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Oracle® Public Cloud Machine

Using the Gmail Adapter

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This guide describes how to configure and add the Gmail Adapter to an integration in Oracle Integration Cloud Service.

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Oracle Public Cloud Machine Using the Gmail Adapter, Release 16.3.1

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5 Creating Mappings and Lookups in Integrations

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Preface

Using the Gmail Adapter describes how to configure the Gmail Adapter as a connection in an integration in Oracle Integration Cloud Service.

Topics:

- Audience

- Related Resources

- Conventions

Audience

Using the Gmail Adapter is intended for developers who want to use the Gmail Adapter in integrations in Oracle Integration Cloud ServiceOracle Integration Cloud Service.

Related Resources

For more information, see these Oracle resources:

- *Using Oracle Integration Cloud Service*

- *Using the Oracle Mapper*

- Oracle Public Cloud Machine documentation in the Oracle Help Center:

    http://docs.oracle.com

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.

1

Getting Started with the Gmail Adapter

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

Topics

- About the Gmail Adapter

- What Application Version Does the Gmail Adapter Support?

- About Oracle Integration Cloud Service

- About Oracle Integration Cloud Service Connections

- About Oracle Integration Cloud Service Integrations

- Typical Workflow for Creating and Including an Adapter Connection in an Integration

About the Gmail Adapter

The Gmail Adapter enables you to create an integration with a Gmail application.

Gmail is a free email service provided by Google. Users can access Gmail as secure web mail and also through the Post Office Protocol version 3 (POP3) or Internet Message Access Protocol version 4 (IMAP4) protocols.

The Gmail Adapter is one of many predefined adapters included with Oracle Integration Cloud Service. You can configure the Gmail Adapter as a connection in an integration in Oracle Integration Cloud Service. For information about Oracle Integration Cloud Service, connections, and integrations, see the following sections:

- About Oracle Integration Cloud Service

- About Oracle Integration Cloud Service Connections

- About Oracle Integration Cloud Service Integrations

What Application Version Does the Gmail Adapter Support?

The Gmail Adapter is compatible with version 1.0 of the Gmail REST API.

About Oracle Integration Cloud Service

Oracle Integration Cloud Service is a complete, secure, but lightweight integration solution that enables you to connect your applications in the cloud. It simplifies connectivity between your applications, and can connect both your applications that live in the cloud and your applications that still live on premises. Oracle Integration

Cloud Service provides secure, enterprise-grade connectivity regardless of the applications you are connecting or where they reside.

Oracle Integration Cloud Service provides native connectivity to Oracle Software as a Service (SaaS) applications, such as Oracle Sales Cloud, Oracle RightNow Cloud, and so on. Oracle Integration Cloud Service *adapters* simplify connectivity by handling the underlying complexities of connecting to applications using industry-wide best practices. You only need to create a *connection* that provides minimal connectivity information for each system. Oracle Integration Cloud Service *lookups* map the different codes or terms used by the applications you are integrating to describe similar items (such as country or gender codes). Finally, the visual data mapper enables you to quickly create direct mappings between the trigger and invoke data structures. From the mapper, you can also access lookup tables and use standard XPath functions to map data between your applications.

Once you integrate your applications and activate the integrations to the runtime environment, the dashboard displays information about the running integrations so you can monitor the status and processing statistics for each integration. The dashboard measures and tracks the performance of your transactions by capturing and reporting key information, such as throughput, the number of messages processed successfully, and the number of messages that failed processing. You can also manage business identifiers that track fields in messages and manage errors by integrations, connections, or specific integration instances.

About Oracle Integration Cloud Service Connections

Connections define information about the instances of each predefined configuration you are integrating. Oracle Integration Cloud Service includes a set of predefined *adapters*, which are the types of applications on which you can base your connections, such as Oracle Sales Cloud, Oracle Eloqua Cloud, Oracle RightNow Cloud, and others. A connection is based on an adapter. A connection includes the additional information required by the adapter to communicate with a specific instance of an application (this can be referred to as metadata or as connection details). For example, to create a connection to a specific RightNow Cloud application instance, you must select the Oracle RightNow adapter and then specify the WSDL URL, security policy, and security credentials to connect to it.

▶ Video

About Oracle Integration Cloud Service Integrations

Integrations are the main ingredient of Oracle Integration Cloud Service. An integration includes at the least a trigger (source) connection (for requests sent to Oracle Integration Cloud Service) and invoke (target) connection (for requests sent from Oracle Integration Cloud Service to the target) and the field mapping between those two connections.

When you create your integrations, you build on the connections you already created by defining how to process the data for the trigger (source) and invoke (target) connections. This can include defining the type of operations to perform on the data, the business objects and fields against which to perform those operations, required schemas, and so on. To make this easier, the most complex configuration tasks are handled by Oracle Integration Cloud Service. Once your trigger (source) and invoke (target) connections are configured, the mappers between the two are enabled so you can define how the information is transferred between the trigger (source) and invoke (target) data structures for both the request and response messages.

▶ Video

Typical Workflow for Creating and Including an Adapter Connection in an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration Cloud Service.

Step	Description	More Information
1	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.	Creating a Gmail Adapter Connection
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Creating an Integration and Adding the Gmail Adapter Connection to an Integration
3	Map data between the trigger connection data structure and the invoke connection data structure.	Mapping Integration Cloud Service Data of *Using Oracle Integration Cloud Service*
4	(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).	Creating Lookups of *Using Oracle Integration Cloud Service*
5	Activate the integration.	Managing Integrations of *Using Oracle Integration Cloud Service*
6	Monitor the integration on the dashboard.	Monitoring Integration Cloud Services of *Using Oracle Integration Cloud Service*
7	Track payload fields in messages during runtime.	Assigning Business Identifiers for Tracking Fields in Messages and Managing Business Identifiers for Tracking Fields in Messages of *Using Oracle Integration Cloud Service*
8	Manage errors at the integration level, connection level, or specific integration instance level.	Managing Errors of *Using Oracle Integration Cloud Service*

2

Creating a Gmail Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate. The following topics describe how to define connections:

Topics

- Prerequisites for Creating a Connection

- Uploading an SSL Certificate

- Creating a Connection

- Editing a Connection

- Cloning a Connection

- Deleting a Connection

Prerequisites for Creating a Connection

To use the Gmail Adapter, you must first have access to the Gmail API for your integration. To access the Gmail API, you must create a Google project.

To create a Google project:

1. Go to the Gmail Developer page at https://console.developers.google.com.

2. Expand the **Select a project** list in the top right corner.

3. Select an existing project to use or create a new project.

4. Click **Use Google APIs**.

5. Search for and select the **Gmail API**.

6. Click **Enable API**.

7. On the left side, click the **Credentials** tab.

8. From the **New credentials** list, select **OAuth client ID**.

    To create an OAuth client ID, you must first set a product name on the consent screen.

    a. Click **Configure consent screen**.

    b. In the **Product name shown to users** field, enter a product name, then click **Save**.

9. Under **Application Type**, select **Web Application**.

   The page is refreshed to display additional fields for updating.

10. In the **Name** field, specify a name for the OAuth2.0 client ID credential.

11. In the **Authorized Redirect URI** field, enter the following URL:

    ```
    https://{ICS_HOST}:{ICS_SSL_PORT}/icsapis/agent/oauth/callback
    ```

12. Click **Create**. This provides you with the client ID and client secret.

13. Copy and paste this information to a safe location because it is required for creating a Gmail Adapter connection, then click **OK**.

Note: Before creating a Gmail connection, you must upload the trusted Gmail public certificate to Integration Cloud Service. The trusted Gmail public certificate can be downloaded from https://gmail.com. Rename the `GoogleCertificate.txt` file extension to `.cer`. To upload the certificate, see Uploading an SSL Certificate.

Uploading 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 Cloud Service, an exception is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration Cloud Service to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration Cloud Service.

To upload a certificate:

1. From the Oracle Integration Cloud Service home page, click the **Administration** tab in the upper right corner.

   All certificates currently uploaded to the trust store are displayed in the Certificates dialog. A navigation panel on the left side of the dialog displays the following details:

   • **All**: Displays all certificates in Oracle Integration Cloud Service.

   • **System**: Displays the certificates automatically included in Oracle Integration Cloud Service. These certificates cannot be deleted.

   • **Uploaded**: Displays the certificates uploaded by individual users. These certificates can be deleted and updated.

2. Click **Upload Certificate** at the top of the page.

3. In the Upload Certificate dialog box, enter a unique identifier for the certificate.

   This is a name you can use to identify the certificate.

4. Click **Browse** to locate the certificate file (`.cer`).

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.

Creating 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 Integration Cloud Service toolbar, click **Designer**.

2. On the Designer Portal, click **Connections**.

Connections

Define connections to the cloud and on-premises applications you want to integrate.
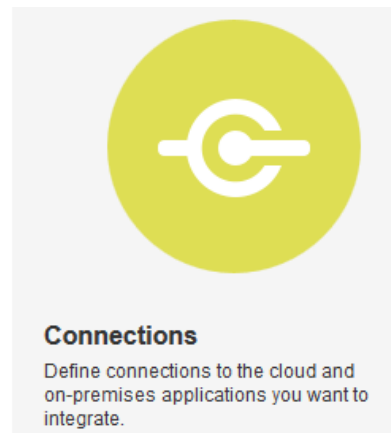
3. Click **Create New Connection**.
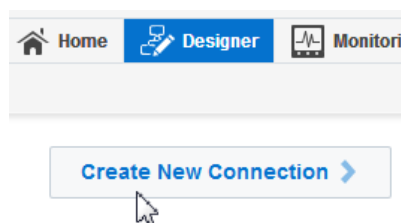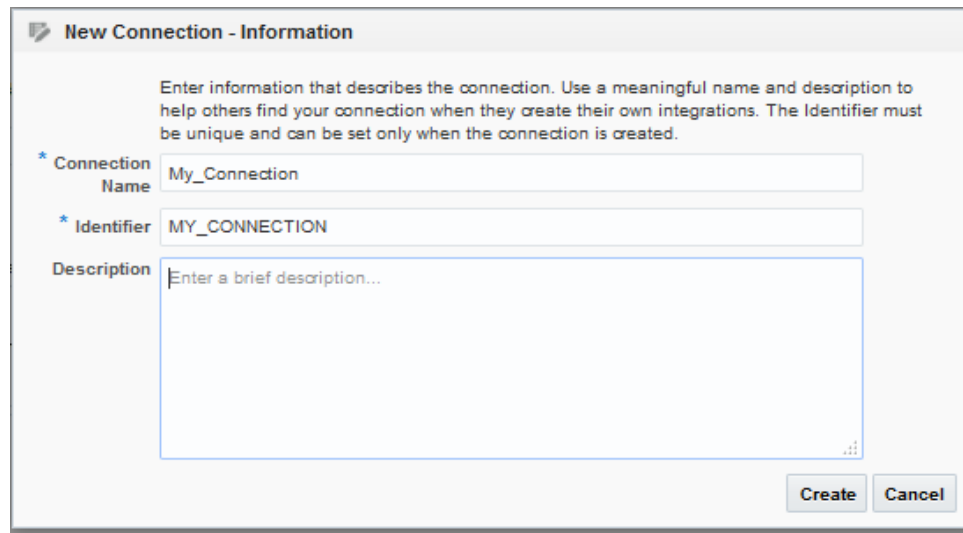
The Create Connection — Select Adapter dialog is displayed.

4. 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 New Connection — Information dialog is displayed.

5. Enter the information to describe the connection. Use a meaningful name to help others find your connection when they begin to create their own integrations.

6. Click **Create**.

   Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, and connection login credentials.

Adding 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**.

Configuring Connection Security

Configure security for your Gmail connection by selecting the security policy and specifying the client ID and client secret. The security policy grants you authorization access to the resources of the Gmail application. When your Oracle Gmail connection requests access to the resources stored on the resource server, your connection is authenticated by sending the client ID and the client secret to the authorization server.

1. Click **Configure Credentials**.

2. In the **Security Policy** field, note that the **Google OAuth Authorization Code Credentials** security policy is displayed by default, and cannot be deselected.

3. In the **Client ID** field, enter the client ID created after completing the steps in Prerequisites for Creating a Connection.

4. In the **Client Secret** field, enter the client secret created after completing the steps in Prerequisites for Creating a Connection.

5. In the **Scope** field, click to display a list of available scopes.

6. Copy and paste the scopes to use, separated by blank spaces.

7. Click **Provide Consent** to allow consent.

   A dialog is displayed indicating that an OAuth request is being initiated from Oracle Integration Cloud Service to Gmail. If the redirect URL in the project in the developer console is correct, the consent screen is displayed. Otherwise. an error occurs indicating that there is a redirect URI mismatch. Once consent is given, a successful consent page is displayed.

8. Click **OK**.

   You are now ready to test your connection.

Testing the Connection

Test your connection to ensure that it is successfully configured.

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

   If successful, the following message is displayed and the progress indicator shows 100%.

   ```
   The connection test was successful!
   ```

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

3. When complete, click **Save**.

Editing a Connection

You can edit connection settings after creating a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.

2. On the Designer Portal, click **Connections**.

3. On the Connections page, select **Edit** from the connection **Actions** menu or click the connection name.

   The Connection page is displayed.

4. To edit the notification email contact, change the email address in the **Email Address** field.

5. To edit the connection properties, click **Configure Connectivity**. Note that some connections do not include this button. If your connector does not include a **Configure Connectivity** button, then click the **Configure Credentials** button.

Cloning a Connection

You can clone a copy of an existing connection. It is a quick way to create a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.

2. On the Designer Portal, click **Connections**.

3. On the Connections page, select **Clone** from the connection **Actions** menu.

The Clone Connection dialog is displayed.

4. Enter the connection information.

5. Click **Clone**.

6. Click **Edit** to configure the credentials of your cloned connection. Cloning a connection does not copy the credentials.

See Editing a Connection for instructions.

Deleting a Connection

You can delete a connection from the connection menu.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.

2. On the Designer Portal, click **Connections**.

3. On the Connections page, click **Delete** from the connection **Actions** menu.
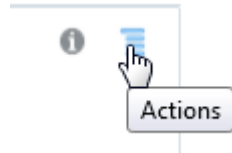
The Delete Connection dialog is displayed if the connection is not used in an integration.

4. Click **Yes** to confirm deletion.

3

Creating an Integration

Integrations use the adapter connections you created to your applications, and define how information is shared between those applications. You can create, import, modify, or delete integrations; create integrations to publish or subscribe to messages; add and remove request and response enrichment triggers; and create routing paths for different invoke endpoints in integrations. Click the following topic for more information.

Topic

- Creating Integrations (in *Using Oracle Integration Cloud Service*)

4

Adding the Gmail Adapter Connection to an Integration

When you drag the Gmail Adapter into the invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of Gmail Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the Gmail Adapter as an invoke in an integration. The Gmail Adapter cannot be used as a trigger in an integration.

Topics

- Configuring Basic Information Properties
- Configuring Gmail Adapter Invoke Operation Selection Properties
- Reviewing Configuration Values on the Summary Page

For more information about the Gmail Adapter, see About the Gmail Adapter.

Configuring Basic Information Properties

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

Topics

- What You Can Do from the Basic Info Page
- What You See on the Basic Info Page

What You Can Do from the Basic Info Page

You can specify the following values on the Basic Info page. The Basic Info page is the initial wizard page that is displayed whenever you drag an adapter to the trigger (source) or invoke (target) area supported by your adapter.

- Specify a meaningful name.
- Specify a description of the responsibilities.

What You See on the Basic Info Page

The following table describes the key information on the Basic Info page.

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 dashes in the name. You cannot include the following: • Blank spaces (for example, `My Inbound Connection`) • Special characters (for example, `#;83&` or `righ(t)now4`) • 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.`

Configuring Gmail Adapter Invoke Operation Selection Properties

Enter the Gmail Adapter invoke operation selection parameters.

Topics

- [What You Can Do from the Gmail Adapter Operation Selection Page](#)

- [What You See on the Gmail Adapter Operation Selection Page](#)

What You Can Do from the Gmail Adapter Operation Selection Page

You can configure the following parameter on the Gmail Adapter invoke Operation Selection page.

- Select the Gmail API operation to perform.

What You See on the Gmail Adapter Operation Selection Page

The following table describes the key information on the Gmail Adapter Operation Selection page.

Element	Description
Select Operation	Select the Gmail API operation to perform. • **Notification Watch** • **List Threads** • **Get Thread** • **Trash Thread** • **List Messages** • **Get Message** • **Get Message Attachment** • **Send Message** • **List Drafts** • **Create Draft** • **Get Draft** • **Delete Draft** • **Send Draft** • **List Labels** • **Create Label** • **Delete Label** The Gmail resource URI and template parameter associated with your selected operation are displayed on the Summary page of this wizard. For information about the Gmail API, visit the following URL: https://developers.google.com/gmail/api/v1/reference

Reviewing Configuration Values on the Summary Page

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

Topics

• What You Can Do from the Summary Page

• What You See on the Summary Page

What You Can Do from the Summary Page

You can review trigger (source) or invoke (target) configuration details from the Summary page. The Summary page is the final wizard page for each adapter after you have completed your configuration.

• View the configuration details you defined for the trigger (source) or invoke (target) adapter. For example, if you have defined an inbound trigger (source) adapter with a request business object and immediate response business object, specific details about this configuration are displayed on the Summary page.

• Click **Done** if you want to save your configuration details.

• Click a specific tab in the left panel or click **Back** to access a specific page to update your configuration definitions.

• Click **Cancel** to cancel your configuration details.

What You See on the Summary Page

The following table describes the key information on the Summary page.

Element	Description
Summary	Displays a summary of the trigger (source) or invoke (target) 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**.

5

Creating Mappings and Lookups in Integrations

You must map data between trigger connections and invoke connections in integrations. You can also optionally create lookups in integrations.

Topics

- Mapping Integration Cloud Service Data (in *Using Oracle Integration Cloud Service*)

- Creating Lookups (in *Using Oracle Integration Cloud Service*)

6

Administering Integrations

Oracle Integration Cloud Service provides you with the information and tools required to activate, monitor, and manage your integrations in the runtime environment.

Topic

- Administering Integration Cloud Service (in *Using Oracle Integration Cloud Service*)