



Active Directory

Introduction



► What is Active Directory?

- ▶ Active Directory (AD) is a Microsoft **technology** used to **manage** computers and other devices on a **network**.
- ▶ **Active Directory Domain Services** (AD DS) is one of the directory services provided by Active Directory. Its primary functions include providing **authentication** and **authorization** to help manage access to network resources.
- ▶ It **runs** on Windows servers called **domain controllers** (DCs)
- ▶ It **stores information** about users, computers and other Active Directory objects, including properties like names and passwords, in a **database**.

Benefits

- ▶ **Hierarchical** organizational structure.
- ▶ **Multimaster Authentication & Multimaster replication** (the ability to access and modify AD DS from multiple points of administration)
- ▶ A **single point** of **access** to network resources.
- ▶ Ability to create **trust relationships** with **external** networks running **previous** versions of Active Directory and even **Unix**.



Domain Controller

What is a Domain Controller?

- ▶ A **server** that is **running AD DS** is called a domain controller.
- ▶ Domain controllers **host** and **replicate** the directory **service database** inside the **forest**.
- ▶ The directory service also provides services for **managing** and **authenticating** resources in the forest.
- ▶ A Domain Controller is a server computer that **acts like a brain** for a Windows Server domain
- ▶ When Active Directory is configured, a **domain** is **created** with a name such as *org.com*, within which we can **add** various types of **objects**, including **computer** and **user** objects.



AD Components



Active Directory Components

- ▶ **Objects:** Single **unique entity** with a type of **information**. Has it's own **attributes** and **schema**
 - ▶ **Resources:** Printers, etc.
 - ▶ **Security Principals:** Computer accounts/groups (with SID)
- ▶ **Forests:**
 - ▶ A **domain** is a **collection** of **objects grouped** together logically under a **namespace**
 - ▶ A **group of domains** with a **trust hierarchy** is called a **tree**
 - ▶ **Forest** is a **collection of trees** that share a **common** global catalog, schema, structure, and configuration

► Active Directory Components

- ▶ **Organizational Units (OU)**
 - ▶ Group of **similar objects** to **ease administration**
 - ▶ Recommended level to apply **group policies**
 - ▶ Think of it like **several departments** of an **organization**. For e.g., sales, finance, technology, human, etc.
 - ▶ Have the **same Common Name (CN)**,. i.e., *sales.org.com*, *tech.org.com*, etc.



Group Policy Objects

Group Policy Objects

- ▶ Group Policy provides a method of **centralizing configuration settings** and management of operating systems, computer and user settings in Microsoft Environment.
- ▶ Two types:
 - ▶ **Local Group Policy:** Affects **only** the **workstation** it is on, management on a desktop **individually**
 - ▶ **AD Group Policy:** **Centralized** administration, which works only in conjunction with Active Directory and **domain joined** workstations

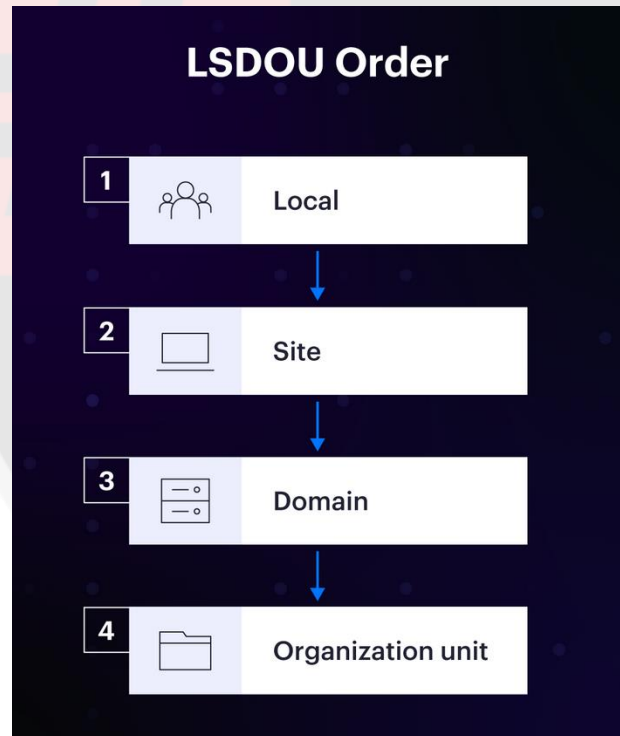
Group Policy Objects

- ▶ A **Group Policy object** (GPO) is a **collection** of Group Policy settings that define what a system will look like and how it will behave for a defined group of users. Every GPO contains **two parts**, or nodes: a **user** configuration and a **computer** configuration.
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Group Policy Objects

- ▶ **Advantages:**
 - ▶ Strong password policy
 - ▶ Principle of least privilege
 - ▶ Regular health checks
 - ▶ Management of systems

AD Group Policy



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