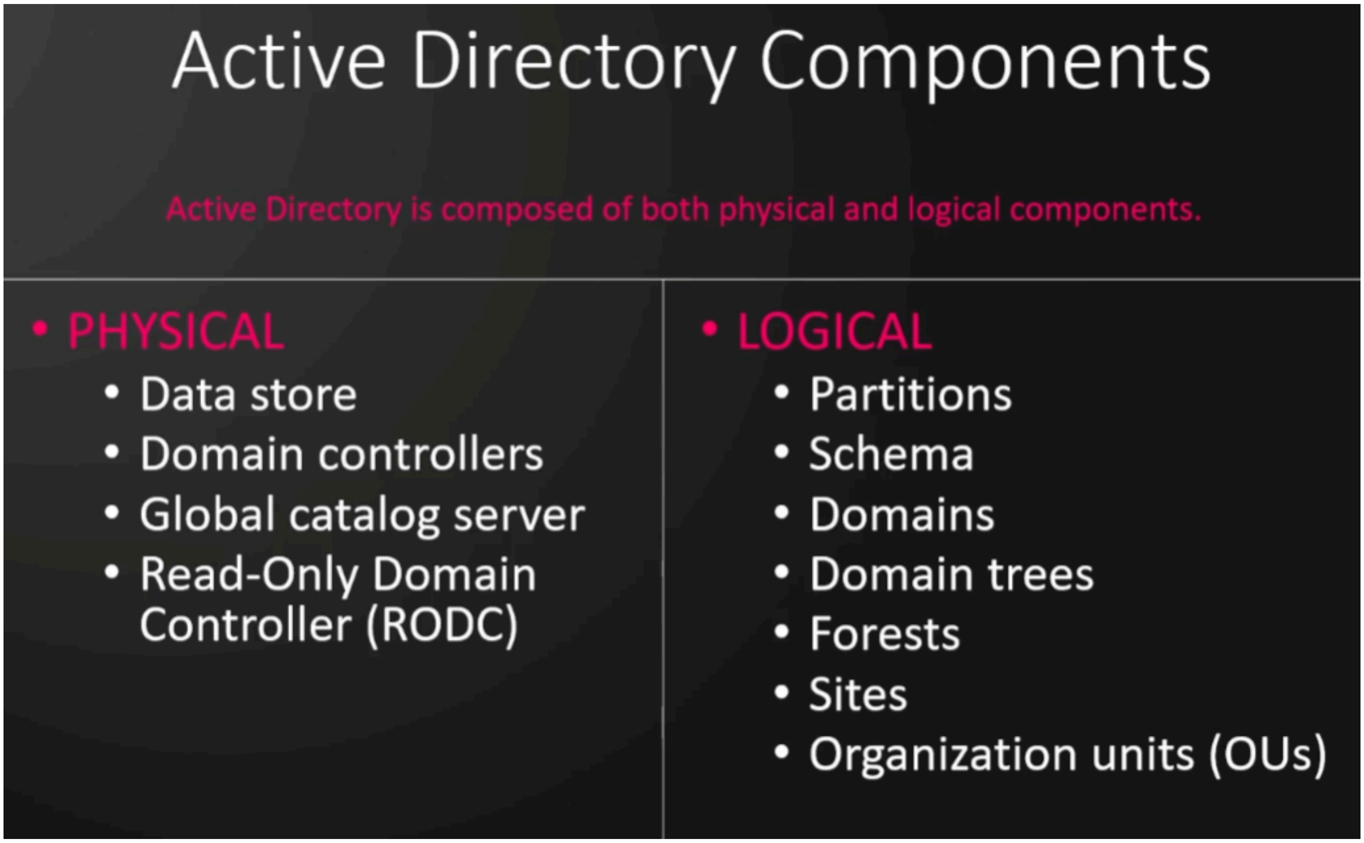
1. Physical Components

Components



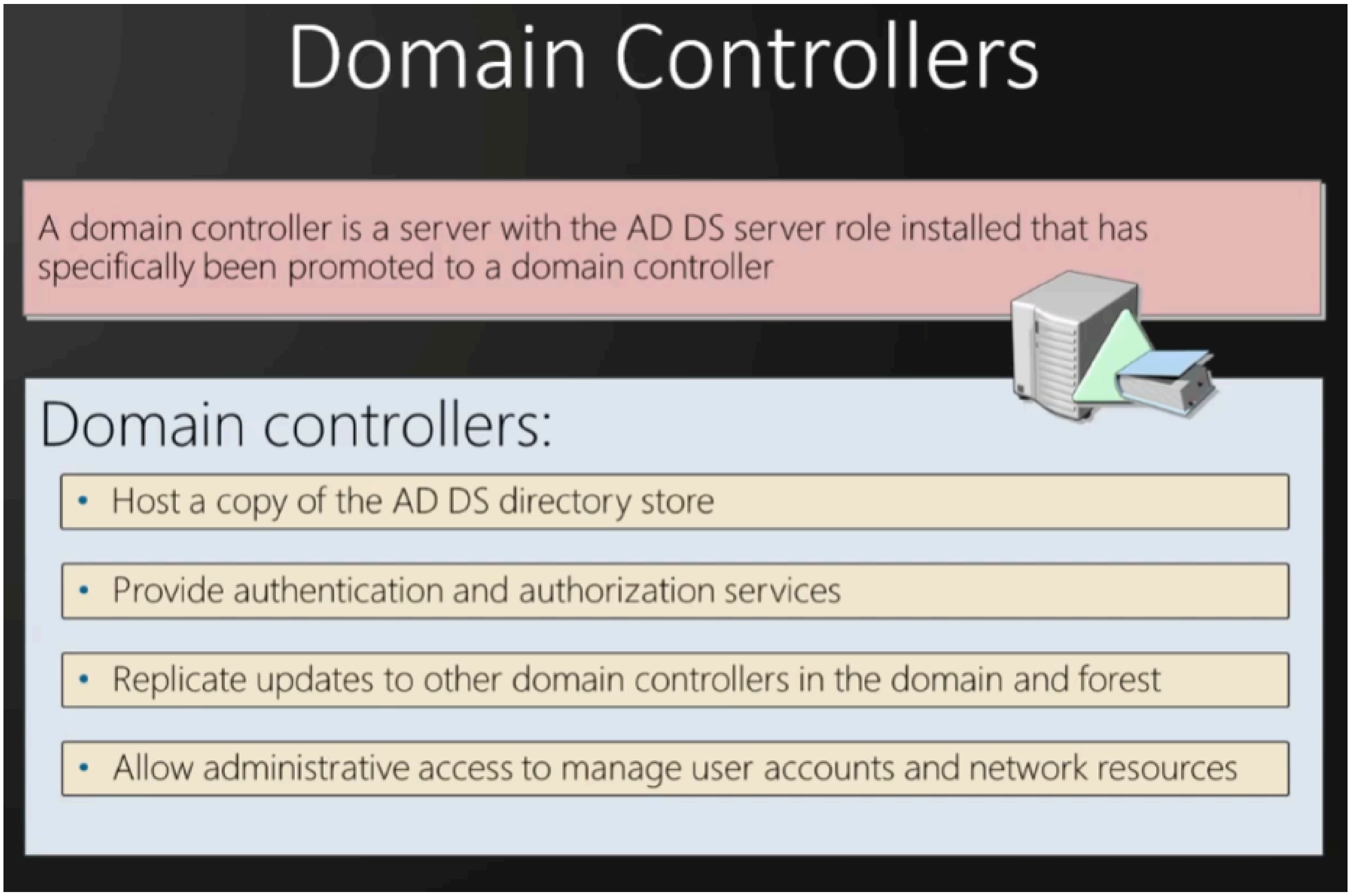
Active Directory Components

Active Directory is composed of both physical and logical components.

- PHYSICAL
  - Data store
  - Domain controllers
  - Global catalog server
  - Read-Only Domain Controller (RODC)
- LOGICAL
  - Partitions
  - Schema
  - Domains
  - Domain trees
  - Forests
  - Sites
  - Organization units (OUs)

Physical Components

Domain Controllers



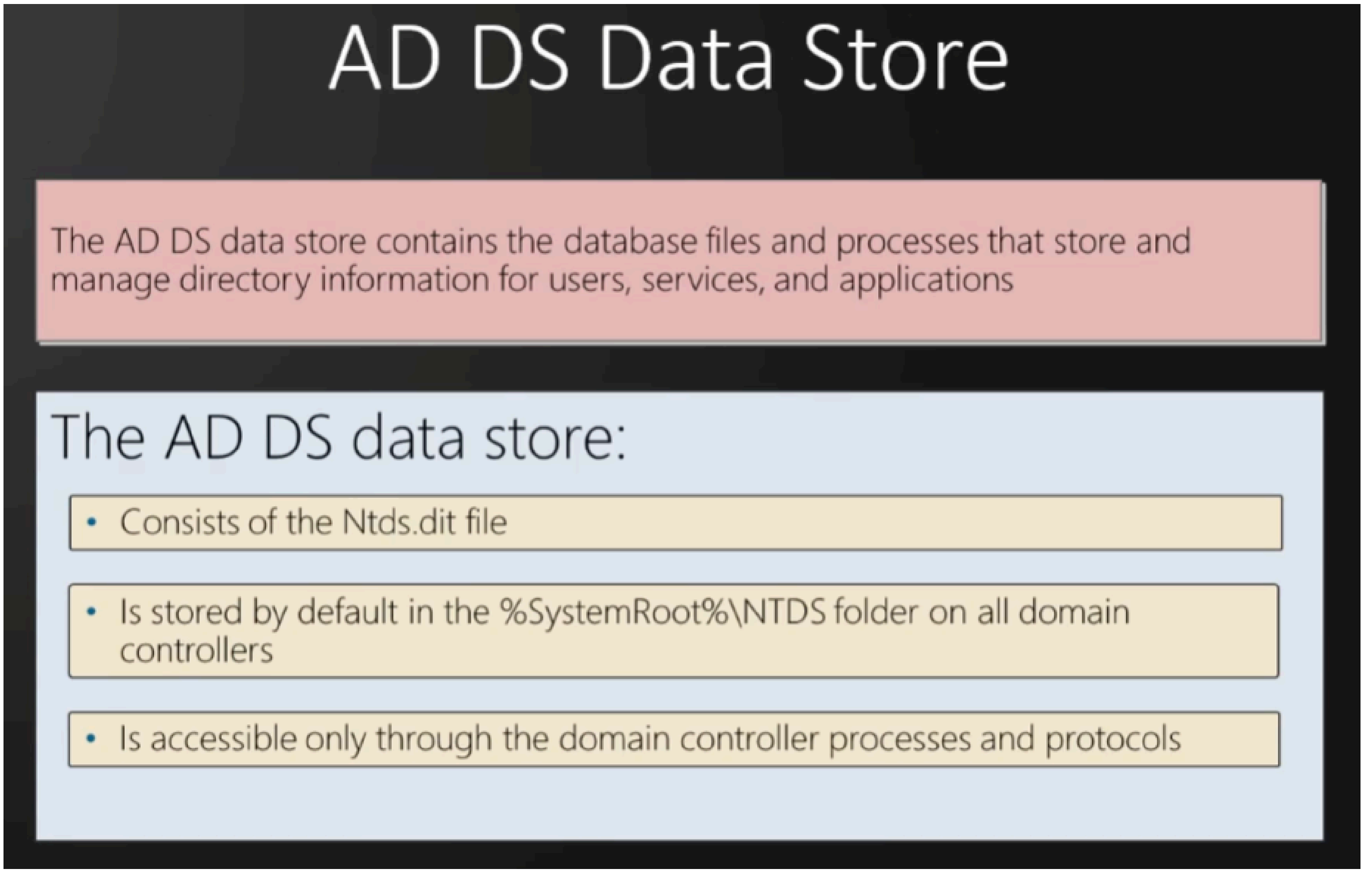
Domain Controllers

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

AD DS Data Store



AD DS Data Store

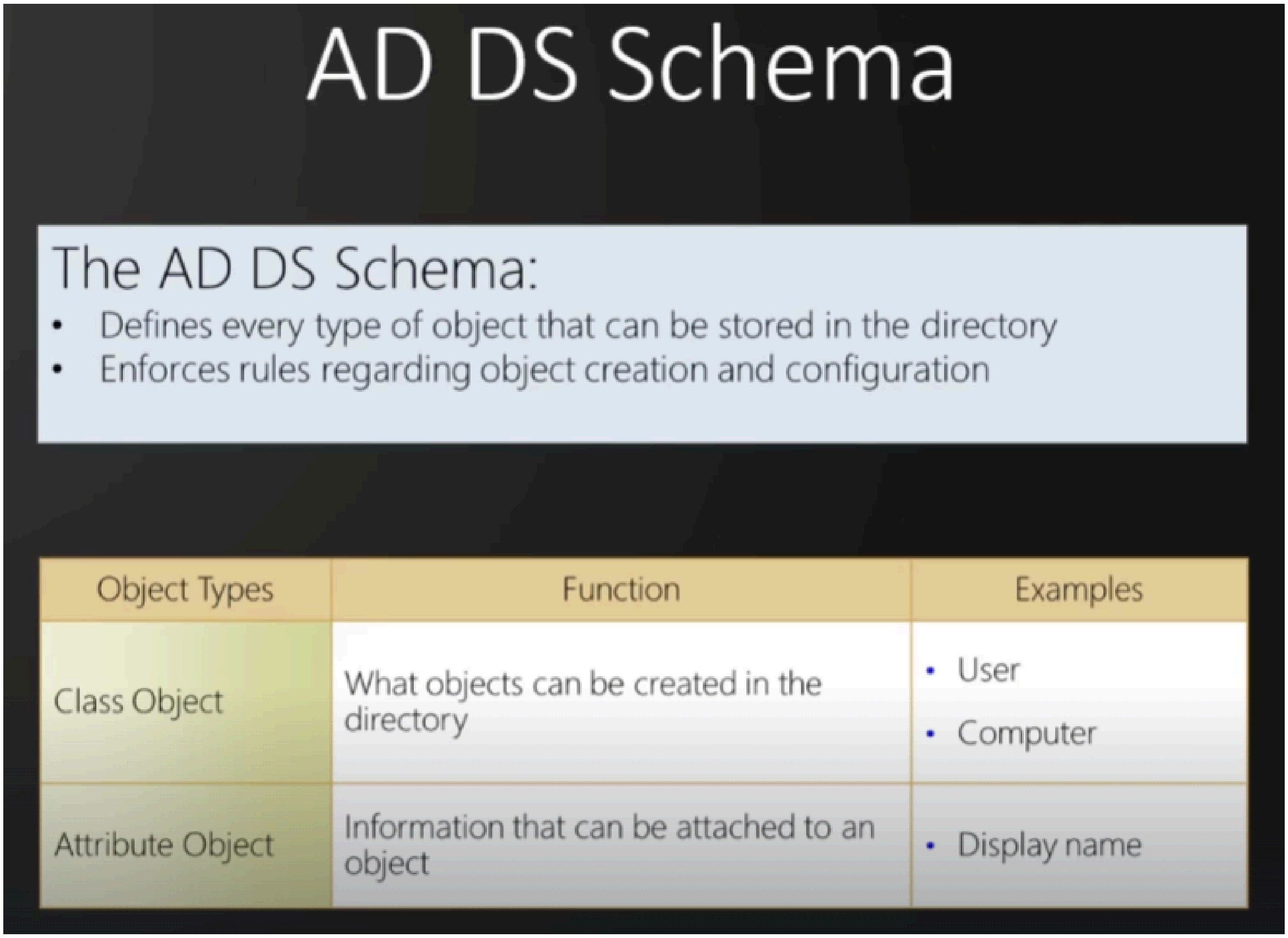
The AD DS data store contains the database files and processes that store and manage directory information for users, services, and applications

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

Logical Components

AD DS Schema



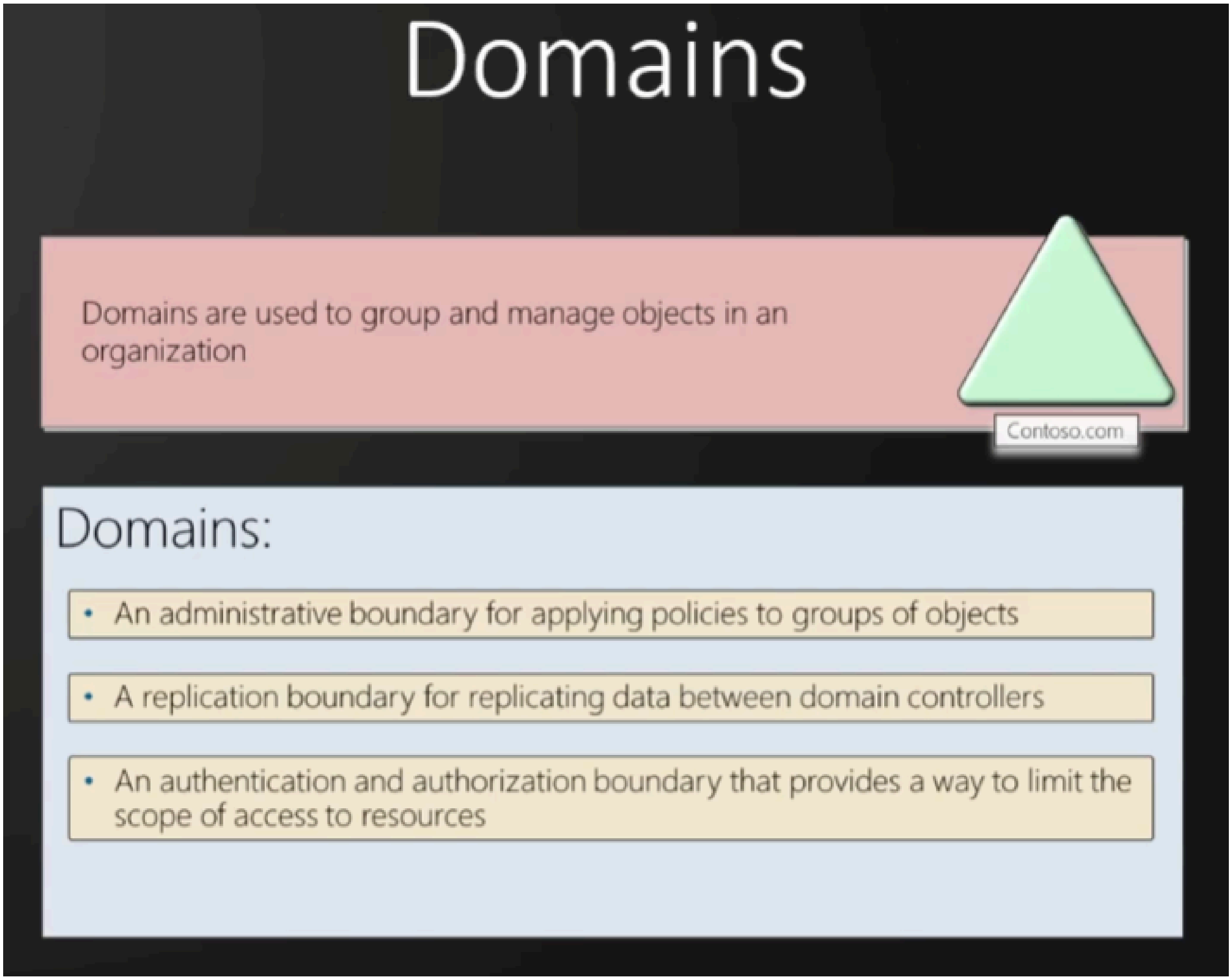
AD DS Schema

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

Domains



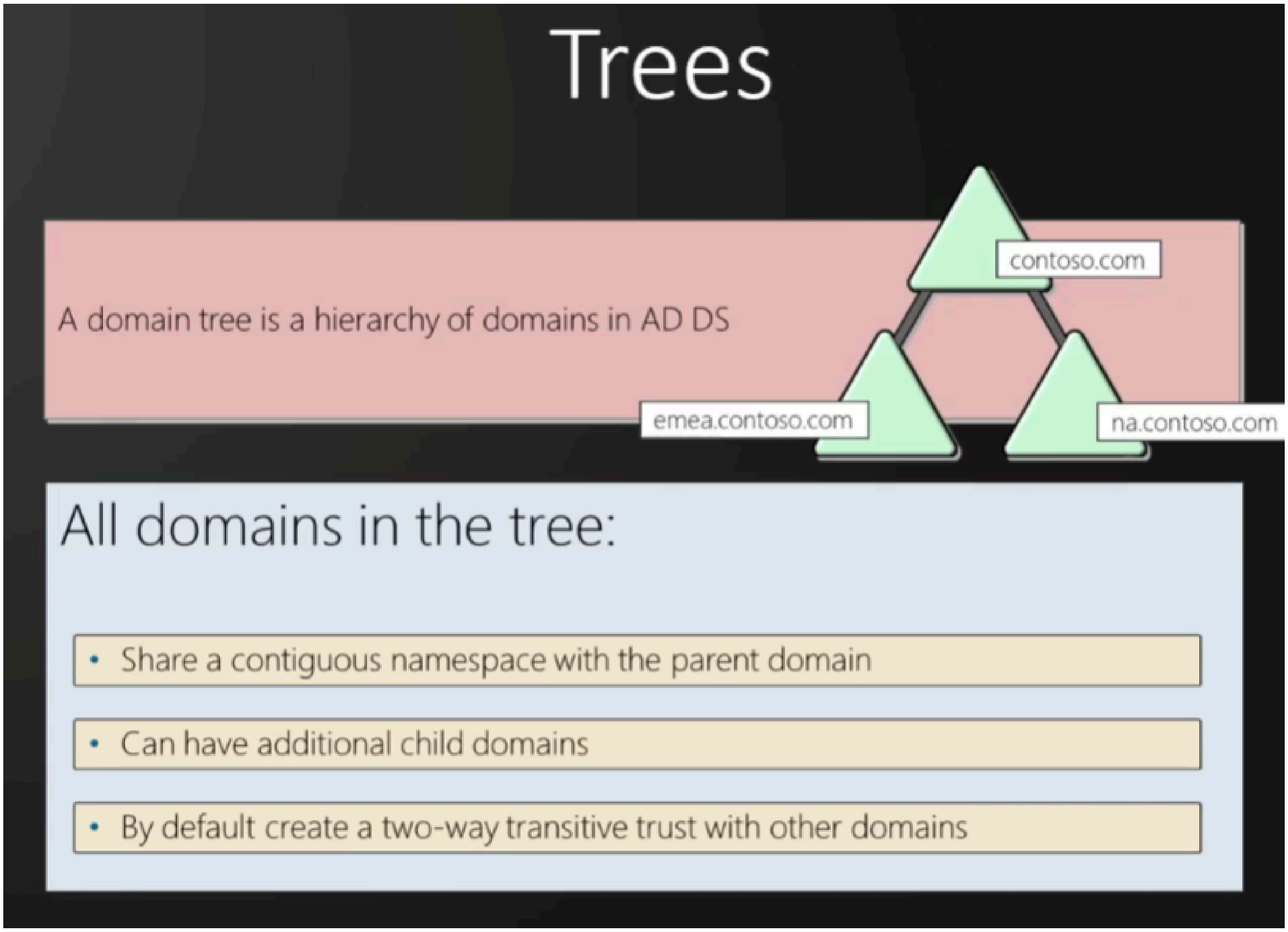
Domains

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

Trees, Forests, Organizational Units



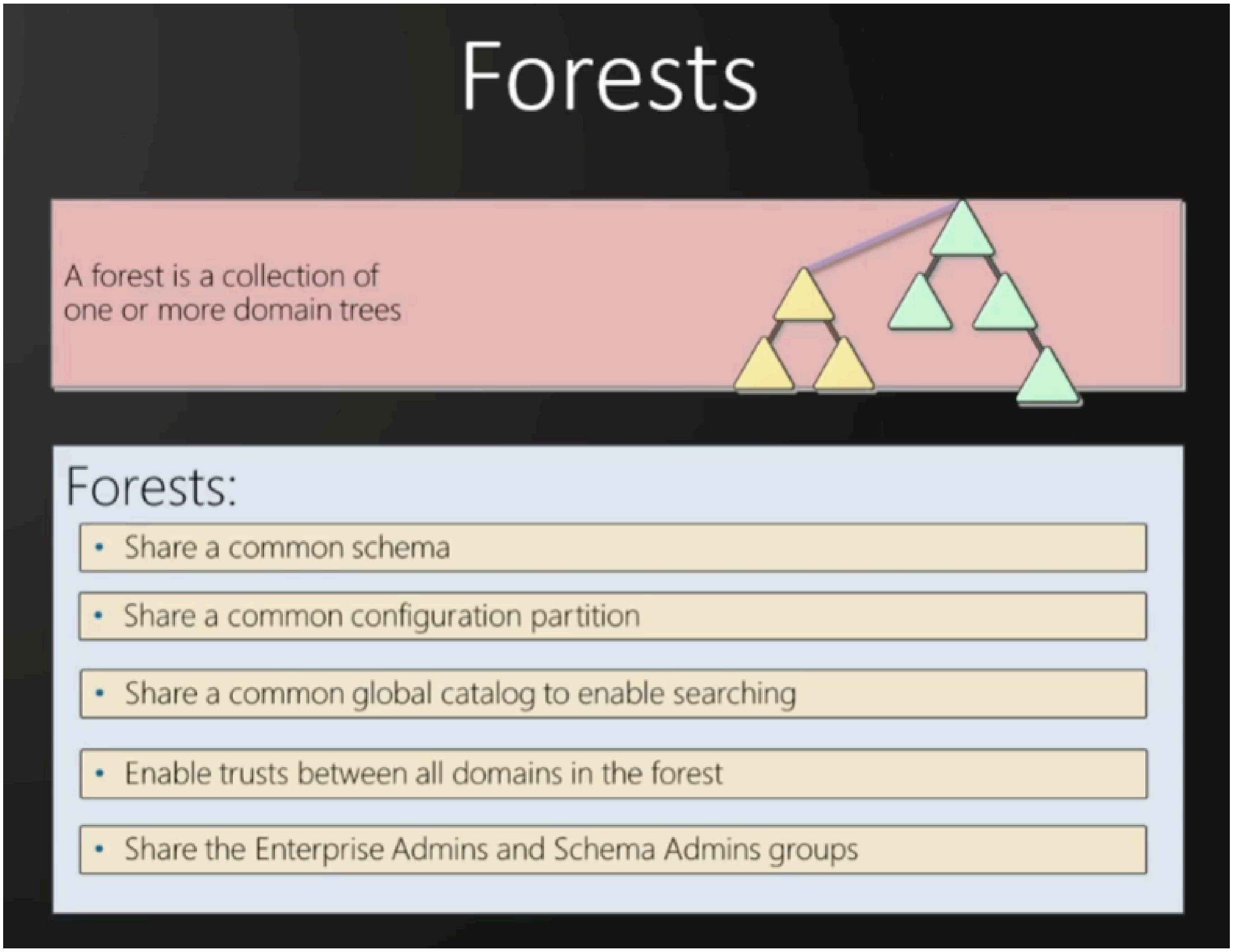
Trees

A domain tree is a hierarchy of domains in AD DS

contoso.com
emea.contoso.com
na.contoso.com

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

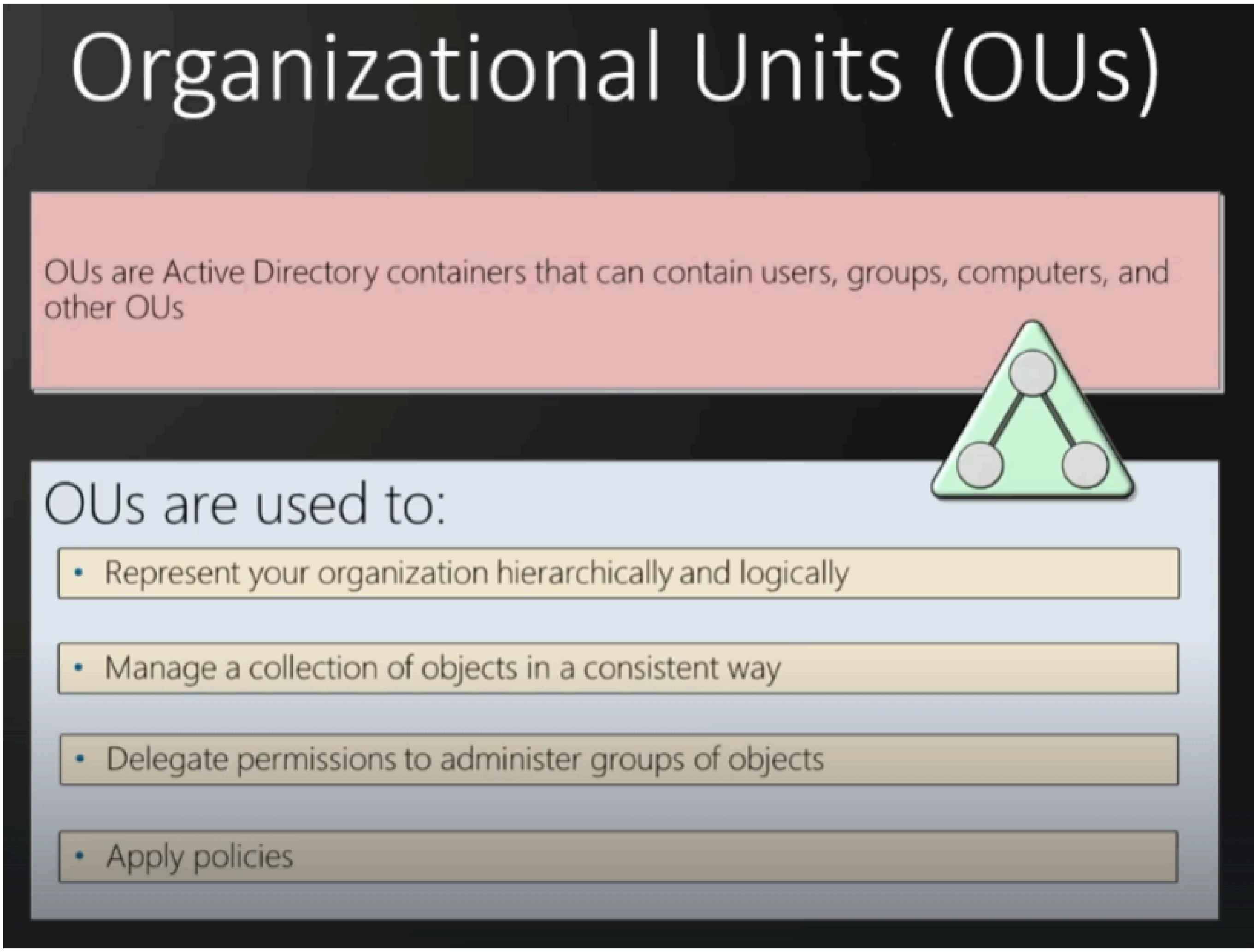


Forests

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

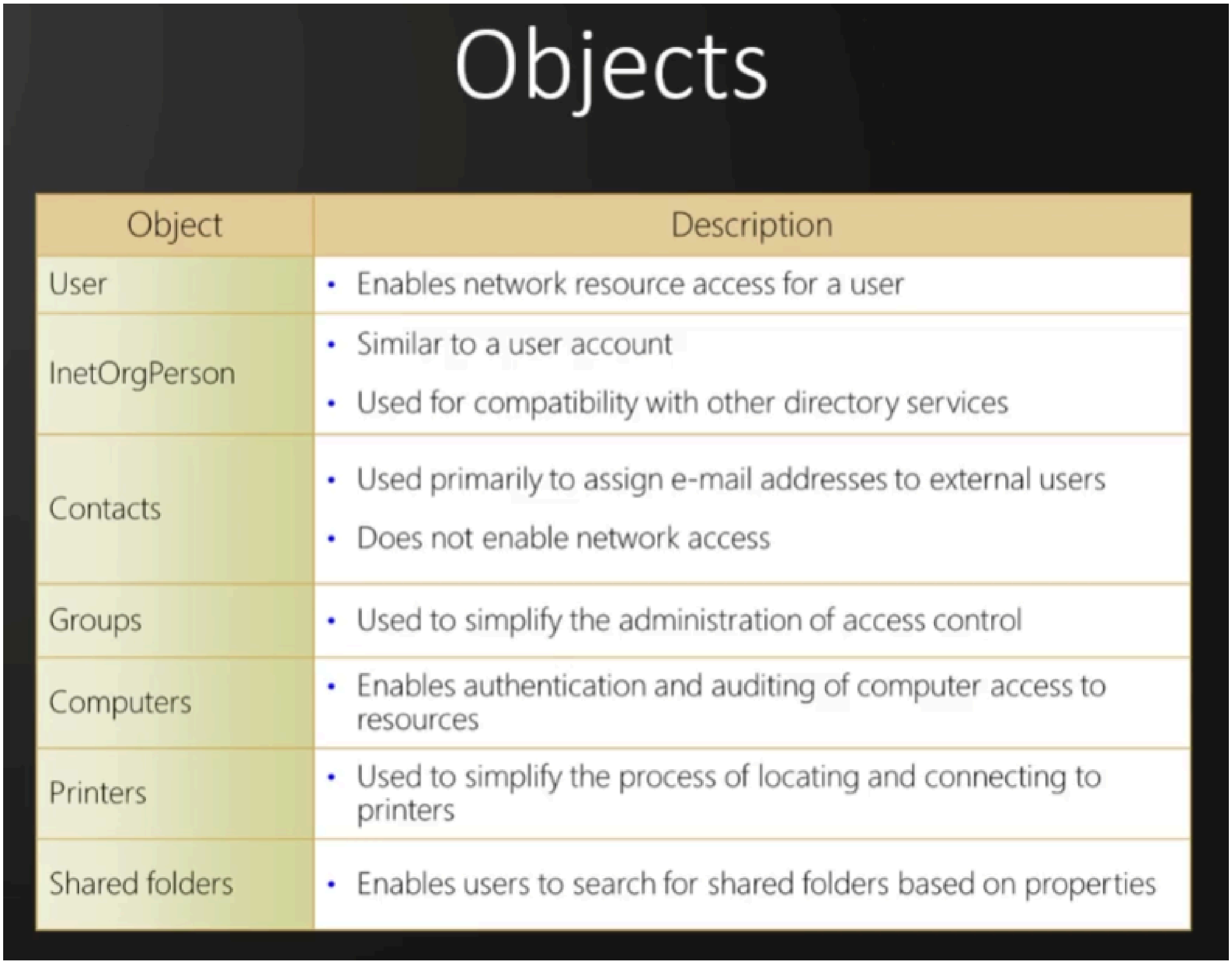


Organizational Units (OUs)

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

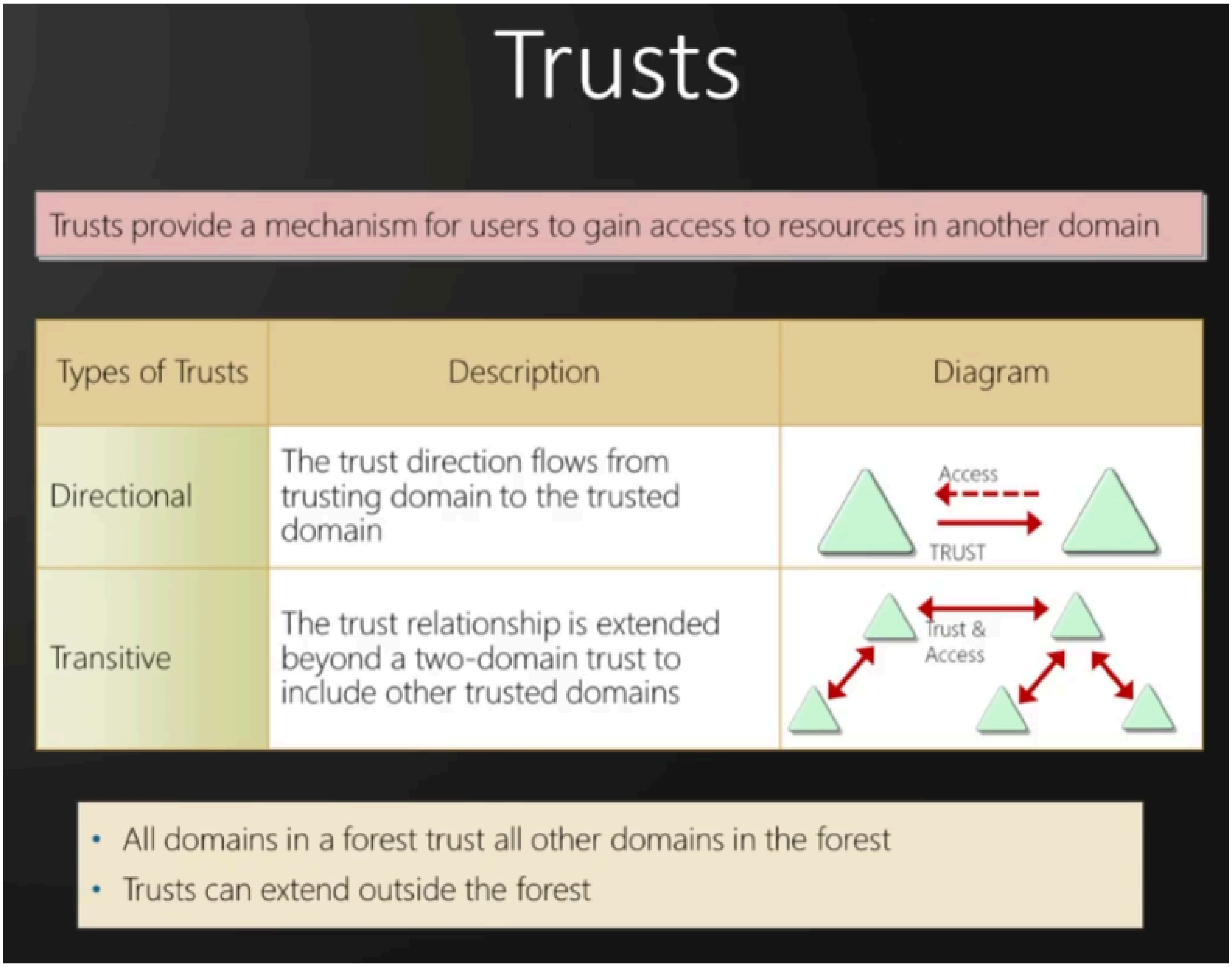
OUs are used to:

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



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	Access TRUST
Transitive	The trust relationship is extended beyond a two-domain trust to include other trusted domains	Trust & Access

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