Schema Reference

iPlanet Directory Server

Version 5.1
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About this Reference Guide

iPlanet Directory Server 5.1 is a powerful and scalable distributed directory server based on the industry-standard Lightweight Directory Access Protocol (LDAP). iPlanet Directory Server is the cornerstone for building a centralized and distributed data repository that can be used in your intranet, over your extranet with your trading partners, or over the public Internet to reach your customers.

For the latest information about new features and enhancements in this release of iPlanet Directory Server, please see the online release notes at:

http://docs.iplanet.com/docs/manuals/directory.html

Purpose of this Guide

This Schema Reference Guide guide describes the standard schema for user directories provided with the iPlanet Directory Server. The schema defines the structure of the data stored in a directory. It determines the name and syntax of each attributes and which attributes are required or allowed in each object class.

This document lists all the object classes and attributes defined by the standard schema. It also lists the operational attributes in the server. The information provided here is intended for the administrator who manages and maintains the schema. For information about server specific schema, please refer to the iPlanet Directory Server Configuration, Command, and File Reference.
Contents of this Guide

Chapter 1, “About Schema” provides an overview of some of the basic concepts of the directory schema, and lists the files in which the schema is described. It describes object classes, attributes and Object Identifiers (OIDs), and briefly discusses extending server schema and schema checking.

Chapter 2, “Object Class Reference” contains an alphabetical list of the object classes accepted by the default schema. It gives a definition of each object class, and lists its required and allowed attributes.

Chapter 3, “Attribute Reference” contains an alphabetic list of the standard attributes. It gives a definition of each attribute, and gives the attribute syntax and OID.

Chapter 4, “Operational Attributes, Special Attributes and Special Object Classes” contains an alphabetical list of the operational attributes used by the server, and of some special object classes and attributes used by the server. It gives a definition of each attribute, and gives the attribute syntax and OID. It also gives a definition of each object class, and gives the list of required and allowed attributes.

Prerequisite Reading

This guide describes the standard schema and the standard object classes and attributes. However, this guide does not describe how to design, customize or maintain your schema, nor does it give any information on replication. Those concepts are described in the iPlanet Directory Server Deployment Guide. You should read that book before continuing with this manual.

For information on how to configure iPlanet Directory Server 5.1 for the Solaris 9 operating environment, see Solaris 9 System Administration Naming and Directory Services: (DNS, NIS and LDAP), the chapter entitled “iPlanet Directory Server 5.1 Configuration.”

Preliminary planning includes deciding how to represent the data you store. You should chose predefined schema elements to meet as many of your needs as possible. These predefined schema elements are listed in this guide.

Conventions Used in This Book

This section explains the typographic conventions used in this book.
Monospaced font - This typeface is used for literal text, such as the names of attributes and object classes when they appear in text. It is also used for filenames and examples.

Italic font - In this reference guide, this typeface is used for attribute names and their description when they are inherited by an object class. It is also used for text that you must substitute for actual values, such as placeholders in path names.

NOTE Notes, Cautions and Tips highlight important conditions or limitations. Be sure to read this information before continuing.

This book uses the following format for paths and file names:

/var/ds5/slapd-serverID/...

serverID represents the server identifier you gave the server when you configured it. Schema files are stored in the /var/ds5/slapd-serverID/config/schema directory.

For example, if you gave the name phonebook to your directory server, then the actual path would be:

/var/ds5/slapd-phonebook/...

Related Information

The document set for iPlanet Directory Server also contains the following guides:


iPlanet Server Administrator’s Guide. Procedures for managing directory contents and maintaining your directory server. Includes information on configuring server-side plug-ins.

Other useful information can be found on the following Web sites:

- iPlanet product documentation online:
  http://docs.iplanet.com/docs/manuals/
Related Information

- iPlanet product status:
  http://www.iplanet.com/support/technical_resources/
- iPlanet Professional Services information:
  http://www.iplanet.com/services/professional_services_3_3.html
- Sun Enterprise Services for Solaris patches and support:
  http://www.sun.com/service/
- iPlanet developer information:
  http://developer.iplanet.com/
- iPlanet learning solutions:
- iPlanet product data sheets:
This chapter provides an overview of some of the basic concepts of the directory schema, and lists the files in which the schema is described. It describes object classes, attributes and Object Identifiers (OIDs), and briefly discusses extending server schema and schema checking.

Schema Definition

The directory schema is a set of rules that defines how the data can be stored in the directory. The data is stored in the form of directory entries. Each entry is a set of attributes and their values. Each entry must have an object class. The object class specifies the kind of object the entry describes and defines the set of attributes it contains. The schema defines the type of entries allowed, their attribute structure and the syntax of the attributes. The schema can be modified and extended if it does not meet your required needs.

To find detailed information about object classes, attributes, and how the Directory Server uses the schema, please refer to the iPlanet Directory Server Deployment Guide.

Object Classes

In LDAP, an object class defines the set of attributes that can be used to define an entry. The LDAP standard provides some basic types of object classes, including:

- Groups, including unordered lists of individual objects or groups of objects.
- Locations, such as the country name and description.
- Organizations.
- People.
Object classes may be subdivided into three types:

- **Structural**: indicates the attributes that the entry may have and where each entry may occur in the DIT. This object class represents the corresponding real world object. Entries must belong to a structural object class, so most object classes are structural object classes.

- **Auxiliary**: indicates the attributes that the entry may have. Does not represent a real world object, but represents additional attributes that can be associated with some structural object class to supplement its specification. Each entry, while belonging to only a single structural object class, may belong to zero or more auxiliary object classes.

- **Abstract**: defined purely for the purpose of serving as a superclass or template for other (structural) object classes. It is a way of conveniently collecting together a set of attributes which it is known will be common to a set of structural object classes, in order that these classes may be derived as subclasses of the abstract class rather than being defined from scratch. Note that an entry may not belong to an abstract object class.

Note that the Directory Server currently does not distinguish between structural and auxiliary object classes.

### Required and Allowed Attributes

Every object class includes a number of required attributes and of allowed attributes. Required attributes include the attributes that must be present in entries using the object class. All entries require the `objectClass` attribute, which defines the object classes assigned to the entry.

Allowed attributes include the attributes that may be present in entries using the object class.

**Example: Object Class = person**

**Required Attributes**

- `objectClass`
- `cn (common name)`
- `sn (surname)`

**Allowed Attributes**

- `description`
- `seeAlso`
- `telephoneNumber`
- `userPassword`
Object Class Inheritance

Each entry should be assigned to one structural object class. All object classes inherit from top. They can also inherit from other object classes. The server’s object class structure determines the list of required and allowed attributes for a particular entry. For example, a person entry is usually defined with the following object class structure:

```plaintext
objectClass: top
objectClass: person
objectClass: organizationalPerson
objectClass: inetOrgperson
```

In this structure, the inetOrgperson inherits from the organizationalPerson and person object classes. Therefore, when you assign the inetOrgperson object class to an entry, it automatically inherits the required and allowed attributes from the superior object class.

**Note:** Object class inheritance is dependant on the order in which the object classes appear in the `.ldif` file. The order in which object classes appear in the `.ldif` file must be consistent with the object class hierarchy, otherwise the server will not start. An object class which inherits from another object class must therefore appear *after* this object class in the `.ldif` file.

Attributes

Directory data is represented as attribute-value pairs. Any piece of information in the directory is associated with a descriptive attribute.

For instance, the `commonName`, or `cn`, attribute is used to store a person’s name. A person named Barbara (Babs) Jensen can be represented in the directory as

```plaintext
cn: Babs Jensen
```

Each person entered in the directory can be defined by the collection of attributes in the `inetorgperson` object class. Other attributes used to define this entry could include:

```plaintext
givenname: Barbara
surname: Jensen
mail: bjensen@siroe.com
```

Attribute Syntax

Each attribute has a syntax definition that describes the type of information provided by the attribute.
Attribute syntax is used by the Directory Server to perform sorting and pattern matching.

Table 1-1 lists the different syntax methods that can be applied to attributes, and gives an OID and a definition for each syntax method.

<table>
<thead>
<tr>
<th>Syntax and OID</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binary 1.3.6.1.4.1.1466.115.121.1.5</td>
<td>Indicates that values for this attribute are binary.</td>
</tr>
<tr>
<td>Boolean 1.3.6.1.4.1.1466.115.121.1.7</td>
<td>Indicates that this attribute has one of only two values: True or False.</td>
</tr>
<tr>
<td>Country String 1.3.6.1.4.1.1466.115.121.1.11</td>
<td>Indicates that values for this attribute are limited to exactly two printable string characters, for example fr.</td>
</tr>
<tr>
<td>DN 1.3.6.1.4.1.1466.115.121.1.12</td>
<td>Indicates that values for this attribute are DNs (distinguished names).</td>
</tr>
<tr>
<td>DirectoryString 1.3.6.1.4.1.1466.115.121.1.15</td>
<td>Indicates that values for this attribute are not case sensitive.</td>
</tr>
<tr>
<td>GeneralizedTime 1.3.6.1.4.1.1466.115.121.1.24</td>
<td>Indicates that values for this attribute are encoded as printable strings. The time zone must be specified. It is strongly recommended to use GMT.</td>
</tr>
<tr>
<td>IA5String 1.3.6.1.4.1.1466.115.121.1.26</td>
<td>Indicates that values for this attribute are case sensitive.</td>
</tr>
<tr>
<td>INTEGER 1.3.6.1.4.1.1466.115.121.1.27</td>
<td>Indicates that valid values for this attribute are numbers.</td>
</tr>
<tr>
<td>OctetString 1.3.6.1.4.1.1466.115.121.1.40</td>
<td>Same behavior as binary.</td>
</tr>
</tbody>
</table>
| Postal Address 1.3.6.1.4.1.1466.115.121.1.41 | Indicates that values for this attribute are encoded as $dstring[^dstring]*$
where each $dstring$ component is encoded as a value with DirectoryString syntax. Backslashes and dollar characters within $dstring$ must be quoted, so that they will not be mistaken for line delimiters. Many servers limit the postal address to 6 lines of up to thirty characters. For example:

1234 Main St.$Anytown, TX 12345$USA |
| TelephoneNumber 1.3.6.1.4.1.1466.115.121.1.50 | Indicates that values for this attribute are in the form of telephone numbers. It is recommended to use telephone numbers in international form. |
Single-Valued and Multi-Valued Attributes

By default, most attributes are multi-valued. This means that an entry can contain the same attribute with multiple values. For example, `cn`, `tel` and `objectClass` are all attributes that can have more than one value. Attributes that are single-valued—that is, only one instance of the attribute can be specified—are noted as such. For example, `uidNumber` can only have one possible value.

### Schema Supported by Directory Server 5.1

The schema provided with iPlanet Directory Server 5.1 is described in a set of files stored in the following directory:

```
/var/ds5/slapd-serverID/config/schema
```

You can modify the schema by creating new object classes and attributes. These modifications are stored in a separate file called `99user.ldif`. You should not modify the standard files provided with the Directory Server, because you incur the risk of breaking compatibility with other iPlanet products, or of causing interoperability problems with directory servers from other vendors than iPlanet.

For more information about how the Directory Server stores information and suggestions for planning directory schema, refer to the *iPlanet Directory Server Deployment Guide*.

The following tables list the schema files that are provided with iPlanet Directory Server. Table 1-2 lists the schema files that are used by the Directory Server. Table 1-3 lists the schema files that are used by other iPlanet products.

#### Table 1-1 Attribute Syntax

<table>
<thead>
<tr>
<th>Syntax and OID</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>URI</td>
<td>Indicates that the values for this attribute are in the form of a URL, introduced by a string such as <code>http://</code>, <code>https://</code>, <code>ftp</code>, <code>LDAP</code>. The URI has the same behavior as <code>IA5String</code>. See RFC 2396.</td>
</tr>
</tbody>
</table>

#### Single-Valued and Multi-Valued Attributes

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The following tables list the schema files that are provided with iPlanet Directory Server. Table 1-2 lists the schema files that are used by the Directory Server. Table 1-3 lists the schema files that are used by other iPlanet products.

#### Table 1-2 Schema Files used by Directory Server

<table>
<thead>
<tr>
<th>Schema Filename</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>00core.ldif</td>
<td>Recommended core schema from the X.500 and LDAP standards (RFCs), and schema used by the Directory Server itself</td>
</tr>
</tbody>
</table>
### Table 1-2  Schema Files used by Directory Server

<table>
<thead>
<tr>
<th>Schema Filename</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>05rfc2247.ldif</td>
<td>Schema from RFC 2247 and related pilot schema “Using Domains in LDAP/X.500 Distinguished Names”</td>
</tr>
<tr>
<td>05rfc2927.ldif</td>
<td>Schema from RFC 2927 “MIME Directory Profile for LDAP Schema”</td>
</tr>
<tr>
<td>10rfc2307.ldif</td>
<td>Schema from RFC 2307 “An Approach for Using LDAP as a Network Information Service”</td>
</tr>
<tr>
<td>20subscriber.ldif</td>
<td>Common schema elements for iPlanet-Nortel subscriber interoperability</td>
</tr>
<tr>
<td>28pilot.ldif</td>
<td>Schema from the pilot RFCs, especially RFC 1274, that is no longer recommended by iPlanet for use in new deployments.</td>
</tr>
<tr>
<td>30ns-common.ldif</td>
<td>Common iPlanet schema</td>
</tr>
<tr>
<td>50ns-directory.ldif</td>
<td>Additional schema used by iPlanet Directory Server 4.x</td>
</tr>
<tr>
<td>50ns-value.ldif</td>
<td>iPlanet servers “value item” schema</td>
</tr>
<tr>
<td>99user.ldif</td>
<td>Customer modifications to the schema</td>
</tr>
</tbody>
</table>

### Table 1-3  Schema Files used by other iPlanet Products

<table>
<thead>
<tr>
<th>Schema Filenames</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>50iplanet-servicemgmt.ldif</td>
<td>iPlanet service management schema elements</td>
</tr>
<tr>
<td>50ns-admin.ldif</td>
<td>Schema used by iPlanet Administration Services</td>
</tr>
<tr>
<td>50ns-calendar.ldif</td>
<td>iPlanet Calendar Server schema</td>
</tr>
<tr>
<td>50ns-certificate.ldif</td>
<td>Schema for iPlanet Certificate Management System</td>
</tr>
<tr>
<td>50ns-compass.ldif</td>
<td>Schema for the Netscape Compass Server</td>
</tr>
<tr>
<td>50ns-delegated-admin.ldif</td>
<td>Schema for iPlanet Delegated Administrator 4.5</td>
</tr>
<tr>
<td>50ns-legacy.ldif</td>
<td>Legacy Netscape Schema</td>
</tr>
<tr>
<td>50ns-mail.ldif</td>
<td>Schema for iPlanet Messaging Server</td>
</tr>
</tbody>
</table>
Object Identifiers (OIDs)

Object identifiers (OIDs) are assigned to all attributes and object classes to conform to the LDAP and X.500 standards. An OID is a sequence of integers, typically written as a dot-separated string. When no OID is specified, the Directory Server automatically uses `ObjectClass_name-oid` and `attribute_name-oid`.

The Netscape base OID is `2.16.840.1.113730`.

The base OID for the iPlanet Directory Server is `2.16.840.1.113730.3`.

All iPlanet-defined attributes have the base OID of `2.16.840.1.113370.3.1`.

All iPlanet-defined object classes have the base OID of `2.16.840.1.113730.3.2`.

For more information about OIDs, or to request a prefix for your enterprise, please go to the IANA (Internet Assigned Number Authority) website at [http://www.iana.org/](http://www.iana.org/).

### Table 1-3  Schema Files used by other iPlanet Products

<table>
<thead>
<tr>
<th>Schema Filenames</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>50ns-mcd-browser.ldif</td>
<td>Schema for Netscape Mission Control Desktop - Browser</td>
</tr>
<tr>
<td>50ns-mcd-config.ldif</td>
<td>Schema for Netscape Mission Control Desktop - Configuration</td>
</tr>
<tr>
<td>50ns-mcd-li.ldif</td>
<td>Schema for Netscape Mission Control Desktop - Location Independence</td>
</tr>
<tr>
<td>50ns-mcd-mail.ldif</td>
<td>Schema for Netscape Mission Control Desktop - Mail</td>
</tr>
<tr>
<td>50ns-media.ldif</td>
<td>Schema for Netscape Media Server</td>
</tr>
<tr>
<td>50ns-mlm.ldif</td>
<td>Schema for iPlanet Mailing List Manager</td>
</tr>
<tr>
<td>50ns-msg.ldif</td>
<td>Schema for iPlanet Web Mail</td>
</tr>
<tr>
<td>50ns-netshare.ldif</td>
<td>Schema for iPlanet Netshare</td>
</tr>
<tr>
<td>50ns-news.ldif</td>
<td>Schema for iPlanet Collabra Server</td>
</tr>
<tr>
<td>50ns-proxy.ldif</td>
<td>Schema for iPlanet Proxy Server</td>
</tr>
<tr>
<td>50ns-wcal.ldif</td>
<td>Schema for iPlanet Web Calendaring</td>
</tr>
<tr>
<td>50ns-web.ldif</td>
<td>Schema for iPlanet Web Server</td>
</tr>
</tbody>
</table>
Extending Server Schema

The Directory Server schema includes hundreds of object classes and attributes that can be used to meet most of your requirements. This schema can be extended with new object classes and attributes that meet evolving requirements for the directory service in the enterprise.

When adding new attributes to the schema, a new object class should be created to contain them (adding a new attribute to an existing object class can compromise the Directory Server’s compatibility with existing LDAP clients that rely on the standard LDAP schema and may cause difficulties when upgrading the server).

For more information about extending server schema, refer to the *iPlanet Directory Server Deployment Guide*.

Schema Checking

You should run Directory Server with schema checking turned on.

The schema checking capability of iPlanet Directory Server checks entries when you add them to the directory or when you modify them, to verify that:

- Object classes and attributes in the entry are defined in the directory schema
- Attributes required for an object class are contained in the entry
- Only attributes allowed by the object class are contained in the entry

Schema checking also occurs when importing a database using LDIF. For more information, refer to the *iPlanet Directory Server Administrator’s Guide*. 
This chapter contains an alphabetical list of the object classes accepted by the default schema. It gives a definition of each object class, and lists its required and allowed attributes. The object classes listed in this chapter are available for you to use to support your own information in the Directory Server. Object classes that are used by the Directory Server or other iPlanet products for internal operations are not documented here. For information about these object classes, please refer to the iPlanet Directory Server Configuration, Command, and File Reference. When an object class inherits attributes from other object classes, the inherited attributes are shown in italics. An object class which inherits from another object class must appear after this object class in the .ldif file, otherwise the server will not start.
account

**Definition**
Used to define entries representing computer accounts.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
0.9.2342.19200300.100.4.5

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object class for the entry.</td>
</tr>
<tr>
<td>uid (userID)</td>
<td>Identifies the account’s user ID.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Text description of the entry.</td>
</tr>
<tr>
<td>host</td>
<td>Hostname of the computer on which the account resides.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the account is located.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the account belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the account belongs.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the account.</td>
</tr>
</tbody>
</table>
alias

**Definition**
Used to point to other entries in the directory tree.

**Note:** Alias dereferencing is not supported in iPlanet Directory Server.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.1

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>aliasedObjectName</td>
<td>Distinguished name of the entry for which this entry is an alias.</td>
</tr>
</tbody>
</table>
cosClassicDefinition

Definition
Identifies the template entry using both the template entry’s DN (as specified in the cosTemplateDn attribute) and the value of one of the target entry’s attributes (as specified in the cosSpecifier attribute).

This object class is defined in iPlanet Directory Server.

Superior Class
cosSuperDefinition

OID
2.16.840.1.113730.3.2.100

Required Attributes

objectClass Defines the object classes for the entry.
cosAttribute Provides the name of the attribute for which you want to generate a value. You can specify more than one cosAttribute value.

Allowed Attributes

cn (commonName) Common name of the entry.
cosSpecifier Specifies the attribute value used by a classic CoS, which, along with the template entry’s DN, identifies the template entry.
cosTemplateDn Provides the DN of the template entry associated with the CoS definition.
description Text description of the entry.
cosDefinition

Definition
Defines the Class of Services you are using. This object class is supported in order to provide compatibility with the DS4.1 CoS Plugin.

This object class is defined in iPlanet Directory Server

Superior Class
top

OID
2.16.840.1.113730.3.2.84

Required Attributes

objectClass
Defines the object classes for the entry.

Allowed Attributes

aci
Evaluates what rights are granted or denied when the directory server receives an LDAP request from a client.

cn (commonName)
Common name of the entry.

cosAttribute
Provides the name of the attribute for which you want to generate a value. You can specify more than one cosAttribute value.

cosSpecifier
Specifies the attribute value used by a classic CoS, which, along with the template entry’s DN, identifies the template entry.

cosTargetTree
Determines the subtrees of the DIT to which the CoS schema applies.

cosTemplateDn
Provides the DN of the template entry associated with the CoS definition.

uid (userID)
Identifies the user id.
cosIndirectDefinition

Definition
Identifies the template entry using the value of one of the target entry’s attributes. The attribute of the target entry is specified in the cosIndirectSpecifier attribute.

This object class is defined in iPlanet Directory Server.

Superior Class
cosSuperDefinition

OID
2.16.840.1.113730.3.2.102

Required Attributes

objectClass Defines the object classes for the entry.
cosAttribute Provides the name of the attribute for which you want to generate a value. You can specify more than one cosAttribute value.

Allowed Attributes

cn (commonName) Common name of the entry.
cosIndirectSpecifier Specifies the attribute value used by an indirect CoS to identify the template entry.
description Text description of the entry.
cosPointerDefinition

Definition
Identifies the template entry associated with the CoS definition using the template entry’s DN value. The DN of the template entry is specified in the cosTemplateDn attribute.

This object class is defined in iPlanet Directory Server.

Superior Class
cosSuperDefinition

OID
2.16.840.1.113730.3.2.101

Required Attributes

objectClass Defines the object classes for the entry.

cosAttribute Provides the name of the attribute for which you want to generate a value. You can specify more than one cosAttribute value.

Allowed Attributes

cn (commonName) Common name of the entry.

cosTemplateDn Provides the DN of the template entry associated with the CoS definition.

description Text description of the entry.
**cosSuperDefinition**

**Definition**
All CoS definition object classes inherit from the `cosSuperDefinition` object class.

This object class is defined in iPlanet Directory Server.

**Superior Class**
ldapSubEntry

**OID**
2.16.840.1.113730.3.2.99

**Required Attributes**

- `objectClass` *Defines the object classes for the entry.*
- `cosAttribute` *Provides the name of the attribute for which you want to generate a value. You can specify more than one `cosAttribute` value*

**Allowed Attributes**

- `cn (commonName)` *Common name of the entry.*
- `description` *Text description of the entry.*
cosTemplate

Definition
Contains a list of the shared attribute values.

This object class is defined in iPlanet Directory Server.

Superior Class
top

OID
2.16.840.1.113730.3.2.128

Required Attributes

objectClass Defines the object classes for the entry.

Allowed Attributes

cn (commonName) Common name of the entry.

cosPriority Specifies which template provides the attribute value, when CoS templates compete to provide an attribute value.
country

Definition
Used to define entries that represent countries.

This object class is defined in RFC 2256.

Superior Class
top

OID
2.5.6.2

Required Attributes

objectClass
Defines the object classes for the entry.

c (countryName)
Contains the two-character code representing country names, as defined by ISO, in the directory.

Allowed Attributes

description
Text description of the country.

searchGuide
Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.
dcObject

**Definition**
Defines a domain component, such as a network domain that is associated with the entry. This object class is defined as auxiliary because it is commonly used in combination with another object class, such as organization, organizationUnit, or locality. For example:

```
dn: ou=Engineering,dc=siroe,dc=com
objectClass: top
objectClass: organizationalUnit
objectClass: dcObject
ou: Engineering
dc: eng
```

This object class is defined in RFC 2247.

**NOTE**
Suffixes often contain the `dc` attribute, such as `dc=siroe,dc=com` in the example above. Suffixes use the `dc` attribute to suggest that the directory they represent is associated with a certain domain. However, the suffix is a string associated with a database and is not related to the `dcObject` object class.

**Superior Class**
top

**OID**
1.3.6.1.4.1.1466.344

**Required Attributes**

<table>
<thead>
<tr>
<th><code>objectClass</code></th>
<th>Defines the object classes for the entry.</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>dc</code> (domainComponent)</td>
<td>One component of a domain name.</td>
</tr>
</tbody>
</table>

**See Also**
domain
device

Definition
Used to store information about network devices, such as printers, in the directory.

This object class is defined in RFC 2256.

Superior Class
top

OID
2.5.6.14

Required Attributes

objectClass Defines the object classes for the entry.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cn (commonName)</td>
<td>The common name of the series.</td>
</tr>
</tbody>
</table>

Allowed Attributes

description Text description of the device.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>l (localityName)</td>
<td>Place in which the device is located.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the device belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the device belongs.</td>
</tr>
<tr>
<td>owner</td>
<td>Distinguished name of the person responsible for the device.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the device.</td>
</tr>
<tr>
<td>serialNumber</td>
<td>Serial number of the device.</td>
</tr>
</tbody>
</table>
document

Definition
Used to define entries which represent documents in the directory.

This object class is defined in RFC 1274.

Superior Class
top

OID
0.9.2342.19200300.100.4.6

Required Attributes

objectClass Defines the object classes for the entry.
documentIdentifier Unique identifier for a document.

Allowed Attributes

abstract Abstract of the document.
audio Stores a sound file in binary format.
authorCn Author’s common or given name.
authorSn Author’s surname.
cn (commonName) Common name of the document.
description Text description of the document.
dITRedirect Distinguished name to use as a redirect for the entry.
documentAuthor Distinguished name of the document author.
documentLocation Location of the original document.
documentPublisher Person or organization that published the document.
documentStore Not defined.
documentTitle The document’s title.
documentVersion The document’s version number.
info Information about the object.
jpegPhoto Photo in jpeg format.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keyWords</td>
<td>Keywords that describe the document.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the document is located.</td>
</tr>
<tr>
<td>lastModifiedBy</td>
<td>Distinguished name of the last user to modify the document.</td>
</tr>
<tr>
<td>lastModifiedTime</td>
<td>Last time the document was modified.</td>
</tr>
<tr>
<td>manager</td>
<td>Distinguished name of the object’s manager.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the document belongs.</td>
</tr>
<tr>
<td>obsoletedByDocument</td>
<td>Distinguished name of a document that obsoletes this document.</td>
</tr>
<tr>
<td>obsoletesDocument</td>
<td>Distinguished name of a document that is obsoleted by this document.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the document belongs.</td>
</tr>
<tr>
<td>photo</td>
<td>Photo of the document, in binary form.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the document.</td>
</tr>
<tr>
<td>subject</td>
<td>Subject of the document.</td>
</tr>
<tr>
<td>uniqueIdentifier</td>
<td>Specific item used to distinguish between two entries when a distinguished name has been reused.</td>
</tr>
<tr>
<td>updatedByDocument</td>
<td>Distinguished name of a document that is an updated version of this document.</td>
</tr>
<tr>
<td>updatesDocument</td>
<td>Distinguished name of a document for which this document is an updated version.</td>
</tr>
</tbody>
</table>
documentSeries

Definition
Used to define an entry that represents a series of documents.

This object class is defined in RFC 1274.

Superior Class
top

OID
0.9.2342.19200300.100.4.9

Required Attributes

objectClass
   Defines the object classes for the entry.

cn (commonName)
   The common name of the series.

Allowed Attributes

description
   Text description of the series.

l (localityName)
   Place in which the series is located.

o (organizationName)
   Organization to which the series belongs.

ou (organizationUnitName)
   Organizational unit to which the series belongs.

seeAlso
   DN to information relevant to the series.

telephoneNumber
   Telephone number of the person responsible for the series.
domain

Definition
Used to represent Internet Domains (for example, siroe.com). The domainComponent attribute should be used for naming entries of this object class.

The domain object class can only be used with an entry that does not correspond to an organization, organizational unit or other type of object for which an object class has been defined. The domain object class requires that the domainComponent attribute be present, and allows several other attributes to be present in the entry. These allowed attributes are used to describe the object represented by the domain, and may also be useful when searching.

This object class is defined in RFC 2247.

Superior Class
top

OID
0.9.2342.19200300.100.4.13

Required Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>dc (domainComponent)</td>
<td>One component of a domain name.</td>
</tr>
</tbody>
</table>

Allowed Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>associatedName</td>
<td>Entry in the organizational directory tree associated with a DNS domain.</td>
</tr>
<tr>
<td>businessCategory</td>
<td>Type of business in which this domain is engaged.</td>
</tr>
<tr>
<td>description</td>
<td>Text description of the domain.</td>
</tr>
<tr>
<td>destinationIndicator</td>
<td>Country and city associated with the entry needed to provide Public Telegram Service.</td>
</tr>
<tr>
<td>fax</td>
<td>Domain’s fax number.</td>
</tr>
<tr>
<td>internationalISDNNumber</td>
<td>Domain’s ISDN number.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the domain is located.</td>
</tr>
</tbody>
</table>
o (organizationName)  Organization to which the domain belongs.
physicalDeliveryOfficeName Location where physical deliveries can be made.
postOfficeBox Domain’s post office box.
postalAddress Domain’s mailing address.
postalCode The postal code for this address (such as a United States zip code).
preferredDeliveryMethod Domain’s preferred method of contact or delivery.
registeredAddress Postal address suitable for reception of expedited documents, where the recipient must verify delivery.
searchGuide Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.
seeAlso DN to information relevant to the domain.
st (stateOrProvinceName) State or province in which the domain is located.
street Street address in which the domain is located.
telephoneNumber Domain’s telephone number.
teletexTerminalIdentifier Identifier for a domain’s teletex terminal.
telexNumber Domain’s telex number.
userPassword Password with which the entry can bind to the directory.
x121Address X.121 address of the domain.

See Also
dcObject
domainRelatedObject

**Definition**
Used to define entries which represent DNS/NRS domains which are “equivalent” to an X.500 domain, for example, an organization or organizational unit.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
0.9.2342.19200300.100.4.17

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>associatedDomain</td>
<td>Specifies a DNS domain associated with an object in the directory tree.</td>
</tr>
</tbody>
</table>
dSA

**Definition**
Used to define entries representing Directory Server Agents.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
2.5.6.13

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>cn (commonName)</td>
<td>The Directory Server Agent’s common name.</td>
</tr>
<tr>
<td>presentationAddress</td>
<td>Contains an OSI presentation address for the entry.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Text description of the series.</td>
</tr>
<tr>
<td>knowledgeInformation</td>
<td>This attribute is no longer used.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the series is located.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the series belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the series belongs.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the series.</td>
</tr>
<tr>
<td>supportedApplicationContext</td>
<td>This attribute contains the identifiers of OSI application contexts.</td>
</tr>
</tbody>
</table>
extensibleObject

Definition
When present in an entry, permits the entry to optionally hold any attribute. The allowed attribute list of this class is implicitly the set of all attributes known to the server.

This object class is defined in RFC 2252.

Superior Class
top

OID
1.3.6.1.4.1.1466.101.120.111

Required Attributes

objectClass
 Defines the object classes for the entry.

Allowed Attributes
All attributes known to the server.
friendlyCountry

**Definition**
Used to define country entries in the directory tree. This object class is used to allow more user-friendly country names than those allowed by the country object class.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
0.9.2342.19200300.100.4.18

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>co (friendlyCountryName)</td>
<td>Stores the name of a country.</td>
</tr>
<tr>
<td>c (countryName)</td>
<td>Contains the two-character code representing country names, as defined by ISO, in the directory.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Text description of the country.</td>
</tr>
<tr>
<td>searchGuide</td>
<td>Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.</td>
</tr>
</tbody>
</table>
groupOfCertificates

Definition
Used to describe a set of X.509 certificates. Any certificate that matches one of the memberCertificateDescription values is considered a member of the group.

This object class is defined in iPlanet Directory Server.

Superior Class
top

OID
2.16.840.1.113730.3.2.31

Required Attributes

<table>
<thead>
<tr>
<th>attribute</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>cn (commonName)</td>
<td>The group’s common name.</td>
</tr>
</tbody>
</table>

Allowed Attributes

<table>
<thead>
<tr>
<th>attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>businessCategory</td>
<td>Type of business in which the group is engaged.</td>
</tr>
<tr>
<td>description</td>
<td>Text description of the group’s purpose.</td>
</tr>
<tr>
<td>memberCertificateDescription</td>
<td>Values used to determine if a particular certificate is a member of this group.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the group of certificates belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the group belongs.</td>
</tr>
<tr>
<td>owner</td>
<td>Distinguished name of the person responsible for the group.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the group.</td>
</tr>
</tbody>
</table>
groupOfNames

**Definition**
Used to define entries for a group of names.

**Note:** The definition in iPlanet Directory Server differs from the standard definition. In the standard definition, member is a required attribute. In iPlanet Directory Server member is an allowed attribute. iPlanet Directory Server therefore allows a group to have no member.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.9

**Required Attributes**

- `objectClass` *Defines the object classes for the entry.*
- `cn (commonName)` The group’s common name.

**Allowed Attributes**

- `businessCategory` Type of business in which the group is engaged.
- `description` Text description of the group’s purpose.
- `member` Distinguished name of a group member.
- `o (organizationName)` Organization to which the group belongs.
- `ou (organizationUnitName)` Organizational unit to which the group belongs.
- `owner` Distinguished name of the person responsible for the group.
- `seeAlso` DN to information relevant to the group.
**groupOfUniqueNames**

**Definition**
Used to define entries for a group of unique names.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.17

**Required Attributes**
- **objectClass**
  Defines the object classes for the entry.
- **cn (commonName)**
  The group’s common name.

**Allowed Attributes**
- **businessCategory**
  Type of business in which the group is engaged.
- **description**
  Text description of the group’s purpose.
- **o (organizationName)**
  Organization to which the group belongs.
- **ou (organizationUnitName)**
  Organizational unit to which the group belongs.
- **owner**
  Distinguished name of the person responsible for the group.
- **seeAlso**
  DN to information relevant to the group.
- **uniqueMember**
  Distinguished name of a unique group member.
groupOfURLs

**Definition**
An auxiliary object class of groupOfUniqueNames or groupOfNames. The group consists of a list of labeled URLs. Not supported by Netscape Directory Server 3.0. This object class is defined in iPlanet Directory Server.

**Superior Class**
top

**OID**
2.16.840.1.113730.3.2.33

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>cn (commonName)</td>
<td>The group’s common name.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>businessCategory</td>
<td>Type of business in which the group is engaged.</td>
</tr>
<tr>
<td>description</td>
<td>Text description of the group’s purpose.</td>
</tr>
<tr>
<td>memberURL</td>
<td>URL associated with each member of the group.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the group belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the group belongs.</td>
</tr>
<tr>
<td>owner</td>
<td>Distinguished name of the person responsible for the group.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the group.</td>
</tr>
</tbody>
</table>
inetOrgPerson

Definition
Used to define entries representing people in an organization’s enterprise network.

This object class is defined in RFC 2798.

Superior Class
organizationalPerson

OID
2.16.840.1.113730.3.2.2

Required Attributes

objectClass Defines the object classes for the entry.

 cn (commonName) The person’s common name.

 sn (surname) The person’s surname, or last name.

Allowed Attributes

audio Stores a sound file in binary format.

businessCategory Type of business in which the person is engaged.

carLicense The license plate number of the person’s vehicle.

departmentNumber Department for which the person works.

description Text description of the person.

destinationIndicator Country and city associated with the entry needed to provide Public Telegram Service.

displayName Preferred name of a person to be used when displaying entries.

eymployeeNumber The person’s employee number.

eymployeeType The person’s type of employment (for example, full time).

fax (facsimileTelephoneNumber) The person’s fax number.

givenName The person’s given, or first, name.

homePhone The person’s home phone number.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>homePostalAddress</td>
<td>The person’s home mailing address.</td>
</tr>
<tr>
<td>initials</td>
<td>The person’s initials.</td>
</tr>
<tr>
<td>internationaliSDNNumber</td>
<td>The person’s ISDN number.</td>
</tr>
<tr>
<td>jpegPhoto</td>
<td>Photo in JPEG format.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the person is located.</td>
</tr>
<tr>
<td>labeledURI</td>
<td>Universal Resource Identifier that is relevant to the person.</td>
</tr>
<tr>
<td>mail</td>
<td>The person’s email address.</td>
</tr>
<tr>
<td>manager</td>
<td>Distinguished name of the object’s manager.</td>
</tr>
<tr>
<td>mobile</td>
<td>The person’s mobile phone number.</td>
</tr>
<tr>
<td>o (organizationName)</td>
<td>Organization to which the person belongs.</td>
</tr>
<tr>
<td>ou (organizationUnitName)</td>
<td>Organizational unit to which the person belongs.</td>
</tr>
<tr>
<td>pager</td>
<td>The person’s pager number.</td>
</tr>
<tr>
<td>photo</td>
<td>Photo of the person, in binary form.</td>
</tr>
<tr>
<td>physicalDeliveryOfficeName</td>
<td>Location where physical deliveries can be made to the person.</td>
</tr>
<tr>
<td>postOfficeBox</td>
<td>The person’s post office box.</td>
</tr>
<tr>
<td>postalAddress</td>
<td>The person’s mailing address.</td>
</tr>
<tr>
<td>postalCode</td>
<td>The postal code for this address (such as a United States zip code).</td>
</tr>
<tr>
<td>preferredDeliveryMethod</td>
<td>The person’s preferred method of contact or delivery.</td>
</tr>
<tr>
<td>preferredLanguage</td>
<td>The person’s preferred written or spoken language.</td>
</tr>
<tr>
<td>registeredAddress</td>
<td>Postal address suitable for reception of courier documents, where the recipient must verify delivery.</td>
</tr>
<tr>
<td>roomNumber</td>
<td>The room number in which the person is located.</td>
</tr>
<tr>
<td>secretary</td>
<td>Distinguished name of the person’s secretary or administrative assistant.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the person.</td>
</tr>
<tr>
<td>st (stateOrProvinceName)</td>
<td>State or province in which the person is located.</td>
</tr>
<tr>
<td>street</td>
<td>Street address at which the person is located.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>The person’s telephone number.</td>
</tr>
<tr>
<td>teletexTerminalIdentifier</td>
<td>Identifier for the person’s teletex terminal.</td>
</tr>
<tr>
<td>telexNumber</td>
<td>The person’s telex number.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>title</td>
<td>The person’s job title.</td>
</tr>
<tr>
<td>uid (userID)</td>
<td>Identifies the person’s user id (usually the logon ID).</td>
</tr>
<tr>
<td>userCertificate</td>
<td>Stores a user’s certificate in clear text (not used).</td>
</tr>
<tr>
<td>userPassword</td>
<td>Password with which the entry can bind to the directory.</td>
</tr>
<tr>
<td>userSMIMECertificate</td>
<td>Stores a user’s certificate in binary form. Used by Netscape Communicator for S/MIME.</td>
</tr>
<tr>
<td>x121Address</td>
<td>X.121 address of the person.</td>
</tr>
<tr>
<td>x500UniqueIdentifier</td>
<td>Reserved.</td>
</tr>
</tbody>
</table>
labeledURIObject

**Definition**
This object class can be added to existing directory objects to allow for inclusion of URI values. This approach does not preclude including the labeledURI attribute type directly in other object classes as appropriate.

This object class is defined in RFC 2079.

**Superior Class**
top

**OID**
1.3.6.1.4.1.250.3.1

**Required Attributes**

\[objectClass\] Defines the object classes for the entry.

**Allowed Attributes**

\[labeledURI\] Universal Resource Identifier that is relevant to the entry.
locality

**Definition**
Used to define entries that represent localities or geographic areas.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.3

**Required Attributes**

- `objectClass` Defines the object classes for the entry.

**Allowed Attributes**

- `description` Text description of the locality.
- `l (localityName)` Place in which the entry is located.
- `searchGuide` Specifies information for a suggested search criteria when using the entry as the base object in the directory tree for a search operation.
- `seeAlso` DN to information relevant to the locality.
- `st (stateOrProvinceName)` State or province to which the locality belongs.
- `street` Street address associated with the locality.
newPilotPerson

**Definition**
Used as a subclass of person, to allow the use of a number of additional attributes to be assigned to entries of the person object class. Inherits cn and sn from the person object class.

This object class is defined in Internet White Pages Pilot.

**Superior Class**
person

**OID**
0.9.2342.19200300.100.4.4

**Required Attributes**
- `objectClass` Defines the object classes for the entry.
- `cn (commonName)` The person’s common name.
- `sn (surname)` The person’s surname, or last name.

**Allowed Attributes**
- `businessCategory` Type of business in which this person is engaged.
- `description` Text description of the person.
- `drink (favouriteDrink)` The person’s favorite drink.
- `homePhone` The person’s home phone number.
- `homePostalAddress` The person’s home mailing address.
- `janetMailbox` The person’s email address.
- `mail` The person’s email address.
- `mailPreferenceOption` Indicates a preference for inclusion of the person’s name on mailing lists (electronic or physical). Not valid in Messaging server 4.0.
- `mobile` The person’s mobile phone number.
- `organizationalStatus` The person’s type of employment (for example, full time).
otherMailbox  Values for electronic mailbox types other than X.400 and rfc822.
pager  The person’s pager number.
personalSignature  The person’s signature file.
personalTitle  The person’s personal title.
preferredDeliveryMethod  The person’s preferred method of contact or delivery.
roomNumber  The person’s room number.
secretary  Distinguished name of the person’s secretary or administrative assistant.

seeAlso  DN to information relevant to the person.
telephoneNumber  The person’s telephone number.
textEncodedORAddress  The person’s text-encoded Originator/Recipient (X.400) address.

uid (userID)  Identifies the person’s user id (usually the logon ID).
userClass  Category of user.
userPassword  Password with which the entry can bind to the directory.
nsComplexRoleDefinition

**Definition**
Any role that is not a simple role is, by definition, a complex role.

This object class is defined in iPlanet Directory Server.

**Superior Class**
nsRoleDefinition

**OID**
2.16.840.1.113730.3.2.95

**Required Attributes**

- objectClass Defines the object classes for the entry.

**Allowed Attributes**

- cn (commonName) The entry’s common name.
- description Text description of the entry.
nsFilteredRoleDefinition

Definition
Specifies assignment of entries to the role, depending upon the attributes contained by each entry.

This object class is defined in iPlanet Directory Server.

Superior Class
nsComplexRoleDefinition

OID
2.16.840.1.113730.3.2.97

Required Attributes

objectClass
Defines the object classes for the entry.

nsRoleFilter
Specifies the filter assigned to an entry.

Allowed Attributes

cn (commonName)
The entry’s common name.

description
Text description of the entry.
**nsLicenseUser**

**Definition**
Used to track licenses for Netscape servers that are licensed on a per-client basis. nsLicenseUser is intended to be used with the inetOrgPerson object class. You can manage the contents of this object class through the Users and Groups area of the Netscape Administration Server.

This object class is defined in iPlanet Administration Services.

**Superior Class**
top

**OID**
2.16.840.1.113730.3.2.7

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nsLicensedFor</td>
<td>Netscape server that the user is licensed to use.</td>
</tr>
<tr>
<td>nsLicenseEndTime</td>
<td>Reserved for future use.</td>
</tr>
<tr>
<td>nsLicenseStartTime</td>
<td>Reserved for future use.</td>
</tr>
</tbody>
</table>
nsManagedRoleDefinition

**Definition**
Specifies assignment of a role to an explicit, enumerated list of members.

This object class is defined in iPlanet Directory Server.

**Superior Class**
nsSimpleRoleDefinition

**OID**
2.16.840.1.113730.3.2.96

**Required Attributes**

- objectClass
  Defines the object classes for the entry.

**Allowed Attributes**

- cn (commonName)
  The entry’s common name.

- description
  Text description of the entry.
nsNestedRoleDefinition

Definition
Specifies containment of one or more roles of any type within the role.

This object class is defined in iPlanet Directory Server.

Superior Class
nsComplexRoleDefinition

OID
2.16.840.1.113730.3.2.98

Required Attributes

objectClass Defines the object classes for the entry.
nsRoleDN Specifies the roles assigned to an entry.

Allowed Attributes

cn (commonName) The entry’s common name.
description Text description of the entry.
nsRoleDefinition

Definition
All role definition object classes inherit from the nsRoleDefinition object class.

This object class is defined in iPlanet Directory Server.

Superior Class
ldapSubEntry

OID
2.16.840.1.113730.3.2.93

Required Attributes

objectClass Defines the object classes for the entry.

cn (commonName) The entry’s common name.

description Text description of the entry.
nsSimpleRoleDefinition

**Definition**
Roles containing this object class are called simple roles because they have a deliberately limited flexibility, which makes it easy to:

- Enumerate the members of a role.
- Determine whether a given entry possesses a particular role.
- Enumerate all the roles possessed by a given entry.
- Assign a particular role to a given entry.
- Remove a particular role from a given entry.

This object class is defined in iPlanet Directory Server.

**Superior Class**
nsRoleDefinition

**OID**
2.16.840.1.113730.3.2.94

**Required Attributes**

- `objectClass` Defines the object classes for the entry.

**Allowed Attributes**

- `cn (commonName)` The entry's common name.
- `description` Text description of the entry.
**organization**

**Definition**
Used to define entries that represent organizations. An organization is generally assumed to be a large, relatively static grouping within a larger corporation or enterprise.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.4

**Required Attributes**

- `objectClass` *Defines the object classes for the entry.*
- `o (organizationName)` The name of the organization.

**Allowed Attributes**

- `businessCategory` Type of business in which the organization is engaged.
- `description` Text description of the organization.
- `destinationIndicator` Country and city associated with the entry needed to provide Public Telegram Service.
- `fax` The organization’s fax number.
- `(facsimileTelephoneNumber)`
- `internationalISDNNumber` The organization’s ISDN number.
- `l (localityName)` Place in which the organization is located.
- `physicalDeliveryOfficeName` Location where physical deliveries can be made to the organization.
- `postalAddress` The organization’s mailing address.
- `postalCode` The postal code for this address (such as a United States zip code).
- `postOfficeBox` The organization’s post office box.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>preferredDeliveryMethod</td>
<td>The organization’s preferred method of contact or delivery.</td>
</tr>
<tr>
<td>registeredAddress</td>
<td>Postal address suitable for reception of expedited documents, where the recipient must verify delivery.</td>
</tr>
<tr>
<td>searchGuide</td>
<td>Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the organization.</td>
</tr>
<tr>
<td>st (stateOrProvinceName)</td>
<td>State or province in which the organization is located.</td>
</tr>
<tr>
<td>street</td>
<td>Street address at which the organization is located.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>The organization’s telephone number.</td>
</tr>
<tr>
<td>teletexTerminalIdentifier</td>
<td>Identifier for the organization’s teletex terminal.</td>
</tr>
<tr>
<td>telexNumber</td>
<td>The organization’s telex number.</td>
</tr>
<tr>
<td>userPassword</td>
<td>Password with which the entry can bind to the directory.</td>
</tr>
<tr>
<td>x121Address</td>
<td>X.121 address of the organization.</td>
</tr>
</tbody>
</table>
organizationalPerson

Definition
Used to define entries for people employed by or associated with an organization.

This object class is defined in RFC 2256.

Superior Class
person

OID
2.5.6.7

Required Attributes

objectClass
Defines the object classes for the entry.

cn (commonName)
The person’s common name.

sn (surname)
The person’s surname, or last name.

Allowed Attributes

description
Text description of the person.

destinationIndicator
Country and city associated with the person needed to provide Public Telegram Service.

fax
The person’s fax number.

(facsimileTelephoneNumber)

internationaliSDNNumber
The person’s ISDN number.

l (localityName)
Place in which the person is located.

ou (organizationUnitName)
Organizational unit to which the person belongs.

physicalDeliveryOfficeName
Location where physical deliveries can be made to this person.

postalAddress
The person’s mailing address.

postalCode
The postal code for this address (such as a United States zip code).

postOfficeBox
The person’s post office box.

preferredDeliveryMethod
The person’s preferred method of contact or delivery.
registeredAddress

Postal address suitable for reception of expedited documents, where the recipient must verify delivery.

seeAlso

DN to information relevant to the person.

st (stateOrProvinceName)

State or province in which the person is located.

street

Street address at which the person is located.

telephoneNumber

The person’s telephone number.

teletexTerminalIdentifier

Identifier for the person’s teletex terminal.

tel exNumber

The person’s telex number.

title

The person’s job title.

userPassword

Password with which the entry can bind to the directory.

x121Address

X.121 address of the person.
organizationalRole

**Definition**
Used to define entries that represent roles held by people within an organization.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.8

**Required Attributes**

- `objectClass` *Defines the object classes for the entry.*
- `cn` (commonName) *The role's common name.*

**Allowed Attributes**

- `description` *Text description of the role.*
- `destinationIndicator` *Country and city associated with the entry needed to provide Public Telegram Service.*
- `fax` *(facsimileTelephoneNumber)* *Fax number of the person in the role.*
- `internationalISDNNumber` *ISDN number of the person in the role.*
- `l` (localityName) *Place in which the person in the role is located.*
- `ou` (organizationUnitName) *Organizational unit to which the person in the role belongs.*
- `physicalDeliveryOfficeName` *Location where physical deliveries can be made to the person in the role.*
- `postalAddress` *The mailing address for the person in the role.*
- `postalCode` *The postal code for this address (such as a United States zip code).*
- `postOfficeBox` *The post office box for the person in the role.*
- `preferredDeliveryMethod` *Preferred method of contact or delivery of the person in the role.*
registeredAddress Postal address suitable for reception of expedited documents, where the recipient must verify delivery.
roleOccupant Distinguished name of the person in the role.
seeAlso DN to information relevant to the person in the role.
st (stateOrProvinceName) State or province in which the person in the role is located.
street Street address at which the person in the role is located.
telephoneNumber Telephone number of the person in the role.
tele texTerminalIdentifier Identifier for the teletex terminal of the person in the role.
telexNumber Telex number of the person in the role.
x121Address X.121 address of the person in the role.
organizationalUnit

Definition
Used to define entries that represent organizational units. An organizational unit is generally assumed to be a relatively static grouping within a larger organization.
This object class is defined in RFC 2256.

Superior Class
top

OID
2.5.6.5

Required Attributes

objectClass Defines the object classes for the entry.
ou (organizationUnitName) The name of the organizational unit.

Allowed Attributes

businessCategory Type of business in which the organizational unit is engaged.
description Text description of the organizational unit.
destinationIndicator Country and city associated with the organizational unit needed to provide Public Telegram Service.
fax The organizational unit’s fax number.
(facsimileTelephoneNumber)
internationaliSDNNumber The organizational unit’s ISDN number.
l (localityName) Place in which the organizational unit is located.
physicalDeliveryOfficeName Location where physical deliveries can be made to the organizational unit.
postalAddress The organizational unit’s mailing address.
pPostalCode The postal code for this address (such as a United States zip code).
postOfficeBox The organizational unit’s post office box.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>preferredDeliveryMethod</td>
<td>The organizational unit’s preferred method of contact or delivery.</td>
</tr>
<tr>
<td>registeredAddress</td>
<td>Postal address suitable for reception of expedited documents, where the recipient must verify delivery.</td>
</tr>
<tr>
<td>searchGuide</td>
<td>Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the organizational unit.</td>
</tr>
<tr>
<td>st (stateOrProvinceName)</td>
<td>State or province in which the organizational unit is located</td>
</tr>
<tr>
<td>street</td>
<td>Street address at which the organizational unit is located.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>The organizational unit’s telephone number.</td>
</tr>
<tr>
<td>teletexTerminalIdentifier</td>
<td>Identifier for the organizational unit’s teletex terminal.</td>
</tr>
<tr>
<td>telexNumber</td>
<td>The organizational unit’s telex number.</td>
</tr>
<tr>
<td>userPassword</td>
<td>Password with which the entry can bind to the directory.</td>
</tr>
<tr>
<td>x121Address</td>
<td>X.121 address of the organizational unit.</td>
</tr>
</tbody>
</table>
person

Definition
Used to define entries that generically represent people. This object class is the base class for the organizationalPerson object class.

This object class is defined in RFC 2256.

Superior Class
top

OID
2.5.6.6

Required Attributes

objectClass
Defines the object classes for the entry.

cn (commonName)
The person’s common name.

sn (surname)
The person’s surname, or last name.

Allowed Attributes

description
Text description of the person.

seeAlso
DN to information relevant to the person.

telephoneNumber
The person’s telephone number.

userPassword
Password with which the entry can bind to the directory.
pilotObject

Definition
Used as a subclass to allow additional attributes to be assigned to entries of all other object classes.

This object class is defined in RFC 1274.

Superior Class
top

OID
0.9.2342.19200300.100.4.3

Required Attributes

objectClass Defines the object classes for the entry.

Allowed Attributes

audio Stores a sound file in binary format.
dITRedirect Distinguished name to use as a redirect for the entry.
info Information about the object.
jpegPhoto Photo in jpeg format.
lastModifiedBy Distinguished name of the last user to modify the object.
lastModifiedTime Last time the object was modified.
manager Distinguished name of the object’s manager.
photo Photo of the object.
uniqueIdentifier Specific item used to distinguish between two entries when a distinguished name has been reused.
pilotOrganization

Definition
Used as a subclass to allow additional attributes to be assigned to organization and organizationalUnit object class entries.

This object class is defined in RFC 1274.

Superior Class
top

OID
0.9.2342.19200300.100.4.20

Required Attributes
objectClass Defines the object classes for the entry.
o (organizationName) Organization to which the entry belongs.
ou (organizationUnitName) Organizational unit to which the entry belongs.

Allowed Attributes
buildingName Name of the building in which the entry is located.
businessCategory Type of business in which the entry is engaged.
description Text description of the entry.
destinationIndicator Country and city associated with the pilot organization needed to provide Public Telegram Service.
fax The pilot organization’s fax number.
(facsimileTelephoneNumber)
internationalISDNNumber The pilot organization’s ISDN number.
l (localityName) Place in which the pilot organization is located.
physicalDeliveryOfficeName Location where physical deliveries can be made to the pilot organization.
pPostalAddress The pilot organization’s mailing address.
pPostalCode The postal code for this address (such as a United States zip code).
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>postOfficeBox</td>
<td>The pilot organization’s post office box.</td>
</tr>
<tr>
<td>preferredDeliveryMethod</td>
<td>The pilot organization’s preferred method of contact or delivery</td>
</tr>
<tr>
<td>registeredAddress</td>
<td>Postal address suitable for reception of expedited documents, where the recipient must verify delivery.</td>
</tr>
<tr>
<td>searchGuide</td>
<td>Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the pilot organization.</td>
</tr>
<tr>
<td>st (stateOrProvinceName)</td>
<td>State or province in which the pilot organization is located.</td>
</tr>
<tr>
<td>street</td>
<td>Street address at which the pilot organization is located.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>The pilot organization’s telephone number.</td>
</tr>
<tr>
<td>teletexTerminalIdentifier</td>
<td>Identifier for the pilot organization’s teletex terminal.</td>
</tr>
<tr>
<td>telexNumber</td>
<td>The pilot organization’s telex number.</td>
</tr>
<tr>
<td>userPassword</td>
<td>Password with which the entry can bind to the directory.</td>
</tr>
<tr>
<td>x121Address</td>
<td>X.121 address of the pilot organization.</td>
</tr>
</tbody>
</table>
residentialPerson

**Definition**
Used by the directory server to contain a person’s residential information.

This object class is defined in RFC 2256.

**Superior Class**
person

**OID**
2.5.6.10

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>cn (commonName)</td>
<td>The person’s common name.</td>
</tr>
<tr>
<td>l (localityName)</td>
<td>Place in which the person resides.</td>
</tr>
<tr>
<td>sn (surname)</td>
<td>The person’s surname, or last name.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>businessCategory</td>
<td>Type of business in which the person is engaged.</td>
</tr>
<tr>
<td>description</td>
<td>Text description of the person.</td>
</tr>
<tr>
<td>destinationIndicator</td>
<td>Country and city associated with the entry needed to provide Public Telegram Service.</td>
</tr>
<tr>
<td>fax (facsimileTelephoneNumber)</td>
<td>The person’s fax number.</td>
</tr>
<tr>
<td>internationalISDNNumber</td>
<td>The person’s ISDN number.</td>
</tr>
<tr>
<td>physicalDeliveryOfficeName</td>
<td>Location where physical deliveries can be made to the person.</td>
</tr>
<tr>
<td>postalAddress</td>
<td>The person’s business mailing address.</td>
</tr>
<tr>
<td>postalCode</td>
<td>The postal code for this address (such as a United States zip code).</td>
</tr>
<tr>
<td>postOfficeBox</td>
<td>The person’s business post office box.</td>
</tr>
<tr>
<td>preferredDeliveryMethod</td>
<td>The person’s preferred method of contact or delivery.</td>
</tr>
</tbody>
</table>
registeredAddress  Postal address suitable for reception of expedited
documents, where the recipient must verify delivery.

seeAlso  DN to information relevant to the person.
st (stateOrProvinceName)  State or province in which the person resides.
street  Street address at which the person is located.
telephoneNumber  The person’s telephone number.
teletexTerminalIdentifier  Identifier for the person’s teletex terminal.
telexNumber  The person’s telex number.
userPassword  Password with which the entry can bind to the directory.
x121Address  X.121 address of the person.
 RFC822LocalPart

Definition
Used to define entries that represent the local part of RFC822 mail addresses. The directory treats this part of an RFC822 address as a domain.

This object class is defined in Internet directory pilot.

Superior Class
domain

OID
0.9.2342.19200300.100.4.14

Required Attributes

objectClass Defines the object classes for the entry.
dc (domainComponent) Domain component of the entry.

Allowed Attributes

associatedName Entry in the organizational directory tree associated with a DNS domain.
businessCategory Type of business in which this local part is engaged.
cn (commonName) The local part’s common name.
description Text description of the local part.
destinationIndicator Country and city associated with the entry needed to provide Public Telegram Service.
fax (facsimileTelephoneNumber) The local part’s fax number.
internationalISDNNumber The local part’s ISDN number.
l (localityName) Place in which the local part is located.
o (organizationName) Organization to which the local part belongs.
physicalDeliveryOfficeName Location where physical deliveries can be made to the local part.
postOfficeBox The local part’s post office box.
postalAddress The local part’s mailing address.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>postalCode</td>
<td>The postal code for this address (such as a United States zip code).</td>
</tr>
<tr>
<td>preferredDeliveryMethod</td>
<td>Local part’s preferred method of contact or delivery.</td>
</tr>
<tr>
<td>registeredAddress</td>
<td>Postal address suitable for reception of courier documents, where the recipient must verify delivery.</td>
</tr>
<tr>
<td>searchGuide</td>
<td>Specifies information for suggested search criteria when using the entry as the base object in the directory tree for a search operation.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the local part.</td>
</tr>
<tr>
<td>sn (surname)</td>
<td>The entry’s surname, or last name.</td>
</tr>
<tr>
<td>st (stateOrProvinceName)</td>
<td>State or province in which the local part is located.</td>
</tr>
<tr>
<td>street</td>
<td>Street address at which the local part is located.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>Telephone number associated with the local part.</td>
</tr>
<tr>
<td>teletexTerminalIdentifier</td>
<td>Identifier for a telex terminal associated with the local part.</td>
</tr>
<tr>
<td>telexNumber</td>
<td>Telex number associated with the local part.</td>
</tr>
<tr>
<td>userPassword</td>
<td>Password with which the entry can bind to the directory.</td>
</tr>
<tr>
<td>x121Address</td>
<td>X.121 address associated with the local part.</td>
</tr>
</tbody>
</table>
**room**

**Definition**
Used to store information in the directory about a room.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
0.9.2342.19200300.100.4.7

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>cn (commonName)</td>
<td>Common name of the room.</td>
</tr>
</tbody>
</table>

**Allowed Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Text description of the room.</td>
</tr>
<tr>
<td>roomNumber</td>
<td>The room’s number.</td>
</tr>
<tr>
<td>seeAlso</td>
<td>DN to information relevant to the room.</td>
</tr>
<tr>
<td>telephoneNumber</td>
<td>The room’s telephone number.</td>
</tr>
</tbody>
</table>
**strongAuthenticationUser**

**Definition**
Used to store a user’s certificate entry in the directory. This is an auxiliary object class and is used with other object classes, such as the person and organization object classes.

This object class is defined in RFC 2256.

**Superior Class**
top

**OID**
2.5.6.15

**Required Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectClass</td>
<td>Defines the object classes for the entry.</td>
</tr>
<tr>
<td>userCertificate</td>
<td>Stores a user’s certificate, usually in binary form.</td>
</tr>
</tbody>
</table>
simpleSecurityObject

**Definition**
Used to allow an entry to contain the userPassword attribute when an entry’s principal object classes do not allow userPassword as an attribute type. Reserved for future use.

This object class is defined in RFC 1274.

**Superior Class**
top

**OID**
0.9.2342.19200300.100.4.19

**Required Attributes**

- `objectClass` *Defines the object classes for the entry.*
- `userPassword` *Password with which the entry can bind to the directory.*
This chapter contains an alphabetic list of the standard autarkies. It gives a definition of each attribute, and gives the attribute syntax and OID.
abstract

**Definition**
Provides an abstract of a document entry.

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.102.1.9

aliasedObjectName

**Definition**
Used by the directory server to identify alias entries in the directory. Contains the distinguished name of the entry for which it is an alias.

**Note:** Alias dereferencing is not supported in iPlanet Directory Server.

For example:

aliasedObjectName: cn=jdoe, dc=siroe, dc=com

This attribute is defined in RFC 2256.

**Syntax**
DN, single-valued.

**OID**
2.5.4.1

associatedDomain

**Definition**
Specifies a DNS domain associated with an object in the directory tree. For example, the entry in the directory tree with a distinguished name c=US, o=Siroe Corporation might be associated to the domain siroe.com. Note that all domains should be represented in rfc822 order.
For example:

associatedDomain: siroe.com

This attribute is defined in RFC 1274.

**Syntax**

DirectoryString, multi-valued.

**OID**

0.9.2342.19200300.100.1.37

### associatedName

**Definition**

Specifies an entry in the organizational directory tree associated with a DNS domain.

For example:

associatedName: c=us

This attribute is defined in RFC 1274.

**Syntax**

DN, multi-valued.

**OID**

0.9.2342.19200300.100.1.38

### audio

**Definition**

Contains a sound file in binary format. The attribute uses a u-law encoded sound file.

For example:

audio:: AAAAAA==

This attribute is defined in RFC 1274.
**Syntax**
Binary, multi-valued.

**OID**
0.9.2342.19200300.100.1.55

**authorCn**

**Definition**
Contains the common name of the author of a document entry.

For example:

authorCn: Kacey

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.102.1.11

**authorSn**

**Definition**
Contains the surname of the author of a document entry.

For example:

authorSn: Doe

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.102.1.12
**authorityRevocationList**

**Definition**
Contains a list of CA certificates that have been revoked. This attribute is to be stored and requested in the binary form, as `authorityRevocationList;binary`.

For example:

```
authorityrevocationlist;binary:: AAAAAA==
```

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.38

**buildingName**

**Definition**
Defines the building name associated with the entry.

For example:

```
buildingName: B14
```

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.48

**businessCategory**

**Definition**
Identifies the type of business in which the entry is engaged. This should be a broad generalization such as is made at the corporate division level.

For example:
businessCategory: Engineering
This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.15

c (countryName)

**Definition**
Contains the two-character code representing country names, as defined by ISO, in the directory.

For example:
countryName: IE
or
c: IE
This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, single-valued.

**OID**
2.5.4.6

**CACertificate**

**Definition**
Contains the CA’s certificate. This attribute is to be stored and requested in the binary form, as CACertificate;binary.

For example:
CACertificate;binary:: AAAAA==
This attribute is defined in RFC 2256.
Syntax
Binary, multi-valued.

OID
2.5.4.37

carLicense

Definition
Identifies the entry’s automobile license plate number.

For example:
carLicense: 4MCS389
This attribute is defined in RFC 2798.

Syntax
DirectoryString, multi-valued.

OID
2.16.840.1.113730.3.1.1

certificateRevocationList

Definition
Contains a list of revoked user certificates. This attribute is to be stored and requested in the binary form, as certificateRevocationList;binary.

For example:
certificateRevocationList;binary:: AAAAAA==
This attribute is defined in RFC 2256.

Syntax
Binary, multi-valued.

OID
2.5.4.39
cn (commonName)

**Definition**
Identifies the name of an object in the directory. When the object corresponds to a person, the `cn` is typically the person’s full name.

When identifying the entry’s common name or full name:
- `commonName: Bill Anderson`
  or
- `cn: Bill Anderson`

When in reference to LDAPReplica or LDAPServer object classes:
- `commonName: replicater.iplanet.com:17430/dc%3DSiroe%2Cdc%3Dcom`
  or
- `cn: replicater.iplanet.com:17430/dc%3DSiroe%2Cdc%3Dcom`

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.3

co (friendlyCountryName)

**Definition**
Contains the name of a country. Often, the country attribute is used to describe a two-character code for a country, and the `friendlyCountryName` attribute is used to describe the actual country name.

For example:
- `friendlyCountryName: Ireland`
  or
- `co: Ireland`

This attribute is defined in RFC 1274.
cosAttribute

Description
Provides the name of the attribute for which you want to generate a value. You can specify more than one cosAttribute value. This attribute is used by all types of CoS definition entries.

This attribute is defined in iPlanet Directory Server.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.100.1.43

cosIndirectSpecifier

Description
Specifies the attribute values used by an indirect CoS to identify the template entry.

This attribute is defined in iPlanet Directory Server.

Syntax
DirectoryString, single-valued.

OID
2.16.840.1.113730.3.1.577
cosPriority

**Definition**
Specifies which template provides the attribute value, when CoS templates compete to provide an attribute value. This attribute represents the global priority of a particular template. A priority of zero is the highest priority.

This attribute is defined in iPlanet Directory Server.

**Syntax**
INTEGER, single-valued.

**OID**
2.16.840.1.113730.3.1.569

---

cosSpecifier

**Description**
Specifies the attribute value used by a classic CoS, which, along with the template entry’s DN, identifies the template entry.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, single-valued.

**OID**
2.16.840.1.113730.3.1.551

---

cosTargetTree

**Definition**
Determine the subtrees of the DIT to which the CoS schema applies. The values for this attribute for the schema and for multiple CoS schema may overlap their target trees in an arbitrary fashion.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, single-valued.
**cosTemplateDn**

**Definition**
Provides the name of the attribute for which you want to generate a value. You can specify more than one `cosAttribute` value. This attribute is used by all types of CoS definition entries.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, single-valued.

**OID**
2.16.840.1.113730.3.1.553

**crossCertificatePair**

**Definition**
This attribute contains a pair of cross signed certificates. It is to be stored and requested in the binary form, as `crossCertificatePair;binary`.

For example:
```
crosscertificatepair;binary:: AAAAA==
```

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.40
dc (domainComponent)

**Definition**
Specifies one component of a domain name.

For example:

domainComponent: siroe

or

dc: siroe

This attribute is defined in RFC 2247.

**Syntax**
DirectoryString, single-valued.

**OID**
0.9.2342.19200300.100.1.25

deltaRevocationList

**Definition**
This attribute contains the “delta revocation list”, a list of newly revoked certificates. It is to be stored and requested in the binary form, as deltaRevocationList;binary.

For example:

deltaRevocationList;binary:: AAAAA==

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.53
departmentNumber

**Definition**
Identifies the entry’s department number.

For example:

```
departmentNumber: 2604
```

This attribute is defined in RFC 2798.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.2

description

**Definition**
Provides a human-readable description of the object. For people and organizations this often includes their role or work assignment.

For example:

```
description: Quality control inspector for the ME2873 product line
```

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.13

destinationIndicator

**Definition**
The country and city associated with the entry needed to provide Public Telegram Service. Generally used in conjunction with registeredAddress.

For example:
destinationIndicator: Stow, Ohio, USA

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.27

**displayName**

**Definition**
Preferred name of a person to be used when displaying entries. Especially useful in displaying a preferred name for an entry within a one-line summary list. Since other attribute types, such as cn, are multivalued, they can not be used to display a preferred name.

For example:

displayName: Michigan Smith

This attribute is defined in RFC 2798.

**Syntax**
DirectoryString, single-valued.

**OID**
2.16.840.1.113730.3.1.241

**dITRedirect**

**Definition**
Used to indicate that the object described by one entry now has a newer entry in the directory tree. This attribute may be used when an individual’s place of work changes, and the individual acquires a new organizational DN.

For example:

ditRedirect: cn=jdoe, dc=siroe, dc=com

This attribute is defined in RFC 1274.
Syntax
DN

OID
0.9.2342.19200300.100.1.54

dmdName

Definition
The value of this attribute specifies a directory management domain (DMD), the administrative authority which operates the directory server.

For example:

dmdName: siroe.com

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.54

dn (distinguishedName)

Definition
Defines the distinguished name (dn) for the entry.

For example:

dn: cn=Jane Doe, ou=Quality Control, dc=siroe, dc=com

This attribute is defined in RFC 2256.

Syntax
DN

OID
2.5.4.49
dNSRecord

**Definition**
Specifies DNS resource records, including type A (Address), type MX (Mail Exchange), type NS (Name Server), and type SOA (Start Of Authority) resource records.

For example:

dNSRecord: IN NS ns.uu.net

This attribute is defined in Internet directory pilot.

**Syntax**
IA5String, multi-valued.

**OID**
0.9.2342.19200300.100.1.26

documentAuthor

**Definition**
Contains the distinguished name of the author of a document entry.

For example:

documentAuthor: cn=John Doe, dc=siroe, dc=com

This attribute is defined in RFC 1274.

**Syntax**
DN, multi-valued.

**OID**
0.9.2342.19200300.100.1.14

documentIdentifier

**Definition**
Specifies a unique identifier for a document.

For example:
This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.11

documentLocation

**Definition**
Defines the location of the original copy of a document entry.

For example:
documentLocation: Department Library

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.15

documentPublisher

**Definition**
The person and/or organization that published a document.

For example:
documentPublisher: Southeastern Publishing

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, single-valued.

**OID**
0.9.2342.19200300.100.1.56
documentStore

**Definition**
This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.102.1.10

documentTitle

**Definition**
Contains the title of a document entry.

For example:

documentTitle: Directory Administrator’s Guide

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.12

documentVersion

**Definition**
Defines the version of a document entry.

For example:

documentVersion: 1.1

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.
**drink (favouriteDrink)**

**Definition**
Describes the favorite drink of a person entry.

For example:

- `drink: soda`
- `favouriteDrink: soda`

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**dSAQuality**

**Definition**
Specifies the purported quality of a DSA. This attribute allows a DSA manager to indicate the expected level of availability of the DSA.

For example:

- `dSAQuality: high`

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, single-valued.
**employeeNumber**

**Definition**
Identifies the entry’s employee number.

For example:

```
employeeNumber: 3440
```

This attribute is defined in RFC 2798.

**Syntax**
DirectoryString, single-valued.

**OID**
2.16.840.1.113730.3.1.3

**employeeType**

**Definition**
Identifies the entry’s type of employment.

For example:

```
employeeType: Full time
```

This attribute is defined in RFC 2798.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.4

**enhancedSearchGuide**

**Definition**
Used by X.500 clients when constructing search filters.

For example:

```
enhancedSearchGuide: (uid=mhughes)
```
This attribute is defined in RFC 2798.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.47

**fax (facsimileTelephoneNumber)**

**Definition**
Identifies the fax number at which the entry can be reached. Abbreviation: fax

For example:
facsimileTelephoneNumber: 415-555-1212
or:
fax: 415-555-1212

This attribute is defined in RFC 2256.

Syntax
TelephoneNumber, multi-valued.

OID
2.5.4.23

**generationQualifier**

**Definition**
Contains the generation Qualifier part of the name, typically appearing in the suffix.

For example:
generationqualifier: Jr

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.
OID
2.5.4.44

givenName

Definition
Identifies the entry’s given name, usually a person’s first name.

For example:
givenName: Hecuba

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.42

homePhone

Definition
Identifies the entry’s home phone number.

For example:
homeTelephoneNumber: 415-555-1212
or
homePhone: 415-555-1212

This attribute is defined in RFC 1274.

Syntax
TelephoneNumber, multi-valued.

OID
0.9.2342.19200300.100.1.20
homePostalAddress

**Definition**  
Identifies the entry’s home mailing address. This field is intended to include multiple lines, but each line within the entry should be separated by a dollar sign ($). To represent an actual dollar sign ($) or backslash (\) within this text, use the escaped hex values \24 and \5c respectively.

To identify an entry’s home mailing address:

```
homePostalAddress: 1234 Ridgeway Drive$Santa Clara, CA$99555
```

Additionally, to represent the string:

```
The dollar ($) value can be found in the c:\cost file.
```

provide the string:

```
The dollar (\24) value can be found$in the c:\5ccost file.
```

This attribute is defined in RFC 1274.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
0.9.2342.19200300.100.1.39

host

**Definition**  
Defines the hostname of a computer.

For example:

```
host: mozilla
```

This attribute is defined in RFC 1274.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
0.9.2342.19200300.100.1.9
houseIdentifier

Definition
Identifies a building in a location.

For example:

```
houseIdentifier: B105
```

This attribute is defined in RFC 2256.

Syntx
DirectoryString, multi-valued.

OID
2.5.4.51

info

Definition
Specifies any general information pertinent to an object. It is recommended that specific usage of this attribute type is avoided, and that specific requirements are met by other (possibly additional) attribute types.

For example:

```
info: not valid
```

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.100.1.4

initials

Definition
Identifies the entry’s initials. Does not identify the entry’s surname.

For example:
initials: BFA
This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.43

internationalISDNNumber

Definition
Contains the ISDN number of the entry. This is in the internationally agreed format for ISDN addresses given in CCITT Rec. E. 164.

For example:
internationalISDNNumber: +SO 812467

This attribute is defined in RFC 2256.

Syntax
IA5String, multi-valued.

OID
2.5.4.25

janetMailbox

Definition
Specifies an email address. This attribute is intended for the convenience of UK users unfamiliar with rfc822 mail addresses. Entries using this attribute must also include an rfc822Mailbox attribute.

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.100.1.46
**jpegPhoto**

**Definition**
Contains a JPEG photo of the entry.

For example:
```
jpegPhoto:: AAAAAA==
```
This attribute is defined in RFC 2798.

**Syntax**
Binary, multi-valued.

**OID**
0.9.2342.19200300.100.1.60

---

**keyWords**

**Definition**
Contains keywords for the entry.

For example:
```
keyWords: directory LDAP X.500
```
This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.102.1.7

---

**knowledgeInformation**

**Definition**
This attribute is no longer used.

This attribute is defined in RFC 2256.
Syntax
DirectoryString, multi-valued.

OID
2.5.4.2

l (localityName)

Definition
Identifies the county, city, or other geographical area in which the entry is located or with which it is in some other way associated.

For example:
l: Santa Clara

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.7

labeledURI

Definition
Specifies a Uniform Resource Identifier (URI) that is relevant in some way to the entry. Values placed in the attribute should consist of a URI (currently only URLs are supported) optionally followed by one or more space characters and a label.

For example:
labeledURI: http://home.iplanet.com
labeledURI: http://home.iplanet.com iPlanet website

This attribute is defined in RFC 2079.
Syntax
IA5String, multi-valued.

OID
1.3.6.1.4.1.250.1.57

lastModifiedBy

Definition
Specifies the distinguished name of the last user to modify the associated entry.

For example:
lastModifiedby: cn=Jane Doe,ou=Quality Control,dc=siroe, dc=com

This attribute is defined in RFC 1274.

Syntax
DN, multi-valued.

OID
0.9.2342.19200300.100.1.24

lastModifiedTime

Definition
Defines the last time, in UTC format, that a change was made to the entry.

For example:
lastModifiedTime: Thursday, 22-Sep-93 14:15:00 GMT

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.100.1.23
**mail**

**Definition**
Identifies a user’s primary email address (the email address retrieved and displayed by “white-pages” lookup applications).

For example:

mail: banderson@siroe.com

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.3

**mailPreferenceOption**

**Definition**
Not used in Messaging Server 4.0.

Indicates a preference for inclusion of user names on mailing lists (electronic or physical). Accepted values include:

- 0: user doesn’t want to be included in mailing lists.
- 1: user consents to be added to any mailing list.
- 2: user only wants to be added to mailing lists which the list provider views as relevant to the user’s professional interests.

The absence of this attribute for a person should be interpreted as if the attribute was present with value "no-list-inclusion". This attribute should be interpreted by anyone using the directory to derive mailing lists, and its value respected.

For example:

mailPreferenceOption:0

This attribute is defined in RFC 1274.

**Syntax**
INTEGER, single-valued.
OID
0.9.2342.19200300.100.1.47

manager

**Definition**
Identifies the distinguished name of the entry’s manager.

For example:

```
manager: cn=Jane Doe, ou=Quality Control, dc=siroe, dc=com
```

This attribute is defined in RFC 1274.

**Syntax**
DN, multi-valued.

**OID**
0.9.2342.19200300.100.1.10

member

**Definition**
Identifies the distinguished names for each member of the group.

For example:

```
member: cn=John Doe, dc=siroe, dc=com
```

This attribute is defined in RFC 2256.

**Syntax**
DN, multi-valued.

**OID**
2.5.4.31
**memberCertificateDescription**

**Definition**
This attribute is a multivalued attribute, where each value is a description, a pattern, or a filter matching the subject DN of a certificate (usually certificates used for SSL client authentication).

memberCertificateDescription matches any certificate that contains a subject DN with the same AVAs as the description. The description may contain multiple "ou=" AVAs. A matching DN must contain those same "ou=" AVAs, in the same order, although it may contain other AVAs (including other "ou=" AVAs) interspersed. For any other attribute type (not ou), there should be at most one AVA of that type in the description. If there are several, all but the last are ignored.

A matching DN must contain that same AVA, but no other AVA of the same type nearer the root (later, syntactically).

AVAs are considered the same if they contain the same attribute description (case-insensitive comparison) and the same attribute value (case-insensitive comparison, leading and trailing whitespace ignored, and consecutive whitespace characters treated as a single SP).

In order to be considered a member of a group with the following memberCertificateDescription, a certificate would need to include ou=x, ou=A, and o=siroe, but not o=company.

*memberCertificateDescription: {ou=x, ou=A, o=siroe}*

In order to match the group’s requirements, a certificate’s subject DNs must contain the same ou attribute types in the same order as defined in the memberCertificateDescription attribute.

This attribute is defined in iPlanet Directory Server.

**Syntax**
IA5String, multi-valued.

**OID**
2.16.840.1.113730.3.1.199
memberURL

**Definition**
Identifies an URL associated with each member of a group. Any type of labeled URL can be used.

For example:

```
memberURL: ldap:///cn=jdoe,dc=siroe,dc=com
```

This attribute is defined in iPlanet Directory Server.

**Syntax**
IA5String, multi-valued.

**OID**
2.16.840.1.113730.3.1.198

mobile

**Definition**
Identifies the entry’s mobile or cellular phone number. Abbreviation: mobile

For example:

```
mobileTelephoneNumber: 415-555-4321
```

or

```
mobile: 415-555-4321
```

This attribute is defined in RFC 1274.

**Syntax**
TelephoneNumber, multi-valued.

**OID**
0.9.2342.19200300.100.1.41
multiLineDescription

**Definition**
Provides descriptive text for a mail user. When represented in LDIF format, each line should be separated by a dollar sign ($). The Directory Server expects 0 or 1 occurrences of this attribute per mail account.

For example:

multiLineDescription: Account Administrator and$directory manager.

To represent an actual dollar sign ($) or backslash (\) within this text, use the escaped hex values \24 and \5c respectively. For example, to represent the string:

The dollar ($) value can be found in the c:\cost file.

provide the string:

The dollar (\24) value can be found$in the c:\5ccost file.

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DirectoryString, multi-valued.

**OID**
1.3.6.1.4.1.250.1.2

name

**Definition**
Identifies the attribute supertype from which string attribute types used for naming may be formed. It is unlikely that values of this type will occur in an entry. LDAP server implementations that do not support attribute subtyping do not need to recognize this attribute in requests. Client implementations should not assume that LDAP servers are capable of performing attribute subtyping.

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.41
**nsLicensedFor**

**Definition**
Identifies the Netscape server the user is licensed to use. The Netscape Administration Server expects each `nsLicenseUser` entry to contain zero or more instances of this attribute. Valid keywords for this attribute are currently:

- mail: the user is a licensed client of the Messaging Server.
- new: the user is a licensed client of the Collabra Server.
- slapd: the user is a licensed client of the Directory Server.
- cal: the user is a licensed client of the Calendar Server.

For example:

```
nsLicensedFor: slapd
```

This attribute is defined in iPlanet Administration Services.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.36

---

**nsLicenseEndTime**

**Definition**
Reserved for future use.

This attribute is defined in iPlanet Administration Services.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.38
nsLicenseStartTime

**Definition**
Reserved for future use.

This attribute is defined in iPlanet Administration Services.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.37

---

**o (organizationName)**

**Definition**
Identifies the name of the organization.

For example:
organizationName: Siroe, Inc.

or

o: Siroe, Inc

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.10

---

**objectClass**

**Definition**
Specifies the object classes of the object. Must include the object.

For example:

objectClass: person
This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.0

**obsoletedByDocument**

**Definition**
Contains the distinguished name of a document that obsoletes the document entry.

For example:

```
```

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DN, multi-valued.

**OID**
0.9.2342.19200300.102.1.4

**obsoletesDocument**

**Definition**
Contains the distinguished name of a document that is obsoleted by the document entry.

For example:

```
```

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DN, multi-valued.
organizationalStatus

Definition
Specifies a category by which a person is often referred to in an organization.

For example:
organizationalStatus: researcher

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.100.1.45

otherMailbox

Definition
Specifies values for electronic mailbox types other than X.400 and rfc822.

For example:
otherMailbox: Telemail: x378: Joe

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.101.1.22
ou (organizationUnitName)

**Definition**
Identifies the name of an organizational unit.

For example:

```
organizationUnitName: Marketing
```

or

```
ou: Marketing
```

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.11

owner

**Definition**
Identifies the distinguished name of the person responsible for the entry.

For example:

```
owner: cn=Babs Jensen, dc=siroe, dc=com
```

This attribute is defined in RFC 2256.

**Syntax**
DN, multi-valued.

**OID**
2.5.4.32

pager

**Definition**
Identifies the entry’s pager phone number. Abbreviation: pager.
For example:

`pagerTelephoneNumber: 415-555-6789`

or

`pager: 415-555-6789`

This attribute is defined in RFC 1274.

**Syntax**

TelephoneNumber, multi-valued.

**OID**

0.9.2342.19200300.100.1.42

---

**personalSignature**

**Definition**

A signature file, in binary format, for the entry.

For example:

`personalSignature:: AAAAA==`

This attribute is defined in RFC 1274.

**Syntax**

Binary, multi-valued.

**OID**

0.9.2342.19200300.100.1.53

---

**personalTitle**

**Definition**

Specifies a personal title for a person. Examples of personal titles are "Ms", "Dr", "Prof" and "Rev".

For example:

`personalTitle: Mr`

This attribute is defined in RFC 1274.
photo

Definition
Contains a photo, in binary form, of the entry.

For example:

photo:: AAAAAA==

This attribute is defined in RFC 1274.

Syntax
Binary, multi-valued.

OID
0.9.2342.19200300.100.1.7

physicalDeliveryOfficeName

Definition
Identifies the name of the city or village in which a physical delivery office is located.

For example:

physicalDeliveryOfficeName: Santa Clara

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.19
**postalAddress**

**Definition**
Identifies the entry’s mailing address. This field is intended to include multiple lines. When represented in LDIF format, each line should be separated by a dollar sign ($).

For example:

```
P.O. Box 3541
Santa Clara, CA 99955
```

To represent an actual dollar sign ($) or backslash (\) within the text, use the escaped hex values \24 and \5c respectively.

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.16

---

**postalCode**

**Definition**
Identifies the entry’s zip code in the United States.

For example:

```
postalCode: 44224
```

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.17
**postOfficeBox**

**Definition**
Specifies a postal mailing address.

For example:

postOfficeBox: P.O. Box 1234

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.18

**preferredDeliveryMethod**

**Definition**
Identifies the entry’s preferred contact or delivery method.

For example:

preferredDeliveryMethod: telephone

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, single-valued.

**OID**
2.5.4.28

**preferredLanguage**

**Definition**
Defines a person’s preferred written or spoken language. The value for this attribute should conform to the syntax for HTTP Accept-Language header values.

For example:
preferredLanguage: en-us
This attribute is defined in RFC 2798.

Syntax
DirectoryString, single-valued.

OID
2.16.840.1.113730.3.1.39

presentationAddress

Definition
Contains an OSI presentation address for the entry. The presentation address consists of an OSI Network Address and up to three selectors, one each for use by the transport, session, and presentation entities.

For example:

presentationAddress: TELEX+00726322+RFC-1006+02+130.59.2.1

This attribute is defined in RFC 2256.

Syntax
IA5String, single-valued.

OID
2.5.4.29

protocolInformation

Definition
Used in conjunction with the presentationAddress attribute to provide additional information to the OSI network service.

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.48
ref

Description
Used in LDAPv3 to support smart referrals. Contains an LDAP URL in the format:

ldap://<servername>:<portnumber>/<dn>

The port number is optional.

For example:

ref: ldap://server.acme.com:389/ou=People, o=acme.com

This attribute is defined in LDAPv3 referrals Internet Draft.

Syntax
IA5String, multi-valued.

OID
2.16.840.1.113730.3.1.34

registeredAddress

Definition
This attribute contains a postal address for receiving telegrams or expedited documents. The recipient’s signature is usually required on delivery.

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.26

roleOccupant

Definition
Contains the distinguished name of the person acting in the role defined in the organizationalRole entry.

For example:
roleOccupant: uid=jdoe, dc=siroe, dc=com

This attribute is defined in RFC 2256.

**Syntax**
DN, multi-valued.

**OID**
2.5.4.33

---

**roomNumber**

**Definition**
Specifies the room number of an object. Note that the commonName attribute should be used for naming room objects.

For example:

roomNumber: 230

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.6

---

**searchGuide**

**Definition**
Specifies information for a suggested search criteria when using the entry as the base object in the directory tree for a search operation. When constructing search filters, use enhancedSearchGuide instead.

This attribute is defined in RFC 2256.

**Syntax**
IA5String, multi-valued.
OID
2.5.4.14

secretary

Definition
Identifies the entry’s secretary or administrative assistant.

For example:

secretary: cn=John Doe, dc=siroe, dc=com

This attribute is defined in RFC 1274.

Syntax
DN, multi-valued.

OID
0.9.2342.19200300.100.1.21

seeAlso

Definition
Identifies another directory server entry that may contain information related to this entry.

For example:

seeAlso: cn=Quality Control Inspectors, ou=manufacturing, dc=siroe, dc=com

This attribute is defined in RFC 2256.

Syntax
DN, multi-valued.

OID
2.5.4.34
serialNumber

**Definition**
Specifies the serial number of a device.

For example:

```plaintext
serialNumber: 555-1234-AZ
```

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.5

singleLevelQuality

**Definition**
Specifies the purported data quality at the level immediately below in the DIT.

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, single-valued.

**OID**
0.9.2342.19200300.100.1.50

sn (surname)

**Definition**
Identifies the entry’s surname, also referred to as last name or family name.

For example:

```plaintext
surname: Anderson
```

or

```plaintext
sn: Anderson
```
This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.4

### st (stateOrProvinceName)

**Definition**
Identifies the state or province in which the entry resides. Abbreviation: st.

For example:

```plaintext
stateOrProvinceName: California
or
st: California
```

This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.4.8

### street

**Definition**
Identifies the entry’s house number and street name.

For example:

```plaintext
streetAddress: 1234 Ridgeway Drive
or
street: 1234 Ridgeway Drive
```

This attribute is defined in RFC 2256.
Syntax
DirectoryString, multi-valued.

OID
2.5.4.9

subject

Definition
Contains information about the subject matter of the document entry.
For example:
subject: employee option grants
This attribute is defined in Internet White Pages Pilot.

Syntax
DirectoryString, multi-valued.

OID
0.9.2342.19200300.102.1.8

subtreeMaximumQuality

Definition
Specifies the purported maximum data quality for a DIT subtree.
This attribute is defined in RFC 1274.

Syntax
DirectoryString, single-valued.

OID
0.9.2342.19200300.100.1.52
subtreeMinimumQuality

**Definition**
Specifies the purported minimum data quality for a DIT subtree.
This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, single-valued.

**OID**
0.9.2342.19200300.100.1.51

supportedAlgorithms

**Definition**
This attribute is to be stored and requested in the binary form, as
supportedAlgorithms;binary.
For example:
supportedAlgorithms:: AAAAAA==
This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.52

supportedApplicationContext

**Definition**
This attribute contains the identifiers of OSI application contexts.
This attribute is defined in RFC 2256.

**Syntax**
DirectoryString, multi-valued.
OID
2.5.4.30

telephoneNumber

Definition
Identifies the entry’s phone number.

For example:
telephoneNumber: 415-555-2233

This attribute is defined in RFC 2256.

Syntax
TelephoneNumber, multi-valued.

OID
2.5.4.20

teletexTerminalIdentifier

Definition
Identifies the entry’s teletex terminal identifier. The format of the attribute is as follows:

teletex-id = ttx-term 0*"$" ttx-param
ttx-term = printablestring
ttx-param = ttx-key ":" ttx-value
ttx-key = "graphic" / "control" / "misc" / "page" / "private"
ttx-value = octetstring

In the above, the first printable string is the encoding of the first portion of the
teletex terminal identifier to be encoded, and the subsequent 0 or more octet strings
are subsequent portions of the teletex terminal identifier.

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.
OID 2.5.4.22

telexNumber

Definition
Defines the telex number of the entry. The format of the telex number is as follows:

actual-number "$" country "$" answerback

where:

• actual-number: the syntactic representation of the number portion of the TELEX number being encoded.
• country: the TELEX country code.
• answerback: the answerback code of a TELEX terminal.

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID 2.5.4.21

textEncodedORAddress

Definition
Defines the text-encoded Originator/Recipient (X.400) address of the entry as defined in RFC987.

For example:
textEncodedORAddress: /S=doe/OU=eng/O=siroe/ADMD=telemail/C=us/

This attribute is defined in RFC 1274.

Syntax
DirectoryString, multi-valued.
OID
0.9.2342.19200300.100.1.2

title

Definition
Identifies the title of a person in the organization.

For example:

```
title: Senior QC Inspector
```

This attribute is defined in RFC 2256.

Syntax
DirectoryString, multi-valued.

OID
2.5.4.12

ttl (timeToLive)

Definition
Contains the time, in seconds, that cached information about an entry should be considered valid. Once the specified time has elapsed, the information is considered out of date. A value of zero (0) indicates that the entry should not be cached. Abbreviation: ttl.

For example:

```
timeToLive: 120
```
or

```
ttl: 120
```

This attribute is defined in LDAP Caching Internet Draft.

Syntax
DirectoryString, multi-valued.

OID
1.3.6.1.4.1.250.1.60
uid (user ID)

**Definition**
Identifies the entry’s userid (usually the logon ID). Abbreviation: uid.

For example:
user id: banderson
or
uid: banderson
This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.1

**uniqueIdentifier**

**Definition**
Identifies a specific item used to distinguish between two entries when a distinguished name has been reused. This attribute is intended to detect instance of a reference to a distinguished name that has been deleted. This attribute is assigned by the server.

For example:
uniqueIdentifier: 17B
This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.44
**uniqueMember**

**Definition**
Identifies a group of names associated with an entry where each name was given a uniqueldentifier to ensure its uniqueness. A value for the uniqueMember attribute is a DN followed by the uniqueldentifier.

For example:

uniqueMember: cn=John Doe, dc=siroe, dc=com

This attribute is defined in RFC 2256.

**Syntax**
DN, multi-valued.

**OID**
2.5.4.50

**updatedByDocument**

**Definition**
Contains the distinguished name of a document that is an updated version of the document entry.

For example:


This attribute is defined in Internet White Pages Pilot.

**Syntax**
DN, multi-valued.

**OID**
0.9.2342.19200300.102.1.6
updatesDocument

**Definition**
Contains the distinguished name of a document for which this document is an updated version.

For example:

```
```

This attribute is defined in Internet White Pages Pilot.

**Syntax**
DN, multi-valued.

**OID**
0.9.2342.19200300.102.1.5

userCertificate

**Definition**
This attribute contains a certificate. It is to be stored and requested in the binary form, as `userCertificate;binary`.

For example:

```
userCertificate;binary:: AAAAAA==
```

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.36
userClass

**Definition**
Specifies a category of computer user. The semantics of this attribute are arbitrary. The organizationalStatus attribute makes no distinction between computer users and others users and may be more applicable.

For example:

```
userClass: intern
```

This attribute is defined in RFC 1274.

**Syntax**
DirectoryString, multi-valued.

**OID**
0.9.2342.19200300.100.1.8

userPassword

**Definition**
Identifies the entry’s password and encryption method in the following format:

```
{encryption method}encrypted password
```

Transfer of clear text passwords is strongly discouraged where the underlying transport service cannot guarantee confidentiality. Transfer of clear text may result in disclosure of the password to unauthorized parties.

For example:

```
userPassword: {ssha}9LsFG7RT+dFnPErwSfxD1aQ7n6dbIFGklMNFRr==
```

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.35
userPKCS12

Definition
This attribute provides a format for the exchange of personal identity information. The attribute is to be stored and requested in binary form, as userPKCS12;binary. The attribute values are PFX PDUs stored as binary data.

This attribute is defined in RFC 2798.

Syntax
Binary, multi-valued.

OID
2.16.840.1.113730.3.1.216

userSMIMECertificate

Definition
Used by Netscape Communicator for S/MIME. This attribute is to be stored and requested in the binary form, as userSMIMECertificate;binary.

For example:
userSMIMECertificate;binary:: AAAAAA==

This attribute is defined in RFC 2798.

Syntax
Binary, multi-valued.

OID
2.16.840.1.113730.3.1.40

x121Address

Definition
Defines the X.121 address of a person.

This attribute is defined in RFC 2256.
**x500UniqueIdentifier**

**Definition**
Reserved for future use. A binary method of identification useful for differentiating objects when a distinguished name has been reused.

For example:

```plaintext
x500UniqueIdentifier: 17B
```

This attribute is defined in RFC 2256.

**Syntax**
Binary, multi-valued.

**OID**
2.5.4.45
Operational Attributes, Special Attributes and Special Object Classes

This chapter describes operational attributes used by the directory server. Operational attributes may be available for use on every entry in the directory, regardless of whether they are defined for the object class of the entry. Operational attributes are only returned in an `ldapsearch` operation if specifically requested. This chapter also describes some special attributes and object classes, that are used by the server. When an object class inherits attributes from other object classes, the inherited attributes are shown in italics.
Operational Attributes

accountUnlockTime

**Definition**
This refers to the exact time after which the entry can be used for authentication.

This attribute is defined in iPlanet Directory Server.

**Syntax**
GeneralizedTime, single-valued

**OID**
2.16.840.1.113730.3.1.95

aci

**Definition**
Used by the directory server to evaluate what rights are granted or denied when it receives an LDAP request from a client.

This attribute is defined in iPlanet Directory Server.

**Syntax**
IA5String, multi-valued

**OID**
2.16.840.1.113730.3.1.55

altServer

**Definition**
The values of this attribute are URLs of other servers which may be contacted when this server becomes unavailable. If the server does not know of any other servers which could be used, this attribute is absent. You may cache this information in case your preferred LDAP server later becomes unavailable.

This attribute is defined in RFC 2252.
attributeTypes

Definition
Multi-valued attribute that specifies the attribute types used within a subschema. Each value describes a single attribute.

This attribute is defined in RFC 2252.

Syntax
DirectoryString, multi-valued.

OID
2.5.21.5

copiedFrom

Definition
Used by read-only replica to recognize master data source. Contains a reference to the server that holds the master data. Note that this attribute is only used for legacy replication. It is not used for multi master replication.

This attribute is defined in iPlanet Directory Server.

Syntax
DirectoryString, single-valued.

OID
2.16.840.1.113730.3.1.613
copyingFrom

**Definition**
Used by read-only replica to recognize master data source while replication is in progress. Contains a reference to the server that holds the master data. Note that this attribute is only used for legacy replication. It is not used for multi master replication.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, single-valued.

**OID**
2.16.840.1.113730.3.1.614

dITContentRules

**Definition**
Multi-valued attribute that defines the DIT content rules which are in force within a subschema. Each value defines one DIT content rule. Each value is tagged by the object identifier of the structural object class to which it pertains.

*Note:* iPlanet Directory Server does not support or use this attribute.

This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.21.2

dITStructureRules

**Definition**
Multi-valued attribute that defines the DIT structure rules which are in force within a subschema. Each value defines one DIT structure rule.

*Note:* iPlanet Directory Server does not support or use this attribute.
This attribute is defined in RFC 2252.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
2.5.21.1

### ldapSyntaxes

**Definition**  
This attribute identifies the syntaxes implemented, with each value corresponding to one syntax.

This attribute is defined in RFC 2252.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
1.3.6.1.4.1.1466.101.120.16

### matchingRules

**Definition**  
Multi-valued attribute that defines the matching rules used within a subschema. Each value defines one matching rule.

This attribute is defined in RFC 2252.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
2.5.21.4
matchingRuleUse

**Definition**
Used to indicate the attribute types to which a matching rule applies in a subschema.

This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.21.8

nameForms

**Definition**
Multi-valued attribute that defines the name forms used in a subschema. Each value defines one name form.

**Note:** iPlanet Directory Server does not support or use this attribute.

This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.5.21.7

namingContexts

**Definition**
Corresponds to a naming context the server is mastering or shadowing. When the directory server does not master any information (for example, it is an LDAP gateway to a public X.500 directory), this attribute is absent. When the directory server believes it contains the entire directory, the attribute has a single value, and that value is the empty string (indicating the null DN of the root). This attribute permits a client contacting a server to choose suitable base objects for searching.
This attribute is defined in RFC 2252.

**Syntax**
DN, multi-valued.

**OID**
1.3.6.1.4.1.1466.101.120.5

### nsds5replconflict

**Definition**
This attribute is a conflict marker attribute. It is included on entries that have a change conflict that cannot be resolved automatically by the replication process.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.973

### nsRole

**Definition**
This attribute is a computed attribute that is not stored with the entry itself. It identifies which roles an entry belongs to.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DN, multi-valued.

**OID**
2.16.840.1.113730.3.1.574
nsRoleDN

**Definition**
This attribute contains the distinguished name of each managed role to which the entry belongs. Membership of a managed role is conferred upon an entry by adding the role’s DN to the entry’s nsRoleDN attribute.

This attribute is not to be confused with the generated nsRole attribute that contains the DN of all roles to which the entry belongs, as computed by the Directory Server. Use nsRoleDN to set managed role membership, and use nsRole to read all roles.

For example:

```plaintext
dn: cn=staff,ou=People,dc=siroe,dc=com
objectclass: LDAPsubentry
objectclass: nsRoleDefinition
objectclass: nsSimpleRoleDefinition
objectclass: nsManagedRoleDefinition

dn: uid=bjensen,ou=People,dc=siroe,dc=com
objectclass: top
objectclass: person
sn: Jensen
cn: Babs Jensen
uid: bjensen
nsroledn: cn=staff,ou=People,dc=siroe,dc=com
```

A nested role specifies containment of one or more roles of any type. In that case, nsRoleDN defines the DN of the contained roles.

For example:

```plaintext
dn: cn=everybody,o=IPlanet,o=airius.com
objectclass: LDAPsubentry
objectclass: nsRoleDefinition
objectclass: nsComplexRoleDefinition
objectclass: nsNestedRoleDefinition
nsroledn: cn=manager,ou=People,dc=siroe,dc=com
nsroledn: cn=staff,ou=People,dc=siroe,dc=com
```

This attribute is defined in iPlanet Directory Server.

**Syntax**
DN, multi-valued.

**OID**
2.16.840.1.113730.3.1.575
numSubordinates

**Description**  
Indicates how many immediate subordinates an entry has.

For example, `numSubordinates=0` in a leaf entry.

This attribute is defined in numSubordinates Internet Draft.

**Syntax**  
INTEGER, single-valued.

**OID**  
1.3.1.1.4.1.453.16.2.103

objectClasses

**Definition**  
Multi-valued attribute that defines the object classes used in a subschema. Each value defines one object class.

This attribute is defined in RFC 2252.

**Syntax**  
DirectoryString, multi-valued.

**OID**  
2.5.21.6

passwordAllowChangeTime

**Definition**  
Used to specify the exact time after which the user is allowed to change their password.

This attribute is defined in iPlanet Directory Server.

**Syntax**  
GeneralizedTime, single-valued.
Operational Attributes

OID
2.16.840.1.113730.3.1.214

passwordExpirationTime

Definition
Used to specify the exact time after which the user's password expires.
This attribute is defined in iPlanet Directory Server.

Syntax
GeneralizedTime, single-valued.

OID
2.16.840.1.113730.3.1.91

passwordExpWarned

Definition
Used to indicate that a password expiration warning has been sent to the user.
This attribute is defined in iPlanet Directory Server.

Syntax
DirectoryString, single-valued.

OID
2.16.840.1.113730.3.1.92

passwordHistory

Definition
Contains the history of the user's previous passwords.
This attribute is defined in iPlanet Directory Server.

Syntax
Binary, multi-valued.
**passwordRetryCount**

**Definition**
Used to count the number of consecutive failed attempts at entering the correct password.

This attribute is defined in iPlanet Directory Server.

**Syntax**
INTEGER, single-valued.

**OID**
2.16.840.1.113730.3.1.96

**retryCountResetTime**

**Definition**
Specifies the exact time after which the passwordRetryCount is reset.

This attribute is defined in iPlanet Directory Server.

**Syntax**
GeneralizedTime, single-valued.

**OID**
2.16.840.1.113730.3.1.93

**subschemaSubentry**

**Definition**
DN of the entry that contains schema information for this entry. This attribute is present for every entry in the directory.

For example:

subschemaSubentry: cn=schema
Operational Attributes

This attribute is defined in RFC 2252.

**Syntax**
DN, single-valued.

**OID**
2.5.18.10

**supportedControl**

**Definition**
The values of this attribute are the object identifiers (OIDs) that identify the controls supported by the server. When the server does not support controls, this attribute is absent.

This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
1.3.6.1.4.1.1466.101.120.13

**supportedExtension**

**Definition**
The values of this attribute are the object identifiers (OIDs) that identify the supported extended operations supported by the server. When the server does not support extensions, this attribute is absent.

This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
1.3.6.1.4.1.1466.101.120.7
supportedLDAPVersion

**Definition**
Identifies the versions of the LDAP protocol implemented by the server.
This attribute is defined in RFC 2252.

**Syntax**
INTEGER, multi-valued.

**OID**
1.3.6.1.4.1.1466.101.120.15

supportedSASLMechanisms

**Definition**
Identifies the names of supported SASL mechanisms supported by the server.
When the server does not support SASL attributes, this attribute is absent.
This attribute is defined in RFC 2252.

**Syntax**
DirectoryString, multi-valued.

**OID**
1.3.6.1.4.1.1466.101.120.14
Special Object Classes

changeLogEntry

**Definition**
Used to represent changes made to the directory server. You can configure iPlanet Directory Server 5.1 to maintain a change log that is compatible with the change log implemented in Directory Server 4.1, 4.1, 4.11, 4.12, and 4.13 by enabling the Retro Changelog plug-in. Each entry in the change log has the object class changeLogEntry.

This object class is defined in Changelog Internet Draft.

**Superior Class**
top

**OID**
2.16.840.1.113730.3.2.1

**Required Attributes**

- **objectClass**: Defines the object classes for the entry.
- **changeNumber**: Number assigned arbitrarily to the changelog.
- **changeTime**: The time at which a change took place.
- **changeType**: The type of change performed on an entry.
- **targetDn**: The distinguished name of an entry added, modified or deleted on a supplier server.

**Allowed Attributes**

- **changes**: Changes made to the directory server.
- **deleteOldRdn**: A flag that defines whether the old Relative Distinguished Name (RDN) of the entry should be kept as a distinguished attribute of the entry, or should be deleted.
- **newRdn**: New RDN of an entry that is the target of a modRDN or modDN operation.
passwordObject

Definition
Stores password information for a user in the directory.

This object class is defined in iPlanet Directory Server.

Superior Class
top

OID
2.16.840.1.113730.3.2.12

Required Attributes

objectClass Defines the object classes for the entry.

Allowed Attributes

accountUnlockTime Refers to the amount of time that must pass after an account lockout before the user can bind to the directory again.

passwordAllowChangeTime Used to specify the length of time that must pass before the user is allowed to change their password.

passwordExpirationTime Used to specify the length of time that passes before the user's password expires.

passwordExpWarned Used to indicate that a password expiration warning has been sent to the user.

passwordHistory Contains the history of the user's previous passwords.

passwordRetryCount Used to count the number of consecutive failed attempts at entering the correct password.

retryCountResetTime Specifies the length of time that passes before the passwordRetryCount is reset.
subschema

**Definition**
An auxiliary object class subentry used to administer the subschema for the subschema administrative area. It holds the operational attributes representing the policy parameters used to express the subschema.

This object class is defined in RFC 2252.

**Superior Class**
top

**OID**
2.5.20.1

**Required Attributes**

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Special Attributes

changes

**Description**
For add and modify operations, contains the changes made to the entry, in LDIF format.

This attribute is defined in Changelog Internet Draft.

**Syntax**
Binary, multi-valued.

**OID**
2.16.840.1.113730.3.1.8

changeLog

**Description**
The distinguished name of the entry which contains the set of entries comprising the servers changelog.

This attribute is defined in Changelog Internet Draft.

**Syntax**
DN, multi-valued.

**OID**
2.16.840.1.113730.3.1.35

changeNumber

**Description**
This single-valued attribute is always present. It contains an integer which uniquely identifies each change made to a directory entry. This number is related to the order in which the change occurred. The higher the number, the later the change.
This attribute is defined in Changelog Internet Draft.

**Syntax**
INTEGER, multi-valued.

**OID**
2.16.840.1.113730.3.1.5

### changeTime

**Description**
Defines a time, in a YYMMDDHHMMSS format, when the entry was added.

This attribute is defined in iPlanet Directory Server.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.77

### changeType

**Description**
Specifies the type of LDAP operation. This attribute can have one of the following values: **add, delete, modify, or modrdn**.

For example:

```
changeType: modify
```

This attribute is defined in Changelog Internet Draft.

**Syntax**
DirectoryString, multi-valued.

**OID**
2.16.840.1.113730.3.1.7
deleteOldRdn

Description
In the case of modrdn operations, specifies whether the old RDN was deleted.
This attribute is defined in Changelog Internet Draft.

Syntax
Boolean, multi-valued.

OID
2.16.840.1.113730.3.1.10

newRdn

Description
In the case of modrdn operations, specifies the new RDN of the entry.
This attribute is defined in Changelog Internet Draft.

Syntax
DN, multi-valued.

OID
2.16.840.1.113730.3.1.9

newSuperior

Description
In the case of modrdn operations, specifies the newSuperior attribute of the entry.
This attribute is defined in Changelog Internet Draft.

Syntax
DN, multi-valued.

OID
2.16.840.1.113730.3.1.11
targetDn

Description
Contains the DN of the entry that was affected by the LDAP operation. In the case of a \texttt{modrdn} operation, the \texttt{targetDn} attribute contains the DN of the entry before it was modified or moved.

This attribute is defined in Changelog Internet Draft.

Syntax
DN, multi-valued.

OID
2.16.840.1.113730.3.1.6
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