtual Machine	Installed memory (RAM)	2 GB
		Total disk space	126.66 GB



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Configuring Server Network Settings



PROPERTIES

For LON-DC1

Computer name

LON-DC1

Domain

Adatum.com

Windows Firewall

Domain: On

Remote management

Enabled

Remote Desktop

Disabled

NIC Teaming

Disabled

Ethernet

172.16.0.10, IPv6 enabled



How to Join a Domain

Information necessary for a domain join:

- Domain name
- Account with permission to join the computer to the domain

A screenshot of a Windows XP-style dialog box titled "Computer Name/Domain Changes". The dialog has a blue title bar with a red close button (X) in the top right corner. The main text area contains the message: "You can change the name and the membership of this computer. Changes might affect access to network resources." Below this, there are two sections. The first section is for the computer name, with a label "Computer name:" and a text box containing "WaggaWagga". Below that is the label "Full computer name:" and the text "WaggaWagga.Adatum.com". To the right of this text is a "More..." button. The second section is titled "Member of" and contains two radio button options. The first option is "Domain:" with a selected radio button and a text box containing "Adatum.com". The second option is "Workgroup:" with an unselected radio button and an empty text box. At the bottom right of the dialog are "OK" and "Cancel" buttons.



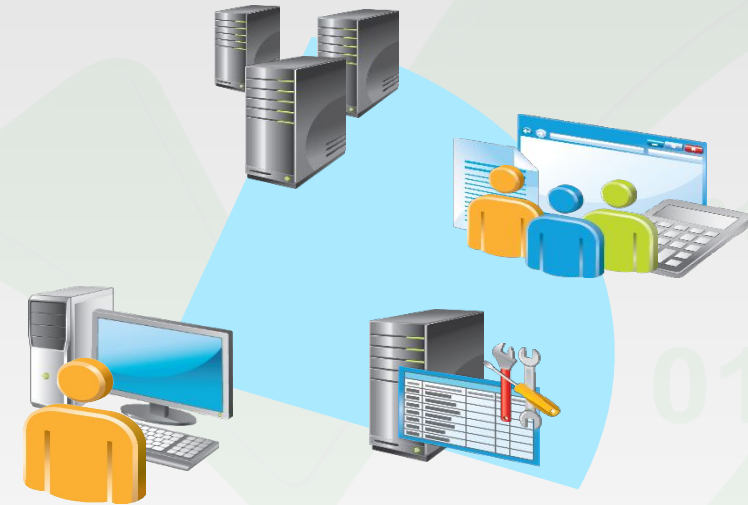
What Is Server Manager?

You can use Server Manager to:

- **Manage multiple servers** on a network from one console
- **Add roles and features**
- Launch Windows PowerShell sessions
- View events
- Perform server configuration tasks
- Manage down-level servers

You can use Best Practices Analyzer to:

- Determine whether roles on your network are functioning efficiently
- Query event logs for warning and error events
- Diagnose health issues with specific roles

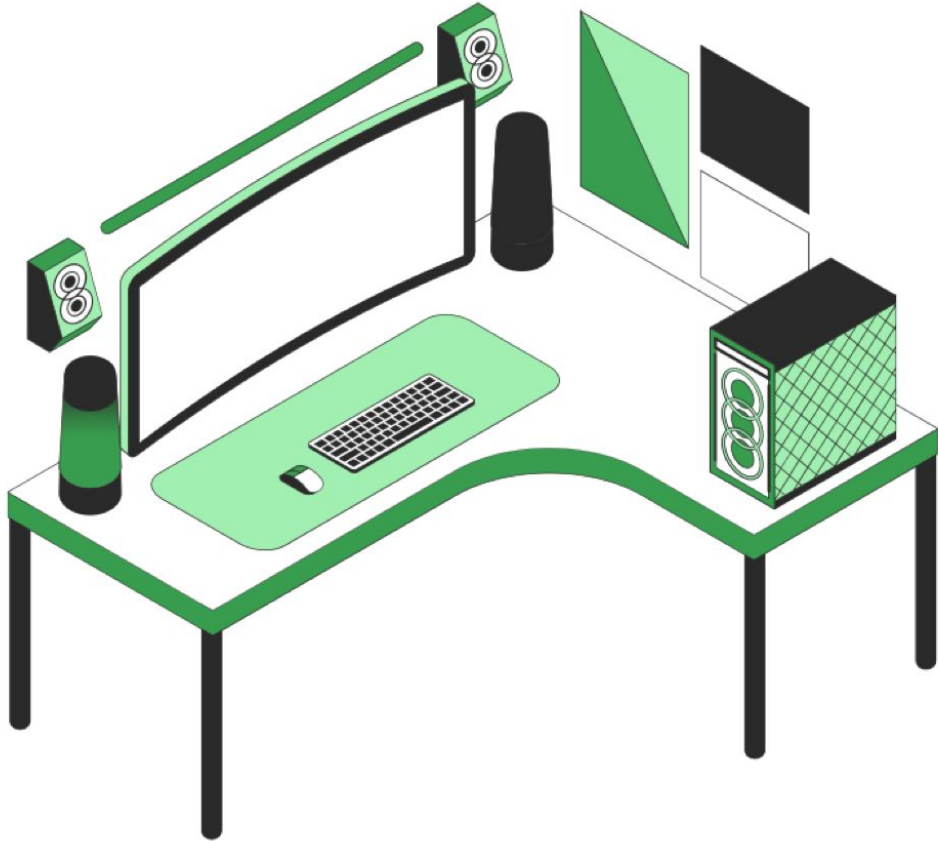




Administrative Tools and Remote Server Administration Tools

Administrative tools:

- Active Directory Administrative Center
- Active Directory Users and Computers
- DNS console
- Event Viewer
- Group Policy Management Console
- IIS Manager
- Performance Monitor
- Resource Monitor
- Task Scheduler
- Can be used to manage non-domain joined systems



Do you
have any
questions?

Send it to us! We hope you learned
something new.