# Active Directory: Glossary

This is a glossary of terms and acronyms used in Active Directory and related technologies:

 $2 \mid A \mid B \mid C \mid D \mid E \mid F \mid G \mid H \mid I \mid J \mid K \mid L \mid M \mid N \mid Q \mid P \mid Q \mid R \mid S \mid I \mid U \mid V \mid M \mid X \mid Y \mid Z$ 

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#### 2FA

Acronym for **2 F**actor **A**uthentication. A variant of Multi-Factor Authentication. See MFA.



#### AAD

Acronym for **A**zure **A**ctive **D**irectory. Active Directory Domain Services in the Windows Azure cloud. Windows Azure is the Microsoft cloud computing platform, and one of the services available is Active Directory.

#### ΔΔΟΙ

Acronym for Azure Active Directory Join. See Azure AD Join on Windows 10 devices .

#### ACE

Acronym for **A**ccess **C**ontrol **E**ntry. Individual entries in a security descriptor (called an access control list or <u>ACL</u>). Specifies permissions granted or denied to trustees for the resource to which the ACE applies.

## **ACL**

Acronym for Access Control List. A collection of Access Control Entries (ACE's) that specify the security applied to a resource.

## **Active Directory**

Microsoft's directory service database for Windows networks. Stores information about resources on the network and provides a means of centrally organizing, managing, and controlling access to the resources. Recently renamed Active Directory Domain Services, or AD DS. Microsoft also has a product called Active Directory Lightweight Directory Services, or AD LDS (formerly called Active Directory Application Mode, or ADAM).

# ΑD

Acronym for **A**ctive **D**irectory. See <u>Active Directory</u>.

# AD CS

Acronym for Active Directory Certificate Services. See Active Directory Certificate Services (AD CS) Overview.

## AD DS

Acronym for Active Directory Domain Services. Microsoft's directory service product. See Active Directory Domain Services (AD DS) Overview.

## AD FS

Acronym for Active Directory Federation Services. See Active Directory Federation Services (AD FS) Overview.

# AD LDS

Acronym for **A**ctive **D**irectory **L**ightweight **D**irectory **S**ervices. This used to be called Active Directory Application Mode, or ADAM. A database for directory-enabled applications that do not need AD DS. See <u>Active Directory Lightweight Directory Services Overview</u>.

# AD RMS

Acronym for Active Directory Rights Management Services. See Active Directory Rights Management Services Overview .

## **ADAC**

Acronym for Active Directory Administrative Center. See Active Directory Administrative Center: Getting Started .

## **ADAL**

Acronym for Azure AD Authentication Library. See Azure AD Authentication Library for .NET ...

#### **ADAM**

Acronym for Active Directory Application Mode, now renamed Active Directory Lightweight Directory Services (AD LDS).

#### adfind

A command line tool developed by Joe Richard (DS-MVP) to query Active Directory. See AdFind 5

#### **ADLB**

Acronym for **Active Directory Load B**alancing tool, Adlb.exe. Now obsolete, as the functionality is built into the Knowledge Consistency Checker (KCC) starting with Windows Server 2008 RODCs.

#### AdminSDHolder

Acronym for Admin Security Descriptor Holder. An object in the cn=System container of the domain. See AdminSDHolder, Protected Groups and SDPROP ...

#### admod

A command line tool developed by Joe Richard (DS-MVP) to modify Active Directory. See AdMod ...

#### **ADMT**

Acronym for **A**ctive **D**irectory **M**igration **T**ool. Toolset to facilitate migration and restructuring tasks in an Active Directory Domain Services infrastructure. See <u>ADMT Guide: Migrating and Restructuring Active Directory Domains</u>.

#### ADC

Acronym for **A**ctiveX **D**ata **O**bjects. <u>ADSI</u> can act as an <u>OLE-DB</u> provider that allows database queries of Active Directory using ADO. Active Directory searches using ADO are only allowed in the <u>LDAP</u> namespace. ADO can also be used to access Microsoft Access databases, <u>SQL</u> Server databases, and even text files.

#### adprep

Active Directory Preparation Tool. Active Directory command line tool to prepare a domain or forest for the introduction of new versions of Windows Server domain controllers. Upgrades the schema. See <u>Running Adprep.exe</u>.

## **ADSI**

Acronym for **A**ctive **D**irectory **S**ervice **I**nterface. A library of routines that provide an interface to various directory namespaces, such as Active Directory, the Windows NT <u>SAM</u> account database, Novell bindery, Novell NDS, and Internet Information Server (<u>IIS</u>).

## **ADSIEdit**

A Windows Support tool for browsing and editing objects in Active Directory. See ADSI Edit d.

## **ADsPath**

A string that specifies the provider and the path to an object in a directory. This string can be used to bind to the object in a script or program. In Active Directory, the provider can be either "LDAP://" or "WinNT://". If you use the <u>LDAP</u> provider, then what follows after the "LDAP://" moniker will be the <u>Distinguished Name</u> of the object. If you use the <u>WinNT</u> provider, the path to the object is in the form "Domain\Name", where "Domain" is the <u>NetBIOS</u> name of the <u>domain</u> (or local workstation) and "Name" is the <u>Relative Distinguished Name</u> (RDN) of the object.

## ADUC

Acronym for **A**ctive **D**irectory **U**sers and **C**omputers, the <u>MMC</u> snap-in used to manage objects in Active Directory. Besides users and computers, you can also use this tool to manage contacts, groups, containers, and Organizational Units.

# ADWS

Acronym for **A**ctive **Di**rectory **W**eb **S**ervices. A Windows service that provides a Web interface to <u>Active Directory domains</u>, <u>Active Directory Lightweight Directory</u> <u>Services</u> instances, and Active Directory Database Mounting Tool instances on a Windows Server 2008 R2 (or above) server. See <u>What's New in AD DS: Active Directory</u> Web Services ...

# **AES**

Acronym for Advanced Encryption Standard. A specification for the encryption of electronic data used by Kerberos. Supercedes the Data Encryption Standard (DES).

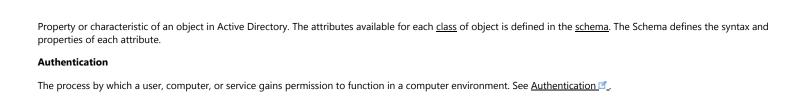
# AGPM

Acronym for Microsoft **A**dvanced **G**roup **P**olicy **M**anagement. Tool to manage Group Policy Objects (GPO). Part of the Microsoft Desktop Optimization Pack (MDOP) for Software Assurance. See <u>Overview Series: Advanced Group Policy Management</u>.

## ANR

Acronym for **A**mbiguous **N**ame **R**esolution, an efficient search algorithm in Active Directory that allows you to specify complex <u>LDAP</u> syntax filters involving multiple naming-related attributes in a single clause. The attributes must be ANR enabled in the directory schema. See Active Directory: Ambiguous Name Resolution.

## Attribute



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B

#### **Back Link**

A DN (Distinguished Name) syntax <u>attribute</u> in Active Directory whose value is based on a <u>Link Table</u> and the value of a related <u>forward link</u> attribute. For example, the member attribute of <u>group</u> objects is the forward link, while the memberOf attribute is the related back link.

#### BDC

Acronym for **B**ackup **D**omain **C**ontroller. In <u>NT</u> domains there was one primary <u>domain controller</u> and zero or more backup domain controllers. The concepts no longer apply in Active Directory, which uses a multi-master database system where all domain controllers are essentially equal.

#### Bitlocker

BitLocker Drive Encryption is data protection feature. See BitLocker Drive Encryption Overview .

#### **BYOK**

Acronym for Bring Your Own Key.

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# **Canonical Name**

An object name in Active Directory in canonical form. Also, the value of the canonicalName attribute of the object. The canonical name of the object appears on the "Object" tab of the Active Directory Users and Computers (ADUC) mmc. If the distinguished name of an object is "cn=Jim Smith,ou=Sales,ou=West,dc=mydomain,dc=com", then the canonical name will be "mydomain.com/West/Sales/Jim Smith".

# CIM

Acronym for **C**ommon **I**nformation **M**odel. The repository in the <u>WMI</u> schema that stores class definitions that model WMI managed resources. See <u>Common Information Model</u>.

# Class

Defines a distinct type of <u>object</u>. Each <u>instance</u> of the class is an object with the <u>attributes</u> specified in the <u>Schema</u>, but the attributes will generally have different values.

## Client

A computer <u>workstation</u>, where users run applications. If the workstation is connected to a network, the users can take advantage of services provided by <u>servers</u>. Also, in client-server applications the client is the part of the application that runs on a client workstation. See <u>Client (computing)</u>.

## CN

Acronym for **C**ommon **N**ame. Also the moniker for objects with a common name in their <u>distinguished names</u>, for example "cn=Jim Smith,ou=West,dc=mydomain,dc=com".

## **Common Name**

Name of the attribute with IDAPDisplayName cn, which is the naming attribute for objects of class user, contact, computer, group, and container. The <u>Relative Distinguished Name</u> (RDN) of these objects is the value of the <u>cn</u> attribute, also referred to as the common name of the object. The moniker "cn" is also used in the <u>distinguished names</u> of these objects (for example "cn=Jim Smith,ou=West,dc=mydomain,dc=com").

# **Configuration Container**

The container in Active Directory that specifies the configuration of the <u>forest</u>. Specifies such things as partitions, sites, servers, display specifiers, services, physical locations, well-known security principals, and forest updates.

#### **Constructed Attribute**

More commonly called an operational attribute. An <u>attribute</u> in Active Directory that is calculated by a <u>domain controller</u> on request, rather than being stored in the directory service database.

#### Contact

A contact object in Active Directory contains the contact information about people who are associated with the organization but are not part of it, for example, contractors or suppliers. A contact object does not have a SID. It can be a member of a group, but cannot be granted access to network resources.

#### Container

An <u>object</u> in Active Directory that can contain other objects. The objects most commonly referred to as containers have a <u>Common Name</u> (the naming attribute is the <u>cn</u> attribute). These containers cannot have <u>group policies</u> applied to them. They can contain users, contacts, groups, computers, and other containers. <u>Organizational units</u> (the naming attribute is the <u>ou</u> attribute) are also containers. They can contain the same objects, plus other organizational units, and they can have group policies applied. In addition, computer objects in Active Directory can contain objects like <u>NTFRS</u> Subscriptions and Service Connection Point (<u>SCP</u>) Objects.

#### csvde

Command line utility to import objects into and export objects from Active Directory using comma delimited text files.

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# DACL

Acronym for Discretionary Access Control List. See DACLs and ACEs .

#### DC

Acronym for **D**omain **C**ontroller. Also the moniker for **D**omain **C**omponent, as used in <u>distinguished names</u> (for example "dc=mydomain,dc=com").

#### DC Locator

The process used by clients to discover domain controllers. See How Domain Controllers are Located in Windows.

## dcdiag

Domain Controller Diagnostics Tool. Command line utility used to analyze and report on the state of domain controllers. See Dcdiag 1.

# dcpromo

Utility used to promote a computer with a Windows Server operating system that is joined to a <u>domain</u> into a <u>domain controller</u>. Installs Active Directory Domain Services (AD DS). Also used to demote a domain controller by removing AD DS. Note that Server Manager is used instead of dcpromo to promote or demote a computer with Windows Server 2012 or higher.

## DDNS

Acronym for **D**ynamic **D**omain **N**ame **S**ystem, or Dynamic DNS. See Dynamic DNS **2** .

## DES

Acronym for **D**ata **E**ncryption **S**tandard. A specification for the encryption of electronic data used by <u>Kerberos</u>. Superceded by the Advanced Encryption Standard (<u>AES</u>). See <u>Data Encryption Standard</u> .

## DFL

Acronym for **D**omain **F**unctional **L**evel. Specifies the versions of Windows Server supported as <u>domain controllers</u> in the <u>domain</u>, and the features of Active directory that are available.

## DFS

Acronym for **D**istributed **File S**ystem. Client and server services that allow servers to organize distributed file shares into a distributed file system. See <u>Distributed File System (Microsoft)</u>.

## DFSR

Acronym for Distributed File System Replication. See Distributed File System Replication ...

## DHCP

Acronym for **D**ynamic **H**ost **C**onfiguration **P**rotocol. Service that provides centralized control of Internet Protocol (<u>IP</u>) addresses. DHCP servers assign dynamic IP addresses and <u>TCP/IP</u> settings to other computers. See <u>DHCP (Dynamic Host Configuration Protocol)</u> Basics .

# **Directory Service**

Repository of network operating system information to manage users and other resources in a networks. The Microsoft directory service product is Active Directory Domain Services (AD DS).

# **Distinguished Name**

A string that uniquely identifies an object in Active Directory. Used by the <u>LDAP</u> provider to bind to the object. Sometimes abbreviated DN, this specifies the name of the object (the <u>Relative Distinguished Name</u>) in it's parent <u>container</u>, and the location of the object in the hierarchical structure of Active Directory. The DN of an object is a string of components (Relative Distinguished Name's) separated by commas (for example "cn=Jim Smith,ou=West,dc=mydomain,dc=com"). The distinguished name combined with the "LDAP://" moniker forms the <u>ADSPath</u> of the object.

#### DIT

Acronym for Directory Information Tree. The Active Directory database file on a Domain Controller is referred to as the DIT. The file name is ntds.dit

#### DN

Acronym for Distinguished Name. See Distinguished Name.

#### DNS

Acronym for Domain Name System. The service that resolves computer names into IP addresses. See Domain Name System II.

#### **DNS Host Name**

The Domain Naming System host name of any computer in Active Directory is the name used by DNS. An example would be host.mycompany.mydomain.com, where "host" is the Relative Distinguished Name of the computer and "mycompany.mydomain.com" is the DNS name of the domain.

#### Domain

An <u>X.500</u>-based hierarchical database of containers and objects. Microsoft domains have a <u>DNS</u> domain name, a security service to authenticate and authorize access to resources, and policies that dictate functionality. Domains are boundaries for administration and <u>replication</u>.

#### **Domain Controller**

A <u>server</u> with Active Directory installed. A domain controller (DC) is authoritative for the <u>domain</u> to which the server is joined. It contains the Active Directory database for the domain <u>namespace</u>, plus the <u>Configuration</u> and <u>Schema</u> namespaces for the <u>forest</u>.

## **Domain Naming Master**

The Domain Naming Master role holder is the <u>domain controller</u> that controls changes to the forest-wide namespace. One of the five Flexible Single Master Operator (<u>FSMO</u>) roles. The domain controller with this role can add, remove, rename, or move <u>domains</u> in the <u>forest</u>. It is also required to create application partitions. One domain controller in the forest must hold this role.

## **DSAStat**

Command line utility to detect differences between naming contexts on domain controllers. See Dsastat Overview 1.

## **DsGetDcName**

Function to retrieve the name of a domain controller in a specified domain. See <u>DsGetDcName function</u> <u>I</u>.

## dsquery

Command line utility used to guery Active Directory. See <u>Dsquery</u>.

## **DSRM**

Acronym for **D**irectory **S**ervices **R**estore **M**ode. Used on <u>Domain Controllers</u> to take the instance of <u>Active Directory</u> on that computer offline, possibly for maintenance or troubleshooting. Requires a DSRM password.

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## **Escape Character**

The escape character in Active Directory is the backslash character, "\". Some characters in distinguished names, such as commas, must be escaped with this character.

## ESE

Acronym for Extensible Storage Engine. The Jet-based ISAM data storage technology used in Active Directory and Exchange. Also called Jet Blue. Allows data storage and retrieval using indexed and sequential access. See Extensible Storage Engine .

## Ethernet

Computer networking technologies for Local Area Networks (LANs). See Ethernet ...

F

#### **FAS**

Acronym for Filtered Attribute Set, the subset of attributes that are not replicated to Read-Only Domain Controllers (RODC's). See RODC Filtered Attribute Set, Credential Caching, and the Authentication Process with an RODC .

#### FFL

Acronym for Forest Functional Level. Specifies the versions of Windows Server supported as <u>domain controllers</u> in the <u>forest</u>, and the features of Active directory that are available.

#### **FGPP**

Acronym for Fine-Grained Password Policy. A feature in Windows Server 2008 (and above) to define different password and account lockout policies for different sets of users in a domain. See AD DS: Fine-Grained Password Policies ...

Fine-Grained Password Policy (FGPP). A feature in Windows Server 2008 (and above) to define different password and account lockout policies for different sets of users in a domain. See AD DS: Fine-Grained Password Policies

## **Foreign Security Principal**

An object that represent a security principal from a trusted domain external to the forest. These objects allow the foreign security principals to become members of groups within the domain. See <u>Foreign Security Principals Container</u>.

#### Forest

A collection of Active Directory <u>trees</u> that share a <u>Configuration container</u> and <u>Schema</u> and are connected through <u>trusts</u>. The forest acts as a security boundary for an organization and defines the scope of authority for administrators.

# **Forward Link**

A DN (Distinguished Name) syntax <u>attribute</u> in Active Directory that is linked through a <u>Link Table</u> to a related <u>back link</u> attribute, also DN syntax. When the forward link is modified, the system automatically updates the link table for the back link attribute. For example, the member attribute of <u>group</u> objects is the forward link, while the memberOf attribute is the related back link.

# **FQDN**

## FRS

Acronym for File Replication Service. Service for distributing shared files and Group Policy Objects (GPO's). See File Replication Service.

## FSMO

Acronym for Flexible Single Master Operator. These are roles that are assigned only to designated domain controllers, either one in each domain, or one in the forest. The five FSMO roles are:

- Schema Master (one for the forest)
- <u>Domain Naming Master</u> (one for the forest)
- PDC Emulator (one for each domain)
- RID Master (one for each domain)
- Infrastructure Master (one for each domain)

## FSP

Acronym for Foreign Security Principal. Objects that represent security principals from trusted domains external to the forest, and allow the foreign security principals to become members of groups within the domain. See Foreign Security Principals Container.

# **Fully Qualified Domain Name**

The Fully Qualified Domain Name (FQDN) of a computer is the host name (the NetBIOS name) of the computer, followed by a dot, followed by the DNS name of the domain. The value of the sAMAccountName of the computer should be the NetBIOS name with the "\$" character appended at the end. If the distinguished name of the domain is "dc=mycompany,dc=mydomain,dc=com", then the DNS name of the domain will be "mycompany.mydomain.com". If a computer in this domain has host name "mycomputer", then the FQDN will be "mycomputer,mycompany.mydomain.com". The FQDN of other classes of objects, like users, will be the value of the sAMAccountName attribute, followed by a dot, followed by the DNS name of the domain. See Fully qualified domain name.

## **Functional Level**

Specifies the versions of Windows Server supported as domain controllers in the domain or forest, and the features of Active directory that are available.



## GC

Acronym for Global Catalog.

## **Global Catalog**

A read-only catalog of all <u>objects</u> in a <u>forest</u>, which contains a subset of the <u>attributes</u>. The subset of attributes is called the partial attribute set (PAS). A <u>domain controller</u> can be designated a GC.

#### GP

Acronym for **G**roup **P**olicy. See <u>Step-by-Step Guide to Understanding the Group Policy Feature Set</u> <u>...</u>.

#### **GPMC**

Acronym for Group Policy Management Console, the MMC used to manage group policy objects.

#### **GPO**

Acronym for Group Policy Object. See Group Policy Objects .

# GPP

Acronym for Group Policy Preferences. See Group Policy Preferences Getting Started Guide <a>IIII</a>.

#### gpresult

Command line utility to display the Resultant Set of Policy (RSoP) for a user or computer. See Gpresult 1.

#### gpupdate

Command line utility to update  $\underline{group\ policy}$  settings. See  $\underline{Gpupdate\ }\underline{\underline{s}}$ .

# Group

An object in Active Dirctory that can have members. Permissions can be granted to security groups (not distribution groups) to give all members access to resources. Members can be users, contacts, computers, or other groups.

# **Group Policy**

Policies linked to Active Directory <u>domains</u>, <u>organizational units</u>, or <u>groups</u>, which are applied to the child objects within. Group Policies are defined in Group Policy Objects (GPO's). See <u>Step-by-Step Guide to Understanding the Group Policy Feature Set</u>.

## **Group Policy Preferences**

See <u>Group Policy Preferences Getting Started Guide</u> <u>...</u>

# GUID

Acronym for **G**lobally **U**nique **ID**entifier. A 128-bit value that should uniquely identify an object. The value is usually displayed as 32 hexadecimal digits. Every object in Active Directory has an objectGUID attribute, which is the GUID of the object. See <u>Globally unique identifier</u>.

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## Host

A computer connected to a network. Also called a network node.

## **HYOK**

Acronym for Hold Your Own Key.

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#### **IADs**

Interfaces supported by ADSI. Exposes methods and properties of namespace objects. See IADs interface I.

#### IAM

Acronym for Identity and Access Management . See Identity and Access Management .

#### IAS

Acronym for Internet Authentication Server. Provides centralized authentication services in Windows Server operating systems. Replaced by Network Policy Server (NPS) in Windows Server 2008.

#### ΙFΜ

Acronym for Install From Media, a feature for installing software or enabling features from media. See Installing AD DS from Media 🗈

#### IIS

Acronym for Internet Information Services. Also sometimes referred to as Internet Information Server. See Internet Information Services (IIS) II.

# **Implicit Identity**

Default groups that are now called special identities. They do not have specific memberships, but can represent different users at different times, depending on the circumstances. Some of these groups include Anonymous Logon, Batch, and Authenticated User. See Special Identities .

## Infrastructure Master

The Infrastructure Master role holder is the <u>domain controller</u> that maintains references, called phantoms, to objects in other <u>domains</u>. One domain controller in each domain must hold this role. One of the five Flexible Single Master Operator (<u>FSMO</u>) roles.

#### Inheritance

Inheritance is when an object or class is based on another object or class. See Class Inheritance in the Active Directory Schema 🖪

#### Instance

A specific realization of something, such as a <u>class</u> of objects. You instantiate a class to create an instance of the <u>object</u>. You can then assign values to the <u>attributes</u> of the object. The attributes available are defined by the class in the <u>schema</u>. An instance of Active Directory is the installation of Active Directory on a specific <u>domain controller</u>.

## IPD

Acronym for Infrastructure Planning and Design guide. Documents providing guidance on design of infrastructure for Microsoft products.

# ISAM

# ISTG

Acronym for InterSite Topology Generator. Automatically creates connection objects in Active Directory between domain controllers to enable replication. See The Role of the Inter-Site Topology Generator in Active Directory Replication.

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# J

# Jet Database Engine

Jet is the acronym for **J**oint **E**ngine **T**echnology. <u>Active Directory</u> and Exchange use a Jet-based <u>ISAM</u> data storage technology called Extensible Storage Engine (<u>ESE</u>). See <u>Microsoft Jet Database Engine</u>.



#### KCC

Acronym for **K**nowledge **C**onsistency **C**hecker. A process in Active Directory that automatically generates and maintains connection objects that describe which <u>naming contexts</u> should be replicated between which <u>domain controllers</u> and when. See <u>KCC Replication Path Computation</u>

#### KCD

Acronym for **K**erberos **C**onstrained **D**elegation. See <u>About Kerberos constrained delegation</u> **2**.

#### Kerberos

Primary authentication method used in Active Directory <u>domains</u>. Uses encrypted tickets to verify the identity of users and services. Older operating systems support <u>DES</u> encryption. Vista, Windows Server 2008, and newer operating systems support <u>AES</u> encryption.

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#### **LAPS**

Acronym for Local Administrator Password Solution. A Microsoft password management solution for local administrator account passwords. Sets a different random password on every computer in a domain. The passwords are stored in a confidential attribute of the corresponding computer object in Active Directory. See Microsoft Security Advisory 3062591.

#### LDAP

Acronym for Lightweight Directory Access Protocol. A language based on the X.500 directory standard that allows clients and servers to communicate. The LDAP provider allows access to the hierarchical structure of Active Directory, or any LDAP compliant database. The LDAP syntax is a filter syntax used to query LDAP compliant databases. See Lightweight Directory Access Protocol.

# **LDAPDisplayName**

In the Active Directory each <u>attribute</u> is represented by an object in the <u>Schema Container</u>, which itself has attributes. Each attribute object has a <u>common name</u> (the value of the cn attribute of the attribute object) and an LDAPDisplayName. When referring to an attribute programmatically, such as in a script or command line utility, you must use the LDAPDisplayName. This is the name used by <u>LDAP</u> clients, such as the <u>ADSI</u> provider. However, it is also used by the <u>PowerShell</u> cmdlets, since it uniquely identifies the attribute. In this way the attribute is similar to the <u>sAMAccountName</u> attribute of user, computer, or group objects in Active Directory.

## **LDAPS**

Acronym for LDAP over SSL. See LDAP over SSL (LDAPS) Certificate.

## LDIF

Acronym for LDAP **D**ata **I**nterchange **F**ormat. A standard plain text data interchange format. Represents directory content as records for update requests. Used by the Idifde command line utility. See <u>LDAP Data Interchange Format</u>.

## ldifde

Command line utility to import objects into and export objects from Active Directory using Idif format text files. Can be used to create, modify, and delete Active Directory objects. See Ldifde ...

## LDP

## **Legacy Value**

The value of a linked multi-valued attribute that was added to Active Directory when the Forest Functional Level was Windows 2000. Such values do not take advantage of Linked Value Replication. The repadmin tool reports these values as "LEGACY". See Remediate Active Directory Members that Don't Support LVR ...

## **Lingering Objects**

Lingering <u>objects</u> can occur if a <u>domain controller</u> does not <u>replicate</u> for an interval of time longer than the <u>tombstone</u> lifetime (<u>TSL</u>), and then reconnects to the replication topology. Objects that were deleted from Active Directory during this time can remain on the domain controller as lingering objects. See <u>Information about lingering objects in a Windows Server Active Directory forest</u>.

## **Link Table**

Most <u>attributes</u> are stored directory in the Active Directory database. But linked attributes use a Link Table. The <u>forward link</u> is saved in the <u>AD</u> database, but the value of the corresponding <u>back link</u> is retrieved using the entry in the link table. See <u>How the Data Store Works</u>.

## **Linked Attribute**

Linked <u>attributes</u> are pairs of attributes. The <u>forward link</u> is one you can update. The <u>back link</u> is a related attribute that is automatically updated by the system when the forward link is updated. Only the forward link is actually saved in Active Directory. A <u>link table</u> determines the value of the back link. Both attributes must be DN (Distinguished Name) syntax. See <u>How the Data Store Works</u>.

# **Linked Value Replication**

Linked value replication (LVR) is how linked <u>multi-valued attributes</u> replicate when they are updated. Instead of the entire <u>attribute</u>, only the individual updated values in the attribute are <u>replicated</u>. Requires Windows Server 2003 Interim mode or Windows Server 2003 <u>Forest Functional Level</u> or higher. When a non-linked multi-valued attribute is updated, the entire attribute must be replicated.

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## **Mandatory Attribute**

An attribute defined in the schema as mandatory for a class objects. Every instance of the class of object must have a value assigned to these attributes.

#### Member Server

A computer running a Windows Server operating system (a server) that is a member of an Active Directory domain, but is not a domain controller.

#### Metadata

Metadata is data about data. For example, replication metadata is data about replication events, such as the originating source, the <u>USN</u> number, and the date and time of the replication. See <u>Metadata 3.</u>

#### Method

Function or procedure implemented by code. See Method (computer programming) .

#### MFA

Acronym for Multi-Factor Authentication. Authentication that requires more than one verification method. Adds a second layer of security to logons. The verification methods can include: a password, biometrics, challenge response question, trusted device characteristics, or a pin communicated to a trusted email account or mobile device. A related concept is Two-Factor Authentication, or 2FA. See Multi-factor authentication .

## MIM

Acronym for Microsoft Identity Manager. The latest version of Microsoft's Identity and Access management (IAM) product suite. See Microsoft Identity Manager II.

## **Mixed Mode**

A <u>domain</u> that supports Windows NT <u>domain controllers</u>. The domain does not support <u>nested groups</u>. The alternative is <u>Native Mode</u>. The distinction only applies to Windows 2000 Server Domain Functional Level (<u>DFL</u>).

## MMC

Acronym for **M**icrosoft **M**anagement **C**onsole. An extensible service for management applications. Provides a user interface allowing addition of snap-ins to manage services in a <u>GUI</u> console.

## **MSA**

## **MSAL**

Acronym for MicroSoft Authentication Library. More commonly referred to as the Azure Active Directory Authentication Library. See ADAL.

## **MSODS**

Acronym for MicroSoft Online Directory Service.

## **Multi-Valued Attribute**

An Active Directory <u>attribute</u> that can have more than one value. Most attributes are single-valued. They can have only one value (or no value). Multi-valued attributes can have no value, one value, or more than one. For example, the "member" attribute of a <u>group</u> object is a collection of the <u>distinguished names</u> of all <u>objects</u> that are direct members of the group.

## Namespace

A <u>container</u> for a set of identifiers or names. A namespace groups names by functionality. The same object can be represented in more than one namespace, each with different naming conventions. For example, an Active Directory object can be represented in <u>WinNT</u>, a flat namespace, or in <u>LDAP</u>, a hierarchical namespace. A <u>.NET</u> namespace would be system.DirectoryServices.ActiveDirectory.

# **Naming Context**

A contiguous sub-tree of the directory that is a unit of replication. In Active Directory each <u>domain controller</u> has at least three Naming Contexts (also called NC <u>replicas</u>): The <u>Schema</u> NC, the <u>Configuration</u> NC, and the domain naming context.

#### NameTranslate

NameTranslate refers to the IADsNameTranslate interface, which can be used to convert the names of Active Directory objects from one format to another. See NameTranslate FAQ ...

#### **Native Mode**

A <u>domain</u> that does not support Windows NT <u>domain controllers</u>. The domain also supports <u>nested groups</u>. The alternative is <u>Mixed Mode</u>. The distinction only applies to Windows 2000 Server Domain Functional Level (<u>DFL</u>).

#### nbstat

Command line utility to report NetBIOS over TCP/IP statistics. See Nbtstat .

#### **NBT**

Acronym for NetBIOS over TCP/IP, sometimes also called NetBT. A networking protocol that allows legacy applications that rely on the NetBIOS API to work in TCP/IP networks. See NetBIOS over TCP/IP

#### NC

Acronym for **N**aming **C**ontext. A partition (<u>namespace</u>) in Active Directory. Examples include the <u>Schema container</u>, <u>Configuration container</u>, the Domain Naming context for each <u>domain</u>, and any application partitions. See <u>Naming Contexts and Directory Partitions</u>.

## **Nested Group**

A group object in Active Directory that is a member of another group.

# .NET

The .NET Framework is a programming model designed to replace the Win32 and <u>COM</u> APIs. The major components are the Common Language Runtime (<u>CLR</u>) and the .NET Framework class libraries.

## NetBIOS

Acronym for **Net**work **B**asic **I**nput/**O**utput **S**ystem. Service allowing applications on separate computers to communicate over a network. Uses NetBIOS over <u>TCP/IP</u> (<u>NBT</u>) protocol. The NetBIOS name of a computer is generally the first 15 characters of the <u>host</u> name, followed by the "\$" character. NetBIOS name to <u>IP</u> address resolution is provided by the <u>WINS</u> service on a WINS <u>server</u>.

# NetBT

Acronym for **NetB**IOS over **T**CP/IP, also called NBT. A networking protocol that allows legacy applications that rely on the <u>NetBIOS API</u> to work in <u>TCP/IP</u> networks. See NetBIOS over TCP/IP.

## netdiag

Command line utility to diagnose network and connectivity problems. Not supported after Windows Server 2003. See Netdiag ...

## netdom

Command line utility to manage Active Directory domains and trusts. See Netdom ...

## NetLogon

A service that verifies NTLM logon requests. It registers, authenticates, and locates domain controllers. Also, the Netlogon share stores logon scripts and possibly other files. See NetLogon .

## Netstat

Acronym for Network statistics. Command line utility to display information on network connections. See Netstat 🗹.

## nltest

Command line utility to perform network administration tasks. See NItest ...

## NOS

Acronym for **N**etwork **O**perating **S**ystem. An operating system installed on a <u>server</u> that allows clients to communicate and share resources on the server. See Network operating system.

#### NPS

Acronym for **N**etwork **P**olicy **S**erver. Microsoft's implementation of Remote Authentication Dial-In User Service (<u>RADIUS</u>). Originally the Internet Authenication Server (IAS) role service (before Windows Server 2008). See Network Policy Server.

#### nslookup

Command line utility to diagnose Domain Name Service (DNS) infrastructure problems. See Using NSlookup.exe 🗹

#### NT

Acronym for Windows NT, a family of Microsoft operating systems. NT originally was the acronym for New Technology. See Windows NT.

#### ntdsutil

Command line utility to manage Active Directory Domain Services (AD DS) and Active Directory Lightweight Directory Services (AD LDS). See Ntdsutil 1.

#### **NTFRS**

Acronym for NT File Replication Service. Service for distributing shared files and Group Policy Objects (GPO's). See File Replication Service.

#### NTP

Acronym for Network Time Protocol. Protocol for time synchronization between computer systems. See Network Time Protocol 🗹

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#### Object

An entry in the directory of a specific class. Objects in Active Directory have attributes appropriate for their class.

# OID

Acronym for **O**bject **ID**entifier. For example, each <u>attribute</u> in the Active Directory <u>schema</u> has a unique <u>X.500</u> OID (the value of the attributeID attribute of the attribute). All OID values created by Microsoft begin with 1.2.840.113556. OID values are also used to identify attribute syntaxes and filter matching rules. See Object identifier.

## ОКТА

A third party identity provider that implements single sign-on using the WS Federation/WS-Trust identity standard. See <u>Azure Active Directory federation compatibility</u> <u>list: third-party identity providers that can be used to implement single sign-on</u> .

## oldcmp

A command line tool developed by Joe Richard (DS-MVP) to query Active Directory for unused computer or user accounts. Can be also clean up the accounts. See OldCmp ...

# **Operational Attribute**

An <u>attribute</u> in Active Directory that is calculated by a <u>domain controller</u> on request, rather than being stored in the directory service database. Also called a constructed attribute.

# **Optional Attribute**

An <u>attribute</u> defined in the <u>schema</u> as optional for a <u>class</u> of <u>objects</u>. Any <u>instance</u> of the class of object can have a value assigned to any of these attributes, but they are not required to have a value.

# **Organizational Unit**

A type of <u>container</u> in an Active Directory <u>domain</u>. It can contain objects like users, computers, contacts, <u>groups</u>, or other OU's or containers. OU's can also have <u>group policies</u> applied.

# OTP

Acronym for One Time Password. See Strong Authentication with One-Time Passwords in Windows 7 and Windows Server 2008 R2 11.

# ΟU

Acronym for **O**rganizational **U**nit. Also the naming attribute for organizational unit objects in Active Directory, and the moniker used in their <u>distinguished names</u> (for example "ou=West,dc=mydomain,dc=com").

P

#### **Partition**

A subdivision of a database. In Active Directory, each <u>naming context</u> is a partition. Also called a <u>namespace</u>.

#### PAS

Acronym for Partial Attribute Set. The subset of attributes of the objects replicated to the Global Catalog. See Active Directory: Attributes in the Partial Attribute Set.

#### **PCNS**

Acronym for **P**assword **C**hange **N**otification **S**ervice. Enables synchronization of passwords between <u>Active Directory</u> and other identity systems. See <u>Password Change Notification Service</u>.

#### PDC

Acronym for **P**rimary **D**omain **C**ontroller. In NT <u>domains</u> there was one primary <u>domain controller</u> and zero or more backup domain controllers. The concepts no longer apply in Active Directory, which uses a multi-master database system where all domain controllers are essentially equal.

#### **PDCe**

Acronym for PDC emulator or Primary Domain Controller emulator. See PDC Emulator.

#### **PDC Emulator**

The PDC Emulator role holder acts as the Windows NT Primary Domain Controller (PDC) for backward compatibility. It also is used to forward password changes immediately to other <u>domain controllers</u> and serves as the primary time source for the domain. The PDC Emulator is also targeted by most <u>Group Policy</u> tools. One domain controller in each <u>domain</u> must hold this role. One of the five Flexible Single Master Operator roles (<u>FSMO</u>).

# **PowerShell**

Scripting language and command line shell based on C# and the Microsoft .<u>NET</u> Framework. PowerShell statements can be entered one at a time in the PowerShell command line shell, or in a script with the statements saved in a file with the .ps1 extension.

## **Pre-Windows 2000 Name**

The value of the <u>sAMAccountName</u> attribute of user and <u>group</u> objects in Active Directory. For computer objects, it is the <u>NetBIOS</u> name of the machine (the sAMAccountName is the NetBIOS name with the "\$" character appended to the end). For user objects in the Active Directory Users and Computers <u>mmc</u>, the field is called the "pre-Windows 2000 logon name".

## **Primary Group**

Each user and computer object in Active Directory has one group designated as their "primary" group. By default the primary group for users is the "Domain Users" group. The default primary group for computer objects is the "Domain Computers" group. Primary group membership is not included in the memberOf attribute of the user or computer, or in the member attribute of the group.

# **Property**

Fixed values assigned to <u>objects</u>. In Active Directory, the properties of objects are often referred to as <u>attributes</u>. Active Directory attributes themselves have properties as specified in the <u>Schema</u>.

# Provider

Library of interfaces including methods and properties that expose directory namespaces. Active Directory is supported by the LDAP and WinNT providers.

## PSO

Acronym for **P**assword **S**etting **O**bject. Objects in the System container of Active Directory that implement <u>Fine-Grained Password Policies</u> (FGPP). See <u>AD DS Fine-Grained Password and Account Lockout Policy Step-by-Step Guide ...</u>

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## **RDN**

Acronym for **R**elative **D**istinguished **N**ame. The name of an <u>object</u> in <u>Active Directory</u> relative to it's location in the hierarchical structure of Active Directory. The Relative Distinguished Name will be the lowest level component of the <u>Distinguished Name</u> (DN). The RDN must be unique in the parent <u>container</u> or <u>Organizational Unit</u> (OU), while the Distinguished Name will be unique in the <u>forest</u>.

# **Recycle Bin**

A container for retaining deleted objects temporarily. The deleted objects can be restored until the recycle bin is emptied, after which the objects are permanently deleted. See <u>Active Directory Recycle Bin Step-by-Step Guide</u>.

## **Relative Distinguished Name**

The name of an <u>object</u> in Active Directory relative to it's location in the hierarchical structure of Active Directory. The Relative Distinguished Name, abbreviated RDN, will be the lowest level component of the <u>Distinguished Name</u> (DN). The RDN must be unique in the parent <u>container</u> or <u>Organizational Unit</u> (OU), while the <u>Distinguished Name</u> will be unique in the <u>forest</u>.

#### repadmin

Command line utility to diagnose Active Directory replication between domain controllers. See Repadmin ...

#### Replica

A copy of an Active Directory namespace (or naming context) on a domain controller that replicates with other domain controllers.

#### Replication

The process by which domain controllers keep their Active Directory databases synchronized. See How Active Directory Replication Works.

#### \_\_\_\_

Acronym for **R**elative **ID**entifier. All <u>security principals</u> (users, computers, and groups) in Active Directory have a Security ID (SID). <u>SID</u> values include several components, including the RID. The SID without the RID is the same for all objects in a <u>domain</u>. The RID value uniquely identifies the <u>object</u> in the domain.

#### **RID Master**

The RID Master role holder is the <u>domain controller</u> responsible for assigning pools of <u>RID's</u> to all domain controllers in the <u>domain</u>. A RID is required whenever a <u>security principal</u> is created in Active Directory. One domain controller in each domain must hold this role. One of the five Flexible Single Master Operator roles (FSMO).

# RODC

Acronym for Read-Only Domain Controller. Cannot be used to update objects in Active Directory. See AD DS: Read-Only Domain Controllers .

# RootDSE

Acronym for **Root D**irectory **S**ervice **E**ntry (or **Root DS E**ntry), an object required of all <u>LDAP</u> compliant directories (such as Active Directory). Exposes a set of properties that are characteristic of the directory. See <u>RootDSE</u>.

## **RSAT**

Acronym for Remote Server Administration Tools. See Remote Server Administration Tools (RSAT) for Windows Client and Windows Server (dsforum2wiki).

## RSO

Acronym for **R**eplicate**S**ingle**O**bject. A Read-Only Domain Controller (<u>RODC</u>) can request <u>replication</u> of a specifc <u>object</u> with functionality known as a Replicate-Single-Object operation. See replicateSingleObject.

## **RSoP**

Acronym for Resultant Set of Policy. See Resultant Set of Policy (RSoP) .

## RUS

Acronym for Recipient Update Service. See Recipient Update Service.

## **RWDC**

Acronym for **R**ead-**W**rite **D**omain **C**ontroller. A writeable <u>domain controller</u>, meaning it can be used to update <u>objects</u> in Active Directory. All domain controllers are writeable, unless they are a Read-Only Domain Controller (<u>RODC</u>).

#### **SACL**

#### SAM

Acronym for **S**ecurity **A**ccount **M**anager, the Windows NT account database format. A Windows NT SAM account database exposes a flat namespace (with no hierarchy). See <u>Security Accounts Manager</u>.

#### sAMAccountName

The logon name used to support clients and servers running earlier versions of Windows. Also called the "Pre-Windows 2000 logon name". See <u>SAM-Account-Name attribute</u>.

#### **SAML**

Acronym for **S**ecurity **A**ssertion **M**arkup **L**anguage. An <u>XML</u> based standard for exchanging authentication and authorization data between an identity provider and a service or application. See <u>Security Assertion Markup Language</u>.

#### SASL

Acronym for Simple Authentication and Security Layer. A framework for authentication and data security on the Internet. See Simple Authentication and Security Layer.

#### Schema

Defines the structure of the data in a database. In Active Directory, the Schema container defines the object <u>classes</u> and the <u>attributes</u> that apply to each class in Active Directory.

#### **Schema Container**

The container within the Configuration container with objects that define the classes in Active Directory and the attributes that apply to the classes.

#### Schema Master

The Schema Master role holder is the <u>domain controller</u> that can make changes to the <u>Schema</u>. One domain controller in the <u>forest</u> must hold this role. One of the five Flexible Single Master Operator roles (<u>FSMO</u>).

# SCP

Acronym for **S**ervice **C**onnection **P**oint object. An <u>object</u> that represents one or more instances of a service and is used to connect to the service. These are objects in Active Directory usually published under the computer object where the corresponding service is installed. Used to maintain information about the service. See <u>Publishing with Service Connection Points</u>.

# SDPROP

Acronym for Security Descriptor Propagator. See AdminSDHolder, Protected Groups and SDPROP ...

## SDS

Acronym for **S**ystem.**D**irectory**S**ervices namespace. The primary <u>namespace</u> used for code that targets Active Directory in the <u>.NET</u> Framework. See <u>System.DirectoryServices Namespace</u> .

## **Security Principal**

An <u>object</u> in Active Directory to which security can be applied. A security principal must have the objectSID attribute, so it can be the trustee in an Access Control Entry (ACE).

## Server

A computer with a server operating system that can share resources in a network. A <u>Domain Controller</u> is one type of server.

## SID

Acronym for **S**ecurity **ID**entifier. All <u>objects</u> in Active Directory that are <u>security principals</u> (users, computers, groups) have the objectSID attribute, which is a SID. The SID uniquely identifies the object for security permissions. The SID value includes several components, including a <u>RID</u> (Relative ID). The SID without the RID is the same for all objects in the <u>domain</u>. Each security principal object in an Active Directory domain has its own unique RID value.

# Site

An Active Directory site defines the boundaries of high-speed connectivity for optimal <u>replication</u> and authentication. Sites are defined in the <u>Configuration container</u> of Active Directory.

## Site Link

An object in Active Directory that defines the connection between sites, allowing them to replicate with each other.

## SNTP

Acronym for Simple Network Time Protocol. A less complex implementation of NTP. See SNTP ...

#### SOA

Acronym for **S**tart **Of A**uthority. Records created by <u>Read-Only Domain Controllers</u> for read-only <u>DNS</u> zones. Also acronym for **S**ervice **O**riented **A**rchitecture. Software architecture where discrete pieces of software provide application functionality as services to other applications. See <u>Service-oriented architecture</u>.

#### **Special Identity**

Special identities (sometime call implicit identities) are default groups that do not have specific memberships, but can represent different users at different times, depending on the circumstances. Some of these groups include Anonymous Logon, Batch, and Authenticated User. See Special Identities .

#### SPN

Acronym for **S**ervice **P**rincipal **N**ame. The name by which a client uniquely identifies an instance of a service. Each instance of a service must have its own SPN, but a given service instance can have multiple SPN's. See <u>Service Principal Names</u>.

#### SRV

Service Records. See SRV record .

#### SSL

Acronym for Secure Sockets Layer. Predecessor to Transport Layer Security (TLS). See Transport Layer Security I

#### SSC

Acronym for **S**ingle **S**ign **O**n. A Property of access control of multiple related but independent software systems that allows users to logon once and gain access to all systems without being prompted to logon again. See <u>Single sign-on</u>.

#### Stand-alone Server

A computer running a Windows Server operating system (a server) that is not a member of an Active Directory domain.

#### Subnet

A portion of a network defined by a subnet mask applied to the <u>IP</u> addresses of the components. Subnets are defined in the <u>Configuration container</u> of Active Directory.

#### Sysvol

A collection of folders and reparse points in the file system that exists on each <u>domain controller</u> in a <u>domain</u>. SYSVOL provides a standard location to store important elements of Group Policy objects (<u>GPOs</u>) and scripts so that the File Replication service (<u>FRS</u>) can distribute them to other domain controllers within that domain. See Introduction to Administering SYSVOL .

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# TGS

Acronym for Ticket Granting Service. See Kerberos (protocol) .

## TGT

Acronym for **T**icket **G**ranting **T**icket. Encrypted file granting access for a user to data protected by a Key Distribution Center (<u>KDC</u>). Contains session key, expiration date, and user <u>IP</u> Address. See <u>Ticket-Granting Tickets</u>.

# TLS

Acronym for Transport Layer Security. Successor to Secure Sockets Layer (SSL). See Transport Layer Security 1.

# Tombstone

Deleted objects in the "Deleted Objects" container are referred to as tombstones. When an object is deleted from Active Directory it, with most of its attributes, is moved to the "Deleted Objects" container. Objects remain in this container, where they can be reanimated, for the tombstone period after which they are permanently deleted.

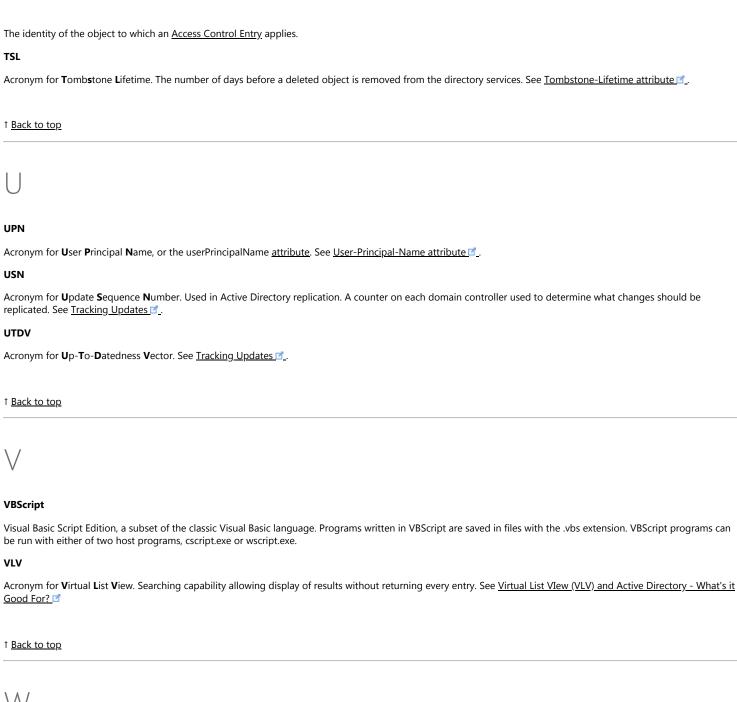
## Tree

A collection of Active Directory hierarchical domains in a contiguous namespace.

## Trust

A relationship between <u>domains</u> that allows access by <u>objects</u> in one domain to resources in another.

## Trustee





## W32Time

Service that synchronizes the time on all computers in the forest.

## WAAD

Acronym for **W**indows **A**zure **A**ctive **D**irectory. Also known as Azure Active Directory (<u>AAD</u>). Active Directory Domain Services in the Windows Azure cloud. Windows Azure is the Microsoft cloud computing platform, and one of the services available is Active Directory.

## WinNT

Windows NT namespace provider, supporting the Windows NT <u>SAM</u> account database. The <u>WinNT</u> provider can also be used to access Active Directory, but it exposes it as a flat namespace.

## WINS

Acronym for Windows Internet Naming Service. Resolves computer NetBIOS names into IP Addresses. See Windows Internet Name Service 1.

## WM:

Acronym for **W**indows **M**anagement **I**nstrumentation. WMI is management technology allowing scripts and programs to monitor and control managed resources throughout the network. Resources include hard drives, file systems, operating system settings, processes, services, shares, registry settings, networking components,

event logs, users, and groups. See Windows Management Instrumentation.

#### Workstation

A computer with a non-server operating system used by users, as opposed to a server. A workstation can be joined to a domain.

#### **WPAD**

Acronym for **W**eb **P**roxy **A**uto**D**iscovery. A service provided via either <u>DHCP</u> or <u>DNS</u> to help <u>clients</u> automatically find a proxy server. See Web Proxy Autodiscovery Protocol.

#### WQL

Acronym for WMI Query Language, as subset of ANSI Structured Query Language (SQL) used to query WMI namespaces. See WQL.

#### WSAD

Acronym for Windows Server Active Directory. On premises Active Directory, as apposed to the cloud based Azure Active Directory (AAD)

## **WSH**

Acronym for **W**indows **S**cript **H**ost, an ActiveX scripting host providing an environment for the execution of scripts using one of several scripting engines or languages, such as <u>VBScript</u> or JScript.

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#### X.500

Computer networking standards for directory services. Developed by <u>ITU-T</u> (International Telecommunications Union, Telecommunications sector), formerly CCITT (International Telegraph and Telephone Consultative Committee). See <u>X.500 </u>.

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Z

## Zone

A collection of contiguous hierarchical domain names. Portions of the DNS namespace delegated to one or more name servers.

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# See Also

- Wiki: Portal of TechNet Wiki Glossaries
- Wiki: Cross-Linking
- Wiki: Glossary of Technology Acronyms
- Wiki: Active Directory Domain Services (AD DS) Portal
- Wiki: How to Add Entries to a TechNet Wiki Glossary