



# **TIBCO® Data Virtualization**

## **Active Directory Adapter Guide**

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# Active Directory Adapter

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## Active Directory Version Support

The adapter provides SQL-based access to Microsoft Active Directory through the LDAP protocol. The adapter is a standard LDAP client that supports LDAP v2 and v3.

## SQL Compliance

The [SQL Compliance](#) section shows the SQL syntax supported by the adapter and points out any limitations.

# Getting Started

## Connecting to Active Directory

[Basic Tab](#) shows how to authenticate to Active Directory and configure any necessary connection properties. Additional adapter capabilities can be configured using the available [Connection](#) properties on the Advanced tab. The Advanced Settings section shows how to set up more advanced configurations and troubleshoot connection errors.

## Deploying the Active Directory Adapter

To deploy the adapter, you can execute the `server_util` utility via the command line by

1. Unzip the `tdv.activedirectory.zip` file to the location of your choice.
2. Open a command prompt window.
3. Navigate to the `<TDV_install_dir>/bin`
4. Enter the `server_util` command with the `-deploy` option:

```
server_util -server <hostname> [-port <port>] -user <user> -  
password <password> -deploy -package <TDV_install_  
dir>/adapters/tdv.activedirectory/tdv.activedirectory.jar
```

Note: When deploying a build of an existing adapter, you will need to undeploy the existing adapter using the `server_util` command with the `-undeploy` option.



```
server_util -server <hostname> [-port <port>] -user <user> -password  
<password> -undeploy -version 1 -name ActiveDirectory
```

## Basic Tab

### Connecting to Active Directory

Set Server and Port for basic connectivity. Additionally, you can fine-tune the connection with the following:

- FollowReferrals: When set, the adapter surfaces data as views from only referral servers. To modify data on a referral server, you must specify this server with Server and Port.
- LDAPVersion: Set this to the version of the protocol your server implements; by default, the adapter uses version 2.

### Authenticating to Active Directory

To authenticate requests, set the User and Password properties to valid Active Directory credentials (e.g., set User to *Domain\\BobF* or *cn=Bob F,ou=Employees,dc=Domain*).

The adapter uses plaintext authentication by default, since the adapter attempts to negotiate TLS/SSL with the server. You can specify another authentication method with AuthMechanism.

See [SSL Configuration](#) for more information on TLS/SSL configuration.

### Fine Tuning Data Access

The following properties control the scope of data returned:

- BaseDN will limit the scope of LDAP searches to the height of the distinguished name provided. *Note*: Specifying a narrow BaseDN may greatly increase performance; for example, a value of *cn=users,dc=domain* will only return results contained within *cn=users* and its children.
- Scope: This property enables more granular control over the data to return from a subtree.

## Customizing Tables

The adapter surfaces the columns most often needed from Active Directory entities. However, if you need to work with other data, the tables are easy to modify. Tables are defined in schema files, which have a simple format.

See [Working with Active Directory Tables](#) for a guide to extending the default schemas or writing your own. To use custom schemas, set the Location property to the folder containing the schema files.

## Logging

The adapter uses TDV Server's logging (log4j) to generate log files. The settings within the TDV Server's logging (log4j) configuration file are used by the adapter to determine the type of messages to log. The following categories can be specified:

- Error: Only error messages are logged.
- Info: Both Error and Info messages are logged.
- Debug: Error, Info, and Debug messages are logged.

The Other property of the adapter can be used to set Verbosity to specify the amount of detail to be included in the log file, that is:

```
Verbosity=4;
```

You can use Verbosity to specify the amount of detail to include in the log within a category. The following verbosity levels are mapped to the log4j categories:

- 0 = Error
- 1-2 = Info
- 3-5 = Debug

For example, if the log4j category is set to DEBUG, the Verbosity option can be set to 3 for the minimum amount of debug information or 5 for the maximum amount of debug information.

Note that the log4j settings override the Verbosity level specified. The adapter never logs at a Verbosity level greater than what is configured in the log4j properties. In addition, if Verbosity is set to a level less than the log4j category configured, Verbosity defaults to the minimum value for that particular category. For example, if Verbosity is set to a value less than 3 and the Debug category is specified, the Verbosity defaults to 3.

The following list is an explanation of the Verbosity levels and the information that they log.

- 1 - Will log the query, the number of rows returned by it, the start of execution and the time taken, and any errors.
- 2 - Will log everything included in Verbosity 1 and HTTP headers.
- 3 - Will additionally log the body of the HTTP requests.
- 4 - Will additionally log transport-level communication with the data source. This includes SSL negotiation.
- 5 - Will additionally log communication with the data source and additional details that may be helpful in troubleshooting problems. This includes interface commands.

## Configure Logging for the Active Directory Adapter

By default, logging is turned on without debugging. If debugging information is desired, uncomment the following line in the TDV Server's log4j.properties file (default location of this file is: C:\Program Files\TIBCO\TDV Server <version>\conf\server):

```
log4j.logger.com.cdata=DEBUG
```

The TDV Server must be restarted after changing the log4j.properties file, which can be accomplished by running the composite.bat script located at: C:\Program Files\TIBCO\TDV Server <version>\bin. Note that reauthenticating to the TDV Studio is required after restarting the server.

Here is an example of the calls:

```
.\composite.bat monitor restart
```

All logs for the adapter are written to the "cs\_server\_dsrc.log" file as specified in the log4j properties.

**Note:** The "log4j.logger.com.cdata=DEBUG" option is not required if the **Debug Output Enabled** option is set to true within the TDV Studio. To set this option, navigate to **Administrator > Configuration**. Select **Server > Configuration > Debugging** and set the Debug Output Enabled option to **True**.

## Working with Active Directory Tables

The adapter includes table schemas for many standard Active Directory objects. You can easily extend the included table schemas to edit column behavior or you can write your own from scratch.

Table schemas are defined in .rsd files, which are simple configuration files. This section will walk through different parts of the schema, adding several columns to the Person table as an example.

You can find the Person.rsd file in the db subfolder in the installation folder of the Active Directory Adapter.

## Connecting to Custom Tables

To use custom schemas, set the Location property to the folder containing the schema files.

## Defining a New Table

It is important to define a new table with the same name as the object class that the table will represent. This will allow the adapter to search for only the desired object class when querying the Active Directory server. The file name defines the table name.

## Defining Table Columns and Inputs

Columns are defined in the *rsb:info* block, as shown below. The *attr* tags in the schema represent the columns of the table. These should match the attributes that make up the desired object class.

There are a few columns that every table should include, regardless of the object class:

```
<rsb:script xmlns:rsb="http://www.rssbus.com/ns/rsbscript/2">
<rsb:info title="Person" description="Create, update, delete, and query
person entries in Active Directory.">
<!-- Required Columns -->
<attr name="Id"           xs:type="string" readonly="true"  key="true"
/>
<attr name="DN"           xs:type="string" readonly="true"
required="false" other:ldatype="OID" />
<attr name="RDN"          xs:type="string" readonly="true"
required="false" other:ldatype="Directory String" />
<attr name="BaseDN"       xs:type="string" readonly="true"
required="false" other:ldatype="OID" />
```

*Note:* The *title* attribute of the *rsb:info* block must match the name of the .rsd file.

## Customizing Column Behavior

Each column requires at least *name* and *xs:type* attributes. Additionally, you will need to specify *dataFormat* to decide how data is returned from the table. For example:

```
<!-- Person Required Attributes -->
<attr name="ObjectClass"
other:dataFormat="splitDataByRow" xs:type="string" readonly="false"
required="false" other:ldapttype="OID" />
<attr name="SN"
other:dataFormat="delimitedData" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
<attr name="CN"
other:dataFormat="delimitedData" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
<!-- Person Optional Attributes -->
<attr name="UserPassword"
other:dataFormat="delimitedData" xs:type="string" readonly="false"
required="false" other:ldapttype="Binary" />
<attr name="TelephoneNumber"
other:dataFormat="delimitedData" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
<attr name="SeeAlso"
other:dataFormat="delimitedData" xs:type="string" readonly="false"
required="false" other:ldapttype="DN" />
<attr name="Description_1"
other:dataFormat="splitDataByCol" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
<attr name="Description_2"
other:dataFormat="splitDataByCol" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
<attr name="Description_3"
other:dataFormat="splitDataByCol" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" />
```

The *other:dataFormat* attribute has three options:

- **delimitedData:** Return multiple Active Directory attribute values as delimited strings, separated by the *delimiter* character defined in the Table Settings section of the .rsd file, detailed later.

This is the default format in which to retrieve data and the delimiter defaults to a semicolon.

- **splitDataByRow:** Push multiple Active Directory attribute values for the same DN as separate rows. All other columns will be pushed consistently, and the index in Id will be incremented. *Note:* Pushing multiple columns like this will exponentially grow the

result set, potentially causing performance issues.

- **splitDataByCol:** Push multiple Active Directory attribute values for the same DN with an appended index on the column name. You need to define multiple columns and append an "\_n" to the end; for example, ObjectClass\_1, ObjectClass\_2, and ObjectClass\_3. In this example, if there are more than 3 values, the remaining values will not be visible in the table, unless more columns are added.

## Example: Splitting the ObjectClass Attribute

The code below can be used to split the different values of the *ObjectClass* attributes into their own rows and *Description* attributes into their own columns. Notice the column definition now includes multiple columns for the *Description* attribute. Also note the *other:dataFormat* attribute for the *attr*.

```
...
<attr name="ObjectClass"      other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"  other:ldaptype="OID"
/>
<attr name="SN"              other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
<attr name="CN"              other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
<attr name="UserPassword"    other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Binary" />
<attr name="TelephoneNumber" other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
<attr name="SeeAlso"         other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"  other:ldaptype="DN"
/>
<attr name="Description_1"   other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
<attr name="Description_2"   other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
<attr name="Description_3"   other:dataFormat="delimitedData"
xs:type="string"  readonly="false"  required="false"
other:ldaptype="Directory String" />
</rsb:info>
<!-- Table Settings -->
```

```
<rsb:set attr="delimiter" value=";" />
...
```

An example result will look like:

Id	DN	ObjectClass	SN	CN	UserPassword	TelephoneNumber	Security	Description_1	Description_2	Description_3
1	CN=User1,DC=Test	Top	Test	User1		555-5555	A;B;C	Desc1	Desc2	Desc3
2	CN=User1,DC=Test	User	Test	User1		555-5555	A;B;C	Desc1	Desc2	Desc3

## Specifying Column Encoding

In addition to data format on inputs, encoding can also be specified. Currently, returning data with UTF8 encoding or BASE64 encoding is supported. In order to retrieve data with a specified encoding, the *other:encoding* field must be specified for the desired attribute to be encoded. If no encoding is specified, UTF8 is the default.

An example of specifying encoding for an attribute:

```
...
<attr name="ObjectClass" other:dataFormat="delimitedData"
other:encoding="UTF8" xs:type="string" readonly="false"
required="false" other:ldapttype="OID" desc="The object class of the
entry." />
<attr name="SN" other:dataFormat="delimitedData"
other:encoding="BASE64" xs:type="string" readonly="false"
required="false" other:ldapttype="Directory String" desc="The surname of
the person." />
...
```

## Modifying Filter Behavior

Optionally, there are two attributes that can be used to control how filtering is handled when using the driver with [SupportEnhancedSQL](#). The *other:ldapttype* attribute can be used to set the LDAP syntax of a field. This is used to determine the comparison operators that are supported server-side on a per-field basis. For example, if a field is marked as the type 'DN' and a query filtering for a substring (i.e., CONTAINS), which is not supported server-side, the driver will instead process this part of the filter entirely client-side. The supported type names are found in section 4.3.2 of RFC 2252. If you are unsure of the type or just want to disable server-side filtering for a given column entirely, the *other:filterable* attribute is also available. Setting this to false for the field will prevent this from ever being sent to the server in a filter, overriding the *other:ldapttype* attribute entirely.

## Configuring Table Settings

In addition to the attributes and inputs, you will need to specify the *delimiter*.

The *delimiter* specifies the character that will be used for delimited data. Delimited data will be returned for any attribute that appears multiple times for a single object (unless otherwise specified in *other:dataFormat*).

For example, the code below will concatenate multiple values of an attribute using the ';' character.

```
...
</rsb:info>
<!-- Table Settings -->
<rsb:set attr="delimiter" value=";" />
...
```

## Defining Supported Operations

Operation definitions will remain exactly the same for all newly created tables: Simply copy and paste these from an existing table, as needed.

```
<!-- Operation definitions -->
<rsb:script method="GET">
<rsb:set attr="action" value="Get" />
<rsb:call op="ldapadoLDAP" >
<rsb:push />
</rsb:call>
```



```

</rsb:script>
<rsb:script method="POST">
<rsb:set attr="action" value="Post" />
<rsb:call op="ldapdoLDAP" >
<rsb:push item="toout"/>
</rsb:call>
</rsb:script>
<rsb:script method="MERGE">
<rsb:set attr="action" value="Merge" />
<rsb:call op="ldapdoLDAP" >
<rsb:push />
</rsb:call>
</rsb:script>
<rsb:script method="DELETE">
<rsb:set attr="action" value="Delete" />
<rsb:call op="ldapdoLDAP" >
<rsb:push />
</rsb:call>
</rsb:script>

```

## Changelog

### General Changes

Date	Build Number	Change Type	Description
12/14/2022	8383	General	<b>Changed</b> <ul style="list-style-type: none"> <li>Added the Default column to the sys_procedureparameters table.</li> </ul>
09/30/2022	8308	General	<b>Changed</b> <ul style="list-style-type: none"> <li>Added the IsPath column to the sys_procedureparameters table.</li> </ul>
08/31/2022	8278	Active Directory	<b>Deprecated</b> <ul style="list-style-type: none"> <li>Deprecated the CreateTableFromSchema stored procedure.</li> </ul>

08/17/2022	8264	General	<b>Changed</b> <ul style="list-style-type: none"> <li>We now support handling the keyword "COLLATE" as standard function name as well.</li> </ul>
05/24/2022	8179	Active Directory	<b>Changed</b> <ul style="list-style-type: none"> <li>Changed provider name to Microsoft Active Directory.</li> </ul>
09/02/2021	7915	General	<b>Added</b> <ul style="list-style-type: none"> <li>Added support for the STRING_SPLIT table-valued function in the CROSS APPLY clause.</li> </ul>
08/07/2021	7889	General	<b>Changed</b> <ul style="list-style-type: none"> <li>Added the KeySeq column to the sys_foreignkeys table.</li> </ul>
08/06/2021	7888	General	<b>Changed</b> <ul style="list-style-type: none"> <li>Added the new sys_primarykeys system table.</li> </ul>
07/23/2021	7874	General	<b>Changed</b> <ul style="list-style-type: none"> <li>Updated the Literal Function Names for relative date/datetime functions. Previously relative date/datetime functions resolved to a different value when used in the projection vs te predicate. Ie: SELECT LAST_MONTH() AS lm, Col FROM Table WHERE Col &gt; LAST_MONTH(). Formerly the two LAST_MONTH() methods would resolve to different datetimes. Now they will match.</li> <li>As a replacement for the previous behavior, the relative date/datetime functions in the criteria may have an 'L'</li> </ul>

			<p>appended to them. I.e: WHERE col &gt; L_LAST_MONTH(). This will continue to resolve to the same values that previously were calculated in the criteria. Note that the "L_" prefix will only work in the predicate - it not available for the projection.</p>
07/08/2021	7859	General	<p><b>Added</b></p> <ul style="list-style-type: none"> <li>Added the TCP Logging Module for the logging information happening on the TCP wire protocol. The transport bytes that are incoming and ongoing will be logged at verbosity=5.</li> </ul>
04/23/2021	7785	General	<p><b>Added</b></p> <ul style="list-style-type: none"> <li>Added support for handling client side formulas during insert / update. For example: UPDATE Table SET Col1 = Concat (Col1, " - ", Col2) WHERE Col2 LIKE 'A%'</li> </ul>
04/23/2021	7783	General	<p><b>Changed</b></p> <ul style="list-style-type: none"> <li>Updated how display sizes are determined for varchar primary key and foreign key columns so they will match the reported length of the column.</li> </ul>
04/16/2021	7776	General	<p><b>Added</b></p> <ul style="list-style-type: none"> <li>Non-conditional updates between two columns is now available to all drivers. For example: UPDATE Table SET Col1=Col2</li> </ul> <p><b>Changed</b></p> <ul style="list-style-type: none"> <li>Reduced the length to 255 for varchar primary key and foreign key columns.</li> <li>Updated implicit and metadata caching to improve performance and support for</li> </ul>

multiple connections. Old metadata caches are not compatible - you would need to generate new metadata caches if you are currently using CacheMetadata.

- Updated index naming convention to avoid duplicates
- Updated and standardized Getting Started connection help.
- Added the Advanced Features section to the help of all drivers.
- Categorized connection property listings in the help for all editions.

04/15 /2021

7775

General

**Changed**

- Kerberos authentication is updated to use TCP by default, but will fall back to UDP if a TCP connection cannot be established

## Advanced Features

This section details a selection of advanced features of the Active Directory adapter.

### User Defined Views

The adapter allows you to define virtual tables, called *user defined views*, whose contents are decided by a pre-configured query. These views are useful when you cannot directly control queries being issued to the drivers. See [User Defined Views](#) for an overview of creating and configuring custom views.

### SSL Configuration

Use [SSL Configuration](#) to adjust how adapter handles TLS/SSL certificate negotiations. You can choose from various certificate formats; see the [SSLServerCert](#) property under "Connection String Options" for more information.

## Firewall and Proxy

Configure the adapter for compliance with [Firewall and Proxy](#), including Windows proxies. You can also set up tunnel connections.

## Query Processing

The adapter offloads as much of the SELECT statement processing as possible to Active Directory and then processes the rest of the query in memory (client-side).

See [Query Processing](#) for more information.

## Logging

See [Logging](#) for an overview of configuration settings that can be used to refine CData logging. For basic logging, you only need to set two connection properties, but there are numerous features that support more refined logging, where you can select subsets of information to be logged using the [LogModules](#) connection property.

## User Defined Views

The Active Directory Adapter allows you to define a virtual table whose contents are decided by a pre-configured query. These are called *User Defined Views*, which are useful in situations where you cannot directly control the query being issued to the driver, e.g. when using the driver from a tool. The User Defined Views can be used to define predicates that are always applied. If you specify additional predicates in the query to the view, they are combined with the query already defined as part of the view.

There are two ways to create user defined views:

- Create a JSON-formatted configuration file defining the views you want.
- DDL statements.

### Defining Views Using a Configuration File

User Defined Views are defined in a JSON-formatted configuration file called *UserDefinedViews.json*. The adapter automatically detects the views specified in this file.

You can also have multiple view definitions and control them using the [UserDefinedViews](#) connection property. When you use this property, only the specified views are seen by the adapter.

This User Defined View configuration file is formatted as follows:

- Each root element defines the name of a view.
- Each root element contains a child element, called **query**, which contains the custom SQL query for the view.

For example:

```
{
  "MyView": {
    "query": "SELECT * FROM User WHERE MyColumn = 'value'"
  },
  "MyView2": {
    "query": "SELECT * FROM MyTable WHERE Id IN (1,2,3)"
  }
}
```

Use the UserDefinedViews connection property to specify the location of your JSON configuration file. For example:

```
"UserDefinedViews",
"C:\\Users\\yourusername\\Desktop\\tmp\\UserDefinedViews.json"
```

## Defining Views Using DDL Statements

The adapter is also capable of creating and altering the schema via DDL Statements such as CREATE LOCAL VIEW, ALTER LOCAL VIEW, and DROP LOCAL VIEW.

### Create a View

To create a new view using DDL statements, provide the view name and query as follows:

```
CREATE LOCAL VIEW [MyViewName] AS SELECT * FROM Customers LIMIT 20;
```

If no JSON file exists, the above code creates one. The view is then created in the JSON configuration file and is now discoverable. The JSON file location is specified by the UserDefinedViews connection property.

### Alter a View

To alter an existing view, provide the name of an existing view alongside the new query you would like to use instead:

```
ALTER LOCAL VIEW [MyViewName] AS SELECT * FROM Customers WHERE
TimeModified > '3/1/2020';
```

The view is then updated in the JSON configuration file.

## Drop a View

To drop an existing view, provide the name of an existing schema alongside the new query you would like to use instead.

```
DROP LOCAL VIEW [MyViewName]
```

This removes the view from the JSON configuration file. It can no longer be queried.

## Schema for User Defined Views

User Defined Views are exposed in the **UserViews** schema by default. This is done to avoid the view's name clashing with an actual entity in the data model. You can change the name of the schema used for UserViews by setting the UserViewsSchemaName property.

## Working with User Defined Views

For example, a SQL statement with a User Defined View called *UserViews.RCustomers* only lists customers in Raleigh:

```
SELECT * FROM Customers WHERE City = 'Raleigh';
```

An example of a query to the driver:

```
SELECT * FROM UserViews.RCustomers WHERE Status = 'Active';
```

Resulting in the effective query to the source:

```
SELECT * FROM Customers WHERE City = 'Raleigh' AND Status = 'Active';
```

That is a very simple example of a query to a User Defined View that is effectively a combination of the view query and the view definition. It is possible to compose these queries in much more complex patterns. All SQL operations are allowed in both queries and are combined when appropriate.

# SSL Configuration

## Customizing the SSL Configuration

By default, the adapter attempts to negotiate SSL/TLS by checking the server's certificate against the system's trusted certificate store.

To specify another certificate, see the [SSLServerCert](#) property for the available formats to do so.

## Firewall and Proxy

### Connecting Through a Firewall or Proxy

Set the following properties:

- To use a proxy-based firewall, set [FirewallType](#), [FirewallServer](#), and [FirewallPort](#).
- To tunnel the connection, set [FirewallType](#) to TUNNEL.
- To authenticate, specify [FirewallUser](#) and [FirewallPassword](#).
- To authenticate to a SOCKS proxy, additionally set [FirewallType](#) to SOCKS5.

## Query Processing

### Query Processing

CData has a client-side SQL engine built into the adapter library. This enables support for the full capabilities that SQL-92 offers, including filters, aggregations, functions, etc.

For sources that do not support SQL-92, the adapter offloads as much of SQL statement processing as possible to Active Directory and then processes the rest of the query in memory (client-side). This results in optimal performance.

For data sources with limited query capabilities, the adapter handles transformations of the SQL query to make it simpler for the adapter. The goal is to make smart decisions based on the query capabilities of the data source to push down as much of the computation as possible. The Active Directory Query Evaluation component examines SQL queries and returns information indicating what parts of the query the adapter is not capable of executing natively.

The Active Directory Query Slicer component is used in more specific cases to separate a single query into multiple independent queries. The client-side Query Engine makes



decisions about simplifying queries, breaking queries into multiple queries, and pushing down or computing aggregations on the client-side while minimizing the size of the result set.

There's a significant trade-off in evaluating queries, even partially, client-side. There are always queries that are impossible to execute efficiently in this model, and some can be particularly expensive to compute in this manner. CData always pushes down as much of the query as is feasible for the data source to generate the most efficient query possible and provide the most flexible query capabilities.

## More Information

For a full discussion of how CData handles query processing, see [CData Architecture: Query Execution](#).

# Logging

Capturing adapter logging can be very helpful when diagnosing error messages or other unexpected behavior.

## Basic Logging

You will simply need to set two connection properties to begin capturing adapter logging.

- Logfile: A filepath which designates the name and location of the log file.
- Verbosity: This is a numerical value (1-5) that determines the amount of detail in the log. See the page in the Connection Properties section for an explanation of the five levels.
- MaxLogFileSize: When the limit is hit, a new log is created in the same folder with the date and time appended to the end. The default limit is 100 MB. Values lower than 100 kB will use 100 kB as the value instead.
- MaxLogFileCount: A string specifying the maximum file count of log files. When the limit is hit, a new log is created in the same folder with the date and time appended to the end and the oldest log file will be deleted. Minimum supported value is 2. A value of 0 or a negative value indicates no limit on the count.

Once this property is set, the adapter will populate the log file as it carries out various tasks, such as when authentication is performed or queries are executed. If the specified file doesn't already exist, it will be created.

## Log Verbosity

The verbosity level determines the amount of detail that the adapter reports to the [Logfile](#). [Verbosity](#) levels from 1 to 5 are supported. These are described in the following list:

- 
- |   |  |
|---|--|
| 1 | Setting <a href="#">Verbosity</a> to 1 will log the query, the number of rows returned by it, the start of execution and the time taken, and any errors. |
|---|--|
- 
- |   |  |
|---|--|
| 2 | Setting <a href="#">Verbosity</a> to 2 will log everything included in <a href="#">Verbosity</a> 1 and additional information about the request. |
|---|--|
- 
- |   |  |
|---|--|
| 3 | Setting <a href="#">Verbosity</a> to 3 will additionally log the body of the request and the response. |
|---|--|
- 
- |   |   |
|---|---|
| 4 | Setting <a href="#">Verbosity</a> to 4 will additionally log transport-level communication with the data source. This includes SSL negotiation. |
|---|---|
- 
- |   |   |
|---|---|
| 5 | Setting <a href="#">Verbosity</a> to 5 will additionally log communication with the data source and additional details that may be helpful in troubleshooting problems. This includes interface commands. |
|---|---|
- 

The [Verbosity](#) should not be set to greater than 1 for normal operation. Substantial amounts of data can be logged at higher verbositys, which can delay execution times.

To refine the logged content further by showing/hiding specific categories of information, see [LogModules](#).

## Sensitive Data

Verbosity levels 3 and higher may capture information that you do not want shared outside of your organization. The following lists information of concern for each level:

- Verbosity 3: The full body of the request and the response, which includes all the data returned by the adapter
- Verbosity 4: SSL certificates
- Verbosity 5: Any extra transfer data not included at Verbosity 3, such as non human-readable binary transfer data

## Best Practices for Data Security

Although we mask sensitive values, such as passwords, in the connection string and any request in the log, it is always best practice to review the logs for any sensitive information before sharing outside your organization.

## Java Logging

When Java logging is enabled in Logfile, the Verbosity will instead map to the following logging levels.

- 0: Level.WARNING
- 1: Level.INFO
- 2: Level.CONFIG
- 3: Level.FINE
- 4: Level.FINER
- 5: Level.FINEST

## Advanced Logging

You may want to refine the exact information that is recorded to the log file. This can be accomplished using the LogModules property.

This property allows you to filter the logging using a semicolon-separated list of logging modules.

All modules are four characters long. **Please note that modules containing three letters have a required trailing blank space.** The available modules are:

- **EXEC:** Query Execution. Includes execution messages for original SQL queries, parsed SQL queries, and normalized SQL queries. Query and page success/failure messages appear here as well.
- **INFO:** General Information. Includes the connection string, driver version (build number), and initial connection messages.
- **HTTP:** HTTP Protocol messages. Includes HTTP requests/responses (including POST messages), as well as Kerberos related messages.
- **SSL :** SSL certificate messages.
- **OAUT:** OAuth related failure/success messages.

- **SQL** : Includes SQL transactions, SQL bulk transfer messages, and SQL result set messages.
- **META**: Metadata cache and schema messages.
- **TCP** : Incoming and Ongoing raw bytes on TCP transport layer messages.

An example value for this property would be.

```
LogModules=INFO;EXEC;SSL ;SQL ;META;
```

Note that these modules refine the information as it is pulled after taking the Verbosity into account.

## SQL Compliance

The Active Directory Adapter supports several operations on data, including querying, deleting, modifying, and inserting.

### SELECT Statements

See [SELECT Statements](#) for a syntax reference and examples.

See [Data Model](#) for information on the capabilities of the Active Directory API.

### INSERT Statements

See [INSERT Statements](#) for a syntax reference and examples, as well as retrieving the new records' Ids.

### UPDATE Statements

The primary key Id is required to update a record. See [UPDATE Statements](#) for a syntax reference and examples.

### DELETE Statements

The primary key Id is required to delete a record. See [DELETE Statements](#) for a syntax reference and examples.

## EXECUTE Statements

Use EXECUTE or EXEC statements to execute stored procedures. See [EXECUTE Statements](#) for a syntax reference and examples.

## Names and Quoting

- Table and column names are considered identifier names; as such, they are restricted to the following characters: [A-Z, a-z, 0-9, \_:@].
- To use a table or column name with characters not listed above, the name must be quoted using double quotes ("name") in any SQL statement.
- Strings must be quoted using single quotes (e.g., 'John Doe').

## SELECT Statements

A SELECT statement can consist of the following basic clauses.

- SELECT
- INTO
- FROM
- JOIN
- WHERE
- GROUP BY
- HAVING
- UNION
- ORDER BY
- LIMIT

## SELECT Syntax

The following syntax diagram outlines the syntax supported by the Active Directory adapter:

```

SELECT {
  [ TOP <numeric_literal> ]
  {
    *
    | {
      <expression> [ [ AS ] <column_reference> ]
      | { <table_name> | <correlation_name> } .*
      } [ , ... ]
    }
  [ INTO csv:// [ filename= ] <file_path> [ ;delimiter=tab ] ]
  {
    FROM <table_reference> [ [ AS ] <identifier> ]
  }
  [ WHERE <search_condition> ]
  [
    ORDER BY
    <column_reference> [ ASC | DESC ] [ NULLS FIRST | NULLS LAST ]
  ]
  [
    LIMIT <expression>
  ]
} | SCOPE_IDENTITY()
<expression> ::=
  | <column_reference>
  | @ <parameter>
  | ?
  | COUNT( * | { [ DISTINCT ] <expression> } )
  | { AVG | MAX | MIN | SUM | COUNT } ( <expression> )
  | NULLIF ( <expression> , <expression> )
  | COALESCE ( <expression> , ... )
  | CASE <expression>
    WHEN { <expression> | <search_condition> } THEN { <expression> |
NULL } [ ... ]
    [ ELSE { <expression> | NULL } ]
    END
  | <literal>
  | <sql_function>
<search_condition> ::=
  {
    <expression> { = | >= | <= | != | LIKE | AND | OR } [ <expression>
]
  } [ { AND | OR } ... ]

```

## Examples

1. Return all columns:

```
SELECT * FROM User
```

2. Rename a column:

```
SELECT "CN" AS MY_CN FROM User
```

3. Cast a column's data as a different data type:

```
SELECT CAST(AnnualRevenue AS VARCHAR) AS Str_AnnualRevenue FROM User
```

4. Search data:

```
SELECT * FROM User WHERE CN = 'Administrator'
```

5. The Active Directory APIs support the following operators in the WHERE clause: =, >=, <=, !=, LIKE, AND, OR.

```
SELECT * FROM User WHERE CN = 'Administrator';
```

6. Sort a result set in ascending order:

```
SELECT Id, CN FROM User ORDER BY CN ASC
```

## SELECT INTO Statements

You can use the SELECT INTO statement to export formatted data to a file.

### Data Export with an SQL Query

The following query exports data into a file formatted in comma-separated values (CSV):

```
boolean ret = stat.execute("SELECT Id, CN INTO \"csv://c:/User.txt\" FROM \"User\" WHERE CN = 'Administrator'");
System.out.println(stat.getUpdateCount()+" rows affected");
```

You can specify other file formats in the URI. The following example exports tab-separated values:

```
Statement stat = conn.createStatement();
boolean ret = stat.execute("SELECT * INTO \"User\" IN
'csv://filename=c:/User.csv;delimiter=tab' FROM \"User\" WHERE CN =
'Administrator'");
System.out.println(stat.getUpdateCount()+" rows affected");
```

## INSERT Statements

To create new records, use INSERT statements.

### INSERT Syntax

The INSERT statement specifies the columns to be inserted and the new column values. You can specify the column values in a comma-separated list in the VALUES clause, as shown in the following example:

```
INSERT INTO <table_name>
( <column_reference> [ , ... ] )
VALUES
( { <expression> | NULL } [ , ... ] )

<expression> ::=
| @ <parameter>
| ?
| <literal>
```

You can use the executeUpdate method of the Statement and PreparedStatement classes to execute data manipulation commands and retrieve the rows affected. To retrieve the Id of the last inserted record use getGeneratedKeys. Additionally, set the **RETURN\_GENERATED\_KEYS** flag of the Statement class when you call prepareStatement.

```
String cmd = "INSERT INTO User (CN) VALUES (?)";
PreparedStatement pstmt = connection.prepareStatement
(cmd,Statement.RETURN_GENERATED_KEYS);
pstmt.setString(1, "User Name");
int count = pstmt.executeUpdate();
System.out.println(count+" rows were affected");
ResultSet rs = pstmt.getGeneratedKeys();
while(rs.next()){
    System.out.println(rs.getString("Id"));
}
connection.close();
```



## UPDATE Statements

To modify existing records, use UPDATE statements.

### Update Syntax

The UPDATE statement takes as input a comma-separated list of columns and new column values as name-value pairs in the SET clause, as shown in the following example:

```
UPDATE <table_name> SET { <column_reference> = <expression> } [ , ... ]
WHERE { Id = <expression> } [ { AND | OR } ... ]
<expression> ::=
    | @ <parameter>
    | ?
    | <literal>
```

You can use the executeUpdate method of the Statement or PreparedStatement classes to execute data manipulation commands and retrieve the rows affected, as shown in the following example:

```
String cmd = "UPDATE User SET CN='User Name' WHERE Id = ?";
PreparedStatement pstmt = connection.prepareStatement(cmd);
pstmt.setString(1, "CN=User Name,CN=Users,DC=Domain");
int count = pstmt.executeUpdate();
System.out.println(count + " rows were affected");
connection.close();
```

## DELETE Statements

To delete information from a table, use DELETE statements.

### DELETE Syntax

The DELETE statement requires the table name in the FROM clause and the row's primary key in the WHERE clause, as shown in the following example:

```
<delete_statement> ::= DELETE FROM <table_name> WHERE { Id =
<expression> } [ { AND | OR } ... ]
<expression> ::=
    | @ <parameter>
```

```
| ?
| <literal>
```

You can use the `executeUpdate` method of the `Statement` or `PreparedStatement` classes to execute data manipulation commands and retrieve the number of affected rows, as shown in the following example:

```
Connection connection = DriverManager.getConnection
("jdbc:activedirectory:User=MyUserName;Password=MyPassword;Server=MyServ
er;Port=MyPort;");
String cmd = "DELETE FROM User WHERE Id = ?";
PreparedStatement pstmt = connection.prepareStatement(cmd);
pstmt.setString(1, "CN=User Name,CN=Users,DC=Domain");
int count=pstmt.executeUpdate();
connection.close();
```

## EXECUTE Statements

To execute stored procedures, you can use `EXECUTE` or `EXEC` statements.

`EXEC` and `EXECUTE` assign stored procedure inputs, referenced by name, to values or parameter names.

### Stored Procedure Syntax

To execute a stored procedure as an SQL statement, use the following syntax:

```
{ EXECUTE | EXEC } <stored_proc_name>
{
  [ @ ] <input_name> = <expression>
} [ , ... ]
<expression> ::=
  | @ <parameter>
  | ?
  | <literal>
```

### Example Statements

Reference stored procedure inputs by name:

```
EXECUTE my_proc @second = 2, @first = 1, @third = 3;
```

Execute a parameterized stored procedure statement:

```
EXECUTE my_proc second = @p1, first = @p2, third = @p3;
```

## PIVOT and UNPIVOT

**PIVOT and UNPIVOT** can be used to change a table-valued expression into another table.

### PIVOT

PIVOT rotates a table-value expression by turning unique values from one column into multiple columns in the output. PIVOT can run aggregations where required on any column value.

### PIVOT Syntax

```
"SELECT 'AverageCost' AS Cost_Sorted_By_Production_Days, [0], [1], [2],
[3], [4]
FROM
(
SELECT DaysToManufacture, StandardCost
FROM Production.Product
) AS SourceTable
PIVOT
(
AVG(StandardCost)
FOR DaysToManufacture IN ([0], [1], [2], [3], [4])
) AS PivotTable;"
```

### UNPIVOT

UNPIVOT carries out nearly the opposite to PIVOT by rotating columns of a table-valued expressions into column values.

### UNPIVOT Syntax

```
"SELECT VendorID, Employee, Orders
FROM
(SELECT VendorID, Emp1, Emp2, Emp3, Emp4, Emp5
FROM pvt) p
UNPIVOT
(Orders FOR Employee IN
(Emp1, Emp2, Emp3, Emp4, Emp5)
)AS unpvt;"
```

For further information on PIVOT and UNPIVOT, see [FROM clause plus JOIN, APPLY, PIVOT \(Transact-SQL\)](#)

## Data Model

The Active Directory Adapter models Active Directory entities in relational tables and stored procedures.

### Tables

The included [Tables](#) cover many standard Active Directory object classes. You can easily extend the schemas to map more closely to your Active Directory classes. The schemas are defined in simple configuration files.

To use custom tables and schemas, set the [Location](#) property to the folder containing the schema files. The schemas shipped with the adapter are located in the db subfolder of the installation directory.

See [Working with Active Directory Tables](#) for a guide to customizing table schemas.

### Stored Procedures

[Stored Procedures](#) are function-like interfaces to the data source. They can be used to access Active Directory functionality not represented as SELECT, INSERT, UPDATE, or DELETE.

## Tables

The adapter models the data in Active Directory into a list of tables that can be queried using standard SQL statements.

Generally, querying Active Directory tables is the same as querying a table in a relational database. Sometimes there are special cases, for example, including a certain column in the WHERE clause might be required to get data for certain columns in the table. This is typically needed for situations where a separate request must be made for each row to get certain columns. These types of situations are clearly documented at the top of the table page linked below.

## Active Directory Adapter Tables

Name	Description
<a href="#">Account</a>	The account object class is used to define entries that represent computer accounts.
<a href="#">ApplicationEntity</a>	X.500 base class for applications: Directory Service only uses subclass MSFT-DSA.
<a href="#">ApplicationProcess</a>	X.500 base class for applications: Exchange only uses subclass DSA-Application.
<a href="#">ApplicationSettings</a>	Base class for server-specific application settings.
<a href="#">ApplicationSiteSettings</a>	Contains all site-specific settings.
<a href="#">ApplicationVersion</a>	Can be used by application developers to store version information about their application or its schema.
<a href="#">BuiltinDomain</a>	The container that holds the default groups for a domain.
<a href="#">CertificationAuthority</a>	Represents a process that issues public key certificates, for example, a Certificate Server.
<a href="#">Computer</a>	This class represents a computer account in the domain.
<a href="#">Contact</a>	This class contains information about a person or company that you may need to contact on a regular basis.
<a href="#">CRLDistributionPoint</a>	The object holding Certificate, Authority, and Delta Revocation lists.

<a href="#">DHCPClass</a>	Represents a DHCP Server (or set of servers).
<a href="#">DnsNode</a>	Holds the DNS resource records for a single host.
<a href="#">DnsZone</a>	The container for DNS Nodes. Holds zone metadata.
<a href="#">Domain</a>	Contains information about a domain.
<a href="#">DomainDNS</a>	Windows NT domain with DNS-based (DC=) naming.
<a href="#">DomainPolicy</a>	Defines the local security authority policy for one or more domains.
<a href="#">DomainRelatedObject</a>	The domainRelatedObject object class is used to define an entry that represents a series of documents.
<a href="#">ForeignSecurityPrincipal</a>	The Security Principal from an external source.
<a href="#">Group</a>	Stores a list of user names. Used to apply security principals on resources.
<a href="#">GroupOfNames</a>	Used to define entries that represent an unordered set of names that represent individual objects or other groups of names.
<a href="#">GroupOfUniqueNames</a>	Defines the entries for a group of unique names. In general, used to store account objects.
<a href="#">GroupPolicyContainer</a>	This represents the Group Policy Object. It is used to define group policies.
<a href="#">IpHost</a>	Represents an abstraction of a host or other IP device.
<a href="#">IpNetwork</a>	Represents an abstraction of a network. The distinguished name value of the Common-Name attribute denotes the canonical name of the network.
<a href="#">Organization</a>	Stores information about a company or organization.
<a href="#">OrganizationalPerson</a>	This class is used for objects that contain organizational information about a user, such as the employee number,

	department, manager, title, office address, and so on.
<a href="#">OrganizationalRole</a>	This class is used for objects that contain information that pertains to a position or role within an organization, such as a system administrator, manager, and so on. It can also be used for a nonhuman identity in an organization.
<a href="#">OrganizationalUnit</a>	A container for storing users, computers, and other account objects.
<a href="#">Person</a>	Contains personal information about a user.
<a href="#">PosixAccount</a>	Represents an abstraction of an account with Portable Operating System Interface (POSIX) attributes.
<a href="#">PosixGroup</a>	Represents an abstraction of a group of accounts.
<a href="#">PrintQueue</a>	Contains information about a print queue.
<a href="#">SecurityObject</a>	This is an auxiliary class that is used to identify security principals.
<a href="#">SecurityPrincipal</a>	Contains the security information for an object.
<a href="#">Server</a>	This class represents a server computer in a site.
<a href="#">Site</a>	A container for storing server objects. Represents a physical location that contains computers. Used to manage replication.
<a href="#">Top</a>	The top level class from which all classes are derived.
<a href="#">TrustedDomain</a>	An object that represents a domain trusted by (or trusting) the local domain.
<a href="#">User</a>	This class is used to store information about an employee or contractor who works for an organization. It is also possible to apply this class to long term visitors.

## Account

The account object class is used to define entries that represent computer accounts.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.



ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_

				FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited	The DS-Core-Propagation-

	<i>ng</i>		Data	Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
Host	<i>String</i>	False	Delimited Data	Specifies a host computer.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited	If TRUE, this object has

	<i>ng</i>		Data	been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when

					this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	String	False		Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	String	False		Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDS-Approx-Immed-SubordinateCount	String	False		Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False		Delimited Data	Backward link for msDS-hasMasterNCs.

MsDS-MembersForAzRoleBL	String	False	Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False	Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.
MsDS-NCReplOutboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False	Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False	Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoleBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Task

					objects that link to it.
MsDS-ReplAttributeMetaData	String	False	Delimited Data		A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False	Delimited Data		A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False	Delimited Data		Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	String	False	Delimited Data		Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	String	False	Delimited Data		The backward link to the owner attribute. Contains a list of owners for an object.
NetbootSCPBL	String	False	Delimited Data		A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data		List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data		Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data		The unique identifier for an object.

ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
Ou	<i>String</i>	False	Delimited Data	The name of the organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular



				partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.

ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited	This constructed attribute

	<i>ng</i>		Data	returns a single DWORD value that can have up to three bits set:
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
Uid	<i>String</i>	False	Delimited Data	A user ID.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change

				to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.

WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ApplicationEntity

X.500 base class for applications: Directory Service only uses subclass MSFT-DSA.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished

	<i>g</i>			name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
PresentationAddress	<i>String</i>	False	Delimited Data	Specifies a presentation address associated with an object that represents an OSI application entity.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.

AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.



CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited	To be used by the object to

	<i>g</i>		Data	store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited	Backward link to privileges

	<i>g</i>		Data	held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited	This attribute is used to

	<i>g</i>		Data	check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
Ou	<i>String</i>	False	Delimited Data	The name of the organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically

				updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.

QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept

				changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.

SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SupportedApplicationContexts	<i>String</i>	False	Delimited Data	Specifies the object identifiers of application contexts that an OSI application supports.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.



USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited	The date when this object

	<i>g</i>		Data	was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ApplicationProcess

X.500 base class for applications: Exchange only uses subclass DSA-Application.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited	The list of classes from

	<i>g</i>		Data	which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).

Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited	The name of a property

	<i>g</i>		Data	page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited	The distinguished name of

	<i>g</i>		Data	the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildrenCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or

				application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
Ou	String	False	Delimited Data	The name of the organizational unit.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the



				system automatically updates the Distinguished Name.
PartialAttributeDeletionSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and

				distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.

RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that

belong to this site.				
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object

				that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.

WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ApplicationSettings

Base class for server-specific application settings.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id	<i>String</i>	True			Combined index and DN.

[KEY]	<i>g</i>			Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.

AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
ApplicationName	String	False	Delimited Data	The name of the application.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited	The name that represents



	<i>g</i>		Data	an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI

				of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this

object belongs.				
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between

					the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False		Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False		Delimited Data	List of nonsecurity-members for an Exchange distribution list.
NotificationList	String	False		Delimited Data	The Notification-List attribute is not currently used.
DistinguishedName	String	False		Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False		Delimited Data	The unique identifier for an object.
ObjectVersion	String	False		Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False		Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.

PartialAttributeDeletionState	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given

Query-Policy.				
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.

RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a

				class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.



WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.

Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
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## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ApplicationSiteSettings

Contains all site-specific settings.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.

BaseDN	String	True		The base distinguished name.
InstanceType	String	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.

AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
ApplicationName	String	False	Delimited Data	The name of the application.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-

				valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica

				instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.

ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited	List of nonsecurity-

	<i>g</i>		Data	members for an Exchange distribution list.
NotificationList	<i>String</i>	False	Delimited Data	The Notification-List attribute is not currently used.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.



PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited	Tracks internal replication

	<i>g</i>		Data	state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited	The revision level for a

	<i>g</i>		Data	security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by

					the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False		Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False		Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False		Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False		Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False		Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False		Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False		Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are

system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ApplicationVersion

Can be used by application developers to store version information about their application or its schema.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a

				particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited	A list of classes that can

	<i>ng</i>		Data	be modified.
ApplicationName	<i>String</i>	False	Delimited Data	The name of the application.
AppSchemaVersion	<i>String</i>	False	Delimited Data	This attribute stores the schema version of the class store. It is used to provide correct behavior across schema changes.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.



Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited	This is a constructed

	<i>ng</i>		Data	attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.

Keywords	<i>String</i>	False	Delimited Data	A list of keywords that can be used to locate a given connection point.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ PartitionSet with a

				User object.
MsDS-Approx-Immed-Subordinate	String	False	Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False	Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRole	String	False	Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False	Delimited Data	A list of past and present replication partners, and how current we are with each of them.

MsDS-NCReplInboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.
MsDS-NCReplOutboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False	Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False	Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoles	String	False	Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTasks	String	False	Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetadata	String	False	Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetadata	String	False	Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who

				changed the value last.
MsDS-Settings	<i>String</i>	False	Delimited Data	Used to store settings for an object. Its use is solely determined by the object's owner. We recommend using it to store name/value pairs. For example, color=blue.
MsDS-TasksForAzRoleBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
NotificationList	<i>String</i>	False	Delimited Data	The Notification-List attribute is not currently used.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited	The unique identifier for

	<i>ng</i>		Data	an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
Owner	<i>String</i>	False	Delimited Data	The distinguished name of an object that has ownership of an object.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular

				partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.



ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited	This constructed attribute

	<i>ng</i>		Data	returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.

USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
Vendor	<i>String</i>	False	Delimited Data	This attribute identifies the vendor for an application.
VersionNumber	<i>String</i>	False	Delimited Data	A general purpose version number.

VersionNumberHi	<i>String</i>	False	Delimited Data	A general purpose major version number.
VersionNumberLo	<i>String</i>	False	Delimited Data	A general purpose minor version number.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.

WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## BuiltinDomain

The container that holds the default groups for a domain.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id	<i>String</i>	True			Combined index and DN.

[KEY]	<i>g</i>			Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.

AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.

CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
CreationTime	<i>String</i>	False	Delimited Data	The date and time that the object was created.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DomainReplica	<i>String</i>	False	Delimited Data	Unicode String Attribute, gives the list of Windows NT 4.0 Replication Domain Controllers.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited	The DS-Core-Propagation-



	<i>g</i>		Data	Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
ForceLogoff	<i>String</i>	False	Delimited Data	Used in computing the kick off time in <code>SamlGetAccountRestrictions</code> . Logoff time minus Force Log off equals kick off time.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new

				replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LockoutDuration	String	False	Delimited Data	The amount of time that an account is locked due to the Lockout-Threshold being exceeded. This value is stored as a large integer that represents the negative of the number of 100-nanosecond intervals from the time the Lockout-Threshold is exceeded that must elapse before the account is unlocked.
LockOutObservationWindow	String	False	Delimited Data	The range of time, in 100-nanosecond intervals, in which the system increments the incorrect logon count.

LockoutThreshold	<i>String</i>	False	Delimited Data	The number of invalid logon attempts that are permitted before the account is locked out.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxPwdAge	<i>String</i>	False	Delimited Data	The maximum amount of time, in 100-nanosecond intervals, a password is valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals from the time the password was set before the password expires.
MinPwdAge	<i>String</i>	False	Delimited Data	The minimum amount of time, in 100-nanosecond intervals, that a password is valid.
MinPwdLength	<i>String</i>	False	Delimited Data	The minimum number of characters that a password must contain.

ModifiedCount	String	False	Delimited Data	Net Logon Change Log serial number.
ModifiedCountAtLastPromotion	String	False	Delimited Data	The Net Logon Change Log serial number at last promotion.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NextRid	String	False	Delimited Data	The Next Rid field used by the mixed mode allocator.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used

by Exchange.				
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectSid	String	False	Delimited Data	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OEMInformation	String	False	Delimited Data	For holding OEM information. No longer used. Here for backward compatibility.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing

				attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
PwdHistoryLength	String	False	Delimited Data	The number of old passwords to save.
PwdProperties	String	False	Delimited Data	Password Properties. Part of Domain Policy. A bitfield to indicate complexity and storage restrictions.
QueryPolicyBL	String	False	Delimited	List of all objects holding

	<i>g</i>		Data	references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined

				naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ServerRole	String	False	Delimited Data	For compatibility with pre-Windows 2000 Server servers. A computer running Windows NT Server can be a standalone server, a primary domain controller (PDC), or a backup domain controller (BDC).
ServerState	String	False	Delimited Data	Indicates whether the server is enabled or disabled. A value of 1



					indicates that the server is enabled. A value of 2 indicates that the server is disabled. All other values are invalid.
ShowInAdvancedViewOnly	String	False		Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False		Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False		Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False		Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False		Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
UASCompat	String	False		Delimited Data	Indicates if the security account manager will enforce data sizes to make Active Directory compatible with the LanManager User Account System (UAS). If this value is 0, no limits are enforced. If this value is 1, the following limits are enforced.
USNChanged	String	False		Delimited	The update sequence

	<i>g</i>		Data	number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The

well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## CertificationAuthority

Represents a process that issues public key certificates, for example, a Certificate Server.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
AuthorityRevocationList	<i>String</i>	False		Delimited Data	Cross certificate, Certificate Revocation List.
CACertificate	<i>String</i>	False		Delimited	Certificates of trusted

	<i>g</i>		Data	Certification Authorities.
CertificateRevocationList	<i>String</i>	False	Delimited Data	Represents a list of certificates that have been revoked.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.

AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CACertificateDN	String	False	Delimited Data	Full distinguished name from the CA certificate.
CACConnect	String	False	Delimited Data	The connection string for binding to a certification authority.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
CAUsages	String	False	Delimited Data	List of OID/CSP name concatenations.
CAWEBURL	String	False	Delimited	URL for http connection to

	<i>g</i>		Data	a certification authority.
CertificateTemplates	<i>String</i>	False	Delimited Data	Contains information for a certificate issued by a Certificate Server.
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
CRLObject	<i>String</i>	False	Delimited Data	Reference to certificate revocation list object associated with a certification authority.
CrossCertificatePair	<i>String</i>	False	Delimited Data	V3 Cross Certificate.
CurrentParentCA	<i>String</i>	False	Delimited Data	Reference to the certification authorities that issued the current certificates for a certification authority.
DeltaRevocationList	<i>String</i>	False	Delimited Data	List of certificates that have been revoked since the last delta update.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.

DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DNSHostName	<i>String</i>	False	Delimited Data	Name of computer as registered in DNS.
DomainID	<i>String</i>	False	Delimited Data	Reference to a domain that is associated with a certification authority.
DomainPolicyObject	<i>String</i>	False	Delimited Data	Reference to the policy object that defines the Local Security Authority policy for the host domain.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
EnrollmentProviders	<i>String</i>	False	Delimited Data	PKI - Certificate Templates.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.



Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.

IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or

				application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
ParentCA	String	False	Delimited Data	The distinguished name of a certification authority (CA) object for a parent CA.
ParentCACertificateChain	String	False	Delimited Data	DER-encoded X.509v3 certificate for the parent

				certification authority.
PartialAttributeDeletionSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PendingCACertificates	String	False	Delimited Data	The certificates that are about to become effective for this certification authority.
PendingParentCA	String	False	Delimited Data	Reference to the certification authorities that issued the pending certificates for this certification authority.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
PreviousCACertificates	String	False	Delimited Data	Last expired certificate for this certification authority.
PreviousParentCA	String	False	Delimited Data	Reference to the certification authorities that

					issued the last expired certificate for a certification authority.
ProxiedObjectName	String	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False		Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False		Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False		Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False		Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False		Delimited	Tracks internal replication

	<i>g</i>		Data	state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to

three bits set:				
SearchGuide	String	False	Delimited Data	Specifies information of suggested search criteria, which may be included in some entries that are expected to be a convenient base-object for the search operation, for example, country/region or organization.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SignatureAlgorithms	String	False	Delimited Data	This attribute indicates the type of algorithm that must be used to decode a digital signature during the authentication process.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SupportedApplicationContexts	String	False	Delimited Data	Specifies the object identifiers of application contexts that an OSI application supports.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TeletexTerminalIdentifier	String	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object



				that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.

WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Computer

This class represents a computer account in the domain.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id	<i>String</i>	True			Combined index and DN.

[KEY]	<i>ng</i>			Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AccountExpires	<i>String</i>	False	Delimited Data	The date when the account expires. This value

				represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of 0 or 0x7FFFFFFFFFFFFFFF (9223372036854775807) indicates that the account never expires.
ACSPolicyName	String	False	Delimited Data	String name of an ACS policy that applies to this user.
StreetAddress	String	False	Delimited Data	The user's address.
HomePostalAddress	String	False	Delimited Data	A user's home address.
AdminCount	String	False	Delimited Data	Indicates that a given object has had its ACLs changed to a more secure value by the system because it was a member of one of the administrative groups (directly or transitively).
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.

AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
Assistant	<i>String</i>	False	Delimited Data	The distinguished name of a user's administrative assistant.
BadPasswordTime	<i>String</i>	False	Delimited Data	The last time and date that an attempt to log on to this account was made with a password that is not valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last time a incorrect password was used is unknown.
BadPwdCount	<i>String</i>	False	Delimited Data	The number of times the user tried to log on to the account using an incorrect password. A value of 0 indicates that the value is unknown.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/u

				sers/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Catalogs	<i>String</i>	False	Delimited Data	The list of catalogs that index storage on a given computer.
CodePage	<i>String</i>	False	Delimited Data	Specifies the code page for the user's language of choice. This value is not used by Windows 2000.
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
Company	<i>String</i>	False	Delimited Data	The user's company name.
ControlAccessRights	<i>String</i>	False	Delimited Data	Used by DS Security to determine which users can perform specific operations on the host object.
CountryCode	<i>String</i>	False	Delimited Data	Specifies the country/region code for the user's language of choice. This value is not

				used by Windows 2000.
C	<i>String</i>	False	Delimited Data	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
DBCSPwd	<i>String</i>	False	Delimited Data	The account's LAN Manager password.
DefaultClassStore	<i>String</i>	False	Delimited Data	The default Class Store for a given user.
DefaultLocalPolicyObject	<i>String</i>	False	Delimited Data	A reference to a Policy object that defines the local policy for the host object.
Department	<i>String</i>	False	Delimited Data	Contains the name for the department in which the user works.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	<i>String</i>	False	Delimited Data	The location of the desktop profile for a user or group of users. Not

				used.
DestinationIndicator	<i>String</i>	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
Division	<i>String</i>	False	Delimited Data	The user's division.
DNSHostName	<i>String</i>	False	Delimited Data	Name of computer as registered in DNS.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
DynamicLDAPServer	<i>String</i>	False	Delimited Data	DNS name of server handing dynamic properties for this account.
Mail	<i>String</i>	False	Delimited	The list of email addresses



	<i>ng</i>		Data	for a contact.
EmployeeID	<i>String</i>	False	Delimited Data	The ID of an employee.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	<i>String</i>	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GenerationQualifier	<i>String</i>	False	Delimited Data	Indicates a person generation. For example, Jr. or II.

GivenName	<i>String</i>	False	Delimited Data	Contains the given name (first name) of the user.
GroupMembershipSAM	<i>String</i>	False	Delimited Data	Windows NT Security. Down level Windows NT support.
GroupPriority	<i>String</i>	False	Delimited Data	The Group-Priority attribute is not currently used.
GroupsToIgnore	<i>String</i>	False	Delimited Data	The Groups-to-Ignore attribute is not currently used.
HomeDirectory	<i>String</i>	False	Delimited Data	The home directory for the account. If homeDrive is set and specifies a drive letter, homeDirectory must be a UNC path. Otherwise, homeDirectory is a fully qualified local path including the drive letter (for example, DriveLetter:\Directory\Folder). This value can be a null string.
HomeDrive	<i>String</i>	False	Delimited Data	Specifies the drive letter to which to map the UNC path specified by homeDirectory. The drive letter must be specified in the form DriveLetter: where DriveLetter is the letter of the drive to map. The DriveLetter must be a single, uppercase letter and the colon (:) is required.

Initials	<i>String</i>	False	Delimited Data	Contains the initials for parts of the user's full name. This may be used as the middle initial in the Windows Address Book.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LastLogoff	<i>String</i>	False	Delimited Data	This attribute is not used.
LastLogon	<i>String</i>	False	Delimited	The last time the user

	<i>String</i>		Data	logged on. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last logon time is unknown.
LmPwdHistory	<i>String</i>	False	Delimited Data	The password history of the user in LAN Manager (LM) one-way format (OWF). The LM OWF is used for compatibility with LAN Manager 2.x clients, Windows 95, and Windows 98.
LocaleID	<i>String</i>	False	Delimited Data	This attribute contains a list of locale IDs supported by this application. A locale ID represents a geographic location, such as a country/region, city, county, and so on.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
LocalPolicyFlags	<i>String</i>	False	Delimited Data	Flags that determine where a computer gets its policy. Local-Policy-Reference.
Location	<i>String</i>	False	Delimited Data	The user's location, such as office number.
LockoutTime	<i>String</i>	False	Delimited	The date and time (UTC)

	<i>ng</i>		Data	that this account was locked out. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the account is not currently locked out.
ThumbnailLogo	<i>String</i>	False	Delimited Data	BLOB that contains a logo for this object.
LogonCount	<i>String</i>	False	Delimited Data	The number of times the account has successfully logged on. A value of 0 indicates that the value is unknown.
LogonHours	<i>String</i>	False	Delimited Data	The hours that the user is allowed to logon to the domain.
LogonWorkstation	<i>String</i>	False	Delimited Data	This attribute is not used. See the User-Workstations attribute.
MachineRole	<i>String</i>	False	Delimited Data	Role for a machine: DC, Server, or Workstation.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy

				property set to this user. Each item in the list is a linked reference to the managed object.
Manager	String	False	Delimited Data	Contains the distinguished name of the user who is the user's manager. The manager's user object contains a directReports property that contains references to all user objects that have their manager properties set to this distinguished name.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxStorage	String	False	Delimited Data	The maximum amount of disk space the user can use. Use the value specified in USER_MAXSTORAGE_UNLIMITED to use all available disk space.
MhsORAddress	String	False	Delimited Data	X.400 address.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCommit	String	False	Delimited Data	This attribute is used to check consistency between

				the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MS-DS-CreatorSID	<i>String</i>	False	Delimited Data	The security ID of the creator of the object that contains this attribute.
MSMQDigests	<i>String</i>	False	Delimited Data	An array of digests of the corresponding certificates in attribute mSMQ-Sign-Certificates. They are used for mapping a digest into a certificate.
MSMQDigestsMig	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, contains the previous value of mSMQDigests.
MSMQSignCertificates	<i>String</i>	False	Delimited Data	This attribute contains a number of certificates. A user can generate a certificate per computer. For each certificate we also keep a digest.
MSMQSignCertificatesMig	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, the attribute contains the previous value of mSMQSignCertificates. MSMQ supports migration from the MSMQ 1.0 DS to

					the Windows 2000 DS, and mixed mode specifies a state in which some of the DS servers were not upgraded to Windows 2000.
MsNPAllowDialin	String	False		Delimited Data	Indicates whether the account has permission to dial in to the RAS server. Do not modify this value directly. Use the appropriate RAS administration function to modify this value.
MsNPCallingStationID	String	False		Delimited Data	The msNPCallingStationID attribute is used internally. Do not modify this value directly.
MsNPSavedCallingStationID	String	False		Delimited Data	The msNPSavedCallingStationID attribute is used internally. Do not modify this value directly.
MsRADIUSCallbackNumber	String	False		Delimited Data	The msRADIUSCallbackNumber attribute is used internally. Do not modify this value directly.
MsRADIUSFramedIPAddress	String	False		Delimited Data	The msRADIUSFramedIPAddresses attribute is used internally. Do not modify this value directly.
MsRADIUSFramedRoute	String	False		Delimited	The



	<i>ng</i>		Data	msRADIUSFramedRoute attribute is used internally. Do not modify this value directly.
MsRADIUSServiceType	<i>String</i>	False	Delimited Data	The msRADIUSServiceType attribute is used internally. Do not modify this value directly.
MsRASSavedCallbackNumber	<i>String</i>	False	Delimited Data	The msRASSavedCallbackNumber attribute is used internally. Do not modify this value directly.
MsRASSavedFramedIPAddress	<i>String</i>	False	Delimited Data	The msRASSavedFramedIPAddress attribute is used internally. Do not modify this value directly.
MsRASSavedFramedRoute	<i>String</i>	False	Delimited Data	The msRASSavedFramedRoute attribute is used internally. Do not modify this value directly.
NetbootGUID	<i>String</i>	False	Delimited Data	Diskless boot: A computer's on-board GUID. Corresponds to the computer's network card MAC address.
NetbootInitialization	<i>String</i>	False	Delimited Data	Default boot path for diskless boot.
NetbootMachineFilePath	<i>String</i>	False	Delimited Data	This attribute specifies the server that answers the client. Beginning with the

				Windows Server 2003 operating system, it can indicate the Startrom.com that the client gets.
NetbootMirrorDataFile	<i>String</i>	False	Delimited Data	The Netboot-Mirror-Data-File attribute is reserved for internal use.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NetbootSIFFile	<i>String</i>	False	Delimited Data	The Netboot-SIF-File attribute is reserved for internal use.
NetworkAddress	<i>String</i>	False	Delimited Data	The TCP/IP address for a network segment. Also called the subnet address.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
NtPwdHistory	<i>String</i>	False	Delimited Data	The password history of the user in Windows NT one-way format (OWF). Windows 2000 uses the Windows NT OWF.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the

object.				
OperatingSystem	String	False	Delimited Data	The Operating System name, for example, Windows Vista Enterprise.
OperatingSystemHotfix	String	False	Delimited Data	The hotfix level of the operating system.
OperatingSystemServicePack	String	False	Delimited Data	The operating system service pack ID string (for example, SP3).
OperatingSystemVersion	String	False	Delimited Data	The operating system version string, for example, 4.0.
OperatorCount	String	False	Delimited Data	Operator count.
Ou	String	False	Delimited Data	The name of the organizational unit.
O	String	False	Delimited Data	The name of the company or organization.
OtherLoginWorkstations	String	False	Delimited Data	Non-Windows NT or LAN Manager workstations from which a user can log on.
OtherMailbox	String	False	Delimited Data	Contains other additional mail addresses in a form such as CCMail: BruceKeever.
MiddleName	String	False	Delimited Data	Additional names for a user. For example, middle name, patronymic, matronymic, or others.

OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PersonalTitle	<i>String</i>	False	Delimited Data	The user's title.
OtherFacsimileTelephoneNumber	<i>String</i>	False	Delimited Data	A list of alternate facsimile numbers.
OtherHomePhone	<i>String</i>	False	Delimited Data	A list of alternate home phone numbers.

HomePhone	String	False	Delimited Data	The user's main home phone number.
OtherIpPhone	String	False	Delimited Data	The list of alternate TCP/IP addresses for the phone. Used by Telephony.
IpPhone	String	False	Delimited Data	The TCP/IP address for the phone. Used by Telephony.
PrimaryInternationalISDNNumber	String	False	Delimited Data	The primary ISDN.
OtherMobile	String	False	Delimited Data	A list of alternate mobile phone numbers.
Mobile	String	False	Delimited Data	The primary mobile phone number.
OtherTelephone	String	False	Delimited Data	A list of alternate office phone numbers.
OtherPager	String	False	Delimited Data	A list of alternate pager numbers.
Pager	String	False	Delimited Data	The primary pager number.
PhysicalDeliveryOfficeName	String	False	Delimited Data	Contains the office location in the user's place of business.
PhysicalLocationObject	String	False	Delimited Data	Used to map a device (for example, a printer, computer, and so on) to a physical location.
ThumbnailPhoto	String	False	Delimited Data	An image of the user. A space-efficient format like JPEG or GIF is

recommended.				
PolicyReplicationFlags	<i>String</i>	False	Delimited Data	Determines which LSA properties are replicated to clients.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	<i>String</i>	False	Delimited Data	The mailing address for the object.
PostalCode	<i>String</i>	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	<i>String</i>	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	<i>String</i>	False	Delimited Data	The X.500-preferred way to deliver to addressee.
PreferredOU	<i>String</i>	False	Delimited Data	The Organizational Unit to show by default on user's desktop.
PrimaryGroupID	<i>String</i>	False	Delimited Data	Contains the relative identifier (RID) for the primary group of the user. By default, this is the RID for the Domain Users group.
ProfilePath	<i>String</i>	False	Delimited Data	Specifies a path to the user's profile. This value can be a null string, a local absolute path, or a UNC path.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active

				Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
PwdLastSet	<i>String</i>	False	Delimited Data	The date and time that the password for this account was last changed. This value is stored as a large integer that represents the number of 100 nanosecond intervals since January 1, 1601 (UTC). If this value is set to 0 and the User-Account-Control attribute does not contain the UF_DONT_EXPIRE_PASSWD flag, then the user must set the password at the next logon.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.

RegisteredAddress	<i>String</i>	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited	Lists the servers from



	<i>ng</i>		Data	which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
RIDSetReferences	<i>String</i>	False	Delimited Data	List of references to RID-Set objects that manage Relative Identifier (RID) allocation.
ScriptPath	<i>String</i>	False	Delimited Data	This attribute specifies the path for the user's logon script. The string can be null.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a

				computer under the sites folder.
ServicePrincipalName	<i>String</i>	False	Delimited Data	List of principal names used for mutual authentication with an instance of a service on this computer.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteGUID	<i>String</i>	False	Delimited Data	The unique identifier for a site.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	<i>String</i>	False	Delimited Data	The name of a user's state or province.
Street	<i>String</i>	False	Delimited Data	The street address.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
Sn	<i>String</i>	False	Delimited Data	This attribute contains the family or last name for a user.

SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
PrimaryTelexNumber	<i>String</i>	False	Delimited Data	The primary telex number.
TerminalServer	<i>String</i>	False	Delimited Data	Opaque data used by the Windows NT terminal server.
Co	<i>String</i>	False	Delimited Data	The country/region in which the user is located.
Title	<i>String</i>	False	Delimited Data	Contains the user's job title. This property is commonly used to indicate the formal job title, such as Senior Programmer, rather than occupational class, such as programmer. It is not typically used for suffix titles such as Esq. or DDS.
UnicodePwd	<i>String</i>	False	Delimited Data	The password of the user in Windows NT one-way

				format (OWF). Windows 2000 uses the Windows NT OWF. This property is used only by the operating system. Note that you cannot derive the clear password back from the OWF form of the password.
UserAccountControl	<i>String</i>	False	Delimited Data	Flags that control the behavior of the user account.
Comment	<i>String</i>	False	Delimited Data	The user's comments.
UserParameters	<i>String</i>	False	Delimited Data	Parameters of the user. Points to a Unicode string that is set aside for use by applications. This string can be a null string, or it can have any number of characters before the terminating null character. Microsoft products use this member to store user data specific to the individual program.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
UserPrincipalName	<i>String</i>	False	Delimited Data	This attribute contains the UPN that is an Internet-style login name for a user based on the Internet standard RFC 822. The UPN is shorter than the distinguished name and

					easier to remember. By convention, this should map to the user email name. The value set for this attribute is equal to the length of the user's ID and the domain name. For more information about this attribute, see User Naming Attributes.
UserSharedFolder	<i>String</i>	False		Delimited Data	Specifies a UNC path to the user's shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserSharedFolderOther	<i>String</i>	False		Delimited Data	Specifies a UNC path to the user's additional shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserWorkstations	<i>String</i>	False		Delimited Data	Contains the NetBIOS or DNS names of the computers running Windows NT Workstation or Windows 2000 Professional from which the user can log on. Each NetBIOS name is separated by a comma. Multiple names should be

separated by commas.				
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
VolumeCount	<i>String</i>	False	Delimited Data	The tracked volume quota for a given computer.
WbemPath	<i>String</i>	False	Delimited	References to objects in

	<i>ng</i>		Data	other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a

				website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.
UserCertificate	<i>String</i>	False	Delimited Data	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Contact

This class contains information about a person or company that you may need to contact on a regular basis.

## Columns



Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited	The list of classes from

	<i>ng</i>		Data	which this class is derived.
Notes	<i>String</i>	False	Delimited Data	Free text for notes on object.
StreetAddress	<i>String</i>	False	Delimited Data	The user's address.
HomePostalAddress	<i>String</i>	False	Delimited Data	A user's home address.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
Assistant	<i>String</i>	False	Delimited Data	The distinguished name of a user's administrative assistant.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in

				canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Info	<i>String</i>	False	Delimited Data	The user's comments. This string can be a null string.
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
Company	<i>String</i>	False	Delimited Data	The user's company name.
CountryCode	<i>String</i>	False	Delimited Data	Specifies the country/region code for the user's language of choice. This value is not used by Windows 2000.
C	<i>String</i>	False	Delimited Data	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	<i>String</i>	False	Delimited	The date when this object

	<i>ng</i>		Data	was created. This value is replicated.
Department	<i>String</i>	False	Delimited Data	Contains the name for the department in which the user works.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DestinationIndicator	<i>String</i>	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
Division	<i>String</i>	False	Delimited Data	The user's division.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to

modify the object.				
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
Mail	String	False	Delimited Data	The list of email addresses for a contact.
EmployeeID	String	False	Delimited Data	The ID of an employee.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	String	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the

				DC where the schema can be modified.
GarbageCollPeriod	<i>String</i>	False	Delimited Data	This attribute is located on the CN=Directory Service,CN=Windows NT,CN=Services,CN=Configuration,... object. It represents the time, in hours, between DS garbage collection runs.
GenerationQualifier	<i>String</i>	False	Delimited Data	Indicates a person generation. For example, Jr. or II.
GivenName	<i>String</i>	False	Delimited Data	Contains the given name (first name) of the user.
Initials	<i>String</i>	False	Delimited Data	Contains the initials for parts of the user's full name. This may be used as the middle initial in the Windows Address Book.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has

				expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LegacyExchangeDN	<i>String</i>	False	Delimited Data	The distinguished name previously used by Exchange.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ThumbnailLogo	<i>String</i>	False	Delimited Data	BLOB that contains a logo for this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
Manager	<i>String</i>	False	Delimited Data	Contains the distinguished name of the user who is the user's manager. The manager's user object

				contains a directReports property that contains references to all user objects that have their manager properties set to this distinguished name.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MhsORAddress	String	False	Delimited Data	X.400 address.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited	List of nonsecurity-



	<i>ng</i>		Data	members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
Ou	<i>String</i>	False	Delimited Data	The name of the organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherMailbox	<i>String</i>	False	Delimited Data	Contains other additional mail addresses in a form such as CCMail: BruceKeever.
MiddleName	<i>String</i>	False	Delimited Data	Additional names for a user. For example, middle name, patronymic, matronymic, or others.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically

					updates the Distinguished Name.
PartialAttributeDeletionList	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PersonalTitle	String	False		Delimited Data	The user's title.
OtherFacsimileTelephoneNumber	String	False		Delimited Data	A list of alternate facsimile numbers.
OtherHomePhone	String	False		Delimited Data	A list of alternate home phone numbers.
HomePhone	String	False		Delimited Data	The user's main home phone number.
OtherIpPhone	String	False		Delimited Data	The list of alternate TCP/IP addresses for the phone. Used by Telephony.
IpPhone	String	False		Delimited Data	The TCP/IP address for the phone. Used by Telephony.

PrimaryInternationalISDNNumber	String	False	Delimited Data	The primary ISDN.
OtherMobile	String	False	Delimited Data	A list of alternate mobile phone numbers.
Mobile	String	False	Delimited Data	The primary mobile phone number.
OtherTelephone	String	False	Delimited Data	A list of alternate office phone numbers.
OtherPager	String	False	Delimited Data	A list of alternate pager numbers.
Pager	String	False	Delimited Data	The primary pager number.
PhysicalDeliveryOfficeName	String	False	Delimited Data	Contains the office location in the user's place of business.
ThumbnailPhoto	String	False	Delimited Data	An image of the user. A space-efficient format like JPEG or GIF is recommended.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	String	False	Delimited Data	The mailing address for the object.
PostalCode	String	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	String	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	String	False	Delimited	The X.500-preferred way to

	<i>ng</i>		Data	deliver to addressee.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	<i>String</i>	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.

ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.

Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAddressBook	<i>String</i>	False	Delimited Data	This attribute is used to indicate in which MAPI address books an object will appear. It is usually maintained by the Exchange Recipient Update Service.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	<i>String</i>	False	Delimited Data	The name of a user's state or province.

Street	<i>String</i>	False	Delimited Data	The street address.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
Sn	<i>String</i>	False	Delimited Data	This attribute contains the family or last name for a user.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
PrimaryTelexNumber	<i>String</i>	False	Delimited Data	The primary telex number.
Co	<i>String</i>	False	Delimited Data	The country/region in which the user is located.

TextEncodedORAddress	<i>String</i>	False	Delimited Data	This attribute is used to support X.400 addresses in a text format.
Title	<i>String</i>	False	Delimited Data	Contains the user's job title. This property is commonly used to indicate the formal job title, such as Senior Programmer, rather than occupational class, such as programmer. It is not typically used for suffix titles such as Esq. or DDS.
UserCert	<i>String</i>	False	Delimited Data	Nortel v1 or DMS certificates.
Comment	<i>String</i>	False	Delimited Data	The user's comments.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
UserSMIMECertificate	<i>String</i>	False	Delimited Data	Certificate distribution object or tagged certificates.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.



USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-

				Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.
UserCertificate	<i>String</i>	False	Delimited Data	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## CRLDistributionPoint

The object holding Certificate, Authority, and Delta Revocation lists.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
AuthorityRevocationList	<i>String</i>	False		Delimited Data	Cross certificate, Certificate Revocation List.

CertificateRevocationList	String	False	Delimited Data	Represents a list of certificates that have been revoked.
InstanceType	String	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited	A list of attributes that can

	<i>g</i>		Data	be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
CertificateAuthorityObject	<i>String</i>	False	Delimited Data	Reference to the certification authority associated with a Certificate Revocation List distribution point.
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is

				replicated.
CRLPartitionedRevocationList	String	False	Delimited Data	Public Key Infrastructure-revocation lists.
DeltaRevocationList	String	False	Delimited Data	List of certificates that have been revoked since the last delta update.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.

ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.

MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.



MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial

				replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.

Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited	Lists the servers that the

	<i>g</i>		Data	directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.

WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DHCPClass

Represents a DHCP Server (or set of servers).

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
DhcpFlags	<i>String</i>	False		Delimited Data	The dhcp-Flags attribute is not currently used.

DhcpIdentification	<i>String</i>	False	Delimited Data	The dhcp-Identification attribute is not currently used.
DhcpType	<i>String</i>	False	Delimited Data	The type of DHCP server. This attribute is set on all objects of objectClass dHCPClass. Its value defines the type of object:
DhcpUniqueKey	<i>String</i>	False	Delimited Data	The dhcp-Unique-Key attribute is not currently used.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited	The description displayed



	<i>g</i>		Data	on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform

				searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DhcpClasses	<i>String</i>	False	Delimited Data	The dhcp-Classes attribute is not currently used.
DhcpMask	<i>String</i>	False	Delimited Data	The dhcp-Mask attribute is not currently used.
DhcpMaxKey	<i>String</i>	False	Delimited Data	The dhcp-MaxKey attribute is not currently used.
DhcpObjDescription	<i>String</i>	False	Delimited Data	The dhcp-Obj-Description attribute is not currently used.
DhcpObjName	<i>String</i>	False	Delimited Data	The dhcp-Obj-Name attribute is not currently used.
DhcpOptions	<i>String</i>	False	Delimited Data	The dhcp-Options attribute is not currently used.
DhcpProperties	<i>String</i>	False	Delimited Data	The dhcp-Properties attribute is not currently used.
DhcpRanges	<i>String</i>	False	Delimited	The dhcp-Ranges attribute

	<i>g</i>		Data	is not currently used.
DhcpReservations	<i>String</i>	False	Delimited Data	The dhcp-Reservations attribute is not currently used.
DhcpServers	<i>String</i>	False	Delimited Data	Contains a list of servers that are authorized in the enterprise.
DhcpSites	<i>String</i>	False	Delimited Data	The dhcp-Sites attribute is not currently used.
DhcpState	<i>String</i>	False	Delimited Data	The dhcp-State attribute is not currently used.
DhcpSubnets	<i>String</i>	False	Delimited Data	The dhcp-Subnets attribute is not currently used.
DhcpUpdateTime	<i>String</i>	False	Delimited Data	The dhcp-Update-Time attribute is not currently used.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.

DSCorePropagationDataString	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBLString	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBLString	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated.

					After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False		Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False		Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False		Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False		Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False		Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False		Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MscopeId	<i>String</i>	False		Delimited Data	Indicates that there is a multicast scope on the specified DHCP server.

MS-DS-ConsistencyChildCount	Integer	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NetworkAddress	String	False	Delimited Data	The TCP/IP address for a network segment. Also called the subnet address.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OptionDescription	String	False	Delimited Data	This attribute contains a description of an option that is set on the DHCP

server.				
OptionsLocation	String	False	Delimited Data	For DHCP, the options location contains the DN for alternate sites that contain the options information.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited	The list of objects that this

	<i>g</i>		Data	object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here



				can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:

ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SuperScopeDescription	<i>String</i>	False	Delimited Data	This attribute provides a description for a superscope.
SuperScopes	<i>String</i>	False	Delimited Data	This attribute is used to group together all the different scopes used in the DHCP class into a single entity.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by

					the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False		Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False		Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False		Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False		Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False		Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False		Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False		Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are

system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DnsNode

Holds the DNS resource records for a single host.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
Dc	<i>String</i>	False		Delimited Data	The naming attribute for Domain and DNS objects. Usually displayed as dc=DomainName.

InstanceType	String	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.

AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerList	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.

DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DNSProperty	String	False	Delimited Data	Used to store binary settings (properties) on DNS zone objects.
DnsRecord	String	False	Delimited Data	Used to store binary DNS resource records on DNS objects.
DNSTombstoned	String	False	Delimited Data	True if this object has been tombstoned. This attribute exists to make searching for tombstoned records easier and faster. Tombstoned objects are objects that have been deleted but not yet removed from the directory.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.



ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.

MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.

MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False	Delimited Data	Tracks the internal replication state of partial

				replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.

Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited	Lists the servers that the

	<i>g</i>		Data	directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.

WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.



## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DnsZone

The container for DNS Nodes. Holds zone metadata.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
Dc	<i>String</i>	False		Delimited Data	The naming attribute for Domain and DNS objects.

				Usually displayed as dc=DomainName.
InstanceType	String	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.

AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-

				valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DnsAllowDynamic	String	False	Delimited Data	The Dns-Allow-Dynamic attribute is not currently used.
DnsAllowXFR	String	False	Delimited Data	The Dns-Allow-XFR attribute is not currently used.
DnsNotifySecondaries	String	False	Delimited Data	The Dns-Notify-Secondaries attribute is not currently used.
DNSProperty	String	False	Delimited Data	Used to store binary settings (properties) on DNS zone objects.
DnsSecureSecondaries	String	False	Delimited Data	The Dns-Secure-Secondaries attribute is not currently used.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.

DSCorePropagationDataString	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBLString	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBLString	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated.

				After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.

MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever

					the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False		Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False		Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as



				custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.

RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming

				Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited	Value of the USN-Changed

	<i>g</i>		Data	attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the

global catalog.				
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Domain

Contains information about a domain.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.

DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
Dc	<i>String</i>	False	Delimited Data	The naming attribute for Domain and DNS objects. Usually displayed as dc=DomainName.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited	The description displayed

	<i>g</i>		Data	on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform

				searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.



Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.

IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or

				application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the

				process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished

				name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request

				for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the

				class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False	Delimited Data	This attribute contains a

list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.



## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DomainDNS

Windows NT domain with DNS-based (DC=) naming.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
CACertificate	<i>String</i>	False		Delimited Data	Certificates of trusted Certification Authorities.

Dc	<i>String</i>	False	Delimited Data	The naming attribute for Domain and DNS objects. Usually displayed as dc=DomainName.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.

AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AuditingPolicy	String	False	Delimited Data	Auditing policy for the local policy.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
BuiltinCreationTime	String	False	Delimited Data	The Builtin-Creation-Time attribute is used to support replication to Windows NT 4.0 domains.
BuiltinModifiedCount	String	False	Delimited Data	The Builtin-Modified-Count attribute is used to support replication to Windows NT 4.0 domains.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_

NAME, ...).				
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
ControlAccessRights	String	False	Delimited Data	Used by DS Security to determine which users can perform specific operations on the host object.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
CreationTime	String	False	Delimited Data	The date and time that the object was created.
DefaultLocalPolicyObject	String	False	Delimited Data	A reference to a Policy object that defines the local policy for the host object.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	String	False	Delimited Data	The location of the desktop profile for a user or group of users. Not used.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial,

				and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DomainPolicyObject	String	False	Delimited Data	Reference to the policy object that defines the Local Security Authority policy for the host domain.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
EFSPolicy	String	False	Delimited Data	The Encrypting File System Policy.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.

FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GPLink	<i>String</i>	False	Delimited Data	A sorted list of Group Policy options. Each option is a DWORD. Use of the UNICODE string is a convenience.
GPOptions	<i>String</i>	False	Delimited Data	Options that affect all group policies associated with the object hosting this property.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.

IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LockoutDuration	<i>String</i>	False	Delimited Data	The amount of time that an account is locked due to the Lockout-Threshold being exceeded. This value is stored as a large integer that represents the negative of the number of 100-nanosecond intervals from the time the Lockout-Threshold is exceeded that must elapse before the account is unlocked.
LockOutObservationWindow	<i>String</i>	False	Delimited Data	The range of time, in 100-nanosecond intervals, in which the system increments the incorrect logon count.
LockoutThreshold	<i>String</i>	False	Delimited Data	The number of invalid logon attempts that are permitted before the account is locked out.
LSACreationTime	<i>String</i>	False	Delimited Data	The LSA-Creation-Time attribute is used to support replication to Windows NT 4.0 domains.
LSAModifiedCount	<i>String</i>	False	Delimited Data	The LSA-Modified-Count attribute is used to support replication to Windows NT

4.0 domains.				
ManagedBy	String	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxPwdAge	String	False	Delimited Data	The maximum amount of time, in 100-nanosecond intervals, a password is valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals from the time the password was set before the password expires.
MinPwdAge	String	False	Delimited Data	The minimum amount of time, in 100-nanosecond intervals, that a password is valid.
MinPwdLength	String	False	Delimited Data	The minimum number of characters that a password must contain.



ModifiedCountAtLastPromotion	String	False	Delimited Data	The Net Logon Change Log serial number at last promotion.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
Ms-DS-MachineAccountQuota	String	False	Delimited Data	The number of computer accounts that a user is allowed to create in a domain.
NETBIOSName	String	False	Delimited Data	The name of the object to be used over NetBIOS.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NextRid	String	False	Delimited Data	The Next Rid field used by the mixed mode allocator.
NonSecurityMemberBL	String	False	Delimited	List of nonsecurity-

	<i>g</i>		Data	members for an Exchange distribution list.
NTMixedDomain	<i>String</i>	False	Delimited Data	Indicates that the domain is in native mode or mixed mode. This attribute is found in the domainDNS (head) object for the domain.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing

				attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PekKeyChangeInterval	<i>String</i>	False	Delimited Data	Password encryption key change interval.
PekList	<i>String</i>	False	Delimited Data	List of password encryption keys.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
PrivateKey	<i>String</i>	False	Delimited Data	An encrypted private key.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.

PwdHistoryLength	<i>String</i>	False	Delimited Data	The number of old passwords to save.
PwdProperties	<i>String</i>	False	Delimited Data	Password Properties. Part of Domain Policy. A bitfield to indicate complexity and storage restrictions.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplicaSource	<i>String</i>	False	Delimited Data	This attribute contains the GUID of a replication source.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited	Contains the list of users

	<i>g</i>		Data	that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
RIDManagerReference	<i>String</i>	False	Delimited Data	The Distinguished Name for the RID Manager of an object.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The

					distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False		Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False		Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False		Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False		Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False		Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TreeName	String	False		Delimited Data	DNS name of the domain at the root of a tree.
USNChanged	String	False		Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False		Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.

USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that

				referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DomainPolicy



Defines the local security authority policy for one or more domains.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.

ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AuthenticationOptions	String	False	Delimited Data	The authentication options used in ADSI to bind to directory services objects.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The

				results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
DefaultLocalPolicyObject	String	False	Delimited Data	A reference to a Policy object that defines the local policy for the host object.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable

				display name is usually the combination of the user's first name, middle initial, and last name.
DomainCAs	String	False	Delimited Data	List of certification authorities for a given domain.
DomainPolicyReference	String	False	Delimited Data	The Distinguished Name of a domain policy object that a policy object copies from.
DomainWidePolicy	String	False	Delimited Data	This is for user extensible policy to be replicated to the clients.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
EFSPolicy	String	False	Delimited Data	The Encrypting File System Policy.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
ForceLogoff	String	False	Delimited Data	Used in computing the kick off time in SamlGetAccountRestrictions. Logoff time minus Force

				Log off equals kick off time.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IpssecPolicyReference	String	False	Delimited Data	The distinguished name of the related Internet Protocol security (IPsec) policy.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.

MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LockoutDuration	String	False	Delimited Data	The amount of time that an account is locked due to the Lockout-Threshold being exceeded. This value is stored as a large integer that represents the negative of the number of 100-nanosecond intervals from the time the Lockout-Threshold is exceeded that must elapse before the account is unlocked.
LockOutObservationWindow	String	False	Delimited Data	The range of time, in 100-nanosecond intervals, in which the system increments the incorrect logon count.
LockoutThreshold	String	False	Delimited Data	The number of invalid logon attempts that are permitted before the account is locked out.
ManagedBy	String	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.

ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxPwdAge	<i>String</i>	False	Delimited Data	The maximum amount of time, in 100-nanosecond intervals, a password is valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals from the time the password was set before the password expires.
MaxRenewAge	<i>String</i>	False	Delimited Data	This attribute determines the time period, in days, during which a user's ticket-granting ticket (TGT) can be renewed for purposes of Kerberos authentication. The default setting is 7 days in the Default Domain Group Policy object (GPO).
MaxTicketAge	<i>String</i>	False	Delimited Data	This attribute determines the maximum amount of

					time, in hours, that a user's ticket-granting ticket (TGT) can be used for the purpose of Kerberos authentication. When a user's TGT expires, a new one must be requested, or the existing one must be renewed. By default, this setting is set to 10 hours in the Default Domain Group Policy object (GPO).
MinPwdAge	String	False		Delimited Data	The minimum amount of time, in 100-nanosecond intervals, that a password is valid.
MinPwdLength	String	False		Delimited Data	The minimum number of characters that a password must contain.
MinTicketAge	String	False		Delimited Data	This attribute determines the minimum time period, in hours, that a user's ticket-granting ticket (TGT) can be used for Kerberos authentication before a request can be made to renew the ticket.
ModifyTimeStamp	String	False		Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildren	String	False		Delimited Data	This attribute is used to check consistency between the directory and another



				object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished

				Name.
PartialAttributeDeletionSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.

ProxyLifetime	<i>String</i>	False	Delimited Data	Contains the lifetime for a proxy object.
PublicKeyPolicy	<i>String</i>	False	Delimited Data	Reference to the Public Key policy for this domain.
PwdHistoryLength	<i>String</i>	False	Delimited Data	The number of old passwords to save.
PwdProperties	<i>String</i>	False	Delimited Data	Password Properties. Part of Domain Policy. A bitfield to indicate complexity and storage restrictions.
QualityOfService	<i>String</i>	False	Delimited Data	Local or domain quality of service bits on policy objects.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here

				can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:

ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.

USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that

				referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## DomainRelatedObject

The domainRelatedObject object class is used to define an entry that represents a series of documents.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the



				ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AssociatedDomain	String	False	Delimited Data	The associatedDomain attribute type specifies a DNS domain that is associated with an object.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in

				canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited	The printable display

	<i>ng</i>		Data	name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the

				DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited	Backward link for Has-

	<i>ng</i>		Data	Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDS-Approx-Immed-Subordinates	<i>String</i>	False	Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and

				another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False	Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRoleBL	String	False	Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False	Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.
MsDS-NCReplOutboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False	Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False	Delimited Data	Backward link for ms-DS-Object-Reference.

MsDS-OperationsForAzRoleBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetaData	String	False	Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False	Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False	Delimited Data	Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	String	False	Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	String	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited	Same as the Distinguished

	<i>ng</i>		Data	Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular



				partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.

ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited	This constructed attribute

	<i>ng</i>		Data	returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.

USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object

containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## ForeignSecurityPrincipal

The Security Principal from an external source.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated

				on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited	A list of classes that can be

	<i>g</i>		Data	modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited	The display name for an



	<i>g</i>		Data	object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
ForeignIdentifier	<i>String</i>	False	Delimited Data	The security properties used by a foreign system.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReference	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer

				belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the

				property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited	Same as the Distinguished

	<i>g</i>		Data	Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectSid	<i>String</i>	False	Delimited Data	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited	Tracks the internal

	<i>g</i>		Data	replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS

				objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other

				change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the

				latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This



information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Group

Stores a list of user names. Used to apply security principals on resources.

### Table Specific Information

#### Select

All columns support server-side processing for the operators =, >=, <=, !=, LIKE, AND, and OR. Other filters are executed client side within the adapter. For example, the following query is processed by Active Directory:

```
SELECT * FROM Group WHERE GroupType != '-2147483644' AND ObjectClass = 'top;group' LIMIT 5
```

#### Insert

To add a Group, all fields can be specified except Id, DN, and BaseDN. Required fields that should be provided are RDN and ObjectClass. For example:

```
INSERT INTO Group (RDN, ObjectClass) VALUES ('CN=Domain Admins', 'group')
```

#### Update

All columns except Id, DN, and BaseDN can be updated by providing the Id in the WHERE clause. For example:

```
UPDATE Group SET Member = 'CN=SUPPORT_388945a0,CN=Users,DC=MyDC' WHERE
Id = '1|CN=HelpServicesGroup,CN=Users,DC=MyDC'
```

## Delete

Groups can be deleted by providing the Id of the Group in a DELETE statement. For example:

```
DELETE FROM Group WHERE Id = '1|CN=HelpServicesGroup,CN=Users,DC=MyDC'
```

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
GroupType	String	False		Delimited Data	Contains a set of flags that define the type and scope of a group object. For the possible values for this attribute, see Remarks.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated

				on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
SAMAccountName	<i>String</i>	False	Delimited Data	The logon name used to support clients and servers running earlier versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
AccountNameHistory	<i>String</i>	False	Delimited Data	The length of time that the account has been active.
AdminCount	<i>String</i>	False	Delimited Data	Indicates that a given object has had its ACLs changed to a more secure value by the system because it was a member of one of the administrative

				groups (directly or transitively).
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AltSecurityIdentities	String	False	Delimited Data	Contains mappings for X.509 certificates or external Kerberos user accounts to this user for the purpose of authentication.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are

				identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Info	String	False	Delimited Data	The user's comments. This string can be a null string.
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
ControlAccessRights	String	False	Delimited Data	Used by DS Security to determine which users can perform specific operations on the host object.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	String	False	Delimited Data	The location of the desktop profile for a user or group of users. Not used.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the

					combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False		Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False		Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False		Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
Mail	String	False		Delimited Data	The list of email addresses for a contact.
ExtensionName	String	False		Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False		Delimited Data	To be used by the object to store bit information.
FromEntry	String	False		Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReference	String	False		Delimited Data	Reference to replica sets to which this computer belongs.

FRSMemberReferenceBLString	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GarbageCollPeriod	String	False	Delimited Data	This attribute is located on the CN=Directory Service,CN=Windows NT,CN=Services,CN=Configuration,... object. It represents the time, in hours, between DS garbage collection runs.
GroupAttributes	String	False	Delimited Data	The Group-Attributes attribute is not currently used.
GroupMembershipSAM	String	False	Delimited Data	Windows NT Security. Down level Windows NT support.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited	The distinguished name of



	<i>g</i>		Data	the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LegacyExchangeDN	<i>String</i>	False	Delimited Data	The distinguished name previously used by Exchange.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
Member	<i>String</i>	False	Delimited Data	The list of users that belong to the group.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last

					changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data		This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data		This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data		A list of service connection points that reference this NetBoot server.
NonSecurityMember	String	False	Delimited Data		Nonsecurity members of a group. Used for Exchange distribution lists.
NonSecurityMemberBL	String	False	Delimited Data		List of nonsecurity-members for an Exchange distribution list.
NTGroupMembers	String	False	Delimited Data		This attribute is not used.
DistinguishedName	String	False	Delimited Data		Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data		The unique identifier for an object.
ObjectSid	String	False	Delimited		A binary value that

	<i>g</i>		Data	specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OperatorCount	<i>String</i>	False	Delimited Data	Operator count.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines

					the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False		Delimited Data	The list of objects that this object can contain.
PrimaryGroupToken	<i>String</i>	False		Delimited Data	A computed attribute that is used in retrieving the membership list of a group, such as Domain Users. The complete membership of such groups is not stored explicitly for scaling reasons.
ProxiedObjectName	<i>String</i>	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False		Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False		Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False		Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished

				name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request

				for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
Rid	<i>String</i>	False	Delimited Data	The relative Identifier of an object.
SAMAccountType	<i>String</i>	False	Delimited Data	This attribute contains information about every account type object. You can enumerate a list of account types or you can use the Display Information API to create a list. Because computers, normal user accounts, and trust accounts can also be enumerated as user objects, the values for these accounts must be a contiguous range.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SecurityIdentifier	<i>String</i>	False	Delimited Data	A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The

					distinguished name of a computer under the sites folder.
ShowInAddressBook	String	False		Delimited Data	This attribute is used to indicate in which MAPI address books an object will appear. It is usually maintained by the Exchange Recipient Update Service.
ShowInAdvancedViewOnly	String	False		Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SIDHistory	String	False		Delimited Data	Contains previous SIDs used for the object if the object was moved from another domain. Whenever an object is moved from one domain to another, a new SID is created and that new SID becomes the objectSID. The previous SID is added to the SIDHistory property.
SiteObjectBL	String	False		Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False		Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False		Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SupplementalCredential	String	False	Delimited Data	Stored credentials for use in authenticating. The encrypted version of the user's password. This attribute is neither readable nor writable.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	String	False	Delimited Data	The primary telephone number.
TextEncodedORAddress	String	False	Delimited Data	This attribute is used to support X.400 addresses in a text format.
UserCert	String	False	Delimited Data	Nortel v1 or DMS certificates.
UserSMIMECertificate	String	False	Delimited Data	Certificate distribution object or tagged certificates.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for



				the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the

				following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	String	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	String	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	String	False	Delimited Data	A web page that is the primary landing page of a website.
Url	String	False	Delimited Data	A list of alternate webpages.
UserCertificate	String	False	Delimited Data	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## GroupOfNames

Used to define entries that represent an unordered set of names that represent individual objects or other groups of names.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.

NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
BusinessCategory	String	False	Delimited	Descriptive text on an

	<i>g</i>		Data	Organizational Unit.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial,

				and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited	Flexible Single-Master

	<i>g</i>		Data	Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.

MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
Member	String	False	Delimited Data	The list of users that belong to the group.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.



ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
Ou	String	False	Delimited Data	The name of the organizational unit.
O	String	False	Delimited Data	The name of the company or organization.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
Owner	String	False	Delimited Data	The distinguished name of an object that has ownership of an object.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited	Tracks the internal

	<i>g</i>		Data	replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS

				objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other

				change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.

USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and

distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## GroupOfUniqueNames

Defines the entries for a group of unique names. In general, used to store account objects.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The

				value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
UniqueMember	<i>String</i>	False	Delimited Data	The distinguished name for the member of a group. Used by groupOfUniqueNames.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.



AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
BusinessCategory	<i>String</i>	False	Delimited Data	Descriptive text on an Organizational Unit.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object.

					This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False		Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False		Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False		Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False		Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False		Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False		Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False		Delimited Data	This is a constructed attribute that is TRUE if the object is writable and

					FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False		Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False		Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False		Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False		Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False		Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False		Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False		Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False		Delimited Data	The Distinguished Name (DN) of the last known

				parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDS-Approx-Immed-Subordinates	<i>String</i>	False	Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI

					display the contents of a container.
MS-DS-ConsistencyChildCount	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False		Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRoleB	String	False		Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False		Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.
MsDS-NCReplOutboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server sends replication data to

					these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False		Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False		Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoleBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetaData	String	False		Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False		Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False		Delimited Data	Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	String	False		Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.

OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
Ou	<i>String</i>	False	Delimited Data	The name of the organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically

				updates the Distinguished Name.
Owner	<i>String</i>	False	Delimited Data	The distinguished name of an object that has ownership of an object.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy



				addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the

					list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False		Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False		Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False		Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False		Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	<i>String</i>	False		Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False		Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False		Delimited Data	TRUE if this attribute is to be visible in the Advanced

				mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.

USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-

				Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## GroupPolicyContainer

This represents the Group Policy Object. It is used to define group policies.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the

				ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are

				identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
DefaultClassStore	String	False	Delimited Data	The default Class Store for a given user.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial,



				and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReference	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReference	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GPCFileSysPath	String	False	Delimited Data	True if the object is enabled.

GPCFunctionalityVersion	String	False	Delimited Data	The version of the Group Policy Editor that created this object.
GPCMachineExtensionName	String	False	Delimited Data	Used by the Group Policy Object for computer policies.
GPCUserExtensionName	String	False	Delimited Data	Used by the Group Policy Object for user policies.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the

				property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited	Same as the Distinguished

	<i>g</i>		Data	Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.

PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an

				entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SchemaVersion	String	False	Delimited Data	The version number for the schema.
SDRightsEffective	String	False	Delimited	This constructed attribute

	<i>g</i>		Data	returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited	The update sequence

	<i>g</i>		Data	number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
VersionNumber	<i>String</i>	False	Delimited Data	A general purpose version number.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it



has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## IpHost

Represents an abstraction of a host or other IP device.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.

NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.

CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.

DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The

				distinguished name of the DC where the schema can be modified.
IpHostNumber	<i>String</i>	False	Delimited Data	Contains the IP address of the host in dotted decimal notation, omitting the leading zeros.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	<i>String</i>	False	Delimited	Contains the list of objects

	<i>ng</i>		Data	that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDFSR-ComputerReference	<i>String</i>	False	Delimited Data	Contains the backward link for the ms-DFSR-ComputerReference attribute.
MsDFSR-MemberReference	<i>String</i>	False	Delimited Data	Contains the backward link for the ms-DFSR-MemberReference attribute.
MsDS-Approx-Immed-Subordinates	<i>String</i>	False	Delimited Data	The value returned by this attribute is based on index

					sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False		Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRole	String	False		Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False		Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server obtains replication data



					from these other servers, which act as sources.
MsDS-NCReplOutboundNeighborsFalse	String	False		Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False		Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False		Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoleBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetaData	String	False		Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False		Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False		Delimited	Backward link from Az-

	<i>ng</i>		Data	Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
MsSFU30PosixMemberOf	<i>String</i>	False	Delimited Data	Contains the display names of groups to which this user belongs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been

					moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False		Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False		Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign

				mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to

				this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited	The list of distinguished

	<i>ng</i>		Data	names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
Uid	<i>String</i>	False	Delimited Data	A user ID.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.

USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-

				Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.



## IpNetwork

Represents an abstraction of a network. The distinguished name value of the Common-Name attribute denotes the canonical name of the network.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
IpNetworkNumber	String	False		Delimited Data	Contains an IP network number in dotted decimal notation, omitting the leading zeros.

NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.

CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.

DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The

				distinguished name of the DC where the schema can be modified.
IpNetmaskNumber	<i>String</i>	False	Delimited Data	Contains the IP netmask in dotted decimal notation, omitting the leading zeros.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the

					user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False		Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False		Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	String	False		Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	String	False		Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDFSR-ComputerReference	String	False		Delimited Data	Contains the backward link for the ms-DFSR-ComputerReference attribute.
MsDFSR-MemberReference	String	False		Delimited Data	Contains the backward link for the ms-DFSR-MemberReference attribute.
MsDS-Approx-Immed-Subordinates	String	False		Delimited Data	The value returned by this attribute is based on index sizes. This may be off by

					+/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False		Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRoleB	String	False		Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False		Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers,

					which act as sources.
MsDS-NCReplOutboundNeighborsFalse	String			Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False		Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False		Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoleBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetaData	String	False		Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False		Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False		Delimited Data	Backward link from Az-Task to Az-Role objects



				that link to it.
MsDS-TasksForAzTaskBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
MsSFU30Aliases	<i>String</i>	False	Delimited Data	Contains part of the NIS mail map.
MsSFU30Name	<i>String</i>	False	Delimited Data	Contains the name of a map.
MsSFU30NisDomain	<i>String</i>	False	Delimited Data	Contains the NIS domain.
MsSFU30PosixMemberOf	<i>String</i>	False	Delimited Data	Contains the display names of groups to which this user belongs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NisMapName	<i>String</i>	False	Delimited Data	Contains the name of the map to which the object belongs.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.

ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited	The list of objects that this

	<i>ng</i>		Data	object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information

				here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:

ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
Uid	<i>String</i>	False	Delimited Data	A user ID.

USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object

containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Organization

Stores information about a company or organization.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated



					on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False		Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False		Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False		Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False		Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False		Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False		Delimited	A list of classes that can be

	<i>g</i>		Data	modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
BusinessCategory	<i>String</i>	False	Delimited Data	Descriptive text on an Organizational Unit.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See

				Remarks.
DestinationIndicator	String	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	String	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited	This is a constructed

	<i>g</i>		Data	attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.

IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	String	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.

MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
O	String	False	Delimited Data	The name of the company or organization.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.

PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PhysicalDeliveryOfficeName	String	False	Delimited Data	Contains the office location in the user's place of business.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	String	False	Delimited Data	The mailing address for the object.
PostalCode	String	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	String	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	String	False	Delimited Data	The X.500-preferred way to deliver to addressee.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active

				Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	String	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API



				DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.

SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SearchGuide	String	False	Delimited Data	Specifies information of suggested search criteria, which may be included in some entries that are expected to be a convenient base-object for the search operation, for example, country/region or organization.
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	String	False	Delimited Data	The name of a user's state or province.
Street	String	False	Delimited Data	The street address.
SubRefs	String	False	Delimited	List of subordinate

	<i>g</i>		Data	references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.

USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that

				referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## OrganizationalPerson

This class is used for objects that contain organizational information about a user, such as the employee number, department, manager, title, office address, and so on.

### Table Specific Information

#### Select

All columns support server-side processing for the operators =, >=, <=, !=, LIKE, AND, and OR. Other filters are executed client side within the adapter. For example, the following query is processed by Active Directory:

```
SELECT * FROM OrganizationalPerson WHERE CN != 'NewUser' AND BaseDN =  
'CN=Users,DC=MyDC' LIMIT 5
```

#### Insert

To add a OrganizationalPerson, all fields can be specified except Id, DN, and BaseDN. Required fields that should be provided are RDN and ObjectClass. For example:

```
INSERT INTO OrganizationalPerson (RDN, ObjectClass) VALUES  
('CN=NewUser', 'top;person;organizationalPerson;user;inetOrgPerson')
```

#### Update

All columns except Id, DN, and BaseDN can be updated by providing the Id in the WHERE clause. For example:

```
UPDATE OrganizationalPerson SET Description = 'desc' WHERE Id =  
'1|CN=NewUser,CN=Users,DC=MyDC'
```

#### Delete

OrganizationalPersons can be deleted by providing the Id of the OrganizationalPerson in a DELETE statement. For example:

```
DELETE FROM OrganizationalPerson WHERE Id =
'1|CN=NewUser,CN=Users,DC=MyDC'
```

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and

				permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
StreetAddress	String	False	Delimited Data	The user's address.
HomePostalAddress	String	False	Delimited Data	A user's home address.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
Assistant	String	False	Delimited Data	The distinguished name of a user's administrative assistant.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for



replication.				
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
Company	String	False	Delimited Data	The user's company name.
CountryCode	String	False	Delimited Data	Specifies the country/region code for the user's language of choice. This value is not used by Windows 2000.
C	String	False	Delimited Data	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	String	False	Delimited	The date when this object

	<i>ng</i>		Data	was created. This value is replicated.
Department	<i>String</i>	False	Delimited Data	Contains the name for the department in which the user works.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DestinationIndicator	<i>String</i>	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
Division	<i>String</i>	False	Delimited Data	The user's division.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to

modify the object.				
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
Mail	String	False	Delimited Data	The list of email addresses for a contact.
EmployeeID	String	False	Delimited Data	The ID of an employee.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	String	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the

				DC where the schema can be modified.
GenerationQualifier	<i>String</i>	False	Delimited Data	Indicates a person generation. For example, Jr. or II.
GivenName	<i>String</i>	False	Delimited Data	Contains the given name (first name) of the user.
Initials	<i>String</i>	False	Delimited Data	Contains the initials for parts of the user's full name. This may be used as the middle initial in the Windows Address Book.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.

LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ThumbnailLogo	<i>String</i>	False	Delimited Data	BLOB that contains a logo for this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
Manager	<i>String</i>	False	Delimited Data	Contains the distinguished name of the user who is the user's manager. The manager's user object contains a directReports property that contains references to all user objects that have their manager properties set to this distinguished name.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MhsORAddress	<i>String</i>	False	Delimited Data	X.400 address.

ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
Ou	<i>String</i>	False	Delimited	The name of the

	<i>ng</i>		Data	organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherMailbox	<i>String</i>	False	Delimited Data	Contains other additional mail addresses in a form such as CCMAIL: BruceKeever.
MiddleName	<i>String</i>	False	Delimited Data	Additional names for a user. For example, middle name, patronymic, matronymic, or others.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial

					replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PersonalTitle	String	False		Delimited Data	The user's title.
OtherFacsimileTelephoneNumber	String	False		Delimited Data	A list of alternate facsimile numbers.
OtherHomePhone	String	False		Delimited Data	A list of alternate home phone numbers.
HomePhone	String	False		Delimited Data	The user's main home phone number.
OtherIpPhone	String	False		Delimited Data	The list of alternate TCP/IP addresses for the phone. Used by Telephony.
IpPhone	String	False		Delimited Data	The TCP/IP address for the phone. Used by Telephony.
PrimaryInternationalISDNNumber	String	False		Delimited Data	The primary ISDN.
OtherMobile	String	False		Delimited Data	A list of alternate mobile phone numbers.
Mobile	String	False		Delimited Data	The primary mobile phone number.
OtherTelephone	String	False		Delimited Data	A list of alternate office phone numbers.
OtherPager	String	False		Delimited Data	A list of alternate pager numbers.



Pager	<i>String</i>	False	Delimited Data	The primary pager number.
PhysicalDeliveryOfficeName	<i>String</i>	False	Delimited Data	Contains the office location in the user's place of business.
ThumbnailPhoto	<i>String</i>	False	Delimited Data	An image of the user. A space-efficient format like JPEG or GIF is recommended.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	<i>String</i>	False	Delimited Data	The mailing address for the object.
PostalCode	<i>String</i>	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	<i>String</i>	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	<i>String</i>	False	Delimited Data	The X.500-preferred way to deliver to addressee.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such

				as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	<i>String</i>	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root

				objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.

ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	<i>String</i>	False	Delimited Data	The name of a user's state or province.
Street	<i>String</i>	False	Delimited Data	The street address.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
Sn	<i>String</i>	False	Delimited Data	This attribute contains the family or last name for a user.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited	The primary telephone

	<i>ng</i>		Data	number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
PrimaryTelexNumber	<i>String</i>	False	Delimited Data	The primary telex number.
Co	<i>String</i>	False	Delimited Data	The country/region in which the user is located.
Title	<i>String</i>	False	Delimited Data	Contains the user's job title. This property is commonly used to indicate the formal job title, such as Senior Programmer, rather than occupational class, such as programmer. It is not typically used for suffix titles such as Esq. or DDS.
Comment	<i>String</i>	False	Delimited Data	The user's comments.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-

				Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to

retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## OrganizationalRole

This class is used for objects that contain information that pertains to a position or role within an organization, such as a system administrator, manager, and so on. It can also be used for a nonhuman identity in an organization.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.



InstanceType	String	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.

AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerList	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.

DestinationIndicator	String	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	String	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and

				FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
InternationalISDNNumber	String	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.

LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	String	False	Delimited Data	Represents the name of a locality, such as a town or city.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another

				object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
Ou	String	False	Delimited Data	The name of the organizational unit.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False	Delimited Data	Tracks the internal replication state of partial

					replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PhysicalDeliveryOfficeName	String	False		Delimited Data	Contains the office location in the user's place of business.
PossibleInferiors	String	False		Delimited Data	The list of objects that this object can contain.
PostalAddress	String	False		Delimited Data	The mailing address for the object.
PostalCode	String	False		Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	String	False		Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	String	False		Delimited Data	The X.500-preferred way to deliver to addressee.
ProxiedObjectName	String	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.

ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	String	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.



ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
RoleOccupant	<i>String</i>	False	Delimited Data	The distinguished name of an object that fulfills an

				organizational role.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	String	False	Delimited Data	The name of a user's state or province.
Street	String	False	Delimited Data	The street address.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.

SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for

				the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and

				exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## OrganizationalUnit

A container for storing users, computers, and other account objects.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited	The list of classes from

	<i>g</i>		Data	which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
BusinessCategory	<i>String</i>	False	Delimited Data	Descriptive text on an Organizational Unit.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_

				ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CountryCode	<i>String</i>	False	Delimited Data	Specifies the country/region code for the user's language of choice. This value is not used by Windows 2000.
C	<i>String</i>	False	Delimited Data	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
DefaultGroup	<i>String</i>	False	Delimited Data	The group to which this object is assigned when it is created.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	<i>String</i>	False	Delimited Data	The location of the desktop profile for a user or group



				of users. Not used.
DestinationIndicator	String	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	String	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited	This is a constructed

	<i>g</i>		Data	attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GPLink	<i>String</i>	False	Delimited Data	A sorted list of Group Policy options. Each option is a DWORD. Use of the UNICODE string is a convenience.
GPOptions	<i>String</i>	False	Delimited Data	Options that affect all group policies associated with the object hosting this property.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.

IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or city.
ThumbnailLogo	<i>String</i>	False	Delimited Data	BLOB that contains a logo for this object.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.

MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.

ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
Ou	String	False	Delimited Data	The name of the organizational unit.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PhysicalDeliveryOfficeName	String	False	Delimited Data	Contains the office location in the user's place of

				business.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	String	False	Delimited Data	The mailing address for the object.
PostalCode	String	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	String	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	String	False	Delimited Data	The X.500-preferred way to deliver to addressee.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative

				portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	String	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.

RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SearchGuide	<i>String</i>	False	Delimited Data	Specifies information of suggested search criteria, which may be included in some entries that are expected to be a convenient base-object for the search operation, for example, country/region or organization.
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The



					distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False		Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False		Delimited Data	The list of distinguished names for subnets that belong to this site.
St	String	False		Delimited Data	The name of a user's state or province.
Street	String	False		Delimited Data	The street address.
SubRefs	String	False		Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False		Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False		Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	String	False		Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	String	False		Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.

TelexNumber	String	False	Delimited Data	A list of alternate telex numbers.
Co	String	False	Delimited Data	The country/region in which the user is located.
UPNSuffixes	String	False	Delimited Data	The list of User-Principal-Name suffixes for a domain.
UserPassword	String	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.

USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is

				replicated and is in the global catalog.
WWWHomePage	String	False	Delimited Data	A web page that is the primary landing page of a website.
Url	String	False	Delimited Data	A list of alternate webpages.
X121Address	String	False	Delimited Data	The X.121 address for an object.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	String	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Person

Contains personal information about a user.

## Table Specific Information

### Select

All columns support server-side processing for the operators =, >=, <=, !=, LIKE, AND, and OR. Other filters are executed client side within the adapter. For example, the following query is processed by Active Directory:

```
SELECT * FROM Person WHERE ObjectClass = 'top' AND CN LIKE
'%NewUser%' LIMIT 5
```

## Insert

To add a Person, all fields can be specified except Id, DN, and BaseDN. Required fields that should be provided are RDN and ObjectClass. For example:

```
INSERT INTO Person (RDN, ObjectClass) VALUES ('CN=Domain Admins',
'Person')
```

## Update

All columns except Id, DN, and BaseDN can be updated by providing the Id in the WHERE clause. For example:

```
UPDATE Person SET Description = 'desc' WHERE Id =
'1|CN=NewUser,CN=Users,DC=MyDC'
```

## Delete

Person rows can be deleted by providing the Id of the Person in a DELETE statement. For example:

```
DELETE FROM Person WHERE Id = '1|CN=NewUser,CN=Users,DC=MyDC'
```

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.

DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.

AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.

Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the



				object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known

				parent of an orphaned object.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this

NetBoot server.				
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited	Tracks the internal

	<i>g</i>		Data	replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS

				objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other

				change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SeeAlso	String	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
Sn	String	False	Delimited Data	This attribute contains the family or last name for a user.

SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	String	False	Delimited Data	The primary telephone number.
UserPassword	String	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited	Value of the USN-Changed

	<i>g</i>		Data	attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the



global catalog.				
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## PosixAccount

Represents an abstraction of an account with Portable Operating System Interface (POSIX) attributes.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is

				set to SplitDataByRow.
DN	<i>String</i>	True		The full distinguished name.
RDN	<i>String</i>	False		The relative distinguished name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.

AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.

CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.

Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
Gecos	<i>String</i>	False	Delimited Data	Contains the information that is stored in the GECOS field.
GidNumber	<i>String</i>	False	Delimited Data	Contains an integer value that uniquely identifies a group in an administrative domain.
HomeDirectory	<i>String</i>	False	Delimited Data	The home directory for the account. If homeDrive is set and specifies a drive letter, homeDirectory must be a UNC path. Otherwise, homeDirectory is a fully qualified local path including the drive letter

				(for example, DriveLetter:\Directory\Folder). This value can be a null string.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	String	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	String	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
LoginShell	String	False	Delimited Data	Contains the path to the login shell.
ManagedObjects	String	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user.

				Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	String	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	String	False	Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDFSR-ComputerReferenceBackLink	String	False	Delimited Data	Contains the backward link for the ms-DFSR-ComputerReference attribute.
MsDFSR-MemberReferenceBackLink	String	False	Delimited Data	Contains the backward link for the ms-DFSR-MemberReference attribute.
MsDS-Approx-Immed-Subordinates	String	False	Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this

					attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False		Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False		Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRoleB	String	False		Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False		Delimited Data	A list of past and present replication partners, and how current we are with each of them.
MsDS-NCReplInboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.
MsDS-NCReplOutboundNeighbors	String	False		Delimited Data	Replication partners for this partition. This server



					sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.
MsDS-NonMembersBL	String	False		Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).
MsDS-ObjectReferenceBL	String	False		Delimited Data	Backward link for ms-DS-Object-Reference.
MsDS-OperationsForAzRoleBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.
MsDS-OperationsForAzTaskBL	String	False		Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.
MsDS-ReplAttributeMetaData	String	False		Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.
MsDS-ReplValueMetaData	String	False		Delimited Data	A list of metadata for each value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	String	False		Delimited Data	Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	String	False		Delimited Data	Backward link from Az-Task to the Az-Task

				objects that link to it.
OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
MsSFU30PosixMemberOf	<i>String</i>	False	Delimited Data	Contains the display names of groups to which this user belongs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically

				updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.

QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited	Lists the servers from

	<i>ng</i>		Data	which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	<i>String</i>	False	Delimited Data	This constructed attribute stores a list of classes contained in a class

				hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
Uid	<i>String</i>	False	Delimited Data	A user ID.
UidNumber	<i>String</i>	False	Delimited Data	Contains an integer that uniquely identifies a user in an administrative domain.
UnixHomeDirectory	<i>String</i>	False	Delimited Data	Contains the absolute path to the home directory.
UnixUserPassword	<i>String</i>	False	Delimited Data	Contains a user password that is compatible with a UNIX system.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.

USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object

containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.



## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## PosixGroup

Represents an abstraction of a group of accounts.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is

				instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	False	Delimited Data	Classes that can be contained by a class.

AllowedChildClassesEffective	<i>String</i>	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.

DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.

FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GidNumber	<i>String</i>	False	Delimited Data	Contains an integer value that uniquely identifies a group in an administrative domain.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.

ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MemberUid	<i>String</i>	False	Delimited Data	Contains the login names of the members of a group.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MsCOM-PartitionSetLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ Partition with a COM+ PartitionSet object.
MsCOM-UserLink	<i>String</i>	False	Delimited Data	A link used to associate a COM+ PartitionSet with a User object.
MsDFSR-ComputerReference	<i>String</i>	False	Delimited Data	Contains the backward link for the ms-DFSR-ComputerReference attribute.
MsDFSR-MemberReference	<i>String</i>	False	Delimited Data	Contains the backward link for the ms-DFSR-

				MemberReference attribute.
MsDS-Approx-Immed-Subordinate	String	False	Delimited Data	The value returned by this attribute is based on index sizes. This may be off by +/-10% on large containers, and the error is theoretically unbounded, but using this attribute helps the UI display the contents of a container.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MsDs-masteredBy	String	False	Delimited Data	Backward link for msDS-hasMasterNCs.
MsDS-MembersForAzRole	String	False	Delimited Data	Backward link from member application group or user to Az-Role objects linking to it.
MsDS-NCReplCursors	String	False	Delimited Data	A list of past and present replication partners, and how current we are with

					each of them.
MsDS-NCReplInboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server obtains replication data from these other servers, which act as sources.	
MsDS-NCReplOutboundNeighbors	String	False	Delimited Data	Replication partners for this partition. This server sends replication data to these other servers, which act as destinations. This server will notify these other servers when new data is available.	
MsDS-NonMembersBL	String	False	Delimited Data	Backward link from non-member group or user to Az groups that link to it (same functionality as Non-Security-Member-BL).	
MsDS-ObjectReferenceBL	String	False	Delimited Data	Backward link for ms-DS-Object-Reference.	
MsDS-OperationsForAzRoleBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Role objects that link to it.	
MsDS-OperationsForAzTaskBL	String	False	Delimited Data	Backward link from Az-Operation to Az-Task objects that link to it.	
MsDS-ReplAttributeMetadata	String	False	Delimited Data	A list of metadata for each replicated attribute. The metadata indicates who changed the attribute last.	
MsDS-ReplValueMetadata	String	False	Delimited	A list of metadata for each	



	<i>String</i>		Data	value of an attribute. The metadata indicates who changed the value last.
MsDS-TasksForAzRoleBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to Az-Role objects that link to it.
MsDS-TasksForAzTaskBL	<i>String</i>	False	Delimited Data	Backward link from Az-Task to the Az-Task objects that link to it.
OwnerBL	<i>String</i>	False	Delimited Data	The backward link to the owner attribute. Contains a list of owners for an object.
MsSFU30PosixMemberOf	<i>String</i>	False	Delimited Data	Contains the display names of groups to which this user belongs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.

OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.

ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited	Contains the list of users

	<i>ng</i>		Data	that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.

ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
StructuralObjectClass	String	False	Delimited Data	This constructed attribute stores a list of classes contained in a class hierarchy, including abstract classes. This list does contain dynamically linked auxiliary classes.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
UnixUserPassword	String	False	Delimited Data	Contains a user password that is compatible with a UNIX system.
UserPassword	String	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
USNChanged	String	False	Delimited	The update sequence

	<i>ng</i>		Data	number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and

distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## PrintQueue

Contains information about a print queue.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated



				on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
PrinterName	<i>String</i>	False	Delimited Data	The display name of an attached printer.
ServerName	<i>String</i>	False	Delimited Data	The name of a server.
ShortServerName	<i>String</i>	False	Delimited Data	Pre-Windows 2000 compatible server name for print servers.
UNCName	<i>String</i>	False	Delimited Data	The universal naming convention name for shared volumes and printers.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.

AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AssetNumber	String	False	Delimited Data	The tracking number for the object.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
BytesPerMinute	String	False	Delimited Data	Printer data transfer rate.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_

NAME, ...).				
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
DefaultPriority	String	False	Delimited Data	The default priority (of a process, print job, and so on).
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DriverName	String	False	Delimited Data	The device driver name.
DriverVersion	String	False	Delimited	The Version number of

	<i>g</i>		Data	device driver.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReference	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReference	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be

				replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
Keywords	<i>String</i>	False	Delimited Data	A list of keywords that can be used to locate a given connection point.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
Location	<i>String</i>	False	Delimited Data	The user's location, such as office number.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user.

				Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.

ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OperatingSystem	String	False	Delimited Data	The Operating System name, for example, Windows Vista Enterprise.
OperatingSystemHotfix	String	False	Delimited Data	The hotfix level of the operating system.
OperatingSystemServicePack	String	False	Delimited Data	The operating system service pack ID string (for example, SP3).
OperatingSystemVersion	String	False	Delimited Data	The operating system version string, for example, 4.0.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the

				process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PhysicalLocationObject	String	False	Delimited Data	Used to map a device (for example, a printer, computer, and so on) to a physical location.
PortName	String	False	Delimited Data	List of port names. For example, for printer ports or comm ports.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
PrintAttributes	String	False	Delimited Data	A bitmask of printer attributes.
PrintBinNames	String	False	Delimited Data	A list of printer bin names.
PrintCollate	String	False	Delimited Data	TRUE if a printer has collating bins.
PrintColor	String	False	Delimited Data	TRUE if a printer can print in color.
PrintDuplexSupported	String	False	Delimited Data	Indicates the type of duplex support a printer has.



PrintEndTime	String	False	Delimited Data	The time a print queue stops servicing jobs.
PrintFormName	String	False	Delimited Data	The name of the currently loaded form.
PrintKeepPrintedJobs	String	False	Delimited Data	TRUE if printed jobs are kept.
PrintLanguage	String	False	Delimited Data	The supported page description language (for example, PostScript, PCL).
PrintMACAddress	String	False	Delimited Data	The user-supplied MAC address.
PrintMaxCopies	String	False	Delimited Data	The maximum number of copies a device can print.
PrintMaxResolutionSupported	String	False	Delimited Data	The maximum printer resolution.
PrintMaxXExtent	String	False	Delimited Data	The maximum horizontal print region.
PrintMaxYExtent	String	False	Delimited Data	The maximum vertical print region.
PrintMediaReady	String	False	Delimited Data	A list of available media for a printer.
PrintMediaSupported	String	False	Delimited Data	A list of media supported by a printer.
PrintMemory	String	False	Delimited Data	The amount of memory installed in a printer.
PrintMinXExtent	String	False	Delimited Data	The minimum horizontal print region.

PrintMinYExtent	String	False	Delimited Data	The minimum vertical print region.
PrintNetworkAddress	String	False	Delimited Data	The user-supplied network address.
PrintNotify	String	False	Delimited Data	A user-supplied string that specifies the notification contact.
PrintNumberUp	String	False	Delimited Data	The number of page images per sheet.
PrintOrientationsSupported	String	False	Delimited Data	The page rotation for landscape printing.
PrintOwner	String	False	Delimited Data	A user-supplied owner string.
PrintPagesPerMinute	String	False	Delimited Data	Driver-supplied print rate in pages per minute.
PrintRate	String	False	Delimited Data	Driver-supplied print rate.
PrintRateUnit	String	False	Delimited Data	Driver-supplied print rate unit.
PrintSeparatorFile	String	False	Delimited Data	The file path of the printer separator page.
PrintShareName	String	False	Delimited Data	The printer's share name.
PrintSpooling	String	False	Delimited Data	A string that represents the type of printer spooling.
PrintStaplingSupported	String	False	Delimited Data	TRUE if the printer supports stapling. Supplied by the driver.

PrintStartTime	<i>String</i>	False	Delimited Data	The time a print queue begins servicing jobs.
PrintStatus	<i>String</i>	False	Delimited Data	Status from the print spooler. Currently unused.
Priority	<i>String</i>	False	Delimited Data	The current priority (of a process, print job, and so on).
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here

				can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the

				Sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including

				creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
VersionNumber	String	False	Delimited Data	A general purpose version number.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The

well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## SecurityObject

This is an auxiliary class that is used to identify security principals.

### Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can



					differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False		Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False		Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False		Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False		Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False		Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False		Delimited Data	A list of classes that can be modified.

BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users

				first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.

FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.

MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.

ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active

				Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.

DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.



ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited	The update sequence

	<i>g</i>		Data	number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects

are contained in Ntdsapi.h):				
WhenChanged	String	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	String	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	String	False	Delimited Data	A web page that is the primary landing page of a website.
Url	String	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	String	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## SecurityPrincipal

Contains the security information for an object.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False		Delimited	The list of classes from

	<i>g</i>		Data	which this class is derived.
SAMAccountName	String	False	Delimited Data	The logon name used to support clients and servers running earlier versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
AccountNameHistory	String	False	Delimited Data	The length of time that the account has been active.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
AltSecurityIdentities	String	False	Delimited Data	Contains mappings for X.509 certificates or external Kerberos user accounts to this user for the purpose of authentication.
BridgeheadServerListBL	String	False	Delimited	The list of servers that are

	<i>g</i>		Data	bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	<i>String</i>	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial,

and last name.				
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited	Flexible Single-Master

	<i>g</i>		Data	Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.



MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.

ObjectSid	String	False	Delimited Data	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial

replica NC.				
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.

ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
Rid	<i>String</i>	False	Delimited Data	The relative Identifier of an object.

SAMAccountType	String	False	Delimited Data	This attribute contains information about every account type object. You can enumerate a list of account types or you can use the Display Information API to create a list. Because computers, normal user accounts, and trust accounts can also be enumerated as user objects, the values for these accounts must be a contiguous range.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SecurityIdentifier	String	False	Delimited Data	A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SIDHistory	String	False	Delimited Data	Contains previous SIDs used for the object if the object was moved from another domain. Whenever

					an object is moved from one domain to another, a new SID is created and that new SID becomes the objectSID. The previous SID is added to the sidHistory property.
SiteObjectBL	String	False		Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False		Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False		Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SupplementalCredential	String	False		Delimited Data	Stored credentials for use in authenticating. The encrypted version of the user's password. This attribute is neither readable nor writable.
SystemFlags	String	False		Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False		Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.

USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the

				domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
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Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.
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## Server

This class represents a server computer in a site.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False		Delimited Data	The Windows NT security descriptor for the schema

				object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
BridgeheadTransportList	String	False	Delimited Data	Transports for which this server is a bridgehead.

CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.

DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DNSHostName	String	False	Delimited Data	Name of computer as registered in DNS.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.

FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy

				property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	String	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	String	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	String	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	String	False	Delimited Data	Same as the Distinguished Name for an object. Used

by Exchange.				
ObjectGUID	String	False	Delimited Data	The unique identifier for an object.
ObjectVersion	String	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.

PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an



				entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:

SerialNumber	<i>String</i>	False	Delimited Data	Part of X.500 specification. Not used by Active Directory.
ServerReference	<i>String</i>	False	Delimited Data	Found in a site computer object. Contains the distinguished name of the domain controller in the domain naming context.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
MailAddress	<i>String</i>	False	Delimited Data	Generic mail address attribute. Used in the box as an optional attribute of server objects, where it is consumed by mail-based DS replication (if the computers are so configured).
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a

				class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.

WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.

Url	String	False	Delimited Data	A list of alternate webpages.
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## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	String	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Site

A container for storing server objects. Represents a physical location that contains computers. Used to manage replication.

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished

	<i>g</i>			name.
BaseDN	<i>String</i>	True		The base distinguished name.
InstanceType	<i>String</i>	False	Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	<i>String</i>	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	False	Delimited Data	Attributes that will be permitted to be assigned to a class.

AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-

				valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica



				instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GPLink	String	False	Delimited Data	A sorted list of Group Policy options. Each option is a DWORD. Use of the UNICODE string is a convenience.
GPOptions	String	False	Delimited Data	Options that affect all group policies associated with the object hosting this property.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited	The distinguished name of

	<i>g</i>		Data	the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
Location	<i>String</i>	False	Delimited Data	The user's location, such as office number.
ManagedBy	<i>String</i>	False	Delimited Data	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildren	<i>String</i>	False	Delimited	This attribute is used to

	<i>g</i>		Data	check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MSMQInterval1	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, default replication time within a site.
MSMQInterval2	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, default replication time between sites.
MSMQNt4Stub	<i>String</i>	False	Delimited Data	The MSMQ-Nt4-Stub attribute contains MSMQ mixed-mode information.
MSMQSiteForeign	<i>String</i>	False	Delimited Data	A Boolean value that indicates whether it is a foreign MSMQ site.
MSMQSiteID	<i>String</i>	False	Delimited Data	The MSMQ-Site-ID attribute contains MSMQ mixed-mode information.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.

NotificationList	<i>String</i>	False	Delimited Data	The Notification-List attribute is not currently used.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs).

				Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	String	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	String	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	String	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public

				form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	String	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	String	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-

				settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	String	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	String	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	String	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	String	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	String	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-

Created.				
USNCreated	String	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	String	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	String	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	String	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	String	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	String	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	String	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it



has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Top

The top level class from which all classes are derived.

### Table Specific Information

#### Select

All columns support server-side processing for the following operators =, >=, <=, !=, LIKE, AND, and OR. Other filters are executed client side within the adapter. For example, the following query is processed by Active Directory:

```
SELECT * FROM Top WHERE CN != 'NewUser' AND BaseDN =
'CN=Users,DC=MyDC' LIMIT 5
```

#### Insert

To add a Top record, all fields can be specified except Id, DN, and BaseDN. Required fields that should be provided are RDN and ObjectClass. For example:

```
INSERT INTO Top (RDN, ObjectClass) VALUES ('CN=NewUser',
'top;person;organizationalPerson;user;inetOrgPerson')
```

#### Update

All columns except Id, DN, and BaseDN can be updated by providing the Id in the WHERE clause. For example:

```
UPDATE Top SET Description = 'test' WHERE Id =
'1|CN=NewUser,CN=Users,DC=MyDC'
```

## Delete

Top records can be deleted by providing the Id of the Top record in a DELETE statement. For example:

```
DELETE FROM Top WHERE Id = '1|CN=NewUser,CN=Users,DC=MyDC'
```

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	String	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that

				contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	String	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	String	False	Delimited Data	The list of classes from which this class is derived.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example

				of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's

				first name, middle initial, and last name.
DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
IsCriticalSystemObject	String	False	Delimited	If TRUE, the object hosting

	<i>g</i>		Data	this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	False	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited	A computed attribute that

	<i>g</i>		Data	represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished



					Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletion	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False		Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	String	False		Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	String	False		Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	String	False		Delimited Data	A proxy address is the address by which a Microsoft Exchange Server

				recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager

				property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	String	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	String	False	Delimited Data	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	String	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	String	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
ServerReferenceBL	String	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	String	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.

SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited	Contains the update

	<i>g</i>		Data	sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This

				value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## TrustedDomain

An object that represents a domain trusted by (or trusting) the local domain.

## Columns

Name	Typ	ReadO	Referen	DataFor	Description
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	e	nly	ces	mat	
Id [KEY]	<i>String</i>	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>	True			The full distinguished name.
RDN	<i>String</i>	False			The relative distinguished name.
BaseDN	<i>String</i>	True			The base distinguished name.
InstanceType	<i>String</i>	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False		Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False		Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False		Delimited Data	The list of classes from which this class is derived.

AdditionalTrustedServicesNames	String	False	Delimited Data	A list of services in the domain that can be trusted. Not used by AD.
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.
BridgeheadServerListBL	String	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	String	False	Delimited Data	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_



				FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
CreateTimeStamp	String	False	Delimited Data	The date when this object was created. This value is replicated.
Description	String	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DisplayName	String	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	String	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
DomainCrossRef	String	False	Delimited Data	This is a reference from a trusted domain object to the cross reference object of the trusted domain.
DomainIdentifier	String	False	Delimited Data	Domain Sid that identifies the domain.

DSASignature	String	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	String	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
ExtensionName	String	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
Flags	String	False	Delimited Data	To be used by the object to store bit information.
FlatName	String	False	Delimited Data	For Windows NT domains, the flat name is the NetBIOS name. For links with non-Windows NT domains, the flat name is the identifying name of that domain, or it is NULL.
FromEntry	String	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	String	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	String	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	String	False	Delimited Data	Flexible Single-Master Operation: The

				distinguished name of the DC where the schema can be modified.
InitialAuthIncoming	String	False	Delimited Data	Contains information about an initial incoming authentication request by a client to this server. This request is then sent by this server to the authentication server for the domain.
InitialAuthOutgoing	String	False	Delimited Data	Contains information about an initial outgoing authentication sent by the authentication server for this domain to the client that requested authentication. The server that uses this attribute receives the authorization from the authentication server and sends it to the client.
IsCriticalSystemObject	String	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	String	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	String	False	Delimited	The distinguished name of

	<i>g</i>		Data	the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known parent of an orphaned object.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited	This attribute is used to

	<i>g</i>		Data	check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	<i>String</i>	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NonSecurityMemberBL	<i>String</i>	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OtherWellKnownObjects	<i>String</i>	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs).

				Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	False	Delimited	The Relative Distinguished

	<i>g</i>		Data	Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited Data	Lists the servers that the directory will notify of

				changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:
SecurityIdentifier	<i>String</i>	False	Delimited Data	A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.



SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of the class. See Remarks.
TrustAttributes	<i>String</i>	False	Delimited Data	This attribute stores the trust attributes for a trusted domain. Possible attribute values are as follows:
TrustAuthIncoming	<i>String</i>	False	Delimited Data	Authentication information for the incoming portion of a trust.
TrustAuthOutgoing	<i>String</i>	False	Delimited Data	Authentication information for the outgoing portion of a trust.
TrustDirection	<i>String</i>	False	Delimited Data	The direction of a trust.
TrustPartner	<i>String</i>	False	Delimited Data	The name of the domain with which a trust exists.
TrustPosixOffset	<i>String</i>	False	Delimited Data	The Portable Operating System Interface (POSIX) offset for the trusted domain.
TrustType	<i>String</i>	False	Delimited Data	The type of trust, for example, Windows NT or MIT.

USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited Data	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object

containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):

WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## User

This class is used to store information about an employee or contractor who works for an organization. It is also possible to apply this class to long term visitors.

## Table Specific Information

### Select

All columns support server-side processing for the operators =, >= , <=, !=, LIKE, AND, and OR. Other filters are executed client side within the adapter. For example, the following query is processed by Active Directory:

```
SELECT * FROM User WHERE Title Like '%abc%' AND AdminCount != '1'
LIMIT 5
```

### Insert

To add a User, all fields can be specified except Id, DN, and BaseDN. Required fields that should be provided are RDN and ObjectClass. For example:

```
INSERT INTO [User] (RDN, ObjectClass) VALUES ('CN=TestUser', 'Top;
Person; OrganizationalPerson; User')
```

## Update

All columns except Id, DN, and BaseDN can be updated by providing the Id in the WHERE clause. For example:

```
UPDATE User SET PostalCode = '94042' WHERE Id =
'1|CN=NewUser,CN=Users,DC=MyDC'
```

## Delete

Users can be deleted by providing the Id of the User in a DELETE statement. For example:

```
DELETE FROM User WHERE Id = '1|CN=NewUser,CN=Users,DC=MyDC'
```

## Columns

Name	Type	ReadOnly	References	DataFormat	Description
Id [KEY]	String	True			Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	String	True			The full distinguished name.
RDN	String	False			The relative distinguished name.
BaseDN	String	True			The base distinguished name.
InstanceType	String	False		Delimited Data	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can

				differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	False	Delimited Data	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	False	Delimited Data	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	False	Delimited Data	The list of classes from which this class is derived.
SAMAccountName	<i>String</i>	False	Delimited Data	The logon name used to support clients and servers running earlier versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
AccountExpires	<i>String</i>	False	Delimited Data	The date when the account expires. This value represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of 0 or 0x7FFFFFFFFFFFFFFF (9223372036854775807) indicates that the account never expires.

AccountNameHistory	String	False	Delimited Data	The length of time that the account has been active.
ACSPolicyName	String	False	Delimited Data	String name of an ACS policy that applies to this user.
StreetAddress	String	False	Delimited Data	The user's address.
HomePostalAddress	String	False	Delimited Data	A user's home address.
AdminCount	String	False	Delimited Data	Indicates that a given object has had its ACLs changed to a more secure value by the system because it was a member of one of the administrative groups (directly or transitively).
AdminDescription	String	False	Delimited Data	The description displayed on admin screens.
AdminDisplayName	String	False	Delimited Data	The name to be displayed on admin screens.
AllowedAttributes	String	False	Delimited Data	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	String	False	Delimited Data	A list of attributes that can be modified on the object.
AllowedChildClasses	String	False	Delimited Data	Classes that can be contained by a class.
AllowedChildClassesEffective	String	False	Delimited Data	A list of classes that can be modified.

AltSecurityIdentities	<i>String</i>	False	Delimited Data	Contains mappings for X.509 certificates or external Kerberos user accounts to this user for the purpose of authentication.
Assistant	<i>String</i>	False	Delimited Data	The distinguished name of a user's administrative assistant.
BadPasswordTime	<i>String</i>	False	Delimited Data	The last time and date that an attempt to log on to this account was made with a password that is not valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last time a incorrect password was used is unknown.
BadPwdCount	<i>String</i>	False	Delimited Data	The number of times the user tried to log on to the account using an incorrect password. A value of 0 indicates that the value is unknown.
BridgeheadServerListBL	<i>String</i>	False	Delimited Data	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	False	Delimited Data	The name of the object in canonical format.



				myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
CodePage	String	False	Delimited Data	Specifies the code page for the user's language of choice. This value is not used by Windows 2000.
Info	String	False	Delimited Data	The user's comments. This string can be a null string.
Cn	String	False	Delimited Data	The name that represents an object. Used to perform searches.
Company	String	False	Delimited Data	The user's company name.
ControlAccessRights	String	False	Delimited Data	Used by DS Security to determine which users can perform specific operations on the host object.
CountryCode	String	False	Delimited Data	Specifies the country/region code for the user's language of choice. This value is not

				used by Windows 2000.
C	<i>String</i>	False	Delimited Data	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	<i>String</i>	False	Delimited Data	The date when this object was created. This value is replicated.
DBCSPwd	<i>String</i>	False	Delimited Data	The account's LAN Manager password.
DefaultClassStore	<i>String</i>	False	Delimited Data	The default Class Store for a given user.
Department	<i>String</i>	False	Delimited Data	Contains the name for the department in which the user works.
Description	<i>String</i>	False	Delimited Data	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	<i>String</i>	False	Delimited Data	The location of the desktop profile for a user or group of users. Not used.
DestinationIndicator	<i>String</i>	False	Delimited Data	This is part of the X.500 specification and not used by NTDS.

DisplayName	<i>String</i>	False	Delimited Data	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	False	Delimited Data	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
Division	<i>String</i>	False	Delimited Data	The user's division.
DSASignature	<i>String</i>	False	Delimited Data	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	False	Delimited Data	The DS-Core-Propagation-Data attribute is for internal use only.
DynamicLDAPServer	<i>String</i>	False	Delimited Data	DNS name of server handing dynamic properties for this account.
Mail	<i>String</i>	False	Delimited Data	The list of email addresses for a contact.
EmployeeID	<i>String</i>	False	Delimited Data	The ID of an employee.
EmployeeNumber	<i>String</i>	False	Delimited Data	The number for an employee.
EmployeeType	<i>String</i>	False	Delimited	The job category for an

	<i>ng</i>		Data	employee.
ExtensionName	<i>String</i>	False	Delimited Data	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	<i>String</i>	False	Delimited Data	Contains telephone number of the user's business fax machine.
Flags	<i>String</i>	False	Delimited Data	To be used by the object to store bit information.
FromEntry	<i>String</i>	False	Delimited Data	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	False	Delimited Data	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	False	Delimited Data	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	False	Delimited Data	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GarbageCollPeriod	<i>String</i>	False	Delimited Data	This attribute is located on the CN=Directory Service,CN=Windows NT,CN=Services,CN=Configuration,... object. It represents the time, in hours, between DS

garbage collection runs.				
GenerationQualifier	String	False	Delimited Data	Indicates a person generation. For example, Jr. or II.
GivenName	String	False	Delimited Data	Contains the given name (first name) of the user.
GroupMembershipSAM	String	False	Delimited Data	Windows NT Security. Down level Windows NT support.
GroupPriority	String	False	Delimited Data	The Group-Priority attribute is not currently used.
GroupsToIgnore	String	False	Delimited Data	The Groups-to-Ignore attribute is not currently used.
HomeDirectory	String	False	Delimited Data	The home directory for the account. If homeDrive is set and specifies a drive letter, homeDirectory must be a UNC path. Otherwise, homeDirectory is a fully qualified local path including the drive letter (for example, DriveLetter:\Directory\Folder). This value can be a null string.
HomeDrive	String	False	Delimited Data	Specifies the drive letter to which to map the UNC path specified by homeDirectory. The drive letter must be specified in the form DriveLetter:

				where DriveLetter is the letter of the drive to map. The DriveLetter must be a single, uppercase letter and the colon (:) is required.
Initials	<i>String</i>	False	Delimited Data	Contains the initials for parts of the user's full name. This may be used as the middle initial in the Windows Address Book.
InternationalISDNNumber	<i>String</i>	False	Delimited Data	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	False	Delimited Data	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	False	Delimited Data	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	True	Delimited Data	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	False	Delimited Data	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	False	Delimited Data	The Distinguished Name (DN) of the last known

				parent of an orphaned object.
LastLogoff	<i>String</i>	False	Delimited Data	This attribute is not used.
LastLogon	<i>String</i>	False	Delimited Data	The last time the user logged on. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last logon time is unknown.
LegacyExchangeDN	<i>String</i>	False	Delimited Data	The distinguished name previously used by Exchange.
LmPwdHistory	<i>String</i>	False	Delimited Data	The password history of the user in LAN Manager (LM) one-way format (OWF). The LM OWF is used for compatibility with LAN Manager 2.x clients, Windows 95, and Windows 98.
LocaleID	<i>String</i>	False	Delimited Data	This attribute contains a list of locale IDs supported by this application. A locale ID represents a geographic location, such as a country/region, city, county, and so on.
L	<i>String</i>	False	Delimited Data	Represents the name of a locality, such as a town or

				city.
LockoutTime	<i>String</i>	False	Delimited Data	The date and time (UTC) that this account was locked out. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the account is not currently locked out.
ThumbnailLogo	<i>String</i>	False	Delimited Data	BLOB that contains a logo for this object.
LogonCount	<i>String</i>	False	Delimited Data	The number of times the account has successfully logged on. A value of 0 indicates that the value is unknown.
LogonHours	<i>String</i>	False	Delimited Data	The hours that the user is allowed to logon to the domain.
LogonWorkstation	<i>String</i>	False	Delimited Data	This attribute is not used. See the User-Workstations attribute.
ManagedObjects	<i>String</i>	False	Delimited Data	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.



Manager	<i>String</i>	False	Delimited Data	Contains the distinguished name of the user who is the user's manager. The manager's user object contains a directReports property that contains references to all user objects that have their manager properties set to this distinguished name.
MasteredBy	<i>String</i>	False	Delimited Data	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxStorage	<i>String</i>	False	Delimited Data	The maximum amount of disk space the user can use. Use the value specified in USER_MAXSTORAGE_UNLIMITED to use all available disk space.
MhsORAddress	<i>String</i>	False	Delimited Data	X.400 address.
ModifyTimeStamp	<i>String</i>	False	Delimited Data	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.

MS-DS-ConsistencyGuid	<i>String</i>	False	Delimited Data	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
MS-DS-CreatorSID	<i>String</i>	False	Delimited Data	The security ID of the creator of the object that contains this attribute.
MSMQDigests	<i>String</i>	False	Delimited Data	An array of digests of the corresponding certificates in attribute mSMQ-Sign-Certificates. They are used for mapping a digest into a certificate.
MSMQDigestsMig	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, contains the previous value of mSMQDigests.
MSMQSignCertificates	<i>String</i>	False	Delimited Data	This attribute contains a number of certificates. A user can generate a certificate per computer. For each certificate we also keep a digest.
MSMQSignCertificatesMig	<i>String</i>	False	Delimited Data	In MSMQ mixed-mode, the attribute contains the previous value of mSMQSignCertificates. MSMQ supports migration from the MSMQ 1.0 DS to the Windows 2000 DS, and mixed mode specifies a state in which some of the DS servers were not upgraded to Windows

2000.				
MsNPAllowDialin	String	False	Delimited Data	Indicates whether the account has permission to dial in to the RAS server. Do not modify this value directly. Use the appropriate RAS administration function to modify this value.
MsNPCallingStationID	String	False	Delimited Data	The msNPCallingStationID attribute is used internally. Do not modify this value directly.
MsNPSavedCallingStationID	String	False	Delimited Data	The msNPSavedCallingStationID attribute is used internally. Do not modify this value directly.
MsRADIUSCallbackNumber	String	False	Delimited Data	The msRADIUSCallbackNumber attribute is used internally. Do not modify this value directly.
MsRADIUSFramedIPAddress	String	False	Delimited Data	The msRADIUSFramedIPAddresses attribute is used internally. Do not modify this value directly.
MsRADIUSFramedRoute	String	False	Delimited Data	The msRADIUSFramedRoute attribute is used internally. Do not modify this value directly.

MsRADIUSServiceType	String	False	Delimited Data	The msRADIUSServiceType attribute is used internally. Do not modify this value directly.
MsRASSavedCallbackNumber	String	False	Delimited Data	The msRASSavedCallbackNumber attribute is used internally. Do not modify this value directly.
MsRASSavedFramedIPAddress	String	False	Delimited Data	The msRASSavedFramedIPAddress attribute is used internally. Do not modify this value directly.
MsRASSavedFramedRoute	String	False	Delimited Data	The msRASSavedFramedRoute attribute is used internally. Do not modify this value directly.
NetbootSCPBL	String	False	Delimited Data	A list of service connection points that reference this NetBoot server.
NetworkAddress	String	False	Delimited Data	The TCP/IP address for a network segment. Also called the subnet address.
NonSecurityMemberBL	String	False	Delimited Data	List of nonsecurity-members for an Exchange distribution list.
NtPwdHistory	String	False	Delimited Data	The password history of the user in Windows NT one-way format (OWF). Windows 2000 uses the Windows NT OWF.

DistinguishedName	<i>String</i>	False	Delimited Data	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	False	Delimited Data	The unique identifier for an object.
ObjectSid	<i>String</i>	False	Delimited Data	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	<i>String</i>	False	Delimited Data	This can be used to store a version number for the object.
OperatorCount	<i>String</i>	False	Delimited Data	Operator count.
Ou	<i>String</i>	False	Delimited Data	The name of the organizational unit.
O	<i>String</i>	False	Delimited Data	The name of the company or organization.
OtherLoginWorkstations	<i>String</i>	False	Delimited Data	Non-Windows NT or LAN Manager workstations from which a user can log on.
OtherMailbox	<i>String</i>	False	Delimited Data	Contains other additional mail addresses in a form such as CCMail: BruceKeever.
MiddleName	<i>String</i>	False	Delimited Data	Additional names for a user. For example, middle name, patronymic,

				matronymic, or others.
OtherWellKnownObjects	String	False	Delimited Data	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	String	False	Delimited Data	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PersonalTitle	String	False	Delimited Data	The user's title.
OtherFacsimileTelephoneNumber	String	False	Delimited Data	A list of alternate facsimile numbers.

OtherHomePhone	<i>String</i>	False	Delimited Data	A list of alternate home phone numbers.
HomePhone	<i>String</i>	False	Delimited Data	The user's main home phone number.
OtherIpPhone	<i>String</i>	False	Delimited Data	The list of alternate TCP/IP addresses for the phone. Used by Telephony.
IpPhone	<i>String</i>	False	Delimited Data	The TCP/IP address for the phone. Used by Telephony.
PrimaryInternationalISDNNumber	<i>String</i>	False	Delimited Data	The primary ISDN.
OtherMobile	<i>String</i>	False	Delimited Data	A list of alternate mobile phone numbers.
Mobile	<i>String</i>	False	Delimited Data	The primary mobile phone number.
OtherTelephone	<i>String</i>	False	Delimited Data	A list of alternate office phone numbers.
OtherPager	<i>String</i>	False	Delimited Data	A list of alternate pager numbers.
Pager	<i>String</i>	False	Delimited Data	The primary pager number.
PhysicalDeliveryOfficeName	<i>String</i>	False	Delimited Data	Contains the office location in the user's place of business.
ThumbnailPhoto	<i>String</i>	False	Delimited Data	An image of the user. A space-efficient format like JPEG or GIF is recommended.

PossibleInferiors	<i>String</i>	False	Delimited Data	The list of objects that this object can contain.
PostalAddress	<i>String</i>	False	Delimited Data	The mailing address for the object.
PostalCode	<i>String</i>	False	Delimited Data	The postal or zip code for mail delivery.
PostOfficeBox	<i>String</i>	False	Delimited Data	The post office box number for this object.
PreferredDeliveryMethod	<i>String</i>	False	Delimited Data	The X.500-preferred way to deliver to addressee.
PreferredOU	<i>String</i>	False	Delimited Data	The Organizational Unit to show by default on user's desktop.
PrimaryGroupID	<i>String</i>	False	Delimited Data	Contains the relative identifier (RID) for the primary group of the user. By default, this is the RID for the Domain Users group.
ProfilePath	<i>String</i>	False	Delimited Data	Specifies a path to the user's profile. This value can be a null string, a local absolute path, or a UNC path.
ProxiedObjectName	<i>String</i>	False	Delimited Data	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	False	Delimited Data	A proxy address is the address by which a Microsoft Exchange Server



				recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
PwdLastSet	<i>String</i>	False	Delimited Data	The date and time that the password for this account was last changed. This value is stored as a large integer that represents the number of 100 nanosecond intervals since January 1, 1601 (UTC). If this value is set to 0 and the User-Account-Control attribute does not contain the UF_DONT_EXPIRE_PASSWD flag, then the user must set the password at the next logon.
QueryPolicyBL	<i>String</i>	False	Delimited Data	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	True	Delimited Data	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	<i>String</i>	False	Delimited Data	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in

				the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	<i>String</i>	False	Delimited Data	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API DsReplicaGetInfo(). Present on all DS objects.
ReplUpToDateVector	<i>String</i>	False	Delimited Data	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API DsReplicaGetInfo(). Present on all NC root objects.
DirectReports	<i>String</i>	False	Delimited Data	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	False	Delimited Data	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	False	Delimited	Lists the servers that the

	<i>ng</i>		Data	directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	False	Delimited Data	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
Rid	<i>String</i>	False	Delimited Data	The relative Identifier of an object.
SAMAccountType	<i>String</i>	False	Delimited Data	This attribute contains information about every account type object. You can enumerate a list of account types or you can use the Display Information API to create a list. Because computers, normal user accounts, and trust accounts can also be enumerated as user objects, the values for these accounts must be a contiguous range.
ScriptPath	<i>String</i>	False	Delimited Data	This attribute specifies the path for the user's logon script. The string can be null.
SDRightsEffective	<i>String</i>	False	Delimited Data	This constructed attribute returns a single DWORD value that can have up to three bits set:

SecurityIdentifier	<i>String</i>	False	Delimited Data	A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.
SeeAlso	<i>String</i>	False	Delimited Data	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	False	Delimited Data	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ServicePrincipalName	<i>String</i>	False	Delimited Data	List of principal names used for mutual authentication with an instance of a service on this computer.
ShowInAddressBook	<i>String</i>	False	Delimited Data	This attribute is used to indicate in which MAPI address books an object will appear. It is usually maintained by the Exchange Recipient Update Service.
ShowInAdvancedViewOnly	<i>String</i>	False	Delimited Data	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SIDHistory	<i>String</i>	False	Delimited Data	Contains previous SIDs used for the object if the object was moved from another domain. Whenever an object is moved from one domain to another, a

				new SID is created and that new SID becomes the objectSID. The previous SID is added to the sidHistory property.
SiteObjectBL	<i>String</i>	False	Delimited Data	The list of distinguished names for subnets that belong to this site.
St	<i>String</i>	False	Delimited Data	The name of a user's state or province.
Street	<i>String</i>	False	Delimited Data	The street address.
SubRefs	<i>String</i>	False	Delimited Data	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	False	Delimited Data	The distinguished name for the location of the subschema object where a class or attribute is defined.
SupplementalCredentials	<i>String</i>	False	Delimited Data	Stored credentials for use in authenticating. The encrypted version of the user's password. This attribute is neither readable nor writable.
Sn	<i>String</i>	False	Delimited Data	This attribute contains the family or last name for a user.
SystemFlags	<i>String</i>	False	Delimited Data	An integer value that contains flags that define additional properties of

				the class. See Remarks.
TelephoneNumber	<i>String</i>	False	Delimited Data	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	False	Delimited Data	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	False	Delimited Data	A list of alternate telex numbers.
PrimaryTelexNumber	<i>String</i>	False	Delimited Data	The primary telex number.
TerminalServer	<i>String</i>	False	Delimited Data	Opaque data used by the Windows NT terminal server.
Co	<i>String</i>	False	Delimited Data	The country/region in which the user is located.
TextEncodedORAddress	<i>String</i>	False	Delimited Data	This attribute is used to support X.400 addresses in a text format.
Title	<i>String</i>	False	Delimited Data	Contains the user's job title. This property is commonly used to indicate the formal job title, such as Senior Programmer, rather than occupational class, such as programmer. It is not typically used for suffix titles such as Esq. or DDS.
UnicodePwd	<i>String</i>	False	Delimited	The password of the user

	<i>String</i>		Data	in Windows NT one-way format (OWF). Windows 2000 uses the Windows NT OWF. This property is used only by the operating system. Note that you cannot derive the clear password back from the OWF form of the password.
UserAccountControl	<i>String</i>	False	Delimited Data	Flags that control the behavior of the user account.
UserCert	<i>String</i>	False	Delimited Data	Nortel v1 or DMS certificates.
Comment	<i>String</i>	False	Delimited Data	The user's comments.
UserParameters	<i>String</i>	False	Delimited Data	Parameters of the user. Points to a Unicode string that is set aside for use by applications. This string can be a null string, or it can have any number of characters before the terminating null character. Microsoft products use this member to store user data specific to the individual program.
UserPassword	<i>String</i>	False	Delimited Data	The user's password in UTF-8 format. This is a write-only attribute.
UserPrincipalName	<i>String</i>	False	Delimited Data	This attribute contains the UPN that is an Internet-

					style login name for a user based on the Internet standard RFC 822. The UPN is shorter than the distinguished name and easier to remember. By convention, this should map to the user email name. The value set for this attribute is equal to the length of the user's ID and the domain name. For more information about this attribute, see User Naming Attributes.
UserSharedFolder	String	False		Delimited Data	Specifies a UNC path to the user's shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserSharedFolderOther	String	False		Delimited Data	Specifies a UNC path to the user's additional shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserSMIMECertificate	String	False		Delimited Data	Certificate distribution object or tagged certificates.
UserWorkstations	String	False		Delimited	Contains the NetBIOS or



	<i>ng</i>		Data	DNS names of the computers running Windows NT Workstation or Windows 2000 Professional from which the user can log on. Each NetBIOS name is separated by a comma. Multiple names should be separated by commas.
USNChanged	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	False	Delimited Data	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	False	Delimited Data	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	False	Delimited Data	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	False	Delimited	Value of the USN-Changed

	<i>ng</i>		Data	attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	False	Delimited Data	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	False	Delimited Data	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	False	Delimited Data	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	False	Delimited	The date when this object

	<i>ng</i>		Data	was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	False	Delimited Data	A web page that is the primary landing page of a website.
Url	<i>String</i>	False	Delimited Data	A list of alternate webpages.
X121Address	<i>String</i>	False	Delimited Data	The X.121 address for an object.
UserCertificate	<i>String</i>	False	Delimited Data	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Views

Views are composed of columns and pseudo columns. Views are similar to tables in the way that data is represented; however, views do not support updates. Entities that are represented as views are typically read-only entities. Often, a stored procedure is available to update the data if such functionality is applicable to the data source.

Queries can be executed against a view as if it were a normal table, and the data that comes back is similar in that regard.

Dynamic views, such as queries exposed as views, and views for looking up specific combinations of project\_team work items are supported.

## Active Directory Adapter Views

Name	Description
<a href="#">Group_Membership</a>	Stores a list of user names. Used to apply security principals on resources. This view returns one row for each Member of the Group.
<a href="#">User_Membership</a>	This class is used to store information about an employee or contractor who works for an organization. It is also possible to apply this class to long term visitors. This view returns one row for each Group the User is a member of.

## Group\_Membership

Stores a list of user names. Used to apply security principals on resources. This view returns one row for each Member of the Group.

## Columns

Name	Type	References	Description
Id [KEY]	<i>String</i>		Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.

DN	<i>String</i>	The full distinguished name.
RDN	<i>String</i>	The relative distinguished name.
BaseDN	<i>String</i>	The base distinguished name.
GroupType	<i>String</i>	Contains a set of flags that define the type and scope of a group object. For the possible values for this attribute, see Remarks.
InstanceType	<i>String</i>	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	The list of classes from which this class is derived.
SAMAccountName	<i>String</i>	The logon name used to support clients and servers running earlier versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
AccountNameHistory	<i>String</i>	The length of time that the account

		has been active.
AdminCount	<i>String</i>	Indicates that a given object has had its ACLs changed to a more secure value by the system because it was a member of one of the administrative groups (directly or transitively).
AdminDescription	<i>String</i>	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	A list of classes that can be modified.
AltSecurityIdentities	<i>String</i>	Contains mappings for X.509 certificates or external Kerberos user accounts to this user for the purpose of authentication.
BridgeheadServerListBL	<i>String</i>	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results

		returned are identical to those returned by the following Active Directory function: DsCrackNames (NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
Info	<i>String</i>	The user's comments. This string can be a null string.
Cn	<i>String</i>	The name that represents an object. Used to perform searches.
ControlAccessRights	<i>String</i>	Used by DS Security to determine which users can perform specific operations on the host object.
CreateTimeStamp	<i>String</i>	The date when this object was created. This value is replicated.
Description	<i>String</i>	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is allowed to be multi-valued in others. See Remarks.
DesktopProfile	<i>String</i>	The location of the desktop profile for a user or group of users. Not used.
DisplayName	<i>String</i>	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last

		name.
DSASignature	<i>String</i>	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	The DS-Core-Propagation-Data attribute is for internal use only.
Mail	<i>String</i>	The list of email addresses for a contact.
ExtensionName	<i>String</i>	The name of a property page used to extend the UI of a directory object.
Flags	<i>String</i>	To be used by the object to store bit information.
FromEntry	<i>String</i>	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GarbageCollPeriod	<i>String</i>	This attribute is located on the CN=Directory Service,CN=Windows NT,CN=Services,CN=Configuration,... object. It represents the time, in hours, between DS garbage collection runs.



GroupAttributes	<i>String</i>	The Group-Attributes attribute is not currently used.
GroupMembershipSAM	<i>String</i>	Windows NT Security. Down level Windows NT support.
IsCriticalSystemObject	<i>String</i>	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	The Distinguished Name (DN) of the last known parent of an orphaned object.
LegacyExchangeDN	<i>String</i>	The distinguished name previously used by Exchange.
ManagedBy	<i>String</i>	The distinguished name of the user that is assigned to manage this object.
ManagedObjects	<i>String</i>	Contains the list of objects that are managed by the user. The objects listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.

MasteredBy	<i>String</i>	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
Member	<i>String</i>	The list of users that belong to the group.
ModifyTimeStamp	<i>String</i>	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	This attribute is used to check consistency between the directory and another object, database, or application, by comparing GUIDs.
NetbootSCPBL	<i>String</i>	A list of service connection points that reference this NetBoot server.
NonSecurityMember	<i>String</i>	Nonsecurity members of a group. Used for Exchange distribution lists.
NonSecurityMemberBL	<i>String</i>	List of nonsecurity-members for an Exchange distribution list.
NTGroupMembers	<i>String</i>	This attribute is not used.
DistinguishedName	<i>String</i>	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	The unique identifier for an object.

ObjectSid	<i>String</i>	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	<i>String</i>	This can be used to store a version number for the object.
OperatorCount	<i>String</i>	Operator count.
OtherWellKnownObjects	<i>String</i>	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PossibleInferiors	<i>String</i>	The list of objects that this object can contain.
PrimaryGroupToken	<i>String</i>	A computed attribute that is used in retrieving the membership list of a

		group, such as Domain Users. The complete membership of such groups is not stored explicitly for scaling reasons.
ProxiedObjectName	<i>String</i>	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
QueryPolicyBL	<i>String</i>	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
ReplPropertyMetaData	<i>String</i>	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.

DirectReports	<i>String</i>	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.
RepsFrom	<i>String</i>	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
Rid	<i>String</i>	The relative Identifier of an object.
SAMAccountType	<i>String</i>	This attribute contains information about every account type object. You can enumerate a list of account types or you can use the Display Information API to create a list. Because computers, normal user accounts, and trust accounts can also be enumerated as user objects, the values for these accounts must be a contiguous range.
SDRightsEffective	<i>String</i>	This constructed attribute returns a single DWORD value that can have up to three bits set:

SecurityIdentifier	<i>String</i>	A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.
ServerReferenceBL	<i>String</i>	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ShowInAddressBook	<i>String</i>	This attribute is used to indicate in which MAPI address books an object will appear. It is usually maintained by the Exchange Recipient Update Service.
ShowInAdvancedViewOnly	<i>String</i>	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SIDHistory	<i>String</i>	Contains previous SIDs used for the object if the object was moved from another domain. Whenever an object is moved from one domain to another, a new SID is created and that new SID becomes the objectSID. The previous SID is added to the SIDHistory property.
SiteObjectBL	<i>String</i>	The list of distinguished names for subnets that belong to this site.
SubRefs	<i>String</i>	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	The distinguished name for the location of the subschema object where a class or attribute is defined.
SupplementalCredentials	<i>String</i>	Stored credentials for use in authenticating. The encrypted version of the user's password. This attribute

		is neither readable nor writable.
SystemFlags	<i>String</i>	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	The primary telephone number.
TextEncodedORAddress	<i>String</i>	This attribute is used to support X.400 addresses in a text format.
UserCert	<i>String</i>	Nortel v1 or DMS certificates.
UserSMIMECertificate	<i>String</i>	Certificate distribution object or tagged certificates.
USNChanged	<i>String</i>	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	Contains the update sequence number (USN) for the last non-system object that was removed from a server.

USNSource	<i>String</i>	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	A web page that is the primary landing page of a website.
Url	<i>String</i>	A list of alternate webpages.



UserCertificate	<i>String</i>	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.
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## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## User\_Membership

This class is used to store information about an employee or contractor who works for an organization. It is also possible to apply this class to long term visitors. This view returns one row for each Group the User is a member of.

## Columns

Name	Type	References	Description
Id [KEY]	<i>String</i>		Combined index and DN. Multiple indices are only possible when a column is set to SplitDataByRow.
DN	<i>String</i>		The full distinguished name.

RDN	<i>String</i>	The relative distinguished name.
BaseDN	<i>String</i>	The base distinguished name.
InstanceType	<i>String</i>	A bitfield that dictates how the object is instantiated on a particular server. The value of this attribute can differ on different replicas even if the replicas are in sync.
NTSecurityDescriptor	<i>String</i>	The Windows NT security descriptor for the schema object. A security descriptor is a data structure that contains security information about an object, such as the ownership and permissions of the object.
ObjectCategory	<i>String</i>	An object class name used to group objects of this or derived classes.
ObjectClass	<i>String</i>	The list of classes from which this class is derived.
SAMAccountName	<i>String</i>	The logon name used to support clients and servers running earlier versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager.
AccountExpires	<i>String</i>	The date when the account expires. This value represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of 0 or 0x7FFFFFFFFFFFFFFF (9223372036854775807) indicates that the account never expires.
AccountNameHistory	<i>String</i>	The length of time that the account

		has been active.
ACSPolicyName	<i>String</i>	String name of an ACS policy that applies to this user.
StreetAddress	<i>String</i>	The user's address.
HomePostalAddress	<i>String</i>	A user's home address.
AdminCount	<i>String</i>	Indicates that a given object has had its ACLs changed to a more secure value by the system because it was a member of one of the administrative groups (directly or transitively).
AdminDescription	<i>String</i>	The description displayed on admin screens.
AdminDisplayName	<i>String</i>	The name to be displayed on admin screens.
AllowedAttributes	<i>String</i>	Attributes that will be permitted to be assigned to a class.
AllowedAttributesEffective	<i>String</i>	A list of attributes that can be modified on the object.
AllowedChildClasses	<i>String</i>	Classes that can be contained by a class.
AllowedChildClassesEffective	<i>String</i>	A list of classes that can be modified.
AltSecurityIdentities	<i>String</i>	Contains mappings for X.509 certificates or external Kerberos user accounts to this user for the purpose of authentication.

Assistant	<i>String</i>	The distinguished name of a user's administrative assistant.
BadPasswordTime	<i>String</i>	The last time and date that an attempt to log on to this account was made with a password that is not valid. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last time a incorrect password was used is unknown.
BadPwdCount	<i>String</i>	The number of times the user tried to log on to the account using an incorrect password. A value of 0 indicates that the value is unknown.
BridgeheadServerListBL	<i>String</i>	The list of servers that are bridgeheads for replication.
CanonicalName	<i>String</i>	The name of the object in canonical format. myserver2.fabrikam.com/users/jeffsmith is an example of a distinguished name in canonical format. This is a constructed attribute. The results returned are identical to those returned by the following Active Directory function: DsCrackNames(NULL, DS_NAME_FLAG_SYNTACTICAL_ONLY, DS_FQDN_1779_NAME, DS_CANONICAL_NAME, ...).
CodePage	<i>String</i>	Specifies the code page for the user's language of choice. This value is not used by Windows 2000.

Info	<i>String</i>	The user's comments. This string can be a null string.
Cn	<i>String</i>	The name that represents an object. Used to perform searches.
Company	<i>String</i>	The user's company name.
ControlAccessRights	<i>String</i>	Used by DS Security to determine which users can perform specific operations on the host object.
CountryCode	<i>String</i>	Specifies the country/region code for the user's language of choice. This value is not used by Windows 2000.
C	<i>String</i>	The country/region in the address of the user. The country/region is represented as a 2-character code based on ISO-3166.
CreateTimeStamp	<i>String</i>	The date when this object was created. This value is replicated.
DBCSPwd	<i>String</i>	The account's LAN Manager password.
DefaultClassStore	<i>String</i>	The default Class Store for a given user.
Department	<i>String</i>	Contains the name for the department in which the user works.
Description	<i>String</i>	Contains the description to display for an object. This value is restricted as single-valued for backward compatibility in some cases but is

		allowed to be multi-valued in others. See Remarks.
DesktopProfile	<i>String</i>	The location of the desktop profile for a user or group of users. Not used.
DestinationIndicator	<i>String</i>	This is part of the X.500 specification and not used by NTDS.
DisplayName	<i>String</i>	The display name for an object. This is usually the combination of the users first name, middle initial, and last name.
DisplayNamePrintable	<i>String</i>	The printable display name for an object. The printable display name is usually the combination of the user's first name, middle initial, and last name.
Division	<i>String</i>	The user's division.
DSASignature	<i>String</i>	The DSA-Signature of an object is the Invocation-ID of the last directory to modify the object.
DSCorePropagationData	<i>String</i>	The DS-Core-Propagation-Data attribute is for internal use only.
DynamicLDAPServer	<i>String</i>	DNS name of server handling dynamic properties for this account.
Mail	<i>String</i>	The list of email addresses for a contact.
EmployeeID	<i>String</i>	The ID of an employee.

EmployeeNumber	<i>String</i>	The number for an employee.
EmployeeType	<i>String</i>	The job category for an employee.
ExtensionName	<i>String</i>	The name of a property page used to extend the UI of a directory object.
FacsimileTelephoneNumber	<i>String</i>	Contains telephone number of the user's business fax machine.
Flags	<i>String</i>	To be used by the object to store bit information.
FromEntry	<i>String</i>	This is a constructed attribute that is TRUE if the object is writable and FALSE if it is read-only, for example, a GC replica instance.
FrsComputerReferenceBL	<i>String</i>	Reference to replica sets to which this computer belongs.
FRSMemberReferenceBL	<i>String</i>	Reference to subscriber objects for this member.
FSMORoleOwner	<i>String</i>	Flexible Single-Master Operation: The distinguished name of the DC where the schema can be modified.
GarbageCollPeriod	<i>String</i>	This attribute is located on the CN=Directory Service,CN=Windows NT,CN=Services,CN=Configuration,... object. It represents the time, in hours, between DS garbage collection runs.

GenerationQualifier	<i>String</i>	Indicates a person generation. For example, Jr. or II.
GivenName	<i>String</i>	Contains the given name (first name) of the user.
GroupMembershipSAM	<i>String</i>	Windows NT Security. Down level Windows NT support.
GroupPriority	<i>String</i>	The Group-Priority attribute is not currently used.
GroupsToIgnore	<i>String</i>	The Groups-to-Ignore attribute is not currently used.
HomeDirectory	<i>String</i>	The home directory for the account. If homeDrive is set and specifies a drive letter, homeDirectory must be a UNC path. Otherwise, homeDirectory is a fully qualified local path including the drive letter (for example, DriveLetter:\Directory\Folder). This value can be a null string.
HomeDrive	<i>String</i>	Specifies the drive letter to which to map the UNC path specified by homeDirectory. The drive letter must be specified in the form DriveLetter: where DriveLetter is the letter of the drive to map. The DriveLetter must be a single, uppercase letter and the colon (:) is required.
Initials	<i>String</i>	Contains the initials for parts of the user's full name. This may be used as the middle initial in the Windows Address Book.



InternationalISDNNumber	<i>String</i>	Specifies an International ISDN Number associated with an object.
IsCriticalSystemObject	<i>String</i>	If TRUE, the object hosting this attribute must be replicated during installation of a new replica.
IsDeleted	<i>String</i>	If TRUE, this object has been marked for deletion and cannot be instantiated. After the tombstone period has expired, it will be removed from the system.
MemberOf	<i>String</i>	The distinguished name of the groups to which this object belongs.
IsPrivilegeHolder	<i>String</i>	Backward link to privileges held by a given principal.
LastKnownParent	<i>String</i>	The Distinguished Name (DN) of the last known parent of an orphaned object.
LastLogoff	<i>String</i>	This attribute is not used.
LastLogon	<i>String</i>	The last time the user logged on. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the last logon time is unknown.
LegacyExchangeDN	<i>String</i>	The distinguished name previously used by Exchange.
LmPwdHistory	<i>String</i>	The password history of the user in LAN Manager (LM) one-way format

		(OWF). The LM OWF is used for compatibility with LAN Manager 2.x clients, Windows 95, and Windows 98.
LocaleID	<i>String</i>	This attribute contains a list of locale IDs supported by this application. A locale ID represents a geographic location, such as a country/region, city, county, and so on.
L	<i>String</i>	Represents the name of a locality, such as a town or city.
LockoutTime	<i>String</i>	The date and time (UTC) that this account was locked out. This value is stored as a large integer that represents the number of 100-nanosecond intervals since January 1, 1601 (UTC). A value of zero means that the account is not currently locked out.
ThumbnailLogo	<i>String</i>	BLOB that contains a logo for this object.
LogonCount	<i>String</i>	The number of times the account has successfully logged on. A value of 0 indicates that the value is unknown.
LogonHours	<i>String</i>	The hours that the user is allowed to logon to the domain.
LogonWorkstation	<i>String</i>	This attribute is not used. See the User-Workstations attribute.
ManagedObjects	<i>String</i>	Contains the list of objects that are managed by the user. The objects

		listed are those that have the property managedBy property set to this user. Each item in the list is a linked reference to the managed object.
Manager	<i>String</i>	Contains the distinguished name of the user who is the user's manager. The manager's user object contains a directReports property that contains references to all user objects that have their manager properties set to this distinguished name.
MasteredBy	<i>String</i>	Backward link for Has-Master-NCs attribute. The distinguished name for its NTDS Settings objects.
MaxStorage	<i>String</i>	The maximum amount of disk space the user can use. Use the value specified in USER_MAXSTORAGE_UNLIMITED to use all available disk space.
MhsORAddress	<i>String</i>	X.400 address.
ModifyTimeStamp	<i>String</i>	A computed attribute that represents the date when this object was last changed. This value is not replicated.
MS-DS-ConsistencyChildCount	<i>String</i>	This attribute is used to check consistency between the directory and another object, database, or application, by comparing a count of child objects.
MS-DS-ConsistencyGuid	<i>String</i>	This attribute is used to check

		consistency between the directory and another object, database, or application, by comparing GUIDs.
MS-DS-CreatorSID	<i>String</i>	The security ID of the creator of the object that contains this attribute.
MSMQDigests	<i>String</i>	An array of digests of the corresponding certificates in attribute mSMQ-Sign-Certificates. They are used for mapping a digest into a certificate.
MSMQDigestsMig	<i>String</i>	In MSMQ mixed-mode, contains the previous value of mSMQDigests.
MSMQSignCertificates	<i>String</i>	This attribute contains a number of certificates. A user can generate a certificate per computer. For each certificate we also keep a digest.
MSMQSignCertificatesMig	<i>String</i>	In MSMQ mixed-mode, the attribute contains the previous value of mSMQSignCertificates. MSMQ supports migration from the MSMQ 1.0 DS to the Windows 2000 DS, and mixed mode specifies a state in which some of the DS servers were not upgraded to Windows 2000.
MsNPAllowDialin	<i>String</i>	Indicates whether the account has permission to dial in to the RAS server. Do not modify this value directly. Use the appropriate RAS administration function to modify this value.
MsNPCallingStationID	<i>String</i>	The msNPCallingStationID attribute is used internally. Do not modify this value directly.

MsNPSavedCallingStationID	<i>String</i>	The msNPSavedCallingStationID attribute is used internally. Do not modify this value directly.
MsRADIUSCallbackNumber	<i>String</i>	The msRADIUSCallbackNumber attribute is used internally. Do not modify this value directly.
MsRADIUSFramedIPAddress	<i>String</i>	The msRADIUSFramedIPAddress attribute is used internally. Do not modify this value directly.
MsRADIUSFramedRoute	<i>String</i>	The msRADIUSFramedRoute attribute is used internally. Do not modify this value directly.
MsRADIUSServiceType	<i>String</i>	The msRADIUSServiceType attribute is used internally. Do not modify this value directly.
MsRASSavedCallbackNumber	<i>String</i>	The msRASSavedCallbackNumber attribute is used internally. Do not modify this value directly.
MsRASSavedFramedIPAddress	<i>String</i>	The msRASSavedFramedIPAddress attribute is used internally. Do not modify this value directly.
MsRASSavedFramedRoute	<i>String</i>	The msRASSavedFramedRoute attribute is used internally. Do not modify this value directly.
NetbootSCPBL	<i>String</i>	A list of service connection points that reference this NetBoot server.
NetworkAddress	<i>String</i>	The TCP/IP address for a network segment. Also called the subnet address.
NonSecurityMemberBL	<i>String</i>	List of nonsecurity-members for an

		Exchange distribution list.
NtPwdHistory	<i>String</i>	The password history of the user in Windows NT one-way format (OWF). Windows 2000 uses the Windows NT OWF.
DistinguishedName	<i>String</i>	Same as the Distinguished Name for an object. Used by Exchange.
ObjectGUID	<i>String</i>	The unique identifier for an object.
ObjectSid	<i>String</i>	A binary value that specifies the security identifier (SID) of the user. The SID is a unique value used to identify the user as a security principal.
ObjectVersion	<i>String</i>	This can be used to store a version number for the object.
OperatorCount	<i>String</i>	Operator count.
Ou	<i>String</i>	The name of the organizational unit.
O	<i>String</i>	The name of the company or organization.
OtherLoginWorkstations	<i>String</i>	Non-Windows NT or LAN Manager workstations from which a user can log on.
OtherMailbox	<i>String</i>	Contains other additional mail addresses in a form such as CCMail: BruceKeever.
MiddleName	<i>String</i>	Additional names for a user. For

		example, middle name, patronymic, matronymic, or others.
OtherWellKnownObjects	<i>String</i>	Contains a list of containers by GUID and Distinguished Name. This permits retrieving an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the Distinguished Name.
PartialAttributeDeletionList	<i>String</i>	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Used when the GC is in the process of removing attributes from the objects in its partial replica NCs.
PartialAttributeSet	<i>String</i>	Tracks the internal replication state of partial replicas (that is, on GCs). Attribute of the partial replica NC object. Defines the set of attributes present on a particular partial replica NC.
PersonalTitle	<i>String</i>	The user's title.
OtherFacsimileTelephoneNumber	<i>String</i>	A list of alternate facsimile numbers.
OtherHomePhone	<i>String</i>	A list of alternate home phone numbers.
HomePhone	<i>String</i>	The user's main home phone number.
OtherIpPhone	<i>String</i>	The list of alternate TCP/IP

		addresses for the phone. Used by Telephony.
IpPhone	<i>String</i>	The TCP/IP address for the phone. Used by Telephony.
PrimaryInternationalISDNNumber	<i>String</i>	The primary ISDN.
OtherMobile	<i>String</i>	A list of alternate mobile phone numbers.
Mobile	<i>String</i>	The primary mobile phone number.
OtherTelephone	<i>String</i>	A list of alternate office phone numbers.
OtherPager	<i>String</i>	A list of alternate pager numbers.
Pager	<i>String</i>	The primary pager number.
PhysicalDeliveryOfficeName	<i>String</i>	Contains the office location in the user's place of business.
ThumbnailPhoto	<i>String</i>	An image of the user. A space-efficient format like JPEG or GIF is recommended.
PossibleInferiors	<i>String</i>	The list of objects that this object can contain.
PostalAddress	<i>String</i>	The mailing address for the object.
PostalCode	<i>String</i>	The postal or zip code for mail delivery.



PostOfficeBox	<i>String</i>	The post office box number for this object.
PreferredDeliveryMethod	<i>String</i>	The X.500-preferred way to deliver to addressee.
PreferredOU	<i>String</i>	The Organizational Unit to show by default on user' s desktop.
PrimaryGroupID	<i>String</i>	Contains the relative identifier (RID) for the primary group of the user. By default, this is the RID for the Domain Users group.
ProfilePath	<i>String</i>	Specifies a path to the user's profile. This value can be a null string, a local absolute path, or a UNC path.
ProxiedObjectName	<i>String</i>	This attribute is used internally by Active Directory to help track interdomain moves.
ProxyAddresses	<i>String</i>	A proxy address is the address by which a Microsoft Exchange Server recipient object is recognized in a foreign mail system. Proxy addresses are required for all recipient objects, such as custom recipients and distribution lists.
PwdLastSet	<i>String</i>	The date and time that the password for this account was last changed. This value is stored as a large integer that represents the number of 100 nanosecond intervals since January 1, 1601 (UTC). If this value is set to 0 and the User-Account-Control attribute does not contain the UF_DONT_EXPIRE_PASSWD flag, then the user must set

		the password at the next logon.
QueryPolicyBL	<i>String</i>	List of all objects holding references to a given Query-Policy.
Name	<i>String</i>	The Relative Distinguished Name (RDN) of an object. An RDN is the relative portion of a distinguished name (DN), which uniquely identifies an LDAP object.
RegisteredAddress	<i>String</i>	Specifies a mnemonic for an address associated with an object at a particular city location. The mnemonic is registered in the country/region in which the city is located and is used in the provision of the Public Telegram Service.
ReplPropertyMetaData	<i>String</i>	Tracks internal replication state information for DS objects. Information here can be extracted in public form through the public API <code>DsReplicaGetInfo()</code> . Present on all DS objects.
ReplUpToDateVector	<i>String</i>	Tracks internal replication state information for an entire NC. Information here can be extracted in public form through the API <code>DsReplicaGetInfo()</code> . Present on all NC root objects.
DirectReports	<i>String</i>	Contains the list of users that directly report to the user. The users listed as reports are those that have the property manager property set to this user. Each item in the list is a linked reference to the object that represents the user.

RepsFrom	<i>String</i>	Lists the servers from which the directory will accept changes for the defined naming context.
RepsTo	<i>String</i>	Lists the servers that the directory will notify of changes and servers to which the directory will send changes on Request for the defined naming context.
Revision	<i>String</i>	The revision level for a security descriptor or other change. Only used in the sam-server and ds-ui-settings objects.
Rid	<i>String</i>	The relative Identifier of an object.
SAMAccountType	<i>String</i>	This attribute contains information about every account type object. You can enumerate a list of account types or you can use the Display Information API to create a list. Because computers, normal user accounts, and trust accounts can also be enumerated as user objects, the values for these accounts must be a contiguous range.
ScriptPath	<i>String</i>	This attribute specifies the path for the user's logon script. The string can be null.
SDRightsEffective	<i>String</i>	This constructed attribute returns a single DWORD value that can have up to three bits set:
SecurityIdentifier	<i>String</i>	A unique value of variable length used to identify a user account, group account, or logon session to

		which an ACE applies.
SeeAlso	<i>String</i>	List of distinguished names that are related to an object.
ServerReferenceBL	<i>String</i>	Found in the domain naming context. The distinguished name of a computer under the sites folder.
ServicePrincipalName	<i>String</i>	List of principal names used for mutual authentication with an instance of a service on this computer.
ShowInAddressBook	<i>String</i>	This attribute is used to indicate in which MAPI address books an object will appear. It is usually maintained by the Exchange Recipient Update Service.
ShowInAdvancedViewOnly	<i>String</i>	TRUE if this attribute is to be visible in the Advanced mode of the UI.
SIDHistory	<i>String</i>	Contains previous SIDs used for the object if the object was moved from another domain. Whenever an object is moved from one domain to another, a new SID is created and that new SID becomes the objectSID. The previous SID is added to the SIDHistory property.
SiteObjectBL	<i>String</i>	The list of distinguished names for subnets that belong to this site.
St	<i>String</i>	The name of a user's state or province.
Street	<i>String</i>	The street address.

SubRefs	<i>String</i>	List of subordinate references of a Naming Context.
SubSchemaSubEntry	<i>String</i>	The distinguished name for the location of the subschema object where a class or attribute is defined.
SupplementalCredentials	<i>String</i>	Stored credentials for use in authenticating. The encrypted version of the user's password. This attribute is neither readable nor writable.
Sn	<i>String</i>	This attribute contains the family or last name for a user.
SystemFlags	<i>String</i>	An integer value that contains flags that define additional properties of the class. See Remarks.
TelephoneNumber	<i>String</i>	The primary telephone number.
TeletexTerminalIdentifier	<i>String</i>	Specifies the Teletex terminal identifier and, optionally, parameters, for a teletex terminal associated with an object.
TelexNumber	<i>String</i>	A list of alternate telex numbers.
PrimaryTelexNumber	<i>String</i>	The primary telex number.
TerminalServer	<i>String</i>	Opaque data used by the Windows NT terminal server.
Co	<i>String</i>	The country/region in which the user is located.

TextEncodedORAddress	<i>String</i>	This attribute is used to support X.400 addresses in a text format.
Title	<i>String</i>	Contains the user's job title. This property is commonly used to indicate the formal job title, such as Senior Programmer, rather than occupational class, such as programmer. It is not typically used for suffix titles such as Esq. or DDS.
UnicodePwd	<i>String</i>	The password of the user in Windows NT one-way format (OWF). Windows 2000 uses the Windows NT OWF. This property is used only by the operating system. Note that you cannot derive the clear password back from the OWF form of the password.
UserAccountControl	<i>String</i>	Flags that control the behavior of the user account.
UserCert	<i>String</i>	Nortel v1 or DMS certificates.
Comment	<i>String</i>	The user's comments.
UserParameters	<i>String</i>	Parameters of the user. Points to a Unicode string that is set aside for use by applications. This string can be a null string, or it can have any number of characters before the terminating null character. Microsoft products use this member to store user data specific to the individual program.
UserPassword	<i>String</i>	The user's password in UTF-8

		format. This is a write-only attribute.
UserPrincipalName	<i>String</i>	This attribute contains the UPN that is an Internet-style login name for a user based on the Internet standard RFC 822. The UPN is shorter than the distinguished name and easier to remember. By convention, this should map to the user email name. The value set for this attribute is equal to the length of the user's ID and the domain name. For more information about this attribute, see User Naming Attributes.
UserSharedFolder	<i>String</i>	Specifies a UNC path to the user's shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserSharedFolderOther	<i>String</i>	Specifies a UNC path to the user's additional shared documents folder. The path must be a network UNC path of the form \\Server\Share\Directory. This value can be a null string.
UserSMIMECertificate	<i>String</i>	Certificate distribution object or tagged certificates.
UserWorkstations	<i>String</i>	Contains the NetBIOS or DNS names of the computers running Windows NT Workstation or Windows 2000 Professional from which the user can log on. Each NetBIOS name is separated by a comma. Multiple names should be separated by commas.

USNChanged	<i>String</i>	The update sequence number (USN) assigned by the local directory for the latest change, including creation. See also , USN-Created.
USNCreated	<i>String</i>	The update sequence number (USN) assigned at object creation. See also, USN-Changed.
USNDSALastObjRemoved	<i>String</i>	Contains the update sequence number (USN) for the last system object that was removed from a server.
USNIntersite	<i>String</i>	The update sequence number (USN) for inter-site replication.
USNLastObjRem	<i>String</i>	Contains the update sequence number (USN) for the last non-system object that was removed from a server.
USNSource	<i>String</i>	Value of the USN-Changed attribute of the object from the remote directory that replicated the change to the local server.
WbemPath	<i>String</i>	References to objects in other ADSI namespaces.
WellKnownObjects	<i>String</i>	This attribute contains a list of well-known object containers by GUID and distinguished name. The well-known objects are system containers. This information is used to retrieve an object after it has been moved by using just the GUID and the domain name. Whenever the object is moved, the system automatically updates the



		Distinguished Name portion of the Well-Known-Objects values that referred to the object. The file Ntdsapi.h contains the following definitions, which can be used to retrieve an object (the GUIDs that are associated to these objects are contained in Ntdsapi.h):
WhenChanged	<i>String</i>	The date when this object was last changed. This value is not replicated and exists in the global catalog.
WhenCreated	<i>String</i>	The date when this object was created. This value is replicated and is in the global catalog.
WWWHomePage	<i>String</i>	A web page that is the primary landing page of a website.
Url	<i>String</i>	A list of alternate webpages.
X121Address	<i>String</i>	The X.121 address for an object.
UserCertificate	<i>String</i>	Contains the DER-encoded X.509v3 certificates issued to the user. Note that this property contains the public key certificates issued to this user by Microsoft Certificate Service.

## Pseudo-Columns

Pseudo column fields are used in the WHERE clause of SELECT statements and offer a more granular control over the tuples that are returned from the data source.

Name	Type	Description
Filter	<i>String</i>	Defines the LDAP filter explicitly, overriding any other values set in the WHERE clause.

## Stored Procedures

Stored procedures are function-like interfaces that extend the functionality of the adapter beyond simple SELECT/INSERT/UPDATE/DELETE operations with Active Directory.

Stored procedures accept a list of parameters, perform their intended function, and then return, if applicable, any relevant response data from Active Directory, along with an indication of whether the procedure succeeded or failed.

### Active Directory Adapter Stored Procedures

Name	Description
<a href="#">ChangePassword</a>	Changes the password of the current user, provided the current password is known. To set the password without a current password (requires an administrator), use ResetPassword. Note that the User set in the connection settings must be a valid DN. Additionally, you must be connected to the server using SSL.
<a href="#">CreateTableFromSchema</a>	Converts an LDAP RFC 2242 compliant schema into a table.
<a href="#">GetAttributes</a>	Returns all the attribute names and values of the specified DN.
<a href="#">MoveToDN</a>	Moves objects from one DN to another one.
<a href="#">ResetPassword</a>	Resets the password of a specific user specified by DN. Use ChangePassword instead if the current password is to be authenticated first. Note that the User set in the connection settings or the AdminUser, if set when calling this procedure, must be a valid DN. Additionally, you must be connected to the server using SSL.

## ChangePassword

Changes the password of the current user, provided the current password is known. To set the password without a current password (requires an administrator), use ResetPassword. Note that the User set in the connection settings must be a valid DN. Additionally, you must be connected to the server using SSL.

### Input

Name	Type	Description
NewPassword	<i>String</i>	The new password for the user specified by DN.

### Result Set Columns

Name	Type	Description
Success	<i>String</i>	Indicates whether the attributes were modified successfully or not.

## CreateTableFromSchema

Converts an LDAP RFC 2242 compliant schema into a table.

### Input

Name	Type	Description
Schema	<i>String</i>	RFC 2252 compliant schema.

## Result Set Columns

Name	Type	Description
Script	<i>String</i>	The output .rsd script. You will need to set the Location connection property to the folder containing your schema files.

## GetAttributes

Returns all the attribute names and values of the specified DN.

## Input

Name	Type	Description
DN	<i>String</i>	Distinguished name of the desired LDAP object. If unspecified, the BaseDN from the connection string will be used.

## Result Set Columns

Name	Type	Description
AttributeName	<i>String</i>	Attribute names of the DN.
AttributeValue	<i>String</i>	Corresponding attribute value of the DN.

## MoveToDN

Moves objects from one DN to another one.

### Input

Name	Type	Description
DN	<i>String</i>	The current DN of the object to be moved on the server (for example, cn=Bob F,ou=Employees,dc=Domain).
NewParentDN	<i>String</i>	The new parent DN of the object(for example ou=Test Org,dc=Domain).

### Result Set Columns

Name	Type	Description
Success	<i>String</i>	Indicates whether movement was successfull or not.

## ResetPassword

Resets the password of a specific user specified by DN. Use ChangePassword instead if the current password is to be authenticated first. Note that the User set in the connection settings or the AdminUser, if set when calling this procedure, must be a valid DN. Additionally, you must be connected to the server using SSL.

### Input

Name	Type	Description
------	------	-------------

AdminUser	<i>String</i>	An administrator account or DN with which to bind to the server (for example, Domain\\BobF or cn=Bob F,ou=Employees,dc=Domain).
AdminPassword	<i>String</i>	An administrator account password used to authenticate to the LDAP server.
User	<i>String</i>	The DN of the account to be modified on the server (for example, Domain\\BobF or cn=Bob F,ou=Employees,dc=Domain).
NewPassword	<i>String</i>	The new password for the user specified by DN.

## Result Set Columns

Name	Type	Description
Success	<i>String</i>	Indicates whether the attributes were modified successfully or not.

## Connection String Options

The connection string properties are the various options that can be used to establish a connection. This section provides a complete list of the options you can configure in the connection string for this provider. Click the links for further details.

For more information on establishing a connection, see [Basic Tab](#).

## Authentication

Property	Description
----------	-------------

<a href="#">Server</a>	The domain name or IP of the Active Directory server.
<a href="#">Port</a>	The port the Active Directory server is running on.
<a href="#">User</a>	The distinguished name of a user.
<a href="#">Password</a>	The password for the distinguished name of the specified user.
<a href="#">UseSSL</a>	Whether or not to use SSL to connect to the server.
<a href="#">BaseDN</a>	The base portion of the distinguished name, used for limiting results to specific subtrees.
<a href="#">AuthMechanism</a>	The authentication mechanism to be used when connecting to the Active Directory server.
<a href="#">Scope</a>	Whether to limit the scope of the search to the whole subtree (BaseDN and all of its descendants), a single level (BaseDN and its direct descendants), or the base object (BaseDN only).
<a href="#">LDAPVersion</a>	The LDAP version used to connect to and communicate with the server.

## SSL

Property	Description
<a href="#">SSLServerCert</a>	The certificate to be accepted from the server when connecting using TLS/SSL.

## Firewall

Property	Description
<a href="#">FirewallType</a>	The protocol used by a proxy-based firewall.

<a href="#">FirewallServer</a>	The name or IP address of a proxy-based firewall.
<a href="#">FirewallPort</a>	The TCP port for a proxy-based firewall.
<a href="#">FirewallUser</a>	The user name to use to authenticate with a proxy-based firewall.
<a href="#">FirewallPassword</a>	A password used to authenticate to a proxy-based firewall.

## Logging

Property	Description
<a href="#">LogModules</a>	Core modules to be included in the log file.

## Schema

Property	Description
<a href="#">Location</a>	A path to the directory that contains the schema files defining tables, views, and stored procedures.

## Miscellaneous

Property	Description
<a href="#">FollowReferrals</a>	Whether or not to follow referrals returned by the Active Directory server.
<a href="#">FriendlyGUID</a>	Whether to return GUID attribute values in a human readable format.
<a href="#">FriendlySID</a>	Whether to return SID attribute values in a human readable format.



<a href="#">MaxRows</a>	Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.
<a href="#">Other</a>	These hidden properties are used only in specific use cases.
<a href="#">Readonly</a>	You can use this property to enforce read-only access to Microsoft Active Directory from the provider.
<a href="#">Timeout</a>	The value in seconds until the timeout error is thrown, canceling the operation.
<a href="#">UserDefinedViews</a>	A filepath pointing to the JSON configuration file containing your custom views.

## Authentication

This section provides a complete list of the Authentication properties you can configure in the connection string for this provider.

Property	Description
<a href="#">Server</a>	The domain name or IP of the Active Directory server.
<a href="#">Port</a>	The port the Active Directory server is running on.
<a href="#">User</a>	The distinguished name of a user.
<a href="#">Password</a>	The password for the distinguished name of the specified user.
<a href="#">UseSSL</a>	Whether or not to use SSL to connect to the server.
<a href="#">BaseDN</a>	The base portion of the distinguished name, used for limiting results to specific subtrees.
<a href="#">AuthMechanism</a>	The authentication mechanism to be used when connecting to the Active Directory server.

---

<b>Scope</b>	Whether to limit the scope of the search to the whole subtree (BaseDN and all of its descendants), a single level (BaseDN and its direct descendants), or the base object (BaseDN only).
<b>LDAPVersion</b>	The LDAP version used to connect to and communicate with the server.

---

## Server

The domain name or IP of the Active Directory server.

### Data Type

string

### Default Value

""

### Remarks

*Note:* This does not need to include the LDAP:\\ portion, only the server domain name or IP.

## Port

The port the Active Directory server is running on.

### Data Type

string

### Default Value

"389"

## Remarks

The port the Active Directory server is running on. Together with [Server](#), this property is used to specify the Active Directory server.

## User

The distinguished name of a user.

## Data Type

string

## Default Value

""

## Remarks

Together with [Password](#), this field is used to authenticate against the Active Directory server.

## Password

The password for the distinguished name of the specified user.

## Data Type

string

## Default Value

""

## Remarks

Together with [User](#), this field is used to authenticate against the Active Directory server.

## UseSSL

Whether or not to use SSL to connect to the server.

### Data Type

bool

### Default Value

false

### Remarks

Whether or not to use SSL to connect to the server. Note that a port of 636 will always use SSL.

## BaseDN

The base portion of the distinguished name, used for limiting results to specific subtrees.

### Data Type

string

### Default Value

""

### Remarks

Specifying a base DN may greatly improve performance when returning entries for large servers by limiting the number of entries that need to be examined.

## AuthMechanism

The authentication mechanism to be used when connecting to the Active Directory server.

## Possible Values

SIMPLE, DIGESTMD5, NEGOTIATE

## Data Type

string

## Default Value

"SIMPLE"

## Remarks

By default, AuthMechanism is SIMPLE, and default plaintext authentication is used to log in to the server. If AuthMechanism is set to DIGESTMD5, the more secure DIGEST-MD5 authentication is used. If AuthMechanism is set to NEGOTIATE, NTLM/Negotiate authentication will be used.

- SIMPLE
- DIGESTMD5
- NEGOTIATE

## Scope

Whether to limit the scope of the search to the whole subtree (BaseDN and all of its descendants), a single level (BaseDN and its direct descendants), or the base object (BaseDN only).

## Possible Values

WHOLESUBTREE, SINGLELEVEL, BASEOBJECT

## Data Type

string

## Default Value

"WHOLESUBTREE"

## Remarks

Whether to limit the scope of the search to the whole subtree (BaseDN and all of its descendants), a single level (BaseDN and its direct descendants), or the base object (BaseDN only). Limiting scope can greatly improve the search performance.

- WholeSubtree
- SingleLevel
- BaseObject

## LDAPVersion

The LDAP version used to connect to and communicate with the server.

## Possible Values

2, 3

## Data Type

string

## Default Value

"2"

## Remarks

Valid options are 2 and 3 for LDAP versions 2 and 3.

## SSL

This section provides a complete list of the SSL properties you can configure in the connection string for this provider.

---

Property	Description
----------	-------------

---

**SSLServerCert**

The certificate to be accepted from the server when connecting using TLS/SSL.

## SSLServerCert

The certificate to be accepted from the server when connecting using TLS/SSL.

### Data Type

string

### Default Value

""

### Remarks

If using a TLS/SSL connection, this property can be used to specify the TLS/SSL certificate to be accepted from the server. Any other certificate that is not trusted by the machine is rejected.

This property can take the following forms:

Description	Example
A full PEM Certificate (example shortened for brevity)	-----BEGIN CERTIFICATE----- MIICHTCCAe4CAQAwDQYJKoZIhV.....Qw == -----END CERTIFICATE-----
A path to a local file containing the certificate	C:\cert.cer
The public key (example shortened for brevity)	-----BEGIN RSA PUBLIC KEY----- MIGfMA0GCSq.....AQAB -----END RSA PUBLIC KEY-----
The MD5 Thumbprint (hex values can also be either spaced or colon separated)	.....bdda5a1529c58a1e9e09828d70e4

---

The SHA1 Thumbprint (hex values can also be either space or colon separated)

34e929226ae0819f2ec14b4a3d904f801cbb150d

---

If not specified, any certificate trusted by the machine is accepted.

Certificates are validated as trusted by the machine based on the System's trust store. The trust store used is the 'javax.net.ssl.trustStore' value specified for the system. If no value is specified for this property, Java's default trust store is used (for example, JAVA\_HOME\lib\security\cacerts).

Use '\*' to signify to accept all certificates. Note that this is not recommended due to security concerns.

## Firewall

This section provides a complete list of the Firewall properties you can configure in the connection string for this provider.

---

Property	Description
FirewallType	The protocol used by a proxy-based firewall.
FirewallServer	The name or IP address of a proxy-based firewall.
FirewallPort	The TCP port for a proxy-based firewall.
FirewallUser	The user name to use to authenticate with a proxy-based firewall.
FirewallPassword	A password used to authenticate to a proxy-based firewall.

---

## FirewallType

The protocol used by a proxy-based firewall.

### Possible Values

NONE, TUNNEL, SOCKS4, SOCKS5



## Data Type

string

## Default Value

"NONE"

## Remarks

This property specifies the protocol that the adapter will use to tunnel traffic through the [FirewallServer](#) proxy.

Type	Default Port	Description
TUNNEL	80	When this is set, the adapter opens a connection to Active Directory and traffic flows back and forth through the proxy.
SOCKS4	1080	When this is set, the adapter sends data through the SOCKS 4 proxy specified by <a href="#">FirewallServer</a> and <a href="#">FirewallPort</a> and passes the <a href="#">FirewallUser</a> value to the proxy, which determines if the connection request should be granted.
SOCKS5	1080	When this is set, the adapter sends data through the SOCKS 5 proxy specified by <a href="#">FirewallServer</a> and <a href="#">FirewallPort</a> . If your proxy requires authentication, set <a href="#">FirewallUser</a> and <a href="#">FirewallPassword</a> to credentials the proxy recognizes.

## FirewallServer

The name or IP address of a proxy-based firewall.

## Data Type

string

## Default Value

""

## Remarks

This property specifies the IP address, DNS name, or host name of a proxy allowing traversal of a firewall. The protocol is specified by [FirewallType](#): Use [FirewallServer](#) with this property to connect through SOCKS or do tunneling.

## FirewallPort

The TCP port for a proxy-based firewall.

## Data Type

int

## Default Value

0

## Remarks

This specifies the TCP port for a proxy allowing traversal of a firewall. Use [FirewallServer](#) to specify the name or IP address. Specify the protocol with [FirewallType](#).

## FirewallUser

The user name to use to authenticate with a proxy-based firewall.

## Data Type

string

## Default Value

""

## Remarks

The `FirewallUser` and `FirewallPassword` properties are used to authenticate against the proxy specified in `FirewallServer` and `FirewallPort`, following the authentication method specified in `FirewallType`.

## FirewallPassword

A password used to authenticate to a proxy-based firewall.

## Data Type

string

## Default Value

""

## Remarks

This property is passed to the proxy specified by `FirewallServer` and `FirewallPort`, following the authentication method specified by `FirewallType`.

## Logging

This section provides a complete list of the Logging properties you can configure in the connection string for this provider.

---

Property	Description
<code>LogModules</code>	Core modules to be included in the log file.

---

## LogModules

Core modules to be included in the log file.

## Data Type

string

## Default Value

""

## Remarks

Only the modules specified (separated by ';') will be included in the log file. By default all modules are included.

See the [Logging](#) page for an overview.

# Schema

This section provides a complete list of the Schema properties you can configure in the connection string for this provider.

---

Property	Description
<a href="#">Location</a>	A path to the directory that contains the schema files defining tables, views, and stored procedures.

---

## Location

A path to the directory that contains the schema files defining tables, views, and stored procedures.

## Data Type

string

## Default Value

"%APPDATA%\\CData\\ActiveDirectory Data Provider\\Schema"

## Remarks

The path to a directory which contains the schema files for the adapter (.rsd files for tables and views, .rsb files for stored procedures). The folder location can be a relative path from the location of the executable. The Location property is only needed if you want to customize definitions (for example, change a column name, ignore a column, and so on) or extend the data model with new tables, views, or stored procedures.

If left unspecified, the default location is "%APPDATA%\\CData\\ActiveDirectory Data Provider\\Schema" with **%APPDATA%** being set to the user's configuration directory:

Platform	%APPDATA%
Windows	The value of the APPDATA environment variable
Mac	~/Library/Application Support
Linux	~/config

## Miscellaneous

This section provides a complete list of the Miscellaneous properties you can configure in the connection string for this provider.

Property	Description
<a href="#">FollowReferrals</a>	Whether or not to follow referrals returned by the Active Directory server.
<a href="#">FriendlyGUID</a>	Whether to return GUID attribute values in a human readable format.
<a href="#">FriendlySID</a>	Whether to return SID attribute values in a human readable format.

<b>MaxRows</b>	Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.
<b>Other</b>	These hidden properties are used only in specific use cases.
<b>Readonly</b>	You can use this property to enforce read-only access to Microsoft Active Directory from the provider.
<b>Timeout</b>	The value in seconds until the timeout error is thrown, canceling the operation.
<b>UserDefinedViews</b>	A filepath pointing to the JSON configuration file containing your custom views.

## FollowReferrals

Whether or not to follow referrals returned by the Active Directory server.

### Data Type

bool

### Default Value

false

### Remarks

When following referrals, you will only be able to return data from the referral servers. INSERT/UPDATE/DELETE will not be available without updating the connection string to connect directly to that server.

## FriendlyGUID

Whether to return GUID attribute values in a human readable format.

## Data Type

bool

## Default Value

false

## Remarks

When inspecting object attributes this setting determines whether GUID attributes such as "objectGUID" are returned as binary objects or converted into a human readable string such as "708d9374-d64a-49b2-97ea-489ddc717703". When set to True a friendly string value is returned. When set to False (default) a base 64 encoded string of the binary object is returned.

## FriendlySID

Whether to return SID attribute values in a human readable format.

## Data Type

bool

## Default Value

false

## Remarks

When inspecting object attributes this setting determines whether SID attributes such as "objectSid" are returned as binary objects or converted into a human readable string such as "S-1-5-21-4272240814-246508344-1325542772-12464". When set to True a friendly string value is returned. When set to False (default) a base 64 encoded string of the binary object is returned.

## MaxRows

Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.

## Data Type

int

## Default Value

-1

## Remarks

Limits the number of rows returned rows when no aggregation or group by is used in the query. This helps avoid performance issues at design time.

## Other

These hidden properties are used only in specific use cases.

## Data Type

string

## Default Value

""

## Remarks

The properties listed below are available for specific use cases. Normal driver use cases and functionality should not require these properties.

Specify multiple properties in a semicolon-separated list.

## Integration and Formatting

---

DefaultColumnSize

Sets the default length of string fields when the data source

---



---

	does not provide column length in the metadata. The default value is 2000.
ConvertDateTimeToGMT	Determines whether to convert date-time values to GMT, instead of the local time of the machine.
RecordToFile=filename	Records the underlying socket data transfer to the specified file.

---

## Readonly

You can use this property to enforce read-only access to Microsoft Active Directory from the provider.

### Data Type

bool

### Default Value

false

### Remarks

If this property is set to true, the adapter will allow only SELECT queries. INSERT, UPDATE, DELETE, and stored procedure queries will cause an error to be thrown.

## Timeout

The value in seconds until the timeout error is thrown, canceling the operation.

### Data Type

int

### Default Value

60

## Remarks

If Timeout = 0, operations do not time out. The operations run until they complete successfully or until they encounter an error condition.

If Timeout expires and the operation is not yet complete, the adapter throws an exception.

## UserDefinedViews

A filepath pointing to the JSON configuration file containing your custom views.

## Data Type

string

## Default Value

""

## Remarks

User Defined Views are defined in a JSON-formatted configuration file called *UserDefinedViews.json*. The adapter automatically detects the views specified in this file.

You can also have multiple view definitions and control them using the UserDefinedViews connection property. When you use this property, only the specified views are seen by the adapter.

This User Defined View configuration file is formatted as follows:

- Each root element defines the name of a view.
- Each root element contains a child element, called **query**, which contains the custom SQL query for the view.

For example:

```
{
  "MyView": {
    "query": "SELECT * FROM User WHERE MyColumn = 'value'"
  },
  "MyView2": {
    "query": "SELECT * FROM MyTable WHERE Id IN (1,2,3)"
  }
}
```

```
    }  
}
```

Use the UserDefinedViews connection property to specify the location of your JSON configuration file. For example:

```
"UserDefinedViews",  
"C:\\Users\\yourusername\\Desktop\\tmp\\UserDefinedViews.json"
```

# TIBCO Product Documentation and Support Services

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For information about this product, you can read the documentation, contact TIBCO Support, and join the TIBCO Community.

## How to Access TIBCO Documentation

Documentation for TIBCO products is available on the [TIBCO Product Documentation](#) website, mainly in HTML and PDF formats.

The [TIBCO Product Documentation](#) website is updated frequently and is more current than any other documentation included with the product.

## Product-Specific Documentation

The following documentation for this product is available on the [TIBCO® Data Virtualization](#) page.

- **Users**
  - TDV Getting Started Guide
  - TDV User Guide
  - TDV Web UI User Guide
  - TDV Client Interfaces Guide
  - TDV Tutorial Guide
  - TDV Northbay Example
- **Administration**
  - TDV Installation and Upgrade Guide
  - TDV Administration Guide
  - TDV Active Cluster Guide
  - TDV Security Features Guide
- **Data Sources**

TDV Adapter Guides

TDV Data Source Toolkit Guide (Formerly Extensibility Guide)

- **References**

TDV Reference Guide

TDV Application Programming Interface Guide

- **Other**

TDV Business Directory Guide

TDV Discovery Guide

- *TIBCO TDV and Business Directory Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## How to Contact TIBCO Support

Get an overview of [TIBCO Support](#). You can contact TIBCO Support in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the [TIBCO Support](#) website.
- For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to [TIBCO Support](#) website. If you do not have a user name, you can request one by clicking **Register** on the website.

## Release Version Support

TDV 8.5 is designated as a Long Term Support (LTS) version. Some release versions of TIBCO® Data Virtualization products are selected to be long-term support (LTS) versions. Defect corrections will typically be delivered in a new release version and as hotfixes or service packs to one or more LTS versions. See also

[https://docs.tibco.com/pub/tdv/general/LTS/tdv\\_LTS\\_releases.htm](https://docs.tibco.com/pub/tdv/general/LTS/tdv_LTS_releases.htm).

## How to Join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the [TIBCO Ideas Portal](#). For a free registration, visit [TIBCO Community](#).

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