Windows Active Directory

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Agenda

- Overview
- Active Directory Components
- Installing Active Directory
- Organizational Units
- Groups
- Tools

Overview

Active Directory :

"directory service that stores various information such as resources in the network so that it can be accessed by users or applications"

"directory service that provides the ability for centralized : "

- authentication

- authorization

- management

Components

- Namespace

    Area in which a network component is located. Active Directory provides a namespace for resolving the names of network objects to the objects themselves. Active Directory can resolve a wide range of objects, including users, systems, and services on a network.

Components

■ Object
Everything that Active Directory keeps a record of is considered an object. An object is any user, system, resource, or service held within Active Directory.
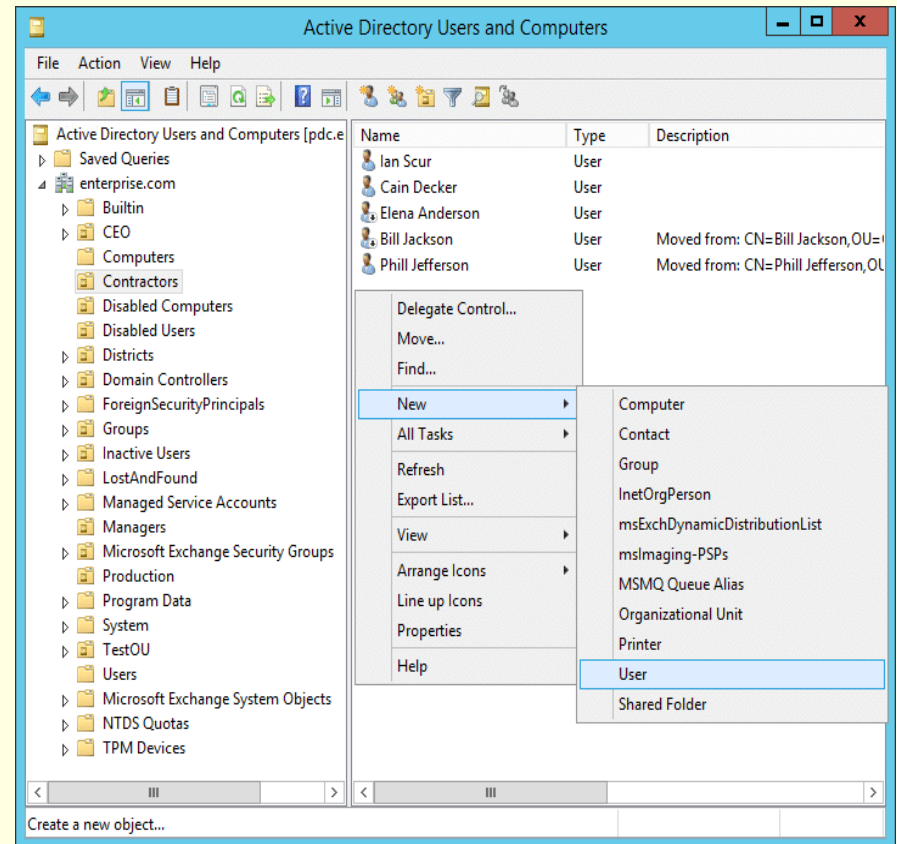
Components

- Attributes

  Attributes describe objects in Active Directory. For example, all User objects have the attributes username, full name, and description. Network printers are also objects, but they are obviously different from Users, so they have a separate set of attributes that includes a host name, an IP address, and a location.

Components

- Schema

  Schema is the name given to the set of attributes that is used for a particular object type. The schema is what makes object classes, or types, different from each other.

Components

- Distinguished names

Each object in Active Directory has a name. These names are based on Lightweight Directory Access Protocol (LDAP), a structured protocol that is used to view and manipulate information stored in a hierarchical database. Active Directory supports both LDAP version 2 (LDAP v2) and LDAP version 3 (LDAP v3).

Object names are referred to, in LDAP terminology, as *distinguished names*. LDAP distinguished names are complicated, but basically they allow any object within a directory to be identified uniquely, regardless of type. For example, a user entry may be represented by the distinguished name of "/O=Internet/DC=COM/DC=MyCompany/DC=MyCompanyIT/CN=Users/CN=John Doe."

Components

- Container

  This is the name given to a special type of object used to organize Active Directory. It does not represent anything physical, like a user or a system, but is used to group other objects, such as servers, printers, or users. Container objects can be nested within other containers.

Components

- Tree

  A tree is a set of objects within Active Directory. When containers and objects are combined hierarchically, they tend to form connected branches, i.e., a tree.

Components

- Forest

  Forest describes a collection of trees that are not part of the same namespace but that share a common schema, configuration, and global catalog. Trees in a forest all trust each other, so objects in these trees are available to all users if the user's security allows it. Organizations that are divided into multiple domains should group the trees into a single forest.

Components

- Site

  Sites correspond to logical IP subnets. This grouping of information enables an application to locate the closest server on a network. Using site information from Active Directory can greatly reduce the traffic on WANs.

Organizational Unit

- Organizational Unit (OU) is a container in the Active Directory domain that can contain different objects from the same AD domain: other containers, groups, user and computer accounts.

- Tasks :
  - storing Active Directory objects
  - Delegation of management and administrative tasks within the domain to other administrators and users without granting them the domain administrator privileges;
  - Linking Group Policies (GPO) to all objects (users and computers) in this OU.

Groups

- An Active Directory group is a group of users that have been given access to certain resources. Any object that belongs to a specific group is referred to as a group member in AD.

- The administrators allow access and permissions to a group depending on the stored information rather than assigning rights individually to each member of the group.

Tools

- Active Directory Users & Computers :

  administer user and computer accounts, groups, printers, organizational units (OUs), contacts, and other objects stored in Active Directory.

- Group Policy Editor :

  administer multiple users' and computers' **configurations** within an Active Directory environment.