



One Identity Quick Connect for Cloud Services 3.7.0

Administrator Guide

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Legend

-  **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.
-  **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.
-  **IMPORTANT, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Contents

Installing Quick Connect for Cloud Services	6
Working with Google Apps	7
Creating a Google Apps connection	8
Modifying a Google Apps connection	8
Google Apps data supported out of the box	9
User object attributes	10
Group object attributes	16
Shared Contact object attributes	18
Organization Unit object attributes	21
Specifying Google Apps containers using a PowerShell script	22
Scenario: Provisioning containers and users from an Active Directory domain to Google Apps	23
Step 1: Configure a connection to source Active Directory domain	23
Step 2: Configure a connection to Google Apps	23
Step 3: Create a new synchronization workflow	23
Step 4: Configure a step to provision OUs	24
Step 5: Configure a step to provision users	25
Step 6: Run your workflow	26
Working with Google Postini Services	27
Creating a Google Postini Services connection	28
Modifying a Google Postini Services connection	29
Google Postini Services data supported out of the box	29
Scenario: Provisioning users from an Active Directory domain to Google Postini Services	34
Step 1: Configure a connection to source Active Directory domain	34
Step 2: Configure a connection to Google Postini Services	34
Step 3: Create a new synchronization workflow	34
Step 4: Configure a workflow step	35
Step 5: Run your workflow	36
Working with Microsoft Office 365	37
Creating a Microsoft Office 365 connection	38

Modifying a Microsoft Office 365 connection	40
Microsoft Office 365 data supported out of the box	41
ClientPolicy object attributes	45
ConferencingPolicy object attributes	45
Contact object attributes	46
DistributionGroup object attributes	59
Domain object attributes	71
DynamicDistributionGroup object attributes	72
ExternalAccessPolicy object attributes	85
HostedVoicemailPolicy object attributes	85
LicensePlanService object attributes	85
Mailbox object attributes	87
MailUser object attributes	105
PresencePolicy object attributes	117
SecurityGroup object attributes	118
SPOSite object attributes	118
SPOSiteGroup object attributes	121
SPOWebTemplate object attributes	121
SPOTenant object attributes	122
User object attributes	123
Attributes Related to License Plans and Services	123
Other attributes	126
VoicePolicy object attributes	131
Objects and attributes specific to Microsoft Office 365 services	131
How Microsoft Office 365 Connector works with data	133
Working with Salesforce	134
Creating a Salesforce connection	135
Modifying a Salesforce Connection	136
Salesforce data supported out of the box	136
User object additional attributes	137
Group object additional attributes	140
Scenario: Provisioning users from an Active Directory domain to Salesforce	141
Step 1: Configure a connection to source Active Directory domain	141
Step 2: Configure a connection to Salesforce	142
Step 3: Create a new synchronization workflow	142

Step 4: Configure a workflow step	142
Step 5: Run your workflow	143
Working with ServiceNow	144
Creating a ServiceNow connection	145
Step 1: Configure ServiceNow	145
Step 2: Create a new connection to ServiceNow	146
Modifying a ServiceNow connection	147
ServiceNow data supported out of the box	148
Working with Windows Azure Active Directory	149
Creating a Windows Azure Active Directory connection	150
Step 1: Configure an application in Windows Azure Active Directory	150
Step 2: Create a connection to Windows Azure Active Directory	151
Modifying a Windows Azure Active Directory connection	152
Windows Azure Active Directory data supported out of the box	152
User object attributes	153
Group object attributes	155
Appendices	157
Appendix A: Syncing Multiple Owners attributes to Google Owners attributes	157
Configuration on Active Roles Server	157
Step 1: Create the virtual attribute 'edsvaOwners'	157
Step 2: Create the script module	158
Step 3: Create a policy to call the script	161
Step 4: Verify the changes	162
Configuration on Quick Connect Sync Engine	162
Step 1: Create Connection to ARS Server	163
Step 2: Create Connection to Google Server	163
Step 3: Create a workflow	163
About us	165
Contacting us	165
Technical support resources	165

Installing Quick Connect for Cloud Services

Before installing Quick Connect for Cloud Services make sure that your system meets the system requirements provided in the *Quick Connect for Cloud Services Release Notes*.

To install the product by using the Setup Wizard

1. Do one of the following:
 - In a 32-bit edition of Windows, run the **QuickConnectForCloudServices_x86.msi** file supplied with the Quick Connect for Cloud Services installation package.
 - In a 64-bit edition of Windows, run the **QuickConnectForCloudServices_x64.msi** file supplied with the Quick Connect for Cloud Services installation package.
2. Follow the steps in the Setup Wizard until you are on the Completion page.
3. Select the **Restart Quick Connect service now for changes to take effect** check box.
4. Click **Finish** to close the wizard.

To perform a silent installation

- On a 32-bit system, enter the following command at a command prompt:
`msiexec /i "<Path to QuickConnectForCloudServices_x86.msi>" /qb /l*v
"<Path to file that will store the Setup log>"`
- On a 64-bit system, enter the following command at a command prompt:
`msiexec /i "<Path to QuickConnectForCloudServices_x64.msi>" /qb /l*v
"<Path to file that will store the Setup log>"`

For instructions on how to configure connections to supported data systems, see the following sections in this guide:

- [Working with Google Apps](#)
- [Working with Google Postini Services](#)
- [Working with Microsoft Office 365](#)
- [Working with Salesforce](#)
- [Working with ServiceNow](#)
- [Working with Windows Azure Active Directory](#)

Working with Google Apps

To create a connection to Google Apps, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *Google Apps Connector*. This connector is included in the Quick Connect for Cloud Services package.

The Google Apps Connector supports the following features:

Table 1: Supported features

Feature	Supported
Bidirectional synchronization	
Allows you to read and write data in the connected data system.	Yes
Delta processing mode	
Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	No
Password synchronization	
Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption	
Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system.	Yes

In this section:

- [Creating a Google Apps connection](#)
- [Modifying a Google Apps connection](#)
- [Google Apps data supported out of the box](#)
- [Specifying Google Apps containers using a PowerShell script](#)

- [Scenario: Provisioning containers and users from an Active Directory domain to Google Apps](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *Quick Connect Administrator Guide*.

Creating a Google Apps connection

To create a new connection

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Google Apps Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, use the following options:
 - **Google Apps domain.** Type the name of the Google Apps domain to which you want to connect.
 - **Access Google Apps domain using.** Type the user name and password of the account with which you want to access the specified Google Apps domain.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
5. Click **Finish** to create a connection to Google Apps.

Modifying a Google Apps connection

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing Google Apps connection you want to modify.
3. On the **Connection Settings** tab, click the **Specify connection settings** item to expand it and use the following options:

- **Google Apps domain.** Type the name of the Google Apps domain to which you want to connect.
 - **Access Google Apps domain using.** Type the user name and password of the account with which you want to access the specified Google Apps domain.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the Proxy server box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
4. When you are finished, click **Save**.

Google Apps data supported out of the box

The next table lists the Google Apps object types supported by the Google Apps Connector out of the box and provides information about the operations you can perform on these objects by using the Google Apps Connector.

Table 2: Supported objects and operations

Object	Read	Create	Delete	Update
User	Yes	Yes	Yes	Yes
Group	Yes	Yes	Yes	Yes
Shared Contact	Yes	Yes	Yes	Yes
Organization Unit	Yes	Yes	Yes	Yes

The next sections describe the attributes provided by the Google Apps Connector. By using these attributes, you can read and/or write data related to a particular object in Google Apps.

In the next sections:

- [User object attributes](#)
- [Group object attributes](#)
- [Shared Contact object attributes](#)
- [Organization Unit object attributes](#)

User object attributes

Table 3: User attributes

Attribute	Description	Supported operations	Google Apps reference
Admin	<p>Single-valued, Boolean</p> <p>Specifies whether or not the user has administrator privileges in Google Apps.</p> <p>This attribute can take the following values:</p> <p>TRUE. Specifies that the user has administrator privileges.</p> <p>FALSE. Specifies that the user has no administrator privileges.</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Organization & users page.</p> <p>Click the name of a user in the Name column.</p> <p>On the Privileges tab, see the Administrator Privileges check box.</p>
Assistant	<p>Single-valued, string</p> <p>Assistant's distinguished name.</p>	Read, Write	N/A
AssistantPhoneNumber	<p>Single-valued, string</p> <p>Phone number of the user's assistant in Google Apps Directory.</p>	Read, Write	N/A
ChangePasswordAtNextLogin	<p>Single-valued, Boolean</p> <p>Specifies whether or not a change of password will be required the next time the user logs on to Google Apps.</p> <p>This attribute can take the following values:</p> <p>TRUE. Specifies that a change of password is</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Organization & users page.</p> <p>Click the name of a user in the Name column.</p> <p>On the User information tab, in</p>

Attribute	Description	Supported operations	Google Apps reference
	required. FALSE. Specifies that a change of password is not required.		the Password area, see the Require a change of password in the next sign in check box.
City	Single-valued, string City of the user in Google Apps Directory.	Read, Write	N/A
Company	Single-valued, string Name of the user's company in Google Apps Directory.	Read, Write	N/A
Country	Single-valued, string Country of the user in Google Apps Directory.	Read, Write	N/A
Department	Single-valued, string Department of the user in Google Apps Directory.	Read, Write	N/A
Email	Single-valued, string E-mail address of the user in Google Apps Directory.	Read, Write	N/A
Employee ID	Single-valued, string Employee's identifier.	Read, Write	N/A
FamilyName	Single-valued, string Last name of the user in Google Apps Directory.	Read, Write	To view related UI element In Google Apps, open the Organization & users page. Use the tree view in the left part of the page to select an appropriate

Attribute	Description	Supported operations	Google Apps reference
			organization unit. See the last name in the Name column.
FaxNumbers	Multivalued, string Fax numbers of the user in Google Apps Directory.	Read, Write	N/A
GivenName	Single-valued, string First name of the user in Google Apps Directory.	Read, Write	To view related UI element In Google Apps, open the Organization & users page. Use the tree view in the left part of the page to select an appropriate organization unit. See the first name in the Name column.
Groups	Multivalued, reference Google Apps groups of which the user is a member.	Read, Write	To view related UI element In Google Apps, open the Organization & users page. Click the name of a user in the Name column. On the User information tab, in the Groups area, see the list of groups of which the user is a member.
HomePhoneNumbers	Multivalued, string Home phone numbers	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
	of the user in Google Apps Directory.		
Id	<p>Single-valued, string</p> <p>ID used by the Google Apps Connector to uniquely identify each object in Google Apps Directory. This attribute only exists in the Google Apps Connector schema.</p> <p>For user objects, this attribute accepts object ID in the following format:</p> <p><GoogleDomain>/ <ObjectType>/ <UserEmail></p> <p>Example: mydomain.com/ User/ John.Doe@mydomain.com</p>	Read	N/A
JobTitle	<p>Single-valued, string</p> <p>Job title of the user in Google Apps Directory.</p>	Read, Write	N/A
Manager	<p>Single-valued, string</p> <p>Manager's distinguished name.</p>	Read, Write	N/A
MobilePhoneNumbers	<p>Multivalued, string</p> <p>Mobile phone numbers of the user in Google Apps Directory.</p>	Read, Write	N/A
Nicknames	<p>Multivalued, string</p> <p>Nicknames of the user in Google Apps</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open</p>

Attribute	Description	Supported operations	Google Apps reference
	Directory.		<p>the Organization & users page.</p> <p>Click the name of a user in the Name column.</p> <p>On the User information tab, in the Nicknames area, see the list of nicknames.</p>
Notes	Multivalued, string Notes of the user in Google Apps Directory.	Read, Write	N/A
OfficeLocation	Single-valued, string Location of the user's office in Google Apps Directory.	Read, Write	N/A
POBox	Single-valued, string Post office box of the user in Google Apps Directory.	Read, Write	N/A
PostalCode	Single-valued, string Zip/postal code of the user in Google Apps Directory.	Read, Write	N/A
Region	Single-valued, string Region of the user in Google Apps Directory.	Read, Write	N/A
StreetAddress	Single-valued, string Street address of the user in Google Apps Directory.	Read, Write	N/A
Suspended	Single-valued, Boolean Specifies whether or	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
	<p>not the user is suspended in Google Apps.</p> <p>This attribute can take the following values:</p> <p>TRUE. Specifies that the user is suspended.</p> <p>FALSE. Specifies that the user is not suspended.</p>		
UserName	<p>Single-valued, string</p> <p>User name that belongs to the user in Google Apps Directory.</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Organization & users page.</p> <p>Use the tree view in the left part of the page to select an appropriate organization unit.</p> <p>In the Email column, see the part of the e-mail address to the left of the at sign (@). For example, in the e-mail address john.doe@mydomain.com the user name is john.doe.</p>
WebSites	<p>Multivalued, string</p> <p>Addresses of user's Web sites in Google Apps Directory.</p>	Read, Write	N/A
WorkMobilePhoneNumbers	<p>Multivalued, string</p> <p>Work mobile phone numbers of the user in Google Apps Directory.</p>	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
WorkPhoneNumbers	Multivalued, string Work phone numbers of the user in Google Apps Directory.	Read, Write	N/A

Group object attributes

Table 4: Group attributes

Attribute	Description	Supported operations	Google Apps reference
Description	Single-valued, string Description of the group in Google Apps Directory.	Read, Write	To view related UI element In Google Apps, open the Groups page. Click group name in the Name column. See group description below the group name at the top of the page.
Email	Single-valued, string E-mail address of the group in Google Apps Directory.	Read	To view related UI element In Google Apps, open the Groups page. See the e-mail address in the Email address column.
EmailPermissions	Single-valued A list of users who can send e-mails to the group.	Read, Write	N/A
GroupName	Single-valued, string Name of the group in Google Apps Directory.	Read, Write	To view related UI element In Google Apps, open the Groups page. See the group name in the Name column.

Attribute	Description	Supported operations	Google Apps reference
Id	<p>Single-valued, string</p> <p>ID used by the Google Apps Connector to uniquely identify each object in Google Apps Directory. This attribute only exists in the Google Apps Connector schema.</p> <p>For group objects, this attribute accepts object ID in the following format:</p> <p><i><GoogleDomain>/ <ObjectType>/ <GroupEmail></i></p> <p>Example: mydomain.com/ Group/ MyGroup@mydomain.com</p>	Read	N/A
Members	<p>Multivalued, reference</p> <p>Members of the group in Google Apps Directory.</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Groups page.</p> <p>Click the group name in the Name column.</p> <p>On the Members tab, see the list of group members.</p>
Owners	<p>Multivalued, reference</p> <p>Owners of the group in Google Apps Directory.</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Groups page.</p> <p>Click group name in the Name column.</p> <p>On the Members tab, use the Roles column to identify the group owners.</p>

Shared Contact object attributes

Table 5: Shared Contact attributes

Attribute	Description	Supported operations	Google Apps reference
AssistantPhoneNumber	Single-valued, string Phone numbers of the shared contact's assistant in Google Apps Directory.	Read, Write	N/A
City	Single-valued, string City of the shared contact in Google Apps Directory.	Read, Write	N/A
Company	Single-valued, string Company name of the shared contact in Google Apps Directory.	Read, Write	N/A
Country	Single-valued, string Country of the shared contact in Google Apps Directory.	Read, Write	N/A
Department	Single-valued, string Department of the shared contact in Google Apps Directory.	Read, Write	N/A
FaxNumbers	Multivalued, string Fax numbers of the shared contact in Google Apps Directory.	Read, Write	N/A
FullName	Single-valued, string Full name of the shared contact in Google Apps Directory.	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
HomePhoneNumbers	Multivalued, string Home phone numbers of the shared contact in Google Apps Directory.	Read, Write	N/A
Id	Single-valued, string ID used by the Google Apps Connector to uniquely identify each object in Google Apps Directory. This attribute only exists in the Google Apps Connector schema. For shared contact objects, this attribute accepts object ID in the following format: <GoogleDomain>/<ObjectType>/<SharedContactID> Example: mydomain.com/SharedContact/7f1947540c6eadf0	Read	N/A
JobTitle	Single-valued, string Job title of the shared contact in Google Apps Directory.	Read, Write	N/A
MobilePhoneNumbers	Multivalued, string Mobile phone numbers of the shared contact in Google Apps Directory.	Read, Write	N/A
Notes	Multivalued, string	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
	Notes of the shared contact in Google Apps Directory.		
OfficeLocationA	Single-valued, string Office location of the shared contact in Google Apps Directory.	Read, Write	N/A
POBox	Single-valued, string Post office box of the shared contact in Google Apps Directory.	Read, Write	N/A
PostalCode	Single-valued, string Postal code of the shared contact in Google Apps Directory.	Read, Write	N/A
Region	Single-valued, string Region of the shared contact in Google Apps Directory.	Read, Write	N/A
SharedContactID	Single-valued, string Unique ID of the shared contact in Google Apps Directory.	Read	N/A
StreetAddress	Single-valued, string Street address of the shared contact in Google Apps Directory.	Read, Write	N/A
WebSites	Multivalued, string Web sites of the shared contact in Google Apps Directory.	Read, Write	N/A

Attribute	Description	Supported operations	Google Apps reference
WorkMobilePhoneNumbers	Multivalued, string Work mobile phone numbers of the shared contact in Google Apps Directory.	Read, Write	N/A
WorkPhoneNumbers	Multivalued, string Work phone numbers of the shared contact in Google Apps Directory.	Read, Write	N/A

Organization Unit object attributes

Table 6: Organization Unit attributes

Attribute	Description	Supported operations	Google Apps reference
Description	Single-valued, string Description of the organization unit in Google Apps Directory.	Read, Write	To view related UI element In Google Apps, open the Organization & users page. Select an organization unit in the tree view. See the description below the organization unit name at the top of the page.
Id	Single-valued, string ID used by the Google Apps Connector to uniquely identify each object in Google Apps Directory. This attribute only exists in the Google Apps Connector schema.	Read	N/A

Attribute	Description	Supported operations	Google Apps reference
	<p>For organization unit objects, this attribute accepts object ID in the following format:</p> <pre><GoogleDomain>/ <ObjectType>/ <OUPath></pre> <p>Example: mydomain.com/ OU/ OU1</p>		
Name	<p>Single-valued, string</p> <p>Name of the organization unit in Google Apps Directory.</p>	Read, Write	<p>To view related UI element</p> <p>In Google Apps, open the Organization & users page.</p> <p>Select an organization unit in the tree view.</p> <p>See the organization unit name at the top of the page.</p>

Specifying Google Apps containers using a PowerShell script

In Quick Connect Administration Console, you can use a custom PowerShell script to specify target Google Apps containers (OUs) to which you want to provision data from the other connected data system. In this case, make sure the PowerShell script returns the target containers in the following format required by One Identity Quick Connect Sync Engine:

```
<GoogleAppsDomain>/<PathToTargetContainer>
```

Example: **mydomain.com/OU1/OU2/OU3**

where **OU3** is the target Google Apps container to which you want to provision data.

For more information on specifying target containers for a synchronization step, see the *Quick Connect Administrator Guide*.

Scenario: Provisioning containers and users from an Active Directory domain to Google Apps

This scenario illustrates how to provision organizational units (OUs) along with the users these OUs include from an Active Directory domain to Google Apps.

The scenario includes the following steps:

- [Step 1: Configure a connection to source Active Directory domain](#)
- [Step 2: Configure a connection to Google Apps](#)
- [Step 3: Create a new synchronization workflow](#)
- [Step 4: Configure a step to provision OUs](#)
- [Step 5: Configure a step to provision users](#)
- [Step 6: Run your workflow](#)

Step 1: Configure a connection to source Active Directory domain

For instructions on how to create a new connection to an Active Directory domain, see the *Administration Guide* supplied with Quick Connect Express for Active Directory.

Step 2: Configure a connection to Google Apps

For instructions on how to create a new connection to Google Apps, see [Creating a Google Apps connection](#).

Step 3: Create a new synchronization workflow

For instructions on how to create a new synchronization workflow, see the *Quick Connect Administrator Guide*.

Step 4: Configure a step to provision OUs

1. Open the workflow you created in [Step 3: Create a new synchronization workflow](#) (in the Quick Connect Administration Console, on the **Workflows** tab, click the workflow name), and then click the **Add synchronization step** link.
2. On the **Select an action** page, click **Provision**, and then click **Next**.
3. On the **Specify source and criteria** page, do the following:
 - a. In the **Source connected system** option, click the **Specify** button, then click **Select existing connected system**, and select the Active Directory connection you configured in [Step 1: Configure a connection to source Active Directory domain](#). Click **Finish**.
 - b. In the **Source object type** option, click the **Select** button, and then select the **organizationalUnit** object type from the list. Click **OK**.
 - c. Click **Next**.
4. On the **Specify target** page, do the following:
 - a. In the **Target connected system** option, click the **Specify** button, then click **Select existing connected system**, and select the Google Apps connection you configured in [Step 2: Configure a connection to Google Apps](#).
 - b. In the **Target object type** option, click the **Select** button, and then select the **OU** object type from the list. Click **OK**.
 - c. Use the **Target container** option to specify the target Google Apps containers to which you want to provision organizational units from the Active Directory domain.

If you want to use a PowerShell script to specify target containers in Google Apps, make sure the script returns the target containers in the format required by One Identity Quick Connect Sync Engine. For details, see [Specifying Google Apps containers using a PowerShell script](#).

- a. In the **Rules to generate unique object name** option, specify rules for generating names for the OUs to be created in Google Apps.
 - b. Click **Next**.
5. Optionally, you can use the **Initial Attribute Population Rules** area on the **Specify provisioning rules** page to specify additional settings for the OUs to be provisioned.

For this purpose, you can use special attributes provided by the Google Apps Connector. For more information about these attributes, see [Google Apps data supported out of the box](#).

6. Click **Finish** to close the wizard.

Step 5: Configure a step to provision users

1. Open the workflow you created (in Quick Connect Administration Console, on the **Workflows** tab, click the workflow name), and then click the **Add synchronization step** link.
2. On the **Select an action** page, click **Provision**, and then click **Next**.
3. On the **Specify source and criteria** page, do the following:
 - a. In the **Source connected system** option, click the **Specify** button, then click **Select existing connected system**, and select the Active Directory domain you connected in [Step 1: Configure a connection to source Active Directory domain](#). Click **Finish**.
 - b. In the **Source object type** option, click the **Select** button, and then select the **User** object type from the list. Click **OK**.
 - c. Click **Next**.
4. On the **Specify target** page, do the following:
 - a. In the **Target connected system** option, click the **Specify** button, then click **Select existing connected system**, and select the Google Apps system you connected in [Step 2: Configure a connection to Google Apps](#).
 - b. In the **Target object type** option, click the **Select** button, and then select the **User** object type from the list. Click **OK**.
 - c. Use the **Target container** option to specify the target Google Apps containers to which you want to provision users from the Active Directory domain.

If you want to use a PowerShell script for specifying target containers in Google Apps, make sure the script returns the target containers in the format required by One Identity Quick Connect Sync Engine. For details, see [Specifying Google Apps containers using a PowerShell script](#).
5. In the **Rules to generate unique object name** option, specify rules for generating user names for the user objects to be created in Google Apps.
 - a. In the **Rules to generate unique object name** option, specify rules for generating user names for the user objects to be created in Google Apps.
 - b. Click **Next**.
6. Use the **Initial Password** option on the **Specify provisioning rules** page to set an initial password for each user to be created in Google Apps. Make sure the password meets the requirements set by Google Apps.
6. Use the **Initial Attribute Population Rules** option to specify values for the **FamilyName** and **GivenName** attributes that are required to create a user object in Google Apps. For more information about these attributes, see [User object attributes](#).

Optionally, you can use the **User Account Options** option to configure additional settings for the users to be provisioned. This option provides the following check boxes:

- **User must change password at next logon.** Allows you to force the provisioned users to change their initial passwords at their next logon to Google Apps.
- **Account is disabled.** Allows you to disable the user accounts created in Google Apps in the result of the provision operation.

7. Click **Finish** to close the wizard.

Step 6: Run your workflow

For instructions on how to run a synchronization workflow, see the *Quick Connect Administrator Guide*.

Working with Google Postini Services

To create a connection to Google Postini Services, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *Google Postini Services Connector*. This connector is included in the Quick Connect for Cloud Services package.

The Google Postini Services Connector supports the following features:

Table 7: Supported features

Feature	Supported
Bidirectional synchronization Allows you to read and write data in the connected data system.	Yes
Delta processing mode Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	No
Password synchronization Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system.	No

In this section:

- [Creating a Google Postini Services connection](#)
- [Modifying a Google Postini Services connection](#)
- [Google Postini Services data supported out of the box](#)
- [Scenario: Provisioning users from an Active Directory domain to Google Postini Services](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *Quick Connect Administrator Guide*.

Creating a Google Postini Services connection

To create a new connection

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Google Postini Services Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, use the following options:
 - **Postini API key.** Specify the Postini API key provided to you by Google. To obtain a Postini API key, submit a request to the Postini Technical Support Team at postinicustomer@care.google.com.
 - **User name.** Type the user name of the account with which you want to access Google Postini Services. The account whose name you specify must have the Modify privilege on User Settings in the Google Postini Services system to which you want to connect.
 - **Password.** Type the password for the account whose user name you specified.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
5. Click **Finish** to create a connection to Google Postini Services.

Modifying a Google Postini Services connection

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing Google Postini Services connection you want to modify.
3. On the **Connection Settings** tab, click the **Specify connection settings** item to expand it and use the following options:
 - **Postini API key.** Specify the Postini API key provided to you by Google. To obtain a Postini API key, submit a request to the Postini Technical Support Team at postinicustomer@care.google.com.
 - **User name.** Type the user name of the account with which you want to access Google Postini Services. The account whose name you specify must have the Modify privilege on User Settings in the Google Postini Services system to which you want to connect.
 - **Password.** Type the password for the account whose user name you specified.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
4. When you are finished, click **Save**.

Google Postini Services data supported out of the box

The next table lists the Google Postini Services object types supported by the Google Postini Services Connector out of the box and provides information about the operations you can perform on these objects by using the Google Postini Services Connector.

Table 8: Supported objects and operations

Object	Read	Create	Delete	Update
User	Supported	Supported	Supported	Supported

The next table lists the attributes provided by the Google Postini Services Connector for the User object.

Table 9: User attributes

Attribute	Description	Supported operations
approved_recipients	Specifies email addresses of approved recipients for the user.	Read, Write
approved_senders	Specifies email addresses of approved senders for the user. Messages from approved senders bypass the spam filters.	Read, Write
blocked_senders	Specifies email addresses of the senders whose messages to the user will be quarantined regardless of their contents.	Read, Write
change_pwd_atlogon	Specifies whether or not the user must change password at next logon. This attribute can take one of the following values: TRUE FALSE	Write
dly_msg_limit	Specifies the maximum number of messages each user in the organization can receive daily. To allow an unlimited number of messages, set the value of this attribute to NULL.	Read, Write
filter_bulk	Specifies a level for filtering bulk emails. This attribute can take one of the following values: Lenient Aggressively lenient Moderate	Read, Write

Attribute	Description	Supported operations
	Leniently aggressive Aggressive	
filter_getrich	Specifies a level for filtering emails with get-rich-quick offers. This attribute can take one of the following values: Off Lenient Moderate Moderately aggressive Aggressive	Read, Write
filter_offers	Specifies a level for filtering emails with commercial offers. This attribute can take one of the following values: Off Lenient Moderate Moderately aggressive Aggressive	Read, Write
filter_racial	Specifies a level for filtering racially insensitive emails. This attribute can take one of the following values: Off Lenient Moderate Moderately aggressive Aggressive	Read, Write
filter_sexPLICIT	Specifies a level for filtering sexually explicit emails. This attribute can take one of the following values:	Read, Write

Attribute	Description	Supported operations
	Off Lenient Moderate Moderately aggressive Aggressive	
msg_center_access_block	Specifies whether to enable or disable Message Center access for the user. This attribute can take one of the following values: Yes No	Read, Write
notify_email	Specifies an email address to which notifications for the user will be delivered.	Read, Write
org_name	Specifies the name of user's organization.	Read, Write
primary_email	Specifies primary email address for the user.	Read, Write
spamfltr_status	Specifies whether or not spam protection is enabled for the user. This attribute can take one of the following values: On Off	Read, Write
user_aliases	Specifies one or more alternative email addresses (aliases) for the user.	Read, Write
user_id	Specifies a unique Google Postini Services identifier for the user.	Read
user_pwd	Specifies user's password.	Write
virus_block	Specifies whether blocking of messages containing viruses is enabled for the	Read, Write

Attribute	Description	Supported operations
	<p>user.</p> <p>This attribute can take one of the following values:</p> <p>On</p> <p>Off</p> <p>Unavailable</p>	
virus_notify	<p>Specifies how frequently notifications about quarantined viruses will be sent to the user.</p> <p>This attribute can take one of the following values:</p> <p>Immediately</p> <p>One per day</p> <p>Disable notifications</p> <p>NULL</p> <p>The NULL value applies the default virus notification setting specified for the organization.</p>	Read, Write
wireless_fwd	<p>Specifies whether or not wireless forwarding is enabled for the user.</p> <p>The Wireless Forwarding feature provided in Google Postini Services allows you to manage message forwarding to mobile devices.</p> <p>This attribute can take one of the following values:</p> <p>On</p> <p>Off</p> <p>Unavailable</p>	Read, Write

Scenario: Provisioning users from an Active Directory domain to Google Postini Services

This scenario illustrates how to configure a synchronization workflow to provision users from an Active Directory domain to Google Postini Services. The scenario includes the following steps:

- [Step 1: Configure a connection to source Active Directory domain](#)
- [Step 2: Configure a connection to Google Postini Services](#)
- [Step 3: Create a new synchronization workflow](#)
- [Step 4: Configure a workflow step](#)
- [Step 5: Run your workflow](#)

Each of these steps is described in the next sections.

Step 1: Configure a connection to source Active Directory domain

For instructions on how to create a new connection to an Active Directory domain, see the *Administration Guide* supplied with Quick Connect Express for Active Directory.

Step 2: Configure a connection to Google Postini Services

For instructions on how to create a new connection to Google Postini Services, see [Creating a Google Postini Services connection](#).

Step 3: Create a new synchronization workflow

For instructions on how to create a new synchronization workflow, see the *Quick Connect Administrator Guide*.

Step 4: Configure a workflow step

1. Open the workflow you created (in the Quick Connect Administration Console, on the **Workflows** tab, click the workflow name), and then click the **Add synchronization step** link.
2. On the **Select an action** page, click **Provision**, and then click **Next**.
3. On the **Specify source and criteria** page, do the following:
 - a. Click the **Specify** button in the **Source connected system** option, then click **Select existing connected system**, and select the Active Directory domain you connected in [Step 1: Configure a connection to source Active Directory domain](#). Click **Finish**.
 - b. Click the **Select** button in the **Source object type** option, and then select the **User** object type from the list. Click **OK**.
 - c. Click **Next**.
4. On the **Specify target** page, do the following:
 - a. Click the **Specify** button in the **Target connected system** option, then click **Select existing connected system**, and select the Google Postini Services system you connected in [Step 2: Configure a connection to Google Postini Services](#).
 - b. Click the **Select** button in the **Target object type** option, and then select the **User** object type from the list. Click **OK**.
 - c. Use the button in the **Target container** option to specify the target container where you want to create user objects.
 - d. In the **Rules to generate unique object name** option, specify rules for generating user names for the users being provisioned to Google Postini Services.
Make sure that generated user names meet the format `<UserName>@<domain>`, where `<domain>` is the domain managed by the target Google Postini Services system.
 - e. Click **Next**.
5. Optionally, you can use the following elements on the **Specify provisioning rules** page to configure additional settings for the users being provisioned:
 - **Initial Attribute Population Rules.** Allows you to use special attributes provided by the Google Postini Services Connector to specify additional settings for the users being provisioned in Google Postini Services. For more information about the attributes you can use attributes, see [Google Postini Services data supported out of the box](#).
 - **Initial Password.** Allows you to set an initial password for each user being provisioned. Make sure the password meets the requirements set by Google Postini Services. If you specify initial password in this option, you can optionally force the users to change the password at their next logon. If you do

not set this option, a random initial password is generated for each user being provisioned and the users will be forced to change their passwords at their next logon.

- **User Account Options.** Provides the **User must change password at next logon** check box that allows you to force the users to change their initial passwords at their next logon. You can only use this check box if you have specified initial password in the **Initial Password** option. This option also provides the **Account is disabled** check box that allows you to disable the user accounts provisioned to Google Postini Services.

6. Click **Finish** to close the wizard.

Step 5: Run your workflow

For instructions on how to run a synchronization workflow, see the *Quick Connect Administrator Guide*.

Working with Microsoft Office 365

To create a connection to Microsoft Office 365, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *Microsoft Office 365 Connector*. This connector is included in the Quick Connect for Cloud Services package.

The Microsoft Office 365 Connector supports the following features:

Table 10: Supported features

Feature	Supported
Bidirectional synchronization Allows you to read and write data in the connected data system.	Yes
Delta processing mode Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	No
Password synchronization Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system. The Microsoft Office 365 Connector uses cmdlets supplied with Windows Azure Active Directory Module for Windows	Yes

Feature	Supported
PowerShell to access Microsoft Office 365. For this reason, all traffic between One Identity Quick Connect Sync Engine and Microsoft Office 365 is encrypted using the SSL certificate configured on the Microsoft Office 365 side.	

In this section:

- [Creating a Microsoft Office 365 connection](#)
- [Modifying a Microsoft Office 365 connection](#)
- [Microsoft Office 365 data supported out of the box](#)
- [Objects and attributes specific to Microsoft Office 365 services](#)
- [How Microsoft Office 365 Connector works with data](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *Quick Connect Administrator Guide*.

Creating a Microsoft Office 365 connection

To create a new connection

1. Make sure that the software specified in the System Requirements section of the *Quick Connect for Cloud Services Release Notes* is installed on the computer on which you plan to use the Microsoft Office 365 Connector.
2. In the Quick Connect Administration Console, open the **Connections** tab.
3. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Microsoft Office 365 Connector**.
4. Click **Next**.
5. On the **Specify connection settings** page, use the following options:
 - **Microsoft Online Services ID.** Type the Microsoft Online Services ID with which you want to access Office 365. The Office 365 user account whose ID you specify must have the Global Administrator role and Exchange Online license assigned in your Office 365 organization.
 - **Password.** Type the password for the specified Microsoft Online Services ID.

- **Proxy server.** Specify whether you want to use a proxy server for the connection. You can select one of the following options:
 - **Use Internet Explorer settings.** Causes the connector to automatically detect and use the proxy server settings specified in Microsoft Internet Explorer installed on the One Identity Quick Connect Sync Engine computer.
 - **Use WinHTTP settings.** Causes the connector to use the proxy server settings configured for Windows HTTP Services (WinHTTP).
 - **Automatically detect.** Automatically detects and uses proxy server settings.
 - **Do not use proxy settings.** Specifies to not use proxy server for the connection.
- **SharePoint Online.** Select this check box to work with object types and attributes specific to SharePoint Online. For detailed information about these object types, see [Objects and attributes specific to Microsoft Office 365 services](#).

If you select this check box, use the **Administration Center URL** text box to enter the SharePoint Online administration center URL.

To use this option, you must install SharePoint Online Management Shell on your computer. For details, see the System Requirements section in the Release Notes.

- **Exchange Online.** Select this check box to work with object types and attributes specific to Exchange Online. For detailed information about these object types and attributes, see [Objects and attributes specific to Microsoft Office 365 services](#).
- **Lync Online.** Select this check box to work with object types and attributes specific to Lync Online. For detailed information about these object types, see [Objects and attributes specific to Microsoft Office 365 services](#).

To use this option, you must install Windows PowerShell Module for Lync Online on your computer. For details, see the System Requirements section in the Release Notes.

- **Test Connection.** Click this button to verify the specified connection settings.

6. Click **Finish** to create a connection to Microsoft Office 365.

Modifying a Microsoft Office 365 connection

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing Microsoft Office 365 connection you want to modify.
3. On the **Connection Settings** tab, click the **Specify connection settings** item to expand it and use the following options:
 - **Microsoft Online Services ID.** Type the Microsoft Online Services ID with which you want to access Office 365. The Office 365 user account whose ID you specify must have the Global Administrator role and Exchange Online license assigned in your Office 365 organization.
 - **Password.** Type the password for the specified Microsoft Online Services ID.
 - **Proxy server.** Specify whether you want to use a proxy server for the connection. You can select one of the following options:
 - **Use Internet Explorer settings.** Causes the connector to automatically detect and use the proxy server settings specified in Microsoft Internet Explorer installed on the One Identity Quick Connect Sync Engine computer.
 - **Use WinHTTP settings.** Causes the connector to use the proxy server settings configured for Windows HTTP Services (WinHTTP).
 - **Automatically detect.** Automatically detects and uses proxy server settings.
 - **Do not use proxy settings.** Specifies to not use proxy server for the connection.
 - **SharePoint Online.** Select this check box to work with object types and attributes specific to SharePoint Online. For detailed information about these object types, see [Objects and attributes specific to Microsoft Office 365 services](#).

If you select this check box, use the **Administration Center URL** text box to enter the SharePoint Online administration center URL.

To use this option, you must install SharePoint Online Management Shell on your computer. For details, see the System Requirements section in the Release Notes.
 - **Exchange Online.** Select this check box to work with object types and attributes specific to Exchange Online. For detailed information about these object types and attributes, see [Objects and attributes specific to Microsoft Office 365 services](#).

- **Lync Online.** Select this check box to work with object types and attributes specific to Lync Online. For detailed information about these object types, see [Objects and attributes specific to Microsoft Office 365 services](#).

To use this option, you must install Windows PowerShell Module for Lync Online on your computer. For details, see the System Requirements section in the Release Notes.

- **Test Connection.** Click this button to verify the specified connection settings.

4. When you are finished, click **Save**.

Microsoft Office 365 data supported out of the box

The next table lists the Microsoft Office 365 object types supported by the Microsoft Office 365 Connector out of the box and provides information about the operations you can perform on these objects by using the Microsoft Office 365 Connector.

Table 11: Supported objects and operations

Object	Read	Create	Delete	Update
ClientPolicy Allows you to work with client policies in Lync Online. You can use client policies to determine the features of Lync Online that are available to users. For more information on what data you can read and write, see ClientPolicy object attributes .	Yes	No	No	No
ConferencingPolicy Allows you to work with conferencing policies in Lync Online. You can use conferencing policies to determine the features available to the users participating in a conference. For more information on what data you can read and write, see ConferencingPolicy object attributes .	Yes	No	No	No
Contact Allows you to work with external contact properties in Office 365.	Yes	Yes	Yes	Yes

Object	Read	Create	Delete	Update
<p>For more information on what data you can read and write, see Contact object attributes.</p>				
<p>DistributionGroup</p> <p>Allows you to work with distribution group properties in Office 365.</p> <p>For more information on what data you can read and write, see DistributionGroup object attributes.</p>	Yes	Yes	Yes	Yes
<p>Domain</p> <p>Allows you to retrieve information about domains in Office 365.</p> <p>For more information on what data you can retrieve, see Domain object attributes.</p>	Yes	No	No	No
<p>DynamicDistributionGroup</p> <p>Allows you to work with dynamic distribution group properties in Office 365.</p> <p>For more information on what data you can read and write, see DynamicDistributionGroup object attributes.</p>	Yes	Yes	Yes	Yes
<p>ExternalAccessPolicy</p> <p>Allows you to work with external access policies in Lync Online.</p> <p>For more information on what data you can read and write, see ExternalAccessPolicy object attributes.</p>	Yes	No	No	No
<p>HostedVoicemailPolicy</p> <p>Allows you to work with voice mail policies in Lync Online.</p> <p>For more information on what data you can read and write, see HostedVoicemailPolicy object attributes.</p>	Yes	No	No	No
<p>LicensePlanService</p>	Yes	No	No	No

Object	Read	Create	Delete	Update
<p>Allows you to retrieve information related to the license plans and services that are currently in use in Office 365.</p> <p>For more information on what data you can read and write, see LicensePlanService object attributes.</p>				
<p>Mailbox</p> <p>Allows you to work with Exchange Online mailboxes in Office 365.</p> <p>For more information on what data you can read and write, see Mailbox object attributes.</p>	Yes	Yes	Yes	Yes
<p>MailUser</p> <p>Allows you to work with mail user properties in Office 365.</p> <p>For more information on what data you can read and write, see MailUser object attributes.</p>	Yes	Yes	Yes	Yes
<p>PresencePolicy</p> <p>Allows you to work with presence policies in Lync Online.</p> <p>For more information on what data you can read and write, see PresencePolicy object attributes.</p>	Yes	No	No	No
<p>SecurityGroup</p> <p>Allows you to work with security group properties in Office 365.</p> <p>For more information on what data you can read and write, see SecurityGroup object attributes.</p>	Yes	Yes	Yes	Yes
<p>SPOSite</p> <p>Allows you to work with the properties of site collections in SharePoint Online.</p> <p>For more information on what data you can read and write, see SPOSite object attributes.</p>	Yes	Yes	Yes	Yes
SPOSiteGroup	Yes	Yes	Yes	Yes

Object	Read	Create	Delete	Update
<p>Allows you to work with groups inside site collections in SharePoint Online.</p> <p>For more information on what data you can read and write, see SPOSiteGroup object attributes.</p>				
<p>SPOWebTemplate</p> <p>Allows you to work with Web templates in SharePoint Online.</p> <p>For more information on what data you can read and write, see SPOWebTemplate object attributes.</p>	Yes	No	No	No
<p>SPOTenant</p> <p>Allows you to work with SharePoint Online organization.</p> <p>For more information on what data you can read and write, see SPOTenant object attributes.</p>	Yes	No	No	Yes
<p>User</p> <p>Allows you to read and write user properties in Office 365.</p> <p>For more information on what data you can read and write, see User object attributes.</p>	Yes	Yes	Yes	Yes
<p>VoicePolicy</p> <p>Allows you to read or write data related to voice policies in Lync Online.</p> <p>For more information on what data you can read and write, see VoicePolicy object attributes.</p>	Yes	No	No	No

This section describes the attributes provided by the Microsoft Office 365 Connector. By using these attributes, you can read and/or write data related to a particular object in Microsoft Office 365.

In this section:

- [ClientPolicy object attributes](#)
- [ConferencingPolicy object attributes](#)
- [Contact object attributes](#)
- [DistributionGroup object attributes](#)
- [Domain object attributes](#)

- [DynamicDistributionGroup object attributes](#)
- [ExternalAccessPolicy object attributes](#)
- [HostedVoicemailPolicy object attributes](#)
- [LicensePlanService object attributes](#)
- [Mailbox object attributes](#)
- [MailUser object attributes](#)
- [PresencePolicy object attributes](#)
- [SecurityGroup object attributes](#)
- [SPOSite object attributes](#)
- [SPOSiteGroup object attributes](#)
- [SPOWebTemplate object attributes](#)
- [SPOTenant object attributes](#)
- [User object attributes](#)
- [VoicePolicy object attributes](#)

ClientPolicy object attributes

Table 12: ClientPolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

ConferencingPolicy object attributes

Table 13: ConferencingPolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

Contact object attributes

Table 14: Contact attributes

Attribute	Description	Supported operations
AcceptMessagesOnlyFrom	<p>Gets or sets the senders that can send email messages to the contact.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none">• Alias• Canonical name• Display name• DN• Exchange DN• GUID• Name• Primary SMTP email address <p>This reference attribute accepts the following object types:</p>	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • MailUser • Mailbox • Contact 	
AcceptMessagesOnlyFromDLMembers	<p>Gets or sets the distribution groups whose members are allowed to send email messages to the contact.</p> <p>This reference attribute can take distribution groups in any of the following formats:</p> <ul style="list-style-type: none"> • Canonical name • Display name • DN • GUID • Legacy Exchange DN • Name • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	Read, Write
AcceptMessagesOnlyFromSendersOrMembers	<p>Gets or sets the senders who can send email messages to the contact.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none"> • Canonical name • Display name • Distinguished name (DN) • GUID • Legacy Exchange DN • Name 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Contact DistributionGroup DynamicDistributionGroup Mailbox MailUser 	
Alias	Gets or sets the alias of the mail-enabled contact.	Read, Write
AllowUMCallsFromNonUsers	<p>Gets or sets whether to exclude or include the contact in directory searches.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> None. Specifies to exclude the contact from directory searches. SearchEnabled. Specifies to include the contact in directory searches. 	Read, Write
AssistantName	Gets or sets the name of the contact's assistant.	Read, Write
BypassModerationFromSendersOrMembers	<p>Gets or sets the senders whose messages bypass moderation for the contact.</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> Canonical name Display name Distinguished name (DN) GUID 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> Name Legacy Exchange DN Primary SMTP email address <p>Moderation does not apply to the senders designated as moderators for the contact.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Contact DistributionGroup DynamicDistributionGroup Mailbox MailUser 	
City	Gets or sets the city of the contact.	Read, Write
Company	Gets or sets the company of the contact.	Read, Write
CountryOrRegion	Gets or sets the country or region of the contact.	Read, Write
CreateDTMFMap	<p>Gets or sets whether to create a dual-tone multi-frequency (DTMF) map for the contact.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies to create a DTMF map for the contact. FALSE. Specifies not to create a DTMF map for the contact. 	Read, Write

Attribute	Description	Supported operations
CustomAttribute1	Get or set the additional custom values you specify.	Read, Write
CustomAttribute2		
CustomAttribute3		
CustomAttribute4		
CustomAttribute5		
CustomAttribute6		
CustomAttribute7		
CustomAttribute8		
CustomAttribute9		
CustomAttribute10		
CustomAttribute11		
CustomAttribute12		
CustomAttribute13		
CustomAttribute14		
CustomAttribute15		
Department	Gets or sets the department of the contact.	Read, Write
DisplayName	Gets or sets the name displayed in Office 365 for the mail-enabled contact.	Read, Write
EmailAddresses	Gets or sets the email alias of the contact.	Read, Write
ExtensionCustomAttribute1	Get or set the additional custom values you specify. These attributes are multivalued. To specify multiple values, use a comma as a separator.	Read, Write
ExtensionCustomAttribute2		
ExtensionCustomAttribute3		
ExtensionCustomAttribute4		
ExtensionCustomAttribute5		
ExternalDirectoryObjectId	Gets the GUID of the contact.	Read
ExternalEmailAddress	Gets or sets the contact's e-mail address.	Read, Write

Attribute	Description	Supported operations
Fax	Gets or sets the fax number of the contact.	Read, Write
FirstName	Gets or sets the first name of the mail-enabled contact.	Read, Write
GrantSendOnBehalfTo	<p>Gets or sets the distinguished name (DN) of other senders that can send messages on behalf of the contact.</p> <p>This reference attribute only accepts the following object type:</p> <ul style="list-style-type: none"> Mailbox 	Read, Write
HiddenFromAddressListsEnabled	<p>Gets or sets whether or not Office 365 hides the contact from the address lists.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies to hide the contact from the address lists. FALSE (default). Specifies to display the contact in the address lists. 	Read, Write
HomePhone	Gets or sets the home phone number of the contact.	Read, Write
Initials	Gets or sets the initials of the mail-enabled contact.	Read, Write
LastName	Gets or sets the last name of the mail-enabled contact.	Read, Write
MacAttachmentFormat	<p>Gets or sets the Apple Macintosh operating system attachment format for messages sent to the contact.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> BinHex 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • UuEncode • AppleSingle • AppleDouble 	
MailTip	Gets or sets the message displayed to senders when they start writing an email message to the contact.	Read, Write
MailTipTranslations	<p>Gets or sets the MailTip message translations in additional languages.</p> <p>This attribute accepts the following format:</p> <p><i><LanguageLocale>:<MailTip MessageTranslation></i></p> <p>A MailTip message translation cannot exceed 250 characters.</p>	Read, Write
Manager	Gets or sets the manager of the contact.	Read, Write
MaxRecipientPerMessage	Gets or sets the maximum number of recipients to which the contact can address a message.	Read, Write
MessageBodyFormat	<p>Gets or sets the message body format for messages sent to the contact.</p> <p>The values this attribute can write depend on the value in the MessageFormat attribute.</p> <p>When the value in the MessageFormat is Mime, the MessageBodyFormat attribute can write the following values:</p> <ul style="list-style-type: none"> • Text • Html • TextAndHtml <p>When the value in the</p>	Read, Write

Attribute	Description	Supported operations
	<p>MessageFormat is Text, the MessageBodyFormat attribute can only write the Text value.</p>	
MessageFormat	<p>Gets or sets the message format for messages sent to the contact.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • Text • Mime 	Read, Write
MobilePhone	<p>Gets or sets the mobile phone number of the contact.</p>	Read, Write
ModeratedBy	<p>Gets or sets the moderators who are moderating the messages sent to the contact. To specify multiple moderators, use a comma as a separator.</p> <p>This reference attribute is required if you set the value of the ModerationEnabled attribute to TRUE.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	Read, Write
ModerationEnabled	<p>Gets or sets whether moderation is enabled for the contact.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
Name	<p>Gets or sets the name of the mail-enabled contact.</p>	Read, Write
Notes	<p>Gets or sets notes about the contact.</p>	Read, Write

Attribute	Description	Supported operations
ObjectID	Gets the unique object identifier (GUID).	Read
Office	Gets or sets the office of the contact.	Read, Write
OtherFax	Gets or sets the alternate fax number of the contact.	Read, Write
OtherHomePhone	Gets or sets the alternate home phone number of the contact.	Read, Write
Pager	Gets or sets the pager of the contact.	Read, Write
Phone	Gets or sets the work phone number of the contact.	Read, Write
PhoneticDisplayName	Gets or sets a phonetic pronunciation of the value specified in the DisplayName attribute for the contact.	Read, Write
PostalCode	Gets or sets the postal code of the contact.	Read, Write
PostOfficeBox	Gets or sets the post office box number of the contact.	Read, Write
RejectMessagesFrom	<p>Gets or sets the senders whose messages to the contact are rejected.</p> <p>This attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • Distinguished name (DN) • GUID • Name • Legacy Exchange DN • Primary SMTP email address <p>This reference attribute accepts</p>	Read, Write

Attribute	Description	Supported operations
	<p>the following object types:</p> <ul style="list-style-type: none"> • Contact • Mailbox 	
RejectMessagesFromDLMembers	<p>Gets or sets the distribution groups whose members cannot send email messages to the contact (their messages are rejected).</p> <p>This reference attribute can take distribution groups in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • Distinguished name (DN) • GUID • Legacy Exchange DN • Name • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	Read, Write
RejectMessagesFromSendersOrMembers	<p>Gets or sets the senders that cannot send email messages to the contact (their messages are rejected).</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • Distinguished name (DN) 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • GUID • Name • Legacy Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox 	
RequireSenderAuthenticationEnabled	<p>Gets or sets whether the senders that send messages to this contact must be authenticated.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
SecondaryAddress	Gets or sets the secondary address for the contact if it has Unified Messaging enabled.	Read, Write
SecondaryDialPlan	Gets or sets a secondary Unified Messaging dial plan for the contact.	Read, Write
SendModerationNotifications	<p>Gets or sets whether to send status notifications to users when a message they sent to the moderated distribution group is rejected by a moderator.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Always. Specifies that notifications are sent to all senders. 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Internal. Specifies that notifications are only sent to the senders internal to your organization. • Never. Specifies that all status notifications are disabled. 	
SimpleDisplayName	<p>Gets or sets an alternate description of the contact in a situation where a limited set of characters is allowed.</p> <p>The limited set of characters includes ASCII characters from 26 to 126.</p>	Read, Write
StateOrProvince	Gets or sets the state or province of the contact.	Read, Write
StreetAddress	Gets or sets the street address of the contact.	Read, Write
TelephoneAssistant	Gets or sets the phone number of the contact's assistant.	Read, Write
Title	Gets or sets the title of the contact.	Read, Write
UMCallingLineIds	<p>Gets or sets telephone numbers or telephone extensions that can be mapped to the contact if it has Unified Messaging enabled.</p> <p>To specify multiple telephone numbers use a comma as a separator.</p> <p>This attribute only accepts values that have less than 128 characters.</p>	Read, Write
UMDtmfMap	Gets or sets whether to create a user-defined DTMF map for the contact if it has Unified Messaging enabled.	Read, Write
UseMapiRichTextFormat	Gets or sets a format for the MAPI Rich Text Format	Read, Write

Attribute	Description	Supported operations
	<p>messages sent to the contact.</p> <ul style="list-style-type: none"> • Never. Specifies to convert all messages sent to the contact to the plain text format. • Always. Specifies to always use the MAPI Rich Text Format (RTF) for the messages sent to the contact. • UseDefaultSettings. Specifies to use the message format set in the MAPI client that sent the message to the contact. 	
UsePreferMessageFormat	<p>Gets or sets whether the message format specified for the contact overrides any global settings (such as those configured for the remote domain).</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that the message format set for the mail user overrides any global settings. • FALSE. Specifies that global settings have precedence over the mail format set for the mail user. 	Read, Write
WebPage	Gets or sets the Web page address of the contact.	Read, Write
WindowsEmailAddress	Gets or sets the email address of the contact stored in Active Directory.	Read, Write

DistributionGroup object attributes

Table 15: DistributionGroup attributes

Attribute	Description	Supported operations
AcceptMessagesOnlyFrom	<p>Gets or sets the senders that can send email messages to the distribution group.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none">• Alias• Canonical DN• Display name• Distinguished name (DN)• Domain\account• GUID• Immutable ID• Legacy Exchange DN• SMTP address• User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none">• MailUser• Mailbox• Contact	Read, Write
AcceptMessagesOnlyFromDLMembers	<p>Gets or sets the distribution groups whose members are allowed to send email messages to the distribution group.</p> <p>This reference attribute can take distribution groups in any of the following formats:</p> <ul style="list-style-type: none">• Alias• Canonical DN	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	
AcceptMessagesOnlyFromSendersOrMembers	<p>Gets or sets the senders who can send email messages to the distribution group.</p> <p>This attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> MailUser 	
Alias	Gets or sets the alias of the distribution group.	Read, Write
BypassModerationFromSendersOrMembers	<p>Gets or sets the senders whose messages bypass moderation for the distribution group.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none"> Alias Canonical DN Display name Distinguished name (DN) Domain\account GUID Immutable ID Legacy Exchange DN SMTP address User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Contact DistributionGroup DynamicDistributionGroup Mailbox MailUser 	Read, Write
BypassNestedModerationEnabled	<p>Gets or sets whether moderators of parent groups are allowed to moderate nested groups for which moderation is enabled.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies that 	Read, Write

Attribute	Description	Supported operations
	<p>email messages approved by parent group moderators bypass any moderation in nested groups.</p> <ul style="list-style-type: none"> • FALSE. Specifies that email messages approved by parent group moderators still can be moderated in nested groups. 	
CreateDTMFMap	<p>Sets whether to create a dual-tone multi-frequency (DTMF) map for the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies to create a DTMF map for the distribution group. • FALSE. Specifies not to create a DTMF map for the distribution group. 	Write

Attribute	Description	Supported operations
CustomAttribute1	Get or set the additional custom values you specify.	Read, Write
CustomAttribute2		
CustomAttribute3		
CustomAttribute4		
CustomAttribute5		
CustomAttribute6		
CustomAttribute7		
CustomAttribute8		
CustomAttribute9		
CustomAttribute10		
CustomAttribute11		
CustomAttribute12		
CustomAttribute13		
CustomAttribute14		
CustomAttribute15		
Description	Gets or sets the description of the distribution group.	Read, Write
DisplayName	Gets or sets the display name of the distribution group.	Read, Write
EmailAddresses	Gets or sets the email alias of the distribution group.	Read, Write
ExtensionCustomAttribute1	Get or set the additional custom values you specify. These attributes are multivalued. To specify multiple values, use a comma as a separator.	Read, Write
ExtensionCustomAttribute2		
ExtensionCustomAttribute3		
ExtensionCustomAttribute4		
ExtensionCustomAttribute5		
GrantSendOnBehalfTo	Gets or sets the senders that can send messages on behalf of the distribution group. This reference attribute can take senders in any of the	Read, Write

Attribute	Description	Supported operations
	<p>following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute only accepts the following object type:</p> <p>Mailbox</p>	
HiddenFromAddressListsEnabled	<p>Gets or sets whether or not Office 365 hides the distribution group from the address lists.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies to hide the distribution group from the address lists. • FALSE (default). Specifies to display the distribution group in the address lists. 	Read, Write
IgnoreNamingPolicy	<p>Sets whether or not to ignore the naming policy applicable to the distribution groups created in the organization.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies to ignore the applicable naming policy. 	Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> FALSE. Specifies to use the applicable naming policy. 	
IsSecurity	Gets or sets whether the distribution group is a security distribution group.	Read, Write This attribute allows you to write data only when you use the Microsoft Office 365 Connector to perform a create operation in Office 365.
MailTip	Gets or sets the message displayed to senders when they start writing an email message to the distribution group.	Read, Write
MailTipTranslations	<p>Gets or sets the MailTip message translations in additional languages.</p> <p>This attribute accepts the following format:</p> <p><i><LanguageLocale>:<MailTip MessageTranslation></i></p> <p>A MailTip message translation cannot exceed 250 characters.</p>	Read, Write
ManagedBy	<p>Gets or sets the owner of the distribution group.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Mailbox MailUser 	Read, Write
Member	Gets or sets the members of the distribution group by using their Object IDs.	Read, Write This attribute only allows you to write data when you use the Microsoft Office 365

Attribute	Description	Supported operations
		Connector to perform an update operation in Office 365.
MemberDepartRestriction	<p>Gets or sets the restrictions applicable to the members who want to leave the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Open • Closed • ApprovalRequired 	Read, Write
MemberJoinRestriction	<p>Gets or sets the restrictions applicable to the members who want to join the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Open • Closed • ApprovalRequired 	Read, Write
Member	Gets or sets the members of the distribution group	Read, Write
ModeratedBy	<p>Gets or sets the users who are moderating the messages sent to the distribution group. To specify multiple users, use a comma as a separator.</p> <p>This reference attribute can take users in any of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This attribute is required if you set the value of the ModerationEnabled attribute to TRUE.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	
ModerationEnabled	<p>Gets or sets whether moderation is enabled for the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
Name	Gets or sets the name of the distribution group.	Read, Write
Notes	Gets or sets notes about the distribution group.	Read, Write This attribute only allows you to write data when you use the Microsoft Office 365 Connector to create an object in Office 365.
ObjectID	Gets the unique object identifier (GUID).	Read
PrimarySmtpAddress	Gets or sets primary SMTP address of the distribution	Read, Write

Attribute	Description	Supported operations
	group.	
PrimarySmtpAddress	Gets or sets the primary email address of the distribution group.	Read, Write
RejectMessagesFrom	<p>Gets or sets the senders whose messages to the distribution group are rejected.</p> <p>This attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • Mailbox 	Read, Write
RejectMessagesFromDLMembers	<p>Gets or sets the distribution groups whose members cannot send email messages to the distribution group (their messages are rejected).</p> <p>This reference attribute can take distribution groups in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	
RejectMessagesFromSendersOrMembers	<p>Gets or sets the senders that cannot send email messages to the distribution group (their messages are rejected).</p> <p>This reference attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> Mailbox 	
ReportToManagerEnabled	<p>Gets or sets whether delivery reports are sent to the manager of the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE FALSE 	Read, Write
ReportToOriginatorEnabled	<p>Gets or sets whether delivery reports are sent to the senders who sent email messages to the distribution group.</p>	Read, Write
RequireSenderAuthenticationEnabled	<p>Gets or sets whether the senders that send messages to this distribution group must be authenticated.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE FALSE 	Read, Write
SendModerationNotifications	<p>Gets or sets whether to send status notifications to senders when a message they send to the moderated distribution group is rejected by a moderator.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> Always. Specifies that notifications are sent to all senders. Internal. Specifies that notifications are only sent to the senders internal to your organization. Never. Specifies that all status notifications are disabled. 	Read, Write

Attribute	Description	Supported operations
SendOofMessageToOriginator Enabled	<p>Gets or sets a value that specifies whether or not to deliver out-of-office messages to the user who sent an e-mail message to the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
SimpleDisplayName	<p>Gets or sets an alternate description of the distribution group in a situation where a limited set of characters is allowed.</p> <p>The limited set of characters includes ASCII characters from 26 to 126.</p>	Read, Write
UMDtmfMap	Gets or sets whether to create a user-defined DTMF map for the distribution group if it has Unified Messaging enabled.	Read, Write
WindowsEmailAddress	Gets or sets the email address of the distribution group stored in Active Directory.	Read, Write

Domain object attributes

Table 16: Domain attributes

Attribute	Description	Supported operations
Authentication	<p>Gets the authentication method with which the domain in Office 365 authenticates users.</p> <p>This attribute can take one of the following values:</p>	Read

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Managed. Indicates that the domain uses Office 365 authentication. • Federated. Indicates that the domain uses Single Sign-on (SSO) to authenticate users. 	
DomainName	Gets the domain name in Office 365.	Read
DomainServices	Gets the Office 365 services available in the domain.	Read
IsDefault	Gets whether the domain is default in Office 365.	Read
IsInitial	Gets whether the domain is initial in Office 365.	Read
ObjectID	Gets the unique object identifier (GUID).	Read
Status	<p>Gets whether the domain is verified with Office 365. This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Verified. Indicates that the domain is verified. • Unverified. Indicates that the domain is not verified. 	Read

DynamicDistributionGroup object attributes

Table 17: DynamicDistributionGroup attributes

Attribute	Description	Supported operations
AcceptMessagesOnlyFrom	Gets or sets the senders that can send email messages to the dynamic	Read, Write

Attribute	Description	Supported operations
	<p>distribution group.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • DN • Exchange DN • GUID • Name • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • MailUser • Mailbox • Contact 	
AcceptMessagesOnlyFromDLMembers	<p>Gets or sets the distribution groups whose members are allowed to send email messages to the dynamic distribution group.</p> <p>This reference attribute accepts any of the following values for the distribution groups:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Legacy Exchange DN • Primary SMTP email address 	Read, Write

Attribute	Description	Supported operations
	<p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	
AcceptMessagesOnlyFromSendersOrMembers	<p>Gets or sets the senders who can send email messages to the dynamic distribution group.</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Alias • Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox • MailUser 	Read, Write
Alias	Gets or sets the alias of the dynamic distribution group.	Read, Write
BypassModerationFromSendersOrMembers	Gets or sets the senders whose messages bypass moderation for the dynamic	Read, Write

Attribute	Description	Supported operations
	<p>distribution group.</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Legacy Exchange DN • Primary SMTP email address <p>The values in this attribute do not apply to the senders that are the moderators of the dynamic distribution group.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • Dynam-icDistributionGroup • Mailbox • MailUser 	

Attribute	Description	Supported operations
ConditionalCustomAttribute1	<p>Allow you to get or set recipients based on the corresponding CustomAttribute<Number> value.</p> <p>For example, ConditionalCustomAttribute 1 corresponds to CustomAttribute1, ConditionalCustomAttribute 2 corresponds to CustomAttribute2, and so on.</p>	Read, Write
ConditionalCustomAttribute2		
ConditionalCustomAttribute3		
ConditionalCustomAttribute4		
ConditionalCustomAttribute5		
ConditionalCustomAttribute6		
ConditionalCustomAttribute7		
ConditionalCustomAttribute8		
ConditionalCustomAttribute9		
ConditionalCustomAttribute10		
ConditionalCustomAttribute11		
ConditionalCustomAttribute12		
ConditionalCustomAttribute13		
ConditionalCustomAttribute14		
ConditionalCustomAttribute15		
ConditionalDepartment	<p>Uses the Department field to get or set the recipients used to build the dynamic distribution group.</p> <p>A comma that separates values of this multivalued attribute acts as the OR operator.</p>	<p>Read, Write</p> <p>When writing data using this attribute, you cannot use the RecipientFilter attribute to write data.</p>
ConditionalStateOrProvince	<p>Uses the State/Province field to get or set the recipients used to build the dynamic distribution group.</p> <p>A comma that separates values of this multivalued attribute acts as the OR operator.</p>	Read, Write

Attribute	Description	Supported operations
CustomAttribute1	Get or set the additional custom values you specify.	Read, Write
CustomAttribute2		
CustomAttribute3		
CustomAttribute4		
CustomAttribute5		
CustomAttribute6		
CustomAttribute7		
CustomAttribute8		
CustomAttribute9		
CustomAttribute10		
CustomAttribute11		
CustomAttribute12		
CustomAttribute13		
CustomAttribute14		
CustomAttribute15		
DisplayName	Gets or sets the display name of the dynamic distribution group.	Read, Write
EmailAddresses	Gets or sets the email addresses of the dynamic distribution group. When specifying two or more email addresses in this multivalued attribute, use a comma as a separator.	Read, Write
GrantSendOnBehalfTo	Gets or sets the distinguished name (DN) of other senders that can send messages on behalf of the dynamic distribution group. This reference attribute only accepts the following object type: <ul style="list-style-type: none"> Mailbox 	Read, Write

Attribute	Description	Supported operations
IncludedRecipients	<p>Gets or sets the recipient types used to build the dynamic distribution group.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • AllRecipients • MailContacts • MailGroups • MailUsers • MailboxUsers • Resources • None <p>NOTE: You can use combinations of these values, except the AllRecipients value. No other value can be used along with the AllRecipients value.</p>	Read, Write
LdapRecipientFilter	Gets the recipient filter that was created by using the RecipientFilter attribute.	Read
ManagedBy	<p>Gets or sets the owner of the dynamic distribution group.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	Read, Write
ManagedBy	<p>Gets or sets the name of the mail-enabled user, group, or contact displayed on the Managed by tab of the Active Directory object.</p> <p>This reference attribute accepts the name in one of</p>	Read, Write

Attribute	Description	Supported operations
	<p>the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display Name • Distinguished Name (DN) • Domain\Account • GUID • Immutable ID • Legacy Exchange DN • SMTP Address • User Principal Name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	
ModeratedBy	<p>Gets or sets the users who are moderating the messages sent to the dynamic distribution group.</p> <p>To specify multiple users, use a comma as a separator.</p> <p>This reference attribute is required if you set the value of the ModerationEnabled attribute to TRUE.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	Read, Write
ModerationEnabled	Gets or sets whether moderation is enabled for the dynamic distribution	Read, Write

Attribute	Description	Supported operations
	<p>group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	
Name	Gets or sets the name of the dynamic distribution group.	Read, Write
Notes	Gets or sets comments for the dynamic distribution group.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read
PhoneticDisplayName	Gets or sets a phonetic pronunciation of the value specified in the DisplayName attribute.	Read, Write
PrimarySmtpAddress	Gets or sets the primary return SMTP email address of the dynamic distribution group. You can use this attribute if the group has two or more SMTP email addresses.	Read, Write
RecipientContainer	<p>Gets or sets the recipients used to build the dynamic distribution group, based on their location in Active Directory.</p> <p>This attribute can take the canonical name of the Active Directory organizational unit (OU) or domain where the recipients reside.</p> <p>When this attribute is omitted, the local container is used.</p>	Read, Write
RecipientFilter	Gets or sets the mail-enabled recipients to be	<p>Read, Write</p> <p>When writing data using</p>

Attribute	Description	Supported operations
	<p>included in the dynamic distribution group. This attribute accepts OPATH filtering syntax.</p> <p>Syntax example:</p> <pre>((Company -eq 'MyCompany') -and (City -eq 'London'))</pre>	<p>this attribute, you cannot use any of the following attributes to write data:</p> <p>IncludedRecipients</p> <p>ConditionalCompany</p> <p>ConditionalCustomAttribute</p> <p><i><Number></i></p> <p>ConditionalDepartment</p> <p>ConditionalStateOrProvince</p>
RejectMessagesFrom	<p>Gets or sets the senders whose messages to the dynamic distribution group are rejected.</p> <p>This reference attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address <p>User principal name</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • Mailbox 	Read, Write
RejectMessagesFromDLMembers	Gets or sets the distribution groups whose members	Read, Write

Attribute	Description	Supported operations
	<p>cannot send email messages to the dynamic distribution group (their messages are rejected).</p> <p>This reference attribute can take distribution groups in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name (DN) • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address • User principal name <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • Dynam-icDistributionGroup 	
RejectMessagesFromSenders Or Members	<p>Gets or sets the senders that cannot send email messages to the dynamic distribution group (their messages are rejected).</p> <p>This reference attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical DN • Display name • Distinguished name 	Read, Write

Attribute	Description	Supported operations
	<p>(DN)</p> <ul style="list-style-type: none"> • Domain\account • GUID • Immutable ID • Legacy Exchange DN • SMTP address <p>User principal name</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • Dynam-icDistributionGroup • Mailbox 	
ReportToManagerEnabled	<p>Gets or sets a value that specifies whether or not to send delivery reports to the dynamic distribution group manager.</p> <p>This Boolean attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that delivery reports are enabled. • FALSE (default). Indicates that delivery reports are disabled. 	Read, Write.
ReportToOriginatorEnabled	<p>Gets or sets a value that specifies whether or not to send a delivery reports to the user who sent an e-mail message to the dynamic distribution group.</p> <p>This Boolean attribute can take one of the following</p>	Read, Write

Attribute	Description	Supported operations
	<p>values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that delivery reports are enabled. • FALSE (default). Indicates that delivery reports are disabled. 	
SendModerationNotifications	<p>Gets or sets whether or not to send a notification to the sender whose message to the moderated dynamic distribution group is rejected by a moderator.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Always. Indicates that moderation notifications are sent to all senders. • Internal. Indicates that moderation notifications are sent to the internal senders only. • Never. Indicates that moderation notifications are disabled. 	Read, Write
SendOofMessageToOriginator Enabled	<p>Gets or sets a value that specifies whether or not to deliver out-of-office messages to the user who sent an e-mail message to the dynamic distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write

ExternalAccessPolicy object attributes

Table 18: ExternalAccessPolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

HostedVoicemailPolicy object attributes

Table 19: HostedVoicemailPolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

LicensePlanService object attributes

Table 20: LicensePlanService attributes

Attribute	Description	Supported operations
AssignedLicenses	Gets the number of used licenses in Office 365. This number includes both valid and expired licenses that are currently assigned.	Read
ExpiredLicenses	Gets the number of expired licenses in Office 365.	Read
ObjectID	Gets the unique object identifier (GUID).	Read
PlanDisplayName	Gets the name of the currently used license plan name in the form it is displayed on the Office 365 graphical user interface.	Read
PlanName	Gets the name of the currently used license plan in the form it is returned by the Windows PowerShell cmdlets for Office 365.	Read
ReducedFunctionalityLicenses	Gets the number of licenses that are currently in the reduced functionality mode (RFM).	Read
RelatedAttributeName	Gets the name of the attribute in the Office 365 Connector schema that allows you to work (for example, read and write) with the specified Office 365 service.	Read
ServiceDisplayName	Gets the license service name in the form it is displayed on the Office 365 graphical user interface. Service names are the names of the check boxes displayed under a license plan.	Read
ServiceName	Gets the license service name in the form it is	Read

Attribute	Description	Supported operations
	returned by the Windows PowerShell cmdlets for Office 365.	
ValidLicenses	Gets the number of valid licenses in Office 365. This number includes both assigned and available licenses.	Read

Mailbox object attributes

Table 21: Mailbox attributes

Attribute	Description	Supported operations
AcceptMessagesOnlyFrom	<p>Gets or sets the senders that can send email messages to the specified mailbox.</p> <p>This reference attribute accepts any of the following values for the distribution groups:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Alias • Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • MailUser • Mailbox • Contact 	Read, Write

Attribute	Description	Supported operations
AcceptMessagesOnlyFromDLMembers	<p>Gets or sets the distribution groups whose members are allowed to send email messages to the specified mailbox.</p> <p>This reference attribute accepts any of the following values for the distribution groups:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Legacy Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	Read, Write
AcceptMessagesOnlyFromSendersOrMembers	<p>Gets or sets the senders who can send email messages to the specified mailbox.</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Alias • Exchange DN • Primary SMTP email address <p>This reference attribute accepts</p>	Read, Write

Attribute	Description	Supported operations
	<p>the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox • MailUser 	
Alias	Gets or sets the alias of the mailbox user.	Read, Write
ApplyMandatoryProperties	<p>Sets whether to modify the mandatory properties of a legacy mailbox.</p> <p>For example, you can use this attribute to remove the legacyMailbox tag from a legacy mailbox residing on an Exchange Server 2010 or check whether this tag exists on the mailbox.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that the legacyMailbox tag does not exist on the mailbox. • FALSE. Specifies that the legacyMailbox tag exists on the mailbox. 	Write
ArchiveName	Gets or sets the name of the archive mailbox. This is the name displayed on the user interface in Microsoft Office Outlook Web App and Microsoft Outlook.	Read, Write
AuditAdmin	<p>Gets or sets the operations to log for administrators.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • None 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Update • Copy • Move • MoveToDeletedItems • SoftDelete • HardDelete • FolderBind • SendAs • SendOnBehalf • MessageBind <p>To enable mailbox audit logging, set the value of the AuditEnabled attribute to TRUE.</p>	
AuditDelegate	<p>Gets or sets the operations to log for delegate users.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • None • Update • Move • MoveToDeletedItems • SoftDelete • HardDelete • FolderBind • SendAs • SendOnBehalf <p>To enable mailbox audit logging, set the value of the AuditEnabled attribute to TRUE.</p>	Read, Write
AuditEnabled	<p>Gets or sets whether mailbox audit logging is enabled or disabled. If mailbox audit</p>	Read, Write

Attribute	Description	Supported operations
	<p>logging is enabled, the operations specified in the AuditAdmin, AuditDelegate, and AuditOwner attributes are logged.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that mailbox audit logging is enabled. • FALSE. Specifies that mailbox audit logging is disabled. 	
AuditLogAgeLimit	<p>Gets or sets the retention period for the mailbox audit logs. Logs whose age exceeds the specified retention period are deleted.</p> <p>This attribute accepts the following format for the retention period:</p> <p>DD.HH:MM:SS</p> <p>The maximum value this attribute can accept is 24855.03:14:07</p> <p>Example 1</p> <p>30.05:00:00</p> <p>Specifies to retain the mailbox audit logs for 30 days and 5 hours.</p> <p>Example 2</p> <p>00.00:00:00</p> <p>The mailbox audit logs are never deleted.</p>	Read, Write
BypassModerationFromSendersOrMembers	<p>Gets or sets the senders whose messages bypass moderation for the mailbox.</p> <p>This reference attribute can</p>	Read, Write

Attribute	Description	Supported operations
	<p>take any of the following values for the senders:</p> <ul style="list-style-type: none"> • DN • Canonical name • GUID • Name • Display name • Legacy Exchange DN • Primary SMTP email address <p>The values in this attribute do not apply to the senders that are the moderators of the mailbox.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox • MailUser 	
CalendarRepairDisabled	<p>Gets or sets whether the calendar items in the mailbox can be repaired by the Calendar Repair Assistant.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that repair operations are enabled. • FALSE. Specifies that repair operations are disabled. 	Read, Write
CalendarVersionStoreDisabled	<p>Gets or sets whether to log calendar changes in the mailbox.</p>	Read, Write

Attribute	Description	Supported operations
	<p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies that calendar changes are logged. <p>FALSE. Specifies that calendar changes are not logged.</p>	
CreateDTMFMap	Sets whether to create a dual-tone multi-frequency map for the mailbox user.	Write
CustomAttribute1	Get or set the additional custom values you specify.	Read, Write
CustomAttribute2		
CustomAttribute3		
CustomAttribute4		
CustomAttribute5		
CustomAttribute6		
CustomAttribute7		
CustomAttribute8		
CustomAttribute9		
CustomAttribute10		
CustomAttribute11		
CustomAttribute12		
CustomAttribute13		
CustomAttribute14		
CustomAttribute15		
DeliverToMailboxAndForward	<p>Gets or sets whether this mailbox receives forwarded messages in case message forwarding to another address is configured for the mailbox.</p> <p>This attribute can take one of the following values:</p>	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • TRUE. Specifies that messages are delivered to this mailbox and to the forwarding address. • FALSE. Specifies that messages are delivered to the forwarding address only and not to this mailbox. 	
DisplayName	Gets or sets the display name of the user account associated with the mailbox.	Read, Write
EmailAddresses	<p>Gets or sets all the proxy addresses of the mailbox. The proxy addresses also include the primary SMTP address.</p> <p>When writing proxy addresses using this attribute, make sure the specified addresses are valid, because the addresses are not validated by Exchange.</p>	Read, Write
EndDateForRetentionHold	<p>Gets or sets the retention hold end date for messaging records management (MRM).</p> <p>To enable or disable retention hold, use the RetentionHoldEnabled attribute.</p>	Read, Write
ExternalDirectoryObjectId	Gets the GUID of the user to whom the mailbox belongs.	Read
ExternalOofOptions	<p>Gets or sets whether Out of Office message is sent to external senders.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • External • InternalOnly 	Read, Write

Attribute	Description	Supported operations
ExtensionCustomAttribute1	Get or set the additional custom values you specify. These attributes are multivalued.	Read, Write
ExtensionCustomAttribute2		
ExtensionCustomAttribute3		
ExtensionCustomAttribute4		
ExtensionCustomAttribute5		
ForwardingAddress	Gets or sets a forwarding address for the mailbox.	Read, Write
ForwardingSmtpAddress	Gets or sets a forwarding SMTP address for the mailbox.	Read, Write
GrantSendOnBehalfTo	<p>Gets or sets the distinguished name (DN) of other senders that can send messages on behalf of the mailbox.</p> <p>This reference attribute only accepts the following object type:</p> <ul style="list-style-type: none"> Mailbox 	Read, Write
HiddenFromAddressListsEnabled	<p>Gets or sets whether this mailbox is hidden from address lists.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies that the mailbox is hidden from address lists. FALSE. Specifies that the mailbox is shown in address lists. 	Read, Write
ImmutableId	Gets or sets a unique immutable ID in the form of an SMTP address.	Read, Write
IsEquipment	<p>Gets or sets whether the mailbox belongs to a piece of equipment.</p> <p>This attribute can take one of the following values:</p>	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • TRUE. Indicates that the mailbox is an equipment mailbox. • FALSE. Indicates that the mailbox is not an equipment mailbox. 	
IsRegular	<p>Gets or sets whether the mailbox belongs to a user.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that the mailbox belongs to a user. • FALSE. Indicates that the mailbox does not belong to a user. 	Read, Write
IsRoom	<p>Gets or sets whether the mailbox belongs to a room.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that the mailbox belongs to a room. • FALSE. Indicates that the mailbox does not belong to a room. 	Read, Write
IsShared	<p>Gets or sets whether the mailbox is shared.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that the mailbox is shared. • FALSE. Indicates that the mailbox is not shared. 	Read, Write
IssueWarningQuota	<p>Gets or sets the mailbox size at which a warning message is sent to the mailbox user.</p> <p>To specify a mailbox size, use</p>	Read, Write

Attribute	Description	Supported operations
	<p>an integer value. To disable warning, set the value of this attribute to Unlimited.</p> <p>The value set on a mailbox by using this attribute overrides the value specified for the entire mailbox database.</p>	
IsValid	<p>Gets whether or not the mailbox object is configured correctly.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Indicates that the mailbox object is configured correctly. • FALSE. Indicates that the mailbox object is not configured correctly. 	Read
Languages	Gets or sets preferred languages for the mailbox in the order of their priority.	Read, Write
LitigationHoldDate	Gets or sets the date when the mailbox is placed on litigation hold. This date is only used for informational or reporting purposes.	Read, Write
LitigationHoldDuration	Gets or sets the litigation hold duration for the mailbox in days.	Read, Write
LitigationHoldEnabled	<p>Gets or sets whether litigation hold is enabled for the mailbox. When a mailbox is on litigation hold, messages cannot be deleted from the mailbox.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that litigation hold is enabled. • FALSE. Specifies that litigation hold is not enabled. 	Read, Write

Attribute	Description	Supported operations
LitigationHoldOwner	Gets or sets the user who put the mailbox on litigation hold.	Read, Write
MailboxPlan	Gets or sets the mailbox plan name associated with the mailbox. When setting a mailbox plan name, make sure that plan name exists for the organization in which the mailbox resides.	Read, Write
MailTip	Gets or sets the message displayed to senders when they start writing an email message to this recipient.	Read, Write
MailTipTranslations	<p>Gets or sets the MailTip message translations in additional languages.</p> <p>This attribute accepts the following format:</p> <p><i><LanguageLocale>:<MailTip MessageTranslation></i></p> <p>A MailTip message translation cannot exceed 250 characters.</p>	Read, Write
MessageTrackingReadStatus Enabled	<p>Gets or sets whether the read status of sent messages is provided to the senders who sent messages to this mailbox.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
ModeratedBy	<p>Gets or sets the users who are moderating the messages sent to the mailbox. To specify multiple users, use a comma as a separator.</p> <p>This reference attribute is required if you set the value of the ModerationEnabled attribute to TRUE.</p>	Read, Write

Attribute	Description	Supported operations
	<p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Mailbox MailUser 	
ModerationEnabled	<p>Gets or sets whether moderation is enabled for the mailbox.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE FALSE 	Read, Write
Name	Gets or sets the name of the mailbox user. This is the name that displays in the Active Directory Users and Computers tool.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read
Office	Gets or sets the Microsoft Office attribute for the mailbox.	Read, Write
Password	Sets the password for the user account associated with the mailbox.	Write
PrimarySmtpAddress	Gets or sets the originating email address displayed to the external recipients of a message sent from the mailbox.	Read, Write
ProhibitSendQuota	<p>Gets or sets the mailbox size at which the mailbox user can no longer send messages.</p> <p>To specify a mailbox size, use an integer value. To disable the send quota, set the value of this attribute to Unlimited.</p> <p>The value set on a mailbox by using this attribute overrides the value specified for the entire</p>	Read, Write

Attribute	Description	Supported operations
	mailbox database.	
ProhibitSendReceiveQuota	<p>Gets or sets the mailbox size at which the mailbox user can no longer send or receive messages.</p> <p>To specify a mailbox size, use an integer value. To disable the send and receive quota, set the value of this attribute to Unlimited.</p> <p>The value set on a mailbox by using this attribute overrides the value specified for the entire mailbox database.</p>	Read, Write
RejectMessagesFrom	<p>Gets or sets the senders whose messages are rejected by the mailbox.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> Contact Mailbox 	Read, Write
RejectMessagesFromDLMembers	<p>Gets or sets the distribution groups whose members cannot send email messages to the mailbox (their messages are rejected).</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> DistributionGroup DynamicDistributionGroup 	Read, Write
RejectMessagesFromSendersOrMembers	<p>Gets or sets the senders that cannot send email messages to the mailbox (their messages are rejected).</p> <p>This attribute can take any of the following values for the recipients:</p> <ul style="list-style-type: none"> DN 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • Canonical name • GUID • Name • Display name • Alias • Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox 	
RequireSenderAuthenticationEnabled	<p>Gets or sets whether senders must be authenticated.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
ResourceCapacity	Gets or sets the maximum number of people that can be accommodated by the room to which the mailbox belongs.	Read, Write
ResourceCustom	Gets or sets additional information about the resource.	Read, Write
RetainDeletedItemsFor	<p>Gets or sets for how long to keep deleted items.</p> <p>This attribute accepts the following format:</p> <p>DD.HH:MM:SS</p> <p>Example</p> <p>10.00:00:00</p> <p>Specifies to retain deleted items</p>	Read, Write

Attribute	Description	Supported operations
	for 10 days 00 hours 00 minutes and 00 seconds.	
RetentionComment	<p>Gets or sets a comment on user's hold status. This comment is displayed in Outlook.</p> <p>You can only write the value of this attribute if the value of the RetentionHoldEnabled attribute is set to TRUE.</p>	Read, Write
RetentionHoldEnabled	<p>Gets or sets whether retention hold is enabled for messaging retention policies.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
RetentionPolicy	Gets or sets the name of a retention policy to be applied to the folders and mail items in this mailbox.	Read, Write
RetentionUrl	Gets or sets the URL of a Web site providing additional details about the organization's messaging retention policies.	Read, Write
RoleAssignmentPolicy	<p>Gets or sets the management role assignment policy to assign to the mailbox when it is created or enabled.</p> <p>If the assignment policy name you want to specify contains spaces, use quotation marks around the name.</p> <p>If you omit this attribute when creating or enabling a mailbox, the default assignment policy is used.</p> <p>If you do not want to assign an assignment policy, set an empty</p>	Read, Write

Attribute	Description	Supported operations
	value in this attribute.	
RulesQuota	<p>Gets or sets the limit for the size of rules for the mailbox.</p> <p>Qualify the value you specify in this attribute by appending B (bytes) or KB (kilobytes). Unqualified values are treated as bytes. The maximum value this attribute accepts is 256 KB.</p> <p>Example</p> <p>64 KB</p>	Read, Write
SecondaryAddress	Sets the secondary address used by the UM-enabled user.	Write
SecondaryDialPlan	Sets a secondary UM dial plan to use.	Write
SendModerationNotifications	<p>Gets or sets whether to send status notifications to users when a message they sent to the moderated distribution group is rejected by a moderator.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Always. Specifies that notifications are sent to all senders. • Internal. Specifies that notifications are only sent to the internal senders in your organization. • Never. Specifies that all status notifications are disabled. 	Read, Write
SharingPolicy	Gets or sets the sharing policy associated with the mailbox.	Read, Write
SimpleDisplayName	Gets or sets an alternate description of the mailbox in a situation where a limited set of	Read, Write

Attribute	Description	Supported operations
	characters is allowed. The limited set of characters includes ASCII characters 26 through 126.	
SingleItemRecoveryEnabled	<p>Gets or sets whether to enable or disable the purging of recovery items.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies to disable the purging of recovery items. • FALSE. Specifies to enable the purging of recovery items. 	Read, Write
UMDtmfMap	Gets or sets whether to create a user-defined DTMF map for the user if it has Unified Messaging enabled.	Read, Write
UsageLocation	<p>Gets a two-letter country code that defines the location of the user. Usage location determines the services available to the user.</p> <p>Examples</p> <p>FR</p> <p>GB</p> <p>NL</p>	Read
UserCertificate	Gets or sets the digital certificate used to sign email messages of the user.	Read, Write
UserPrincipalName	Gets or sets the logon name of the mailbox user.	Read, Write
UserSMimeCertificate	Gets or sets the SMIME certificate used to sign email messages of the user.	Read, Write

MailUser object attributes

Table 22: MailUser attributes

Attribute	Description	Supported operations
AcceptMessagesOnlyFrom	<p>Gets or sets the senders that can send email messages to the specified mail user.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none">• Alias• Canonical name• Display name• DN• Exchange DN• GUID• Name• Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none">• MailUser• Mailbox• Contact	Read, Write
AcceptMessagesOnlyFromDLMembers	<p>Gets or sets the distribution groups whose members are allowed to send email messages to the specified mail user.</p> <p>This reference attribute can take distribution groups in any of the following formats:</p> <ul style="list-style-type: none">• Canonical name• Display name• DN	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • GUID • Legacy Exchange DN • Name • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • DistributionGroup • DynamicDistributionGroup 	
AcceptMessagesOnlyFromSendersOrMembers	<p>Gets or sets the senders who can send email messages to the mail user.</p> <p>This reference attribute can take senders in any of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • DN • GUID • Name • Legacy Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox • MailUser 	Read, Write
Alias	Gets or sets the alias of the mail user.	Read, Write

Attribute	Description	Supported operations
ArchiveName	Gets the name of the archive mailbox. This is the name displayed on the user interface in Microsoft Office Outlook Web App and Microsoft Outlook.	Read
BypassModerationFromSendersOrMembers	<p>Gets or sets the senders whose messages bypass moderation for the mail user.</p> <p>This reference attribute can take any of the following values for the senders:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • DN • GUID • Name • Legacy Exchange DN • Primary SMTP email address <p>Moderation does not apply to the senders designated as moderators for the mail user.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • DistributionGroup • DynamicDistributionGroup • Mailbox • MailUser 	Read, Write
CalendarVersionStoreDisabled	<p>Gets or sets whether to log calendar changes for the mail user.</p> <p>This attribute can take one of the following values:</p>	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> • TRUE. Specifies that calendar changes are logged. • FALSE. Specifies that calendar changes are not logged. 	
CreateDTMFMap	Sets whether to create a dual-tone multi-frequency map for the mail user.	Write
CustomAttribute1	Get or set the additional custom values you specify.	Read, Write
CustomAttribute2		
CustomAttribute3		
CustomAttribute4		
CustomAttribute5		
CustomAttribute6		
CustomAttribute7		
CustomAttribute8		
CustomAttribute9		
CustomAttribute10		
CustomAttribute11		
CustomAttribute12		
CustomAttribute13		
CustomAttribute14		
CustomAttribute15		
DeliverToMailboxAndForward	<p>Gets whether messages sent to the mail user are forwarded to another address in case message forwarding is configured.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that messages are delivered to 	Read

Attribute	Description	Supported operations
	<p>the mail user and to the forwarding address.</p> <ul style="list-style-type: none"> • FALSE. Specifies that messages are delivered to the forwarding address only. 	
DisplayName	Gets or sets the display name of the mail user.	Read, Write
EmailAddresses	Gets or sets the email alias of the mail user.	Read, Write
EndDateForRetentionHold	<p>Gets the retention hold end date for messaging records management (MRM).</p> <p>To enable or disable retention hold, use the RetentionHoldEnabled attribute.</p>	Read
ExtensionCustomAttribute1	Get or set the additional custom values you specify. These attributes are multivalued. To specify multiple values, use a comma as a separator.	Read, Write
ExtensionCustomAttribute2		
ExtensionCustomAttribute3		
ExtensionCustomAttribute4		
ExtensionCustomAttribute5		
ExternalDirectoryObjectId	Gets the GUID of the mail user.	Read
ExternalEmailAddress	Gets or sets an email address outside of the mail user's organization. Messages sent to the mail user are delivered to this external address.	Read, Write
FederatedIdentity	Allows you to associate an on-premises Active Directory user with the Office 365 mail user.	Write
ForwardingAddress	Gets the forwarding address for the mail user.	Read
GrantSendOnBehalfTo	Gets or sets the distinguished name (DN) of other senders that can send messages on behalf of	Read, Write

Attribute	Description	Supported operations
	<p>the mail user.</p> <p>This reference attribute only accepts the following object type:</p> <ul style="list-style-type: none"> Mailbox 	
HiddenFromAddressListsEnabled	<p>Gets or sets whether the mail user is hidden from address lists.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies that the mail user is hidden from address lists. FALSE. Specifies that the mail user is shown in address lists. 	Read, Write
ImmutableId	Gets or sets a unique immutable ID in the form of an SMTP address.	Read, Write
LitigationHoldDate	Gets the date when the mail user's mailbox is placed on litigation hold.	Read
LitigationHoldEnabled	<p>Gets whether litigation hold is enabled for the mail user's mailbox. When a mailbox is on litigation hold, messages cannot be deleted from the mailbox.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE. Specifies that litigation hold is enabled. FALSE. Specifies that litigation hold is not enabled. 	Read
LitigationHoldOwner	<p>Gets the user who enabled litigation hold on the mailbox.</p> <p>This attribute can only be used for informational or reporting purposes.</p>	Read

Attribute	Description	Supported operations
MacAttachmentFormat	<p>Gets or sets the Apple Macintosh operating system attachment format for messages sent to the mail user.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • BinHex • UuEncode • AppleSingle • AppleDouble 	Read, Write
MailTip	Gets or sets the message displayed to senders when they start writing an email message to the mail user.	Read, Write
MailTipTranslations	<p>Gets or sets the MailTip message translations in additional languages.</p> <p>This attribute accepts the following format:</p> <p><i><LanguageLocale>:<MailTip MessageTranslation></i></p> <p>A MailTip message translation cannot exceed 250 characters.</p>	Read, Write
MessageBodyFormat	<p>Gets or sets the message body format for messages sent to the mail user.</p> <p>The values this attribute can take depend on the value in the MessageFormat attribute.</p> <p>When the value in the MessageFormat is Mime, the MessageBodyFormat attribute can take the following values:</p> <ul style="list-style-type: none"> • Text • Html • TextAndHtml 	Read, Write

Attribute	Description	Supported operations
	When the value in the MessageFormat is Text , the MessageBodyFormat attribute can only take the Text value.	
MessageFormat	<p>Gets or sets the message format for messages sent to the mail user.</p> <p>This attribute can take the following values:</p> <ul style="list-style-type: none"> • Text • Mime 	Read, Write
ModeratedBy	<p>Gets or sets the moderators who are moderating the messages sent to the distribution group. To specify multiple moderators, use a comma as a separator.</p> <p>This reference attribute is required if you set the value of the ModerationEnabled attribute to TRUE.</p> <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Mailbox • MailUser 	Read, Write
ModerationEnabled	<p>Gets or sets whether moderation is enabled for the distribution group.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
Name	Gets or sets the name of the mail user.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read

Attribute	Description	Supported operations
Password	Sets the password for the mail user.	Write
RejectMessagesFrom	<p>Gets or sets the senders whose messages to the mail user are rejected.</p> <p>This attribute can take senders in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • DN • GUID • Name • Legacy Exchange DN • Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> • Contact • Mailbox 	Read, Write
RejectMessagesFromDLMembers	<p>Gets or sets the distribution groups whose members cannot send email messages to the mail user (such messages are rejected).</p> <p>This reference attribute can take distribution groups in one of the following formats:</p> <ul style="list-style-type: none"> • Alias • Canonical name • Display name • DN • GUID • Legacy Exchange DN • Name 	Read, Write

Attribute	Description	Supported operations
	<ul style="list-style-type: none"> Primary SMTP email address <p>This reference attribute accepts the following object types:</p> <ul style="list-style-type: none"> DistributionGroup DynamicDistributionGroup 	
RequireSenderAuthenticationEnabled	<p>Gets or sets whether the senders that send messages to this mail user must be authenticated.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> TRUE FALSE 	Read, Write
RetainDeletedItemsFor	<p>Gets for how long to keep deleted items for the mail user.</p> <p>This attribute accepts the following format:</p> <p>DD.HH:MM:SS</p> <p>Example</p> <p>10.00:00:00</p> <p>Specifies to retain deleted items for 10 days 00 hours 00 minutes and 00 seconds.</p>	Read
RetentionComment	<p>Gets the comment on the mail user's hold status. This comment is displayed in Outlook.</p> <p>You can only write the value of this attribute if the value of the RetentionHoldEnabled attribute is set to TRUE.</p>	Read
RetentionHoldEnabled	<p>Gets whether retention hold is enabled for messaging retention policies.</p> <p>This attribute can take one of</p>	Read

Attribute	Description	Supported operations
	<p>the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	
RetentionUrl	Gets the URL of a Web page providing additional details about the organization's messaging retention policies.	Read
SecondaryAddress	Sets the secondary address used by the Unified Messaging-enabled user.	Write
SecondaryDialPlan	Sets a secondary Unified Messaging dial plan for the mail user.	Write
SendModerationNotifications	<p>Gets or sets whether to send status notifications to users when a message they sent to the moderated distribution group is rejected by a moderator.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • Always. Specifies that notifications are sent to all senders. • Internal. Specifies that notifications are only sent to the senders internal to your organization. • Never. Specifies that all status notifications are disabled. 	Read, Write
SimpleDisplayName	<p>Gets or sets an alternate description of the mailbox in a situation where a limited set of characters is allowed.</p> <p>The limited set of characters includes ASCII characters from 26 to 126.</p>	Read, Write

Attribute	Description	Supported operations
SingleItemRecoveryEnabled	<p>Gets whether the purging of recovery items is enabled.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies to disable the purging of recovery items. • FALSE. Specifies to enable the purging of recovery items. 	Read
StartDateForRetentionHold	<p>Gets the start date for retention hold. To use this attribute, you must set the RetentionHoldEnabled attribute to TRUE.</p>	Read
UMDtmfMap	<p>Gets or sets whether to create a user-defined DTMF map for the mail user if it has Unified Messaging enabled.</p>	Read, Write
UsageLocation	<p>Gets a two-letter country code that defines the location of the mail user. Usage location determines the services available to the mail user.</p> <p>Examples</p> <p>FR</p> <p>GB</p> <p>NL</p>	Read
UseMapiRichTextFormat	<p>Gets or sets a format for the MAPI Rich Text Format messages sent to the mail user.</p> <ul style="list-style-type: none"> • Never. Specifies to convert all messages sent to the mail user to the plain text format. • Always. Specifies to always use the MAPI Rich Text Format (RTF) for the 	<p>Read, Write</p> <p>You can only write data by using this attribute when updating an existing object in Office 365.</p>

Attribute	Description	Supported operations
	<p>messages sent to the mail user.</p> <ul style="list-style-type: none"> • UseDefaultSettings. Specifies to use the message format set in the MAPI client that sent the message to the mail user. 	
UsePreferMessageFormat	<p>Gets or sets whether the message format specified for the mail user overrides any global settings (such as those configured for the remote domain).</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE. Specifies that the message format set for the mail user overrides any global settings. • FALSE. Specifies that global settings have precedence over the mail format set for the mail user. 	Read, Write
UserPrincipalName	Gets or sets the user principal name (UPN) of the mail user.	Read, Write
WindowsEmailAddress	Gets or sets the email address for the mail user stored in Active Directory.	Read, Write

PresencePolicy object attributes

Table 23: PresencePolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read

Attribute	Description	Supported operations
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

SecurityGroup object attributes

Table 24: SecurityGroup attributes

Attribute	Description	Supported operations
Description	Gets or sets the description of the security group.	Read, Write
DisplayName	Gets or sets the display name of the security group.	Read, Write
Members	Gets or sets the members of the security group.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read

SPOSite object attributes

Table 25: SPOSite attributes

Attribute	Description	Supported operations
AllowSelfServiceUpgrade	Gets or sets whether the site collection administrators can upgrade this site collection.	Read, Write
CompatibilityLevel	Gets the major version number of the site	Read

Attribute	Description	Supported operations
	collection. This version number is used to perform compatibility checks.	
Groups	Gets or sets the site collection groups. This attribute is required to create a site collection in SharePoint Online.	Read, Write
LastContentModifiedDate	Gets the date when the site collection content was last modified.	Read
LocaleId	Gets or sets the Locale ID (LCID) for the site collection.	Read, Write
LockIssue	Gets or sets the comment that was written when the site collection was locked.	Read
LockState	Gets or sets a lock state for the site collection. This attribute can take one of the following values: <ul style="list-style-type: none"> • NoAccess. All traffic to the site collection is blocked. Traffic to sites that have this lock state is redirected to the URL set in the NoAccessRedirectUrl attribute of the SPOTenant object. If no URL is set in that attribute, a 404 error is returned. • Unlock. All traffic to the site collection is allowed. 	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read
Owner	Gets or sets the owner of the site collection.	Read, Write

Attribute	Description	Supported operations
	This attribute is required to create a site collection in SharePoint Online.	
ResourceQuota	Gets or sets the server resource quota for the site collection.	Read, Write
ResourceQuotaWarningLevel	Gets or sets the warning level for the site collection. When the resource usage for the site collection reaches the specified warning level, a notification email is sent.	Read, Write
ResourceUsageAverage	Gets average resource usage for the site collection.	Read
ResourceUsageCurrent	Gets the current resource usage for the site collection.	Read
Status	No description available.	Read, Write
StorageQuota	Gets or sets the storage quota limit for the site collection. This attribute is required to create a site collection in SharePoint Online.	Read, Write
StorageQuotaWarningLevel	Gets or sets the storage warning level for the site collection. In SharePoint Online, you can view the current storage warning level in the site collection properties.	Read, Write
StorageUsageCurrent	Gets the current storage usage for the site collection.	Read
Template	Gets or sets the template for the site collection.	Read, Write
TimeZoneId	Gets or sets the identifier of the time zone for the site collection.	Read, Write

Attribute	Description	Supported operations
Title	Gets or sets the title of the site collection.	Read, Write
Url	Gets or sets the Web site address (URL). In SharePoint Online, you can view the Web site address in the site collection properties. This attribute is required to create a site collection in SharePoint Online.	Read, Write
WebsCount	No description available.	Read

SPOSiteGroup object attributes

Table 26: SPOSiteGroup attributes

Attribute	Description	Supported operations
LoginName	Gets or sets the name of the group.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read
Owner	Gets or sets the owner in the group.	Read, Write
PermissionLevels	Gets or sets permission levels for the group.	Read, Write
Site	Gets or sets the name of the site collection to which the group belongs.	Read, Write
Users	Gets or sets users in the group.	Read, Write

SPOWebTemplate object attributes

Table 27: SPOWebTemplate attributes

Attribute	Description	Supported operations
CompatibilityLevel	Gets the compatibility level of the Web template.	Read
Description	Gets the description of the Web template.	Read
DisplayCategory	Gets the name of the category to which the Web template belongs.	Read
LocaleID	Gets the Locale ID (LCID) of the Web template.	Read
Name	Gets the name of the Web template.	Read
ObjectID	Gets the unique object identifier (GUID).	Read
Title	Gets the title of the Web template.	Read

SPOTenant object attributes

Table 28: SPOTenant attributes

Attribute	Description	Supported operations
ExternalServicesEnabled	Gets or sets the maximum compatibility level for new sites.	Read, Write (update only)
MinCompatibilityLevel	Gets or sets the minimum compatibility level for new sites.	Read, Write (update only)
NoAccessRedirectUrl	Gets or sets the redirect URL for the SPOSite object whose LockState attribute value is set to NoAccess .	Read, Write (update only)
ObjectID	Gets the unique object identifier (GUID).	Read
ResourceQuota	Gets or sets the server resource quota available to	Read, Write (update only)

Attribute	Description	Supported operations
	the organization.	
ResourceQuotaAllocated	Gets or sets the server resource quota limit for the organization.	Read, Write (update only)
StorageQuota	Gets or sets the storage quota available to the organization.	Read, Write (update only)
StorageQuotaAllocated	Gets or sets the storage quota limit for the organization.	Read, Write (update only)

User object attributes

The Office 365 Connector provides the following attributes for the User object in Office 365:

- [Attributes Related to License Plans and Services](#)
- [Other attributes](#)

Attributes Related to License Plans and Services

These attributes allow you to get or set the license plans and services available to the user in Office 365. The attributes support Read and Write operations.

The names and display names of these attributes are formed dynamically according to the following patterns:

Table 29: Naming patterns for attributes

Item	Naming pattern	Examples
Attribute display name	<p><LicensePlanNameOnGUI> - <ServiceNameOnGUI></p> <p>In this pattern:</p> <p>LicensePlanNameOnGUI is the license plan name as it is displayed on the Office 365 user interface.</p> <p>ServiceNameOnGUI is the service name as it is</p>	<p>Microsoft Office 365 Plan E3 - Office Web Apps</p> <p>Microsoft Office 365 Plan K2 - Exchange Online Kiosk</p>

Item	Naming pattern	Examples
	displayed below the corresponding license plan on the Office 365 user interface.	
Attribute name	<code><LicensePlanName>-</code> <code><ServiceName></code> In this pattern: LicensePlanName is the license plan name in the form used by the Microsoft Office 365 cmdlets for Windows PowerShell. ServiceName is the service name in the corresponding license plan. The service name is displayed in the form used by the Microsoft Office 365 cmdlets for Windows PowerShell.	ENTERPRISEPACK- SHAREPOINTWAC DESKLESSWOFFPACK- EXCHANGE_S_DESKLESS

These attributes can take one of the following values:

- **True.** Specifies that the service is selected in the corresponding license plan in Office 365.
- **False.** Specifies that the service is selected in the corresponding license plan in Office 365.

.xml located in the Office 365 Connector installation folder (by default, this is **%ProgramFiles%\One Identity\Quick Connect\Office365Connector**).

For example, you may need to modify the name of a license plan or service in the Office 365 Connector schema when the corresponding name changes in the Office 365 user interface and therefore the related attribute display name becomes outdated in the Quick Connect Administration Console.

To modify the display names of attributes in the Office 365 Connector schema

1. Open the file **ConnectorConfig.xml** located in the Quick Connect installation folder (by default, this is **%ProgramFiles%\One Identity\Quick Connect**).
2. In the appropriate XML elements, modify the values of the **PlanDisplayName** and **ServiceDisplayName** attributes as necessary. See the following table for more

information about the XML elements used in the file:

Table 30: XML elements

XML element	Description	Example
<Plan>	<p>Defines the name and display name of the attribute related to a particular Office 365 license plan in the Office 365 Connector schema.</p> <p>This element has the following attributes:</p> <ul style="list-style-type: none">• PlanName. The license plan name in the form used by the Microsoft Office 365 cmdlets for Windows PowerShell.• PlanDisplayName. The license plan name as it displays in the Quick Connect Administration Console.	<pre><Plan PlanName="STANDARDPACK" PlanDisplayName="Microsoft Office 365 Plan E1"/></pre>
<Service>	<p>Defines the name and display name of the attribute related to a particular Office 365 service in the Office 365 Connector schema.</p> <p>This element has the following attributes:</p> <ul style="list-style-type: none">• ServiceName. The service name in the form used by the Microsoft Office 365 cmdlets for Windows PowerShell.• ServiceDisplayName. The service name as it displays in the Quick Connect Administration Console.	<pre><Service ServiceName="OFFICESUBSCRIPTIO N" ServiceDisplayName="Office Professional Plus" /></pre>

3. When you are finished, click **OK**.

Other attributes

Table 31: Other attributes

Attribute	Description	Supported operations
AllowUMCallsFromNonUsers	<p>Gets or sets whether to exclude or include the user in directory searches.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none">• None. Specifies to exclude the user from directory searches.• SearchEnabled. Specifies to include the user in directory searches.	Read, Write
AlternateEmailAddresses	Gets or sets the alternate e-mail addresses of the user.	Read, Write
AssistantName	Gets or sets the name of the user's assistant.	Read, Write
BlockCredential	<p>Gets or sets whether or not the user can sign in and use Microsoft Office 365 services.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none">• TRUE. Specifies that user's Microsoft Online Services ID is disabled and the user cannot sign in and use Office 365 services.• FALSE (default). Specifies that user's Microsoft Online Services ID is enabled and the user can sign in and use Office 365 services.	Read, Write

Attribute	Description	Supported operations
City	Gets or sets the user's city.	Read, Write
Company	Gets or sets the name of user's company.	Read, Write
Country	Gets or sets the user's country.	Read, Write
CountryOrRegion	Gets or sets the country or region of the user.	Read, Write
Department	Gets or sets the user's department.	Read, Write
DisplayName	Gets or sets the display name of the user.	Read, Write
Fax	Gets or sets the user's fax number.	Read, Write
FirstName	Gets or sets the first name of the user.	Read, Write
ForceChangePassword	<p>Gets or sets whether or not the user is forced to change their password the next time the user signs in to Microsoft Office 365.</p> <ul style="list-style-type: none"> • TRUE. Specifies that the user must change their password the next time the user signs in to Microsoft Office 365. • FALSE (default). Specifies that the user does not have to change their password the next time the user signs in to Microsoft Office 365. 	<p>Write</p> <p>To write data by using this attribute, you must at the same time write data by using the Password attribute.</p>
HomePhone	Gets or sets the home phone number of the user.	Read, Write
ImmutableId	<p>Gets or sets the GUID of the user in Office 365.</p> <p>This GUID is used to verify</p>	Read, Write

Attribute	Description	Supported operations
	<p>the identity of the Active Directory user when the user accesses Office 365 by using single sign-on.</p> <p>Note that in order the Microsoft Office 365 Connector could read the ImmutableId attribute value stored in Microsoft Office 365, that value must be in base64 encoding format. If the ImmutableId attribute value has any other encoding format, the Microsoft Office 365 Connector returns an error when reading that value.</p>	
Initials	Gets or sets the initials of the user.	Read, Write
LastName	Gets or sets the last name of the user.	Read, Write
LiveID	Gets the user's unique login ID.	Read
MailboxId	Gets the GUID of the user's mailbox.	Read
Manager	Gets or sets the name of the user's manager.	Read, Write
MobilePhone	Gets or sets the user's mobile phone number.	Read, Write
Name	Gets or sets the name of the user.	Read, Write
Notes	Gets or sets notes about the user.	Read, Write
ObjectID	Gets the unique object identifier (GUID).	Read
Office	Gets or sets the user's office.	Read, Write
OtherFax	Gets or sets the alternate fax number of the user.	Read, Write

Attribute	Description	Supported operations
OtherHomePhone	Gets or sets the alternate home phone number of the user.	Read, Write
OtherTelephone	Gets or sets the alternate phone number of the user.	Read, Write
Pager	Gets or sets the pager of the user.	Read, Write
Password	Sets a password for the user.	Write
PasswordNeverExpires	<p>Gets or sets whether or not the user's password periodically expires.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE (default). Specifies that the user's password never expires. • FALSE. Specifies that the user's password periodically expires. 	Read, Write
Phone	Gets or sets the phone number of the user.	Read, Write
PhoneNumber	Gets or sets the user's phone number.	Read, Write
PhoneticDisplayName	Gets or sets a phonetic pronunciation of the value specified in the DisplayName attribute for the user.	Read, Write
PostalCode	Gets or sets the user's postal code.	Read, Write
PostOfficeBox	Gets or sets the post office box number of the user.	Read, Write
PreferredLanguage	Gets or sets the preferred language for the user.	Read, Write
RemotePowerShellEnabled	Gets or sets whether remote Windows PowerShell	Read, Write

Attribute	Description	Supported operations
	<p>cmdlets are available to the user.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	
ResetPasswordOnNextLogon	<p>Gets or sets whether the user must reset their password at next logon.</p> <p>This attribute can take one of the following values:</p> <ul style="list-style-type: none"> • TRUE • FALSE 	Read, Write
SimpleDisplayName	<p>Gets or sets an alternate description of the user in a situation where a limited set of characters is allowed.</p> <p>The limited set of characters includes ASCII characters from 26 to 126.</p>	Read, Write
State	Gets or sets the state where the user is located.	Read, Write
StateOrProvince	Gets or sets the state or province of the user.	Read, Write
StreetAddress	Gets or sets the user's street address.	Read, Write
Title	Gets or sets the user's title.	Read, Write
UMDtmfMap	Gets or sets whether to create a user-defined DTMF map for the user if it has Unified Messaging enabled.	Read, Write
UsageLocation	<p>Gets or sets the two-letter ISO country designation.</p> <p>This attribute specifies the user's country where services are consumed.</p>	Read, Write
UserPrincipalName	Gets or sets the user's	Read, Write

Attribute	Description	Supported operations
	Microsoft Online Services ID.	
WebPage	Gets or sets the Web page address of the user.	Read, Write
WindowsEmailAddress	Gets or sets the email address of the user stored in Active Directory.	Read, Write

VoicePolicy object attributes

Table 32: VoicePolicy attributes

Attribute	Description	Supported operations
Anchor	Gets the Anchor property value of the policy.	Read
Description	Gets the policy description.	Read
Identity	Gets the unique identifier assigned to the policy.	Read
Members	Gets the users who have been assigned the policy.	Read
ObjectID	Gets the unique object identifier (GUID).	Read

Objects and attributes specific to Microsoft Office 365 services

In the Microsoft Office 365 connection settings, you can select the services you want to work with, such as SharePoint Online, Exchange Online, or Lync Online.

The next table describes the object types and attributes that become available in the Quick Connect Administration Console user interface when you select a particular check box in the connection settings. The objects and object attributes not mentioned in the table are always available in the Quick Connect Administration Console user interface.

Table 33: Objects and attributes specific to Microsoft Office 365 services

Check box	Related objects	Related attributes
SharePoint Online	SPOSiteGroup	All
	SPOWebTemplate	All
	SPOTenant	All
Exchange Online	Contact	All
	DistributionGroup	All
	DynamicDistributionGroup	All
	User	Manager
Lync Online	ClientPolicy	All
	ConferencingPolicy	All
	ExternalAccessPolicy	All
	HostedVoicemailPolicy	All
	VoicePolicy	All
	PresencePolicy	All
	User	<ul style="list-style-type: none"> • AudioVideoDisabled • ClientPolicy • ConferencingPolicy • Enabled • EnterpriseVoiceEnabled • ExchangeArchivingPolicy • ExternalAccessPolicy • HostedVoicemailPolicy • LineURI • LineServerURI • PresencePolicy • PrivateLine • RegistrarPool • RemoteCallControlTelephonyEnabled • SipAddress • VoicePolicy

How Microsoft Office 365 Connector works with data

To read and write data in Microsoft Office 365, the Microsoft Office 365 Connector relies on the functionality provided by the cmdlets supplied with Windows Azure Active Directory Module for Windows PowerShell (previously known as Microsoft Online Services Module for Windows PowerShell), PowerShell Module for Lync Online, and SharePoint Online Management Shell. As a result, the connector can only work with data supported by those cmdlets.

Please note that for this reason, the connector cannot work with the following:

- Objects written to Microsoft Office 365 by the Windows Azure Active Directory Sync tool.
- Password hashes.

Working with Salesforce

To create a connection to Salesforce, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *Salesforce Connector*. This connector is included in the Quick Connect for Cloud Services package.

The Salesforce Connector supports the following features:

Table 34: Supported features

Feature	Supported
Bidirectional synchronization Allows you to read and write data in the connected data system.	Yes
Delta processing mode Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	No
Password synchronization Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system.	Yes

In the next sections:

- [Creating a Salesforce connection](#)
- [Modifying a Salesforce Connection](#)

- [Salesforce data supported out of the box](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *Quick Connect Administrator Guide*.

Creating a Salesforce connection

To create a new connection

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Salesforce Connector**.
3. Click **Next**.
4. Specify connection settings by using the following options:
 - **Connect to Salesforce Sandbox.** Select this check box if you want to connect to your Salesforce testing environment. If you want to connect to production environment, make sure this check box is cleared. For more information about Salesforce Sandbox, see the Salesforce documentation.
 - **User name.** Type the user name of the account with which you want to access Salesforce. The account must have the System Administrator profile in the target Salesforce system.
 - **Password.** Type the password of the account with which you want to access Salesforce.
 - **Security token.** Enter the security token provided to you by Salesforce. For more information on what a security token is and how to obtain it, see the Salesforce documentation.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server, and then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
5. Click **Finish** to create a connection to Salesforce.

Modifying a Salesforce Connection

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing Salesforce connection you want to modify.
3. On the **Connection Settings** tab, click the **Specify connection settings** item to expand it and use the following options:
 - **Connect to Salesforce Sandbox.** Select this check box if you want to connect to your Salesforce testing environment. If you want to connect to production environment, make sure this check box is cleared. For more information about Salesforce Sandbox, see the Salesforce documentation.
 - **User name.** Type the user name of the account with which you want to access Salesforce. The account must have the System Administrator profile in the target Salesforce system.
 - **Password.** Type the password of the account with which you want to access Salesforce.
 - **Security token.** Enter the security token provided to you by Salesforce. For more information on what a security token is and how to obtain it, see the Salesforce documentation.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server, and then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
4. When you are finished, click **Save**.

Salesforce data supported out of the box

Out of the box, the Salesforce Connector supports all object types existing in Salesforce. For each Salesforce object, the Salesforce Connector supports the same operations (Read, Create, Delete, or Update) that you can perform on that object by using native Salesforce tools.

To read and/or write data related to a particular object in Salesforce, you can use the following:

- **Native Salesforce fields.** In the Quick Connect Administration Console user interface these fields are referred to as attributes. For more information on native Salesforce fields, see the "Reference | Standard Objects" section in the Salesforce Web Services API Developer's Guide available online at www.salesforce.com/us/developer/docs/api/.
- **Additional attributes provided by the Salesforce Connector.** The names of all such attributes start with the **va** prefix. For information about these attributes, see the following sections:
 - [User object additional attributes](#)
 - [Group object additional attributes](#)

User object additional attributes

Table 35: User additional attributes

Attribute	Description	Supported operations
vaProfileName	<p>Allows you to specify a Salesforce profile. For example, you can use this attribute to assign a Salesforce profile to a user being provisioned to Salesforce.</p> <p>To specify a profile, enter the profile name as it appears in the Salesforce user interface.</p> <p>Examples of vaProfileName values:</p> <ul style="list-style-type: none"> • System Administrator • Force.com - Free User <p>For more information on profiles, see the Salesforce documentation.</p>	Read, Write
vaRoleName	<p>Allows you to specify a Salesforce role. For example, you can use this attribute to assign a</p>	Read, Write

Attribute	Description	Supported operations
	<p>Salesforce role to a user being provisioned to Salesforce.</p> <p>To specify a role, enter the role name in the format used in the Salesforce user interface.</p> <p>For more information on roles, see the Salesforce documentation.</p>	
vaManagerName	<p>Allows you to specify a manager for a particular user.</p> <p>To specify a manager, enter the manager name in the format used in the Salesforce user interface.</p>	Read, Write
vaContactName	<p>Allows you to specify an associated contact for a particular user.</p> <p>To specify an associated contact, enter the associated contact name in the format used in the Salesforce user interface.</p>	Read, Write
vaMemberOf	<p>Allows you to define group membership for a particular user (this attribute is primarily intended for group membership synchronization).</p> <p>This attribute contains references to the groups where the user is a member.</p>	Read, Write
vaMemberOfName	<p>Allows you to define group membership for a particular user (for example, when provisioning a user to</p>	Read, Write

Attribute	Description	Supported operations
	<p>Salesforce).</p> <p>Specify the names of the Salesforce groups where you want the user to be a member.</p>	
vaLocale	<p>Allows you to specify a locale for a particular user (for example, when provisioning a user to Salesforce).</p> <p>To specify a locale, enter the locale name in the format used in the Salesforce user interface.</p> <p>Example of a vaLocale value:</p> <p>English (United States)</p>	Read, Write
vaTimeZone	<p>Allows you to specify a time zone for a user (for example, when provisioning a user to Salesforce).</p> <p>To specify a time zone, enter the time zone name in the format used in the Salesforce user interface.</p> <p>Example of a vaTimezone value:</p> <p>(GMT+00:00) Greenwich Mean Time (GMT)</p>	Read, Write
vaEmailEncoding	<p>Allows you to specify outbound email encoding to be used for a user (for example, when provisioning a user to Salesforce).</p> <p>Specify email encoding in the format used in the Salesforce user interface.</p> <p>Example of a</p>	Read, Update

Attribute	Description	Supported operations
	vaEmailEncoding value: Unicode (UTF-8)	
vaLanguage	Allows you to specify a user interface language for a particular user. The Salesforce user interface and help will be displayed to the user in the language you specify in this attribute.	Read, Write
vaDelegatedApproverUserName	Allows you to specify the name of the user you want to appoint as a delegated approver.	Read, Write
vaDelegatedApproverGroupName	Allows you to specify the name of a group all members of which you want to appoint as delegated approvers.	Read, Write

Group object additional attributes

Table 36: Group additional attributes

Attribute	Description	Supported operations
vaMemberOf	Allows you to define group membership for the group in Salesforce (this attribute is primarily intended for group membership synchronization). The attribute contains references to other groups where the group is a member.	Read, Write
vaMemberOfName	Allows you to define group membership for the group. Specify the names of	Read, Write

Attribute	Description	Supported operations
	Salesforce groups where you want the group to be a member.	
vaMember	<p>Allows you to define members of the group.</p> <p>This attribute contains references to the users and/or groups that are members of a particular group.</p>	Read, Write
vaMemberName	<p>Allows you to define members of a particular group.</p> <p>Specify the names of users and/or groups you want to be members of the group.</p>	Read, Write

Scenario: Provisioning users from an Active Directory domain to Salesforce

This scenario illustrates how to configure a synchronization workflow to provision users from an Active Directory domain to Salesforce. The scenario includes the following steps:

- [Step 1: Configure a connection to source Active Directory domain](#)
- [Step 2: Configure a connection to Salesforce](#)
- [Step 3: Create a new synchronization workflow](#)
- [Step 4: Configure a workflow step](#)
- [Step 5: Run your workflow](#)

Step 1: Configure a connection to source Active Directory domain

For instructions on how to create a new connection to an Active Directory domain, see the *Administration Guide* supplied with Quick Connect Express for Active Directory.

Step 2: Configure a connection to Salesforce

For instructions on how to create a new connection to Salesforce, see [Creating a Salesforce connection](#).

Step 3: Create a new synchronization workflow

For instructions on how to create a new synchronization workflow, see the *Quick Connect Administrator Guide*.

Step 4: Configure a workflow step

1. Open the workflow you created (in the Quick Connect Administration Console, on the **Workflows** tab, click the workflow name), and then click the **Add synchronization step** link.
2. On the **Select an action** page, click **Provision**, and then click **Next**.
3. On the **Specify source and criteria** page, do the following:
 - a. Click the **Specify** button in the **Source connected system** option, then click **Select existing connected system**, and select the Active Directory connection you configured in [Step 1: Configure a connection to source Active Directory domain](#). Click **Finish**.
 - b. Click the **Select** button in the **Source object type** option, and then select the **User** object type from the list. Click **OK**.
 - c. Click **Next**.
4. On the **Specify target** page, do the following:
 - a. Click the **Specify** button in the **Target connected system** option, then click **Select existing connected system**, and select the Salesforce connection you configured in [Step 2: Configure a connection to Salesforce](#).
 - b. Click the **Select** button in the **Target object type** option, and then select the **User** object type from the list. Click **OK**.
 - c. Click **Next**.
5. On the **Specify provisioning rules** page, in the **Initial Attribute Population Rules** option, add rules to populate the following required attributes:
 - **Username**. Use this attribute to specify a Salesforce user name for the user being provisioned. Make sure the user name you specify meets the format `<UserName>@<Domain>`, for example `jdoe@domain.com`.

- **LastName.** Use this attribute to specify the last name of the user being provisioned.
- **vaProfileName.** Use this attribute to assign a Salesforce profile to the user being provisioned. A profile defines specific permissions a user has in Salesforce. For more information on profiles, see the Salesforce documentation. Alternatively, you can specify a Salesforce profile by using the **ProfileId** attribute.
- **Email.** Use this attribute to specify an existing valid email address for the user being provisioned.
- **Alias.** Use this attribute to specify a unique Salesforce alias for the user being provisioned. A Salesforce alias can include up to 8 characters. For more information on alias, see the Salesforce documentation.

You must populate these attributes in order to create a new user object in Salesforce. You can populate other attributes at your discretion.

6. Click **Finish** to close the wizard.

Step 5: Run your workflow

For instructions on how to run a synchronization workflow, see the *Quick Connect Administrator Guide*.

Working with ServiceNow

To create a connection to ServiceNow, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *ServiceNow Connector*. This connector is included in the Quick Connect for Cloud Services package.

The ServiceNow Connector supports the following features:

Table 37: Supported features

Feature	Supported
Bidirectional synchronization Allows you to read and write data in the connected data system.	Yes
Delta processing mode Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	No
Password synchronization Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system.	Yes

In this section:

- [Creating a ServiceNow connection](#)
- [Modifying a ServiceNow connection](#)

- [ServiceNow data supported out of the box](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *Quick Connect Administrator Guide*.

Creating a ServiceNow connection

Creating a new connection to ServiceNow includes the following steps:

- [Step 1: Configure ServiceNow](#)
- [Step 2: Create a new connection to ServiceNow](#)

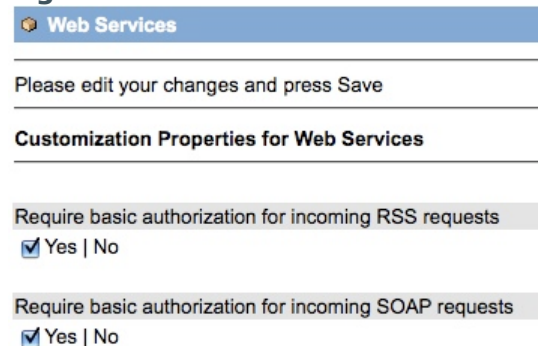
Step 1: Configure ServiceNow

In this step, you need to configure your ServiceNow instance to make it accessible to Quick Connect.

To configure ServiceNow

1. Open the Web site of your ServiceNow instance.
2. In the left pane of the ServiceNow Web site, under **System Properties**, click **Web Services**.
3. Make sure ServiceNow requires basic authorization for incoming RSS and SOAP requests, as shown on the screenshot below:

Figure 1:



4. In the right pane, make sure you clear the following check box:

Figure 2:

This property sets the elementFormDefault attribute of the embedded XML schema to the value of unqualified, if set to true. This attribute indicates whether or not locally declared elements must be qualified by the target namespace in an instance document. If the value of this attribute is 'unqualified', then locally declared elements should not be qualified by the target namespace. If the value of this attribute is 'qualified', then locally declared elements must be qualified by the target namespace. For compatibility with Clients generated from WSDL (.NET Web Reference, Axis2 stub, webMethods, ect.), set this value to false. This value defaults to true.

For further documentation, follow this URL http://wiki.service-now.com/index.php?title=Web_Services

☐ Yes | No

5. Click the **Save** button.

Step 2: Create a new connection to ServiceNow

To create a new connection

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **ServiceNow Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, use the following options:
 - **ServiceNow instance name.** Type the name of the ServiceNow instance to which you want to connect.
 - **Access ServiceNow instance using.** Type the user name and password of the account with which you want to access the specified ServiceNow instance.
 - **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the **Proxy server** box.
 - **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
 - **Test Connection.** Click this button to verify the specified connection settings.
5. Click **Finish** to create a connection to ServiceNow.
6. Synchronize the ServiceNow Connector schema with that of the connected ServiceNow instance.

This step is required to pass information about object classes and attributes existing in the connected ServiceNow instance to the ServiceNow Connector, so that the connector could correctly read and write data in the connected ServiceNow instance.

To synchronize the connector schema, do the following:

- a. Below the ServiceNow connection you have just created, click the **Connection settings** link.
- b. On the **Connection Settings** tab, click the **Update connector schema** item to expand it.
- c. Click the **Update Schema** button.

Modifying a ServiceNow connection

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing ServiceNow connection you want to modify.
3. On the **Connection Settings** tab, click to expand the following items and use the options they provide:

Specify connection settings item:

- **ServiceNow instance name.** Type the name of the ServiceNow instance to which you want to connect.
- **Access ServiceNow instance using.** Type the user name and password of the account with which you want to access the specified ServiceNow instance.
- **Use a proxy server for your LAN.** Select this check box if your LAN uses a proxy server. Then enter the proxy server address in the **Proxy server** box.
- **Use credentials for proxy.** Select this check box if your proxy server requires authentication. Use the appropriate text boxes to specify the user name and password with which you want to authenticate.
- **Test Connection.** Click this button to verify the specified connection settings.

Update connector schema item:

- **Update Schema.** Synchronizes the ServiceNow Connector schema with changes in the connected ServiceNow instance. Use this button whenever schema changes occur in the connected ServiceNow instance (for example, object classes or attributes are added or deleted in the ServiceNow instance). In order the ServiceNow Connector could correctly read and write data in the ServiceNow instance, the connector schema must be completely in sync with that of the ServiceNow instance.
4. When you are finished, click **Save**.

ServiceNow data supported out of the box

The ServiceNow Connector supports all object classes and attributes existing in the connected ServiceNow instance, provided that the ServiceNow Connector schema and the ServiceNow instance schema are completely in sync.

To synchronize the ServiceNow Connector schema with the connected ServiceNow instance schema, use the **Update Connector Schema** button in the ServiceNow connection settings. For more information, see [Modifying a ServiceNow connection](#).

Working with Windows Azure Active Directory

To create a connection to Windows Azure Active Directory, you need to use One Identity Quick Connect Sync Engine in conjunction with a special connector called *Windows Azure AD Connector*. This connector is included in the Quick Connect for Cloud Services package.

The Windows Azure AD Connector supports the following features:

Table 38: Supported features

Feature	Supported
Bidirectional synchronization Allows you to read and write data in the connected data system.	Yes
Delta processing mode Allows you to process only the data that has changed in the connected data system since the last synchronization operation, thereby reducing the overall synchronization operation time.	Yes
Password synchronization Allows you to synchronize user passwords from an Active Directory domain to the connected data system.	Yes
Secure Sockets Layer (SSL) data encryption Uses SSL to encrypt data that is transmitted between One Identity Quick Connect Sync Engine and connected data system.	Yes

In this section:

- [Creating a Windows Azure Active Directory connection](#)
- [Modifying a Windows Azure Active Directory connection](#)
- [Windows Azure Active Directory data supported out of the box](#)

For instructions on how to rename a connection, delete a connection, synchronize passwords in a connected data system, or modify synchronization scope for a connection, see the *One Identity Quick Connect Sync Engine Administrator Guide*.

Creating a Windows Azure Active Directory connection

To create a connection, complete the following steps:

- [Step 1: Configure an application in Windows Azure Active Directory](#)
- [Step 2: Create a connection to Windows Azure Active Directory](#)

Step 1: Configure an application in Windows Azure Active Directory

One Identity Quick Connect for Cloud Services reads and writes data in Windows Azure Active Directory by using an application existing in your Windows Azure Active Directory environment. This step describes how to configure such an application.

To configure an application

1. Create an application in any domain of your Windows Azure Active Directory environment. The application must have sufficient permissions to read and write data in Windows Azure Active Directory.

You can assign the required permissions to the application by running a Windows PowerShell script. Below is an example of such a script. To run the script, you need to install Windows Azure PowerShell on your computer.

```
# Replace <ClientId> with the Client ID of the Active Roles Azure AD Connector
Application (example format: 455ad643-332g-32h7-q004-8ba89ce65ae26)
$Id = "<ClientID>"

# Prompt for Windows Azure AD Global Admin credentials.
# Save the supplied credentials to the $creds variable.
$creds=get-credential
Active

# Connect to Azure AD using the credentials stored in $creds.
```

```
connect-msolservice -credential $creds

# Get the Principal ID of the Active Roles Azure AD Connector Application and
save it to the $servicePrincipal variable

$servicePrincipal = Get-MsolServicePrincipal -AppPrincipalId $Id

# Get the required role ID from the Active Roles Azure AD Connector Application
and save it to the $roleId variable

$roleId = (Get-MsolRole -RoleName "Company Administrator").ObjectId

# Assign the required permissions to the Active Roles Azure AD Connector
Application

Add-MsolRoleMember -RoleObjectId $roleId -RoleMemberObjectId
$servicePrincipal.ObjectId -RoleMemberType servicePrincipal
```

2. Open the application properties and copy the following:

- Client ID
- Valid key of the application

You need to supply the copied client ID and key when creating a new or modifying an existing connection to Windows Azure Active Directory in the Quick Connect Administration Console.

Step 2: Create a connection to Windows Azure Active Directory

To create a new connection

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Windows Azure AD Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, use the following options:
 - **Azure AD domain.** Specify the name of any domain in the Windows Azure Active Directory environment you want to manage with Quick Connect.
 - **Client ID.** Enter the client ID you copied in [Step 1: Configure an application in Windows Azure Active Directory](#).
 - **Key.** Enter the application key you copied in [Step 1: Configure an application in Windows Azure Active Directory](#).
 - **Test Connection.** Click this button to verify the specified connection settings.
5. Click **Finish** to create a connection to Windows Azure Active Directory.

Modifying a Windows Azure Active Directory connection

This section assumes that your Windows Azure Active Directory environment already includes an application through which One Identity Quick Connect for Cloud Services can read and write data. For more information, see [Step 1: Configure an application in Windows Azure Active Directory](#).

To modify connection settings

1. In the Quick Connect Administration Console, open the **Connections** tab.
2. Click **Connection settings** below the existing Windows Azure Active Directory connection you want to modify.
3. On the **Connection Settings** tab, click the **Specify connection settings** item to expand it and use the following options:
 - **Azure AD domain.** Specify the name of any domain in the Windows Azure Active Directory environment you want to manage with Quick Connect.
 - **Client ID.** Enter the client ID you want to use. For more information, see [Step 1: Configure an application in Windows Azure Active Directory](#).
 - **Key.** Enter the application key you want to use. For more information, see [Step 1: Configure an application in Windows Azure Active Directory](#).
 - **Test Connection.** Click this button to verify the specified connection settings.
4. When you are finished, click **Save**.

Windows Azure Active Directory data supported out of the box

The next table lists the Windows Azure Active Directory object types supported by the Windows Azure AD Connector out of the box. The table also provides information about the operations you can perform on these objects by using the Windows Azure AD Connector.

Table 39: Supported objects and operations

Object	Read	Create	Delete	Update
User	Yes	Yes	Yes	Yes
Group	Yes	Yes	Yes	Yes

The next sections describe the attributes provided by the Windows Azure AD Connector. By using these attributes, you can read and/or write data related to a particular object in Windows Azure Active Directory.

In the next sections:

- [User object attributes](#)
- [Group object attributes](#)

User object attributes

Table 40: User attributes

Attribute	Description	Supported operations
accountEnabled	Gets or sets whether the user account is enabled. Required for creating a user.	Read, Write
assignedLicenses	Gets the licenses assigned to the user.	Read
assignedPlans	Gets the plans assigned to the user.	Read
city	Gets or sets the user's city.	Read, Write
country	Gets or sets the user's country.	Read, Write
department	Gets or sets the user's department.	Read, Write
dirSyncEnabled	Gets or sets whether the user was synchronized from the on-premises Active Directory Domain Services.	Read, Write
directReports	Gets the direct reports of the user.	Read
displayName	Gets or sets the user's name in the address book. Required for creating a user.	Read, Write
facsimileTelephoneNumber	Gets or sets the user's fax number.	Read, Write
givenName	Gets or sets the user's given name.	Read, Write
jobTitle	Gets or sets the user's job title.	Read, Write
lastDirSyncTime	Gets the time when the user was last synchronized with	Read

Attribute	Description	Supported operations
	the on-premises Active Directory Domain Services.	
mail	Gets or sets the user's primary e-mail address.	Read, Write
mailNickName	Gets or sets the user's mail alias. Required for creating a user.	Read, Write
manager	Gets or sets the user's manager.	Read, Write
memberOf	Gets group membership for the user.	Read
mobile	Gets or sets the user's mobile phone number.	Read, Write
objectId	Gets the user's unique identifier.	Read
objectType	Gets the object type.	Read
otherMails	Gets or sets other e-mail addresses of the user.	Read, Write
passwordPolicies	Gets or sets password policies applicable to the user.	Read, Write
passwordProfile	Gets or sets the user's password profile. Required for creating a user.	Read, Write
physicalDeliveryOfficeName	Gets or sets the user's office location.	Read, Write
postalCode	Gets or sets the user's postal code.	Read, Write
preferredLanguage	Gets or sets the user's preferred language.	Read, Write
provisionedPlans	Gets the user's provisioned plans.	Read
provisioningErrors	Gets the errors encountered when provisioning the user.	Read
proxyAddresses	Not available	Read
state	Gets or sets the user's state	Read, Write

Attribute	Description	Supported operations
	or province.	
streetAddress	Gets or sets the user's street address.	Read, Write
surname	Gets or sets the user's surname.	Read, Write
telephoneNumber	Gets or sets the user's telephone number.	Read, Write
thumbnailPhoto	Gets or sets the user's thumbnail photo.	Read, Write
usageLocation	Not available	Read, Write
userPrincipalName	Gets or sets the user's principal name (UPN). Required when creating a user.	Read, Write

Group object attributes

Table 41: Group attributes

Attribute	Description	Supported operations
description	Gets or sets the group's description.	Read, Write
dirSyncEnabled	Gets whether the group was synchronized from the on-premises Active Directory Domain Services.	Read
displayName	Gets or sets the group's display name. Required when creating a group.	Read, Write
lastDirSyncTime	Gets the time when the group was last synchronized with the on-premises Active Directory Domain Services.	Read
mail	Gets or sets the group's e-mail address.	Read, Write
mailEnabled	Gets or sets whether the group is mail-enabled. Required when creating a	Read, Write

Attribute	Description	Supported operations
	group.	
mailNickName	Gets or sets the group's mail alias. Required when creating a group.	Read, Write
members	Gets or sets the group's members.	Read, Write
objectId	Gets the group's unique identifier.	Read
objectType	Gets the object type.	Read
provisioningErrors	Gets the errors encountered when provisioning the user.	Read
proxyAddresses	Not available	Read
securityEnabled	Gets or sets whether the group is a security group. Required when creating a group.	Read, Write

Appendices

Appendix A: Syncing Multiple Owners attributes to Google Owners attributes

The following scenario demonstrates how to synchronize multiple owners attributes such as, *ManagedBy* and *SecondaryOwners* to Google Owners attributes. This scenario involves two tasks, [Configuration on Active Roles Server](#) and [Configuration on Quick Connect Sync Engine](#).

Configuration on Active Roles Server

This task includes the following steps:

- [Step 1: Create the virtual attribute 'edsvaOwners'](#)
- [Step 2: Create the script module](#)
- [Step 3: Create a policy to call the script](#)
- [Step 4: Verify the changes](#)

Step 1: Create the virtual attribute 'edsvaOwners'

To create the virtual attribute 'edsvaOwners'

1. From the Active Roles MMC Console, select **Server Configuration-> Virtual Attributes-> New-> Virtual Attribute**.
2. On the **Add Virtual Attribute Wizard**, enter the required specifications to identify the virtual attribute:

- In the **Common-Name** field, type *edsvaOwners*.
 - In the **LDAP Display Name** field type *edsvaOwners*, and then click **Next**.
3. On the **Attribute Syntax** wizard, in the **Syntax** field, select **DN** from the drop-down menu.
 4. Select the **Multi-valued** check-box, and then click **Next**.
 5. On the **Object Classes** wizard, under **Select object classes** select **Group**, and then click **Next**.
 6. On the **Attribute Storage** wizard, select the **Store values of this virtual attribute in the Active Roles Administration database** check-box, and then click **Next**.
 7. Click **Finish**.
 8. Reconnect to the Active Roles MMC console, to view the new virtual attribute under **Groups**.

Step 2: Create the script module

To create the script module

1. From the Active Roles MMC Console, select **Script Modules-> New-> Script module**.
2. On the **New Object-Script Module** window, in the **Name** field, type a name, for example *edsavaManagers Policy Script*, and then click **Next**.
3. From the **Script Module Type** list, select **Policy script**, and click **Next**.
4. From the **Event handler functions:** list, do not choose any event handler functions.
5. Click **Next** and then click **Finish**.
6. Reconnect to the Active Roles MMC console, to view the new policy script under **Script Modules**.
7. Edit the policy script to include the following:

```
function onPostCreate($Request)
{
    if ($Request.Class -ine "GROUP") {
        exit
    }
    if (!( (IsAttributeModified "managedBy" $Request) -or
        (IsAttributeModified "edsvaSecondaryOwners" $Request))) )
    {
        exit
    }
}
```

```

#1. Declare the result array
$resultObjects = @()

#2. Query ManagedBY
if ((IsAttributeModified "managedBy" $Request))
{
    $managedBy = $Request.Get("managedBy")
    $resultObjects += $managedBy

    # Read Secondary Owners from DirObj
    $Dirobj.GetInfoEx(@("edsvaSecondaryOwners"), 0)
    $edsvaSecondaryOwners = $Dirobj.Get("edsvaSecondaryOwners")

    foreach ($qcobject in $edsvaSecondaryOwners)
    {
        $resultObjects += $qcobject
    }
}

#4. Query Secondary Owners
if ((IsAttributeModified "edsvaSecondaryOwners" $Request))
{
    $edsvaSecondaryOwners = $Request.Get("edsvaSecondaryOwners")
    #5. Loop edsvaSecondaryOwners
    foreach ($qcobject in $edsvaSecondaryOwners)
    {
        $resultObjects += $qcobject
    }

    # Read managedBy Owners from DirObj
    $Dirobj.GetInfoEx(@("managedBy"), 0)
    $managedBy = $DirObj.Get("managedBy")
    $resultObjects += $managedBy
}

```

```

$DirObj.Put("edsvaOwners", $resultObjects)
$DirObj.SetInfo()

}
function onPostModify($Request)
{
if ($Request.Class -ine "GROUP") {
exit
}
if (!( (IsAttributeModified "managedBy" $Request) -or
(IsAttributeModified "edsvaSecondaryOwners" $Request)) )
{
exit
}

#1. Declare the result array
$resultObjects = @()

#2. Query ManagedBY
if ((IsAttributeModified "managedBy" $Request))
{
$managedBy = $Request.Get("managedBy")
$resultObjects += $managedBy
# Read Secondary Owners from DirObj
$DirObj.GetInfoEx(@("edsvaSecondaryOwners"), 0)
$edsvaSecondaryOwners = $DirObj.Get("edsvaSecondaryOwners")
foreach ($qcobject in $edsvaSecondaryOwners)
{
$resultObjects += $qcobject
}

}

#4. Query Secondary Owners
if ((IsAttributeModified "edsvaSecondaryOwners" $Request))
{

```



```

$edsvaSecondaryOwners = $Request.Get("edsvaSecondaryOwners")
#5. Loop edsvaSecondaryOwners
foreach ($qcobject in $edsvaSecondaryOwners)
{
$resultObjects += $qcobject
}
# Read managedBy Owners from DirObj
# set Binding to managedBy attribute
$DirObj.GetInfoEx(@("managedBy"), 0)
# read managedBy
$managedBy= $DirObj.Get("managedBy")
$resultObjects += $managedBy
}

$DirObj.Put("edsvaOwners", $resultObjects)
$DirObj.SetInfo()

}

function IsAttributeModified ([string]$strAttributeName, $Request)
{
$objEntry = $Request.GetPropertyItem($strAttributeName, $Constants.ADSTYPE_CASE_
IGNORE_STRING)
if ($objEntry -eq $null) { return $false}
$nControlCode = $objEntry.ControlCode
if ($nControlCode -eq 0) { return $false }
return $true
}

```

8. Click **Save** and then **Next**.

Step 3: Create a policy to call the script

To create a policy to call the script

1. From the Active Roles MMC Console, select **Configuration->Policies->Administration->New->Provisioning Policy**.

2. On the **New Provisioning Policy Object** window, in the **Name** field type a name, for example, **edsavaOwners Policy Script** and click **Next**.
3. Under **Select a policy to configure**, select **Script Execution**, and then click **Next**.
4. Under **Script Modules**, select the newly created script module, and then click **Next**.
5. On the Policy Parameters window, click **Next**, and then click **Finish**.
6. Link the newly created policy to an Organizational Unit where you want ARS to calculate *edsvaOwners* attribute as a combination of *ManagedBy* and *edsvaSecondaryOwners* attributes.

Step 4: Verify the changes

To verify the changes

1. On the Active Roles MMC console, navigate to the required Organizational Unit.
2. Create a Group and configure the following attributes:
 - Add a few members to the group
 - Add a ManagedBy user in addition to the other members
 - Add a SecondaryOwners in addition to the other members
3. Save the Group.
4. Select the newly created Group, right-click and click **Advanced Properties**.
5. Select **edsvaOwners**.

The list of DN configured in **ManagedBy** and **SecondaryOwners** attributes must be displayed.

Configuration on Quick Connect Sync Engine

This task includes the following steps:

- [Step 1: Create Connection to ARS Server](#)
- [Step 2: Create Connection to Google Server](#)
- [Step 3: Create a workflow](#)

Step 1: Create Connection to ARS Server

To create a connection to Active Roles Server

1. In the Synchronization Service Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Active Directory Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, provide all the required connection details.
5. Click **Test Connection**, to verify the specified connection settings.

Step 2: Create Connection to Google Server

To create a connection to Google Server

1. In the Synchronization Service Administration Console, open the **Connections** tab.
2. Click **Add connection**, and then use the following options:
 - **Connection name.** Type a descriptive name for the connection.
 - **Use the specified connector.** Select **Google Connector**.
3. Click **Next**.
4. On the **Specify connection settings** page, provide all the required connection details.
5. Click **Test Connection**, to verify the specified connection settings.
6. Under **Script Modules** select **New Script Module**.

Step 3: Create a workflow

To create a workflow to provision users and groups from Active Roles to Google servers

1. In the Synchronization Service Administration Console, provision Users from Active Roles Server to Google server.
2. Provision Groups from Active Roles Server to Google server.
3. Update Groups from Active Roles Server to Google server with the following mapping rules:

- Member -> Members
- edsvaOwners -> Owners, where *edsvaOwners* is the virtual attribute created in ARS initially.

Contacting us

For sales or other inquiries, visit <https://www.oneidentity.com/company/contact-us.aspx> or call +1-800-306-9329.

Technical support resources

Technical support is available to One Identity customers with a valid maintenance contract and customers who have trial versions. You can access the Support Portal at <https://support.oneidentity.com/>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product