Introduction to Active Directory Domain Services

#Pre-requisite for installation for vcenter server

Source: Microsoft Virtual Academy

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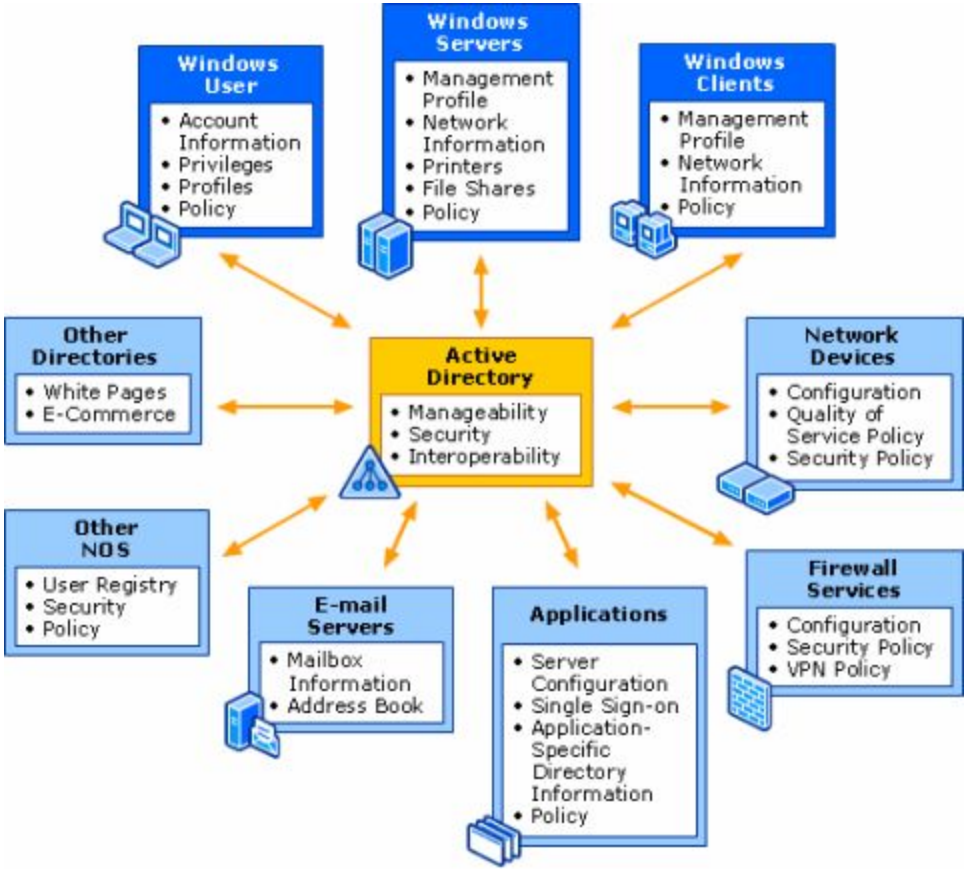
Windows User
• Account Information
• Privileges
• Profiles
• Policy
Windows Servers
• Management Profile
• Network Information
• Printers
• File Shares
• Policy
Windows Clients
• Management Profile
• Network Information
• Policy
Other Directories
• White Pages
• E-Commerce
Active Directory
• Manageability
• Security
• Interoperability
Network Devices
• Configuration
• Quality of Service Policy
• Security Policy
Other NOS
• User Registry
• Security
• Policy
E-mail Servers
• Mailbox Information
• Address Book
Applications
• Server Configuration
• Single Sign-on
• Application-Specific Directory Information
• Policy
Firewall Services
• Configuration
• Security Policy
• VPN Policy

What is Authentication ???

Authentication is a **process** of verifying a user’s identity on the network.

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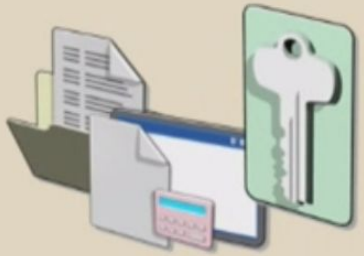
Authentication includes two components:

- Interactive logon: grants access to the local computer

- Network authentication: grants access to network resources



What is Authorization ?

What is Authorization?

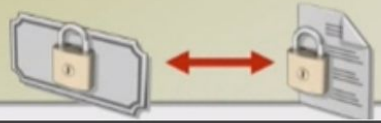
Authorization is a process of verifying that an authenticated user has permission to perform an action

- Security principals are issued security identifiers (SIDs) when the account is created

- User accounts are issued security tokens during authentication that include the user's SID and all related group SIDs

- Shared resources on a network include access control lists (ACL) that define who can access the resource

- The security token is compared against the Discretionary Access Control List (DACL) on the resource and access is granted or denied



Centralized Network Management

AD DS centralizes network management by providing:

- Single location and set of tools for managing user and group accounts
- Single location for assigning access to shared network resources
- Directory service for AD DS enabled applications
- Options for configuring security policies that apply to all users and computers

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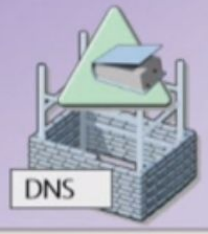
- Options for configuring security policies that apply to all users and computers
- Group policies to manage user desktops and security settings

Requirements for Installing AD DS

Object	Description
TCP/IP	• Configure appropriate TCP/IP and DNS server addresses.
Credentials	• To install a new AD DS forest, you need to be local Administrator on the server. To install an additional domain controller in an existing domain, you need to be a member of the Domain Admins group.
Domain Name System)DNS) Infrastructure	• Verify that a DNS infrastructure is in place. When you install AD DS, you can include DNS server installation, if it is needed. • When you create a new domain, a DNS delegation is created automatically during the installation process. Creating a DNS delegation requires credentials that have permissions to update the parent DNS zones.

Overview of AD DS and DNS

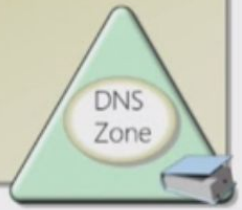
- AD DS requires a DNS infrastructure



- AD DS domain names must be DNS domain names

- AD DS domain controller records must be registered in DNS to enable other domain controllers and client computers to locate the domain controllers

- DNS zones can be stored in AD DS as Active Directory integrated zones



Component Overview

AD DS is composed of both physical and logical components

Physical Components	Logical Components
• Data store • Domain controllers • Global catalog server • Read-Only Domain Controller (RODC)	• Partitions • Schema • Domains • Domain trees • Forests • Sites • Organizational units (OUs)

Domain Controllers

A domain controller is a server with the AD DS server role installed that has specifically been promoted to a domain controller

Domain controllers:

- Host a copy of the AD DS directory store
- Provide authentication and authorization services
- Replicate updates to other domain controllers in the domain and forest
- Allow administrative access to manage user accounts and network resources

What is the AD DS Data Store?

The AD DS data store contains the database files and processes that store and manage directory information for users, services, and applications

The AD DS data store:

- Consists of the Ntds.dit file
- Is stored by default in the %SystemRoot%\NTDS folder on all domain controllers
- Is accessible only through the domain controller processes and protocols

What is AD DS Replication?

AD DS replication copies all updates of the AD DS database to all other domain controllers in a domain or forest

AD DS replication:

- Ensures that all domain controllers have the same information
- Uses a multimaster replication model
- Can be managed by creating AD DS sites

The AD DS replication topology is created automatically as new domain controllers are added to the domain

What are Sites?

An AD DS site is used to represent a network segment where all domain controllers are connected by a fast and reliable network connection

Sites are:

- Associated with IP subnets
- Used to manage replication traffic
- Used to manage client logon traffic
- Used by site aware applications such as Distributed File Systems (DFS) or Exchange Server
- Used to assign group policy objects to all users and computers in a company location

What is the AD DS Schema?

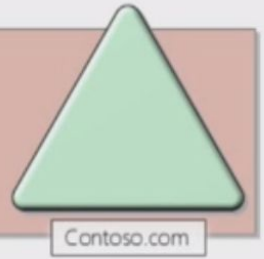
The AD DS Schema:

- Defines every type of object that can be stored in the directory
- Enforces rules regarding object creation and configuration

Object Types	Function	Examples
Class Object	What objects can be created in the directory	• User • Computer
Attribute Object	Information that can be attached to an object	• Display name

The Basics: Domains

Domains are used to group and manage objects in an organization

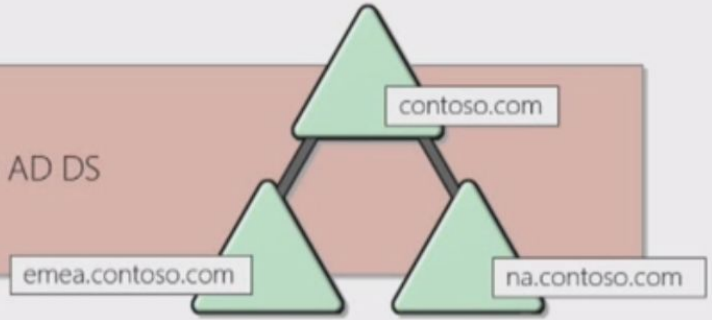


Domains:

- An administrative boundary for applying policies to groups of objects
- A replication boundary for replicating data between domain controllers
- An authentication and authorization boundary that provides a way to limit the scope of access to resources

The Basics: Trees

A domain tree is a hierarchy of domains in AD DS

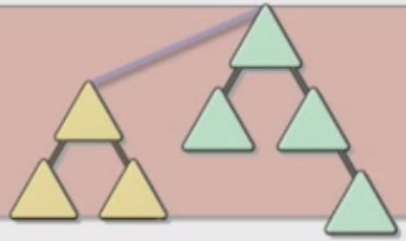


All domains in the tree:

- Share a contiguous namespace with the parent domain
- Can have additional child domains
- By default create a two-way transitive trust with other domains

The Basics: Forests

A forest is a collection of one or more domain trees

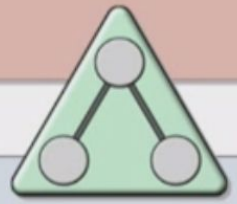


Forests:

- Share a common schema
- Share a common configuration partition
- Share a common global catalog to enable searching
- Enable trusts between all domains in the forest
- Share the Enterprise Admins and Schema Admins groups

The Basics: Organizational Units (OUs)

OUs are Active Directory containers that can contain users, groups, computers, and other OUs



OUs are used to:

- Represent your organization hierarchically and logically
- Manage a collection of objects in a consistent way
- Delegate permissions to administer groups of objects
- Apply policies

AD DS Objects

Object	Description
User	• Enables network resource access for a user
InetOrgPerson	• Similar to a user account • Used for compatibility with other directory services
Contacts	• Used primarily to assign e-mail addresses to external users • Does not enable network access
Groups	• Used to simplify the administration of access control
Computers	• Enables authentication and auditing of computer access to resources
Printers	• Used to simplify the process of locating and connecting to printers
Shared folders	• Enables users to search for shared folders based on properties

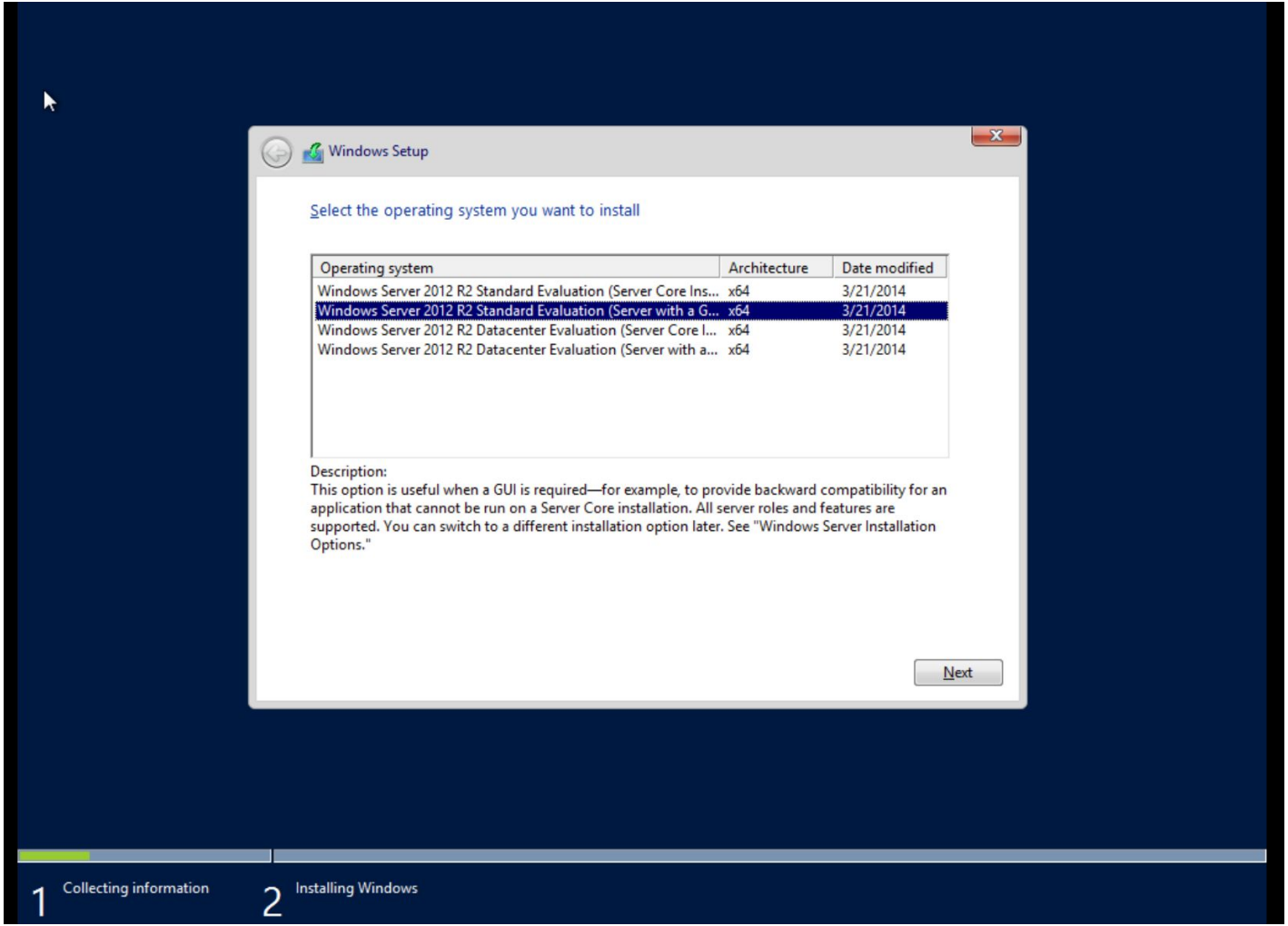
Trusts

Trusts provide a mechanism for users to gain access to resources in another domain

Types of Trusts	Description	Diagram
Directional	The trust direction flows from trusting domain to the trusted domain	
Transitive	The trust relationship is extended beyond a two-domain trust to include other trusted domains	

- All domains in a forest trust all other domains in the forest
- Trusts can extend outside the forest

Demonstration in Window 2012 R2 Server


Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2012 R2 Standard Evaluation (Server Core Ins...
x64
3/21/2014
Windows Server 2012 R2 Standard Evaluation (Server with a G...
x64
3/21/2014
Windows Server 2012 R2 Datacenter Evaluation (Server Core I...
x64
3/21/2014
Windows Server 2012 R2 Datacenter Evaluation (Server with a...
x64
3/21/2014
Description:
This option is useful when a GUI is required—for example, to provide backward compatibility for an application that cannot be run on a Server Core installation. All server roles and features are supported. You can switch to a different installation option later. See "Windows Server Installation Options."
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Installing Windows