Oracle® Cloud Using the Microsoft Office 365 People Adapter with Oracle Integration Generation 2



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Contents

Preface

Audience	V
Documentation Accessibility	V
Diversity and Inclusion	V
Related Resources	vi
Conventions	vi

1 Understand the Microsoft Office 365 People Adapter

Microsoft Office 365 People Adapter Capabilities	1-1
What Application Version Is Supported?	1-1
About Microsoft Office 365 People Adapter Use Cases	1-1
Workflow to Create and Add a Microsoft Office 365 People Adapter Connection to an Integration	1-2

2 Create a Microsoft Office 365 People Adapter Connection

Prerequisites for Creating a Connection	2-1
Create a Connection	2-2
Configure Connection Security	2-3
Test the Connection	2-4
Upload an SSL Certificate	2-5

3 Add the Microsoft Office 365 People Adapter Connection to an Integration

Basic Info Page	3-1
Invoke Operations Page	3-2
Summary Page	3-2

4 Troubleshoot the Microsoft Office 365 People Adapter

Error Occurs If Using Outlook Scopes with a Microsoft Graph REST API Operation	4-1
End Occurs in Using Outlook Scopes with a Microsoft Oraph rest Air Operation	



Specify the Port Number with the Authorized Redirect URL



Preface

This guide describes how to configure this adapter as a connection in an integration in Oracle Integration.



The use of this adapter may differ depending on the features you have, or whether your instance was provisioned using Standard or Enterprise edition. These differences are noted throughout this guide.

Topics:

- Audience
- Documentation Accessibility
- Diversity and Inclusion
- Related Resources
- Conventions

Audience

This guide is intended for developers who want to use this adapter in integrations in Oracle Integration.

Documentation Accessibility

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Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and



partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

See these Oracle resources:

Oracle Cloud

http://cloud.oracle.com

- Using Integrations in Oracle Integration Generation 2
- Using the Oracle Mapper with Oracle Integration Generation 2

Conventions

The following text conventions are used in this document:

Convention	Meaning	
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.	
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.	
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.	



⊥ Understand the Microsoft Office 365 People Adapter

Review the following conceptual topics to learn about the Microsoft Office 365 People Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

- Microsoft Office 365 People Adapter Capabilities
- What Application Version Is Supported?
- About Microsoft Office 365 People Adapter Use Cases
- Workflow to Create and Add a Microsoft Office 365 People Adapter Connection to an Integration

Note:

There are overall service limits for Oracle Integration. A service limit is the quota or allowance set on a resource. See Service Limits.

Microsoft Office 365 People Adapter Capabilities

The Microsoft Office 365 People Adapter enables you to create, update, and manage contacts to a target Microsoft Office 365 People server in an Oracle Integration integration.

The Microsoft Office 365 People Adapter supports the Microsoft Graph REST API operations. Outlook Contacts REST API operations have been desupported.

The Microsoft Office 365 People Adapter is one of many predefined adapters included Oracle Integration. You can configure the Microsoft Office 365 People Adapter as a connection in an integration in Oracle Integration.

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Connectivity Certification Matrix.

See Connectivity Certification Matrix.

About Microsoft Office 365 People Adapter Use Cases

The Microsoft Office 365 People Adapter can be used in scenarios such as the following.



You can create two integrations that include a REST Adapter on the trigger (inbound) side and an Microsoft Office 365 People Adapter on the invoke (outbound) side.

- When configuring the Microsoft Office 365 People Adapter in one integration, you can select the List Contacts API operation to list all contacts in a default or specific Microsoft Office 365 People folder. Appropriate data mapping between the REST Adapter and the Microsoft Office 365 People Adapter is performed in the mapper. The REST Adapter sends a GET request to the Microsoft Office 365 People Adapter, which returns the display names, given names, and surnames for all the contacts in the folder.
- When configuring the Microsoft Office 365 People Adapter in the other integration, you can select the Create Contact API operation to create new contacts in a default or specific Microsoft Office 365 People folder. Appropriate data mapping between the REST Adapter and the Microsoft Office 365 People Adapter is performed in the mapper. The REST Adapter sends a POST request to the Microsoft Office 365 People Adapter, which adds the new contact to the contact list and returns the results.

Note:

Oracle Integration offers a number of prebuilt integrations, known as *recipes*, that provide you with a head start in building your integrations. You can start with a recipe, and then customize it to fit your needs and requirements. Depending upon the solution provided, a variety of adapters are configured in the prebuilt integrations.

See the Recipes and Accelerators page on the Oracle Help Center.

Workflow to Create and Add a Microsoft Office 365 People Adapter Connection to an Integration

Follow a workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration.

Step	Descripti on	More Information
1	Create a Microsoft Outlook account, enable REST APIs and add the applicatio n to the Microsoft Outlook account.	Prerequisites for Creating a Connection



Step	Descripti on	More Information		
2	Create the adapter connectio ns for the applicatio ns you want to integrate. The connectio ns can be reused in multiple integratio ns and are typically created by the administr ator.	Create Integrations and Add the Microsoft Office 365 People Adapter		
3	Create the integratio n. When you do this, you add trigger and invoke connectio ns to the integratio n.	Create Integrations and Add the Microsoft Office 365 People Adapter Connection to an Integration		
4	Map data between the trigger connectio n data structure and the invoke connectio n data structure.	Map Data in Using Integrations in Oracle Integration Generation 2		

Step	Descripti on	More Information
5	(Optional) Create lookups that map the different values used by those applicatio ns to identify the same type of object (such as gender codes or country codes).	Manage Lookups in Using Integrations in Oracle Integration Generation 2
6	Activate the integratio n.	Manage Integrations in Using Integrations in Oracle Integration Generation 2
7	Monitor the integratio n on the dashboar d.	Monitor Integrations in Using Integrations in Oracle Integration Generation 2
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages in <i>Using Integrations</i> <i>in Oracle Integration Generation 2</i>
9	Manage errors at the integratio n level, connectio n level, or specific integratio n instance level.	Manage Errors in Using Integrations in Oracle Integration Generation 2

Create a Microsoft Office 365 People Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Topics:

- Prerequisites for Creating a Connection
- Create a Connection
- Upload an SSL Certificate

Prerequisites for Creating a Connection

These are the prerequisites for creating a connection with the Microsoft Office 365 People Adapter.

Note:

Before creating a Microsoft Office 365 People Adapter connection, you must upload the trusted public certificate to Oracle Integration. The public certificate is created when you create the private key. Rename the public certificate file extension to .crt. To upload the certificate, see Upload an SSL Certificate.

- 1. Log in to https://azure.microsoft.com/ with administrator access. If you do not have an account, click Free account.
- 2. In the upper right, click **Portal**.
- 3. In the search field at the top, enter app registration, then click the Search icon.
- 4. Click New registration.
- 5. In the Name field, enter the user-facing display name for this application.
- 6. In the Supported account types section, select Accounts in Any Organizational Directory.
- 7. In the Redirect URI (optional) section, select Web, then enter the redirect URL.

https://instance URL/icsapis/agent/oauth/callback

- 8. Click Register.
- 9. If you want to add more redirect URLs, click the link in the **Redirect URIs** section on the right side of the page.
- 10. In the left navigation pane, click Certificates & secrets to generate a secret.



- 11. In the Client secrets section, click New client secret.
- 12. In the **Description** field, enter a description for the secret.
- 13. In the Expires section, select the proper expiration time (preferably Never).
- 14. Click Add.
- **15.** In the **Client secrets** section at the bottom, copy the client secret value in the **Value** column. This value is required when configuring the connection on the Connections page.

Note:

The client secret value cannot be displayed again once you exit the Microsoft Azure page. Ensure that you copy this value.

- **16.** In the left navigation pane, click **API permissions** to add required permissions to the application.
- 17. Click Microsoft Graph.
- In the Select permissions field, begin entering the name of the adapter for which you are configuring permissions. For the Microsoft Office 365 People Adapter, enter Contact.

Available permissions are displayed. You enter these permissions in the **Scope** field when configuring a connection on the Connections page.

- 19. Select the necessary permissions, and click Update Permissions. The offline_access scope is required. This scope is needed to get a refresh token, which is then used to get new access tokens. See Scopes and permissions in the Microsoft identity platform.
- **20.** In the left navigation pane, click **Overview**.
- **21.** Copy the value shown in the **Application (client) ID** field. This value is required when configuring the connection on the Connections page.

Microsoft also provides an example of how to create this application. See Quickstart: Configure a client application to access web APIs.

Create a Connection

Before you can build an integration, you have to create the connections to the applications with which you want to share data.

To create a connection in Oracle Integration:

- **1.** In the left navigation pane, click **Home > Integrations > Connections**.
- 2. Click Create.



Note:

You can also create a connection in the integration canvas of:

- An orchestrated integration (See Define Inbound Triggers and Outbound Invokes.)
- A basic routing integration (See Add a Trigger (Source) Connection.)
- 3. In the Create Connection Select Adapter dialog, select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field and click

Q

Search.

- 4. In the Create Connection dialog, enter the information that describes this connection.
 - a. Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the **Identifier** field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
 - **b.** Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
 - c. Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select. For example, let's say you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an invoke. Dragging the adapter to a trigger section in the integration produces an error.
 - d. Enter an optional description of the connection.
- 5. Click Create.

Your connection is created. You're now ready to configure the connection details, such as connection properties, security policies, connection login credentials, and (for certain connections) agent group.

Configure Connection Security

Configure security for your connection by specifying the necessary values.

- 1. Go to the **Security** section.
- Enter the client ID (application (client) ID) and client secret values you recorded when you added your application to your account in Prerequisites for Creating a Connection.
- 3. Enter the authorization permissions in the **Scope** field.

A scope is a list of authorization permissions for the target application. You must include the offline_access scope along with any other application-specific scopes you selected in Prerequisites for Creating a Connection.



If using the Outlook REST APIs:

https://outlook.office.com/Contacts.ReadWrite offline access

If using the Microsoft Graph REST APIs:

https://graph.microsoft.com/Contacts.ReadWrite offline_access

Note:

- You cannot use both Outlook and Microsoft Graph scopes in one connection.
- Do not specify Outlook scopes if you plan to select a Microsoft Graph REST API operation during adapter configuration. See Error Occurs If Using Outlook Scopes with a Microsoft Graph REST API Operation.
- 4. Click Provide Consent.
- 5. Click OK.

Test the Connection

Test your connection to ensure that it's configured successfully.

1. In the page title bar, click **Test**. What happens next depends on whether your connection uses a Web Services Description Language (WSDL) file.

If Your Connection	Then	
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.	
Uses a WSDL	A dialog prompts you to select the type of connection testing to perform:	
	• Validate and Test: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL.	
	 Test: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL. 	

- 2. Wait for a message about the results of the connection test.
 - If the test was successful, then the connection is configured properly.
 - If the test failed, then edit the configuration details you entered. Check for typos, verify URLs and credentials, and download the diagnostic logs for additional details. Continue to test until the connection is successful.
- 3. When complete, click **Save**.



Upload an SSL Certificate

Certificates are used to validate outbound SSL connections. If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration.

To upload an SSL certificate:

1. In the left navigation pane, click **Home > Settings > Certificates**.

All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The

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link enables you to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.

Certificates				Upload
Q III 6 Certificates Installed By: User \times				0
Name	Туре	Category	Status	
mykey3 EXPRESING MONTHS	X.509	Identity	Configured	
mykey2 EDATE	X.509	Identity	Configured	
recert1586867745048 [DOWNES IN & YILANS]	X.509	Trust	Configured	
recert1586863610817 [DIMMES IN A YEARS]	X.509	Trust	Configured	
recert1586857607511 [EXAMPS]	X.509	Trust	Configured	
recert1586857416600 [DIMMES IN A YEARS]	X.509	Trust	Configured	

- 2. Click **Upload** at the top of the page. The Upload Certificate dialog box is displayed.
- 3. Enter an alias name and optional description.
- 4. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
 - X.509 (SSL transport)
 - SAML (Authentication & Authorization)
 - PGP (Encryption & Decryption)

X.509 (SSL transport)

- **1.** Select a certificate category.
 - a. Trust: Use this option to upload a trust certificate.
 - i. Click Browse, then select the trust file (for example, .cer or .crt) to upload.
 - b. Identity: Use this option to upload a certificate for two-way SSL communication.
 - i. Click **Browse**, then select the keystore file (.jks) to upload.



ii. Enter the comma-separated list of passwords corresponding to key aliases.

Note:

When an identity certificate file (JKS) contains more than one private key, all the private keys must have the same password. If the private keys are protected with different passwords, the private keys cannot be extracted from the keystore.

- iii. Enter the password of the keystore being imported.
- c. Click Upload.

SAML (Authentication & Authorization)

- 1. Note that **Message Protection** is automatically selected as the only available certificate category and cannot be deselected. Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported with this type of certificate.
- 2. Click Browse, then select the certificate file (.cer or .crt) to upload.
- 3. Click Upload.

PGP (Encryption & Decryption)

- 1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.
 - a. Private: Uses a private key of the target location to decrypt the file.
 - i. Click Browse, then select the PGP file to upload.
 - ii. Enter the PGP private key password.
 - b. Public: Uses a public key of the target location to encrypt the file.
 - i. Click Browse, then select the PGP file to upload.
 - ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**. **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content. **No** causes the message to be sent in binary format.
 - iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetrickey algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text.
 - c. Click Upload.



Add the Microsoft Office 365 People Adapter Connection to an Integration

When you drag the Microsoft Office 365 People Adapter into the invoke area of an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through configuration of Microsoft Office 365 People Adapter endpoint properties.

These topics describe the wizard pages that guide you through configuration of the Microsoft Office 365 People Adapter as an invoke in an integration. The Microsoft Office 365 People Adapter cannot be used as a trigger in an integration.

Topics:

- Basic Info Page
- Invoke Operations Page
- Summary Page

Basic Info Page

You can enter a name and description on the Basic Info page of each adapter in your integration.

Element	Description		
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and hyphens in the name. You can't include the following characters:		
	• No blank spaces (for example, My Inbound Connection)		
	 No special characters (for example, #;83& or righ(t)now4) except underscores and hyphens 		
	No multibyte characters		
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example:		
	This connection receives an inbound request to synchronize account information with the cloud application.		



Invoke Operations Page

Select the Microsoft Office 365 People operation to perform.

Note:

The Microsoft Office 365 People Adapter supports the selection of Microsoft Graph REST API operations from the **Select Operation** list. The Outlook Contacts REST API operations are identified as **Desupported** in the **Select Operation** list.

Operation	Description
List Contacts	Returns a list of contacts from the default contacts folder of the signed-in user, or from the specified contact folder.
Get Specific Contact	Returns a specific contact from the default contacts folder of the signed-in user, or from a specified contact folder.
List All Contacts From Specific Contact Folder	Returns a list of contacts from the specified contact folder.
Create Contact	Creates a contact in the root contacts folder or in the contacts endpoint of another contact folder.
Create Contact in Specific Contact Folder	Creates a contact in the specified contact folder.
Update Contact	Changes the properties of a contact.
Delete Contact	Deletes a contact. Deleted contents might not be recoverable.
List All Contact Folders	Returns a list of contact folders for the signed-in user, or from the specified contact folder.
Get Specific Contact Folder	Returns a specific contact folder for the signed-in user, or from the specified contact folder.

Summary Page

You can review the specified adapter configuration values on the Summary page.

Element	Description
Summary	Displays a summary of the configuration values you defined on previous pages of the wizard.
	The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file.
	To return to a previous page to update any values, click the appropriate tab in the left panel or click Back .
	To cancel your configuration details, click Cancel.



4

Troubleshoot the Microsoft Office 365 People Adapter

Review these topics to learn about troubleshooting issues with the Microsoft Office 365 People Adapter.

Topics:

- Error Occurs If Using Outlook Scopes with a Microsoft Graph REST API Operation
- Specify the Port Number with the Authorized Redirect URL

Additional integration troubleshooting information is provided. See Troubleshoot Oracle Integration in *Using Integrations in Oracle Integration Generation 2* and the Oracle Integration Troubleshooting page on the Oracle Help Center.

Error Occurs If Using Outlook Scopes with a Microsoft Graph REST API Operation

The Connections page currently provides Outlook scope examples in the **Scope** field. If you try to configure a new connection with an Outlook scope, then select a Microsoft Graph REST API operation in the Adapter Endpoint Configuration Wizard, you receive a 401 error during runtime.

If you want to use a Microsoft Graph REST API operation, ensure that you select a Microsoft Graph scope during connection configuration. See Configure Connection Security.

Specify the Port Number with the Authorized Redirect URL

When configuring the authorized redirect URL, ensure that you specify the port number. For example:

https://host:443/icsapis/agent/oauth/callback

Not specifying the port number in the URL results in an error saying the application wasn't authorized for the redirect URL.

