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Preface

This guide describes how to configure the Microsoft Contact Adapter as a connection in an integration in Oracle Integration.

**Note:**

The information in this guide applies to all of your Oracle Integration instances. It doesn’t matter which edition you’re using, what features you have, or who manages your cloud environment. You’ll find what you need here, including notes about any differences between the various flavors of Oracle Integration when necessary.

Topics

- **Audience**
- **Documentation Accessibility**
- **Related Resources**
- **Conventions**

**Audience**

This guide is intended for developers who want to use the Microsoft Contact Adapter in integrations in Oracle Integration.

**Documentation Accessibility**


**Access to Oracle Support**

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit [http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info](http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info) or visit [http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs](http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs) if you are hearing impaired.

**Related Resources**

See these Oracle resources:
- Oracle Cloud
  http://cloud.oracle.com
- Using Integrations in Oracle Integration
- Using the Oracle Mapper with Oracle Integration

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Understand the Microsoft Contact Adapter

Review the following conceptual topics to learn about the Microsoft Contact 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 Contact Adapter Capabilities
• What Application Version Is Supported?
• About Microsoft Contact Adapter Use Cases
• Workflow to Create and Add a Microsoft Contact Adapter Connection to an Integration

Microsoft Contact Adapter Capabilities

Use the Microsoft Contact Adapter to transfer files to a target Microsoft Contact server in an Oracle Integration integration.

The Microsoft Contact Adapter is one of many predefined adapters included Oracle Integration. You can configure the Microsoft Contact 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 Oracle Integration Adapters Certification Matrix under section Oracle Integration Adapters Certification at the top of the page:

Oracle Integration Adapters Certification Matrix

About Microsoft Contact Adapter Use Cases

The Microsoft Contact Adapter can be used in scenarios such as the following.

You can create two integrations that include a REST Adapter on the source (inbound) side and an Microsoft Contact Adapter on the invoke (outbound) side.

• When configuring the Microsoft Contact Adapter in one integration, you can select the List Contacts API operation to list all contacts in a default or specific Microsoft Contact folder. Appropriate data mapping between the REST Adapter and the Microsoft Contact Adapter is performed in the mapper. The REST Adapter sends a GET request to the Microsoft Contact Adapter, which returns the display names, given names, and sir names for all the contacts in the folder.

• When configuring the Microsoft Contact Adapter in the other integration, you can select the Create Contact API operation to create new contacts in a default or specific Microsoft Contact folder. Appropriate data mapping between the REST
Adapter and the Microsoft Contact Adapter is performed in the mapper. The REST Adapter sends a POST request to the Microsoft Contact Adapter, which adds the new contact to the contact list and returns the results.

### Workflow to Create and Add a Microsoft Contact 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.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Create a Microsoft Outlook account, enable REST APIs and add the application to the Microsoft Outlook account.</td>
<td>Prerequisites for Creating a Connection</td>
</tr>
<tr>
<td>2</td>
<td>Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.</td>
<td>Create a Microsoft Contact Adapter Connection</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td>More Information</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>3</td>
<td>Create the integration. When you do this, you add trigger and invoke connections to the integration.</td>
<td>Create Integrations and Add the Microsoft Contact Adapter Connection to an Integration</td>
</tr>
<tr>
<td>4</td>
<td>Map data between the trigger connection data structure and the invoke connection data structure.</td>
<td>Map Data of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>5</td>
<td>(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).</td>
<td>Manage Lookups of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>6</td>
<td>Activate the integration.</td>
<td>Manage Integrations of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>7</td>
<td>Monitor the integration on the dashboard.</td>
<td>Monitor Integrations of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td>More Information</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>8</td>
<td>Track payload fields in messages during runtime.</td>
<td>Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>9</td>
<td>Manage errors at the integration level, connection level, or specific integration instance level.</td>
<td>Manage Errors of <em>Using Integrations in Oracle Integration</em></td>
</tr>
</tbody>
</table>
Create a Microsoft Contact 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 Contact Adapter.

Note:
Before creating a Microsoft Contact Adapter connection, you must upload the trusted Microsoft Contact public certificate to Oracle Integration. The Microsoft Contact 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. Create a Microsoft Outlook account.
2. Submit a request to outlookdev@microsoft.com to enable REST API functionality on the Microsoft Outlook account. You can also create a developer preview account by submitting a request to the same email address.
3. Follow the instructions provided in the email response sent by Microsoft.
4. Open a web browser and navigate to https://apps.dev.microsoft.com/.
5. Click Sign in with a Microsoft account and enter your email address and password.
6. Click Sign in.
7. Click Add an app.
8. Enter a name for the application and click Create application.
9. Click Generate New Password to generate a secret key.
10. Enter a password for the key and click Ok.
11. Select a location for the certificate and click OK.
12. Copy or record the values in the Application Id and Private Key values. These values are required to create the connection in Oracle Integration.

13. Click Add Platform.


16. Scroll to the bottom of the page and click Save.

Create a Connection

The first step in creating an integration is to create the connections to the applications with which you want to share data.

1. In the navigation pane, click Integrations, then click 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.)

The Create Connection — Select Adapter dialog is displayed.

3. Select an adapter from the dialog. You can also search for the type of adapter to use by entering a partial or full name in the Search field, and clicking Search. The Create New Connection dialog is displayed.

4. Enter the information to describe the connection.

- 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, do not include a blank space (for example, Sales Opportunity).

- Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by this 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, then try to drag the adapter into the section you did not select, you receive an error (for example, configure an Oracle Service Cloud (RightNow) Adapter as only an invoke, but drag the adapter to the trigger section).

- Enter an optional description of the connection.
5. Click **Create**.

Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, connection login credentials, and (for certain connections) agent group.

**Add a Contact Email**

From the Connection Administrator section of the connection, you can add a contact email address for notifications.

1. In the **Email Address** field, enter an email address to receive email notifications when problems occur.
2. In the upper right corner, click **Save**.

**Configure Connection Security**

Configure security for your Oracle Commerce connection by selecting the security policy and security token.

1. Click **Configure Credentials**.

   The Credentials dialog is displayed.

2. In the **Security Policy** field, note that **Microsoft Contact OAuth Authorization Code Credentials** is displayed by default and cannot be deselected. This security policy supports OAuth 2.0 authorization code flow credentials.

3. Enter the client ID (Microsoft application ID) and client secret (Microsoft private key) values you recorded when you added your application to your Microsoft Email account.

   See **Prerequisites for Creating a Connection**.
4. Enter https://outlook.office.com/Contacts.ReadWrite offline_access 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 the application-specific scopes.

5. Click Provide Consent.

6. Click OK.

Test the Connection

Test your connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click Test.

2. If your adapter connection uses a WSDL, you are prompted 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.

   If successful, the following message is displayed and the progress indicator shows 100%.
   Connection connection_name was tested successfully.

3. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.

4. When complete, click Save, then click Close.

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 navigation pane, click Integrations, then click the < arrow next to Designer.

2. Click Settings > Certificates.

   All certificates currently uploaded to the trust store are displayed in the Certificates dialog. The Filter By > Type list displays the following details:
   - **Preinstalled**: Displays the certificates automatically installed in Oracle Integration. These certificates cannot be deleted.
   - **Uploaded**: Displays the certificates uploaded by individual users. These certificates can be deleted and updated.

   You can also search for certificates in the Search field. The search results are limited to a maximum of ten records sorted by name for performance and usability.
reasons. To ensure that your search results are more granular, enter as much of the certificate name as possible.

3. Click **Upload** at the top of the page.

4. In the Upload Certificate dialog box, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
   - **Trust Certificate**: Use this option to upload a trust certificate.
     a. Enter a unique alias for the certificate.
     b. Click **Browse**, then select the trust file (for example, `.cer` or `.crt`) to upload.
   - **Message Protection Certificate**: Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported on this type of certificate.
     a. Enter a unique alias for the certificate.
     b. Click **Browse**, then select the certificate file (`.cer` or `.crt`) to upload.
   - **Identity Certificate**: Use this option to upload a certificate for two-way SSL communication.
     a. Click **Browse**, then select the keystore file (`.jks`) to upload.
     b. Enter the password of the keystore being imported.
     c. Enter the comma-separated list of aliases from the keystore being imported.
     d. Enter the comma-separated list of passwords corresponding to key aliases.
     e. If you want to display the passwords in clear text, select **Show Key Password(s)**. This enables you to ensure that you are correctly entering a list of keystore passwords.

5. Click **Upload**.

6. Click the certificate name to view details such as the subject of the certificate, the issuer of the certificate, the date the certificate was issued, and the date the certificate expires.
Add the Microsoft Contact Adapter Connection to an Integration

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

These topics describe the wizard pages that guide you through configuration of the Microsoft Contact Adapter as an invoke in an integration. The Microsoft Contact 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What do you want to call your endpoint?</strong></td>
<td>Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following: <em>Blank spaces (for example, My Inbound Connection)</em> <em>Special characters (for example, #;83&amp; or righ(t)now4)</em> <em>Multibyte characters</em></td>
</tr>
<tr>
<td><strong>What does this endpoint do?</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
Invoke Operations Page

Select the Microsoft Contact operation to perform.

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

Summary Page

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>Displays a summary of the configuration values you defined on previous pages of the wizard.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>To return to a previous page to update any values, click the appropriate tab in the left panel or click Back. Click Cancel to cancel your configuration details.</td>
</tr>
</tbody>
</table>
4

Troubleshoot the Microsoft Contact Adapter

Review these topics to learn about troubleshooting issues with the Microsoft Contact Adapter.

Topics:

• 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.

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 when configuring the adapter on the Connections page:

“Authorization Failed: String index out of range: -12”