

Oracle® Cloud

Using the GCP Pub Sub Adapter with Oracle Integration 3



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Preface

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



Note:

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 at <http://cloud.oracle.com>
- *Using Integrations in Oracle Integration 3*
- *Using the Oracle Mapper with Oracle Integration 3*
- Oracle Integration documentation on the Oracle Help Center.

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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the GCP Pub Sub Adapter

Review the following topics to learn about the GCP Pub Sub 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:

- [GCP Pub Sub Adapter Capabilities](#)
- [GCP Pub Sub Adapter Restrictions](#)
- [What Application Version Is Supported?](#)
- [Workflow to Create and Add a GCP Pub Sub Adapter Connection to an Integration](#)

GCP Pub Sub Adapter Capabilities

The GCP Pub Sub Adapter enables users to create an integration in Oracle Integration that connects to a GCP Pub Sub messaging system. The GCP Pub Sub Adapter connects to the GCP Pub Sub distributed publish-subscribe messaging system from Oracle Integration and allows for the publishing and subscribing of messages from a GCP Pub Sub topic. The GCP Pub Sub Adapter can be configured as a trigger connection or an invoke connection in an integration in Oracle Integration.

The GCP Pub Sub Adapter provides the following capabilities:

- Serves as both an event producer/publisher and an event consumer/subscriber for GCP Pub Sub.
- Supports the publishing and subscription of JSON and Avro formatted messages.
- Uses GCP Pub Sub's push-based message delivery to webhooks made available by the GCP Pub Sub Adapter for message subscription.
- Supports enabling dead lettering and retaining acknowledged messages.
- Supports processing message payloads of up to 10 MB in size.
- Supports JWT-based validation of inbound requests.
- Supports OAuth Code Credentials authentication for authenticating against GCP Pub Sub for message publishing.
- Supports direct connectivity with publicly accessible GCP Pub Sub.

The GCP Pub Sub Adapter is one of many predefined adapters included with Oracle Integration.

GCP Pub Sub Adapter Restrictions

Note the following GCP Pub Sub Adapter restrictions.

- The Protocol buffer message structure is not currently supported by the GCP Pub Sub Adapter.

- The GCP Pub Sub Adapter has a limit of 1 message per request when using the Avro (binary) message format. However, the GCP Pub Sub publish request has a limit of 10 MB (total size) or 1,000 messages.
- When configuring a trigger connection with the Avro binary message format and your Avro schema contains fixed data types, the decoded value may differ from the published value. For instance, the character `A` is decoded to its Dec equivalent of `65`. Similarly, the string `AA` is decoded to the array `[65, 65]`. See the [ASCII Table](#).
- The GCP Pub Sub Adapter displays 1000 topics for selection at a time on the Configuration page of the Adapter Endpoint Configuration Wizard.
- If a subscription already exists for consumption of messages from a GCP Pub Sub topic, you can't update or change a topic, subscription filter, and message ordering.
- The refresh token has the following restrictions:
 - Only 100 refresh tokens are allowed, per Google Account per OAuth 2.0 client ID.
 - There are other restrictions. See [Refresh Token Expiration](#).



Note:

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

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the [Connectivity Certification Matrix](#).

Workflow to Create and Add a GCP Pub Sub Adapter Connection to 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.

This table lists the workflow steps for both adapter tasks and overall integration tasks, and provides links to instructions for each step.

Step	Description	More Information
1	Access Oracle Integration.	Go to <code>https://instance_URL/ic/home</code>
2	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.	Create an GCP Pub Sub Adapter Connection

Step	Description	More Information
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Understand Integration Creation and Best Practices in <i>Using Integrations in Oracle Integration 3</i> and Add the GCP Pub Sub Adapter Connection to an Integration
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in <i>Using Integrations in Oracle Integration 3</i>
5	(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).	Manage Lookups in <i>Using Integrations in Oracle Integration 3</i>
6	Activate the integration.	Activate an Integration in <i>Using Integrations in Oracle Integration 3</i>
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in <i>Using Integrations in Oracle Integration 3</i>
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in <i>Using Integrations in Oracle Integration 3</i>
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in <i>Using Integrations in Oracle Integration 3</i>

2

Create an GCP Pub Sub 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](#)
- [Create a Connection](#)
- [Refresh Integration Metadata](#)

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the GCP Pub Sub Adapter:

- [Prerequisites for Trigger Connections](#)
- [Prerequisites for Invoke Connections](#)

Prerequisites for Trigger Connections

- Create a project ID in the Google Cloud console, see [Create a Google Cloud Project](#).
- To create a service account in the Google Cloud console, you either need an administrator account or must ask your administrator to grant you the following roles/permissions:
Roles/permissions:
 - API Keys Admin
 - Browser
 - OAuth Config Editor
 - GCP Pub/Sub Admin
 - GCP Pub/Sub Editor
 - GCP Pub/Sub Viewer
 - Service Account Admin
 - Service Account Token Creator
 - Service Account User
 - View Service Accounts
- Create a service account in the Google Cloud console. See [Create Service Accounts](#).

 **Note:**

Ensure that your service account has the required permissions to create an authenticated push subscription.

- Register a web application in the Google Cloud console and obtain the client ID and client secret. See [OAuth client ID credentials](#).

 **Note:**

You must enter the client ID in the **Google Client ID** field and the secret key in the **Google Client Secret** field on the Connections page. See [Configure Connection Security](#).

- Create a user in the Oracle Cloud Infrastructure identity domain that has the same user name as the service account's client ID and assign it the ServiceInvoker role. See Manage Access and Assign Roles in *Provisioning and Administering Oracle Integration 3*.

Prerequisites for Invoke Connections

- Create a project ID in the Google Cloud console. See [Create a Google Cloud Project](#).
- Register a web application in the Google Cloud console and obtain the client ID and client secret. See [OAuth client ID credentials](#).

 **Note:**

You must enter the client ID in the **Google Client ID** field and the secret key in the **Google Client Secret** field on the Connections page. See [Configure Connection Security](#).

Create a Connection

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

To create a connection in Oracle Integration:

1. In the navigation pane, click **Design**, then **Connections**.
2. Click **Create**.

 **Note:**

You can also create a connection in the integration canvas. See Define Inbound Triggers and Outbound Invokes.

3. In the Create connection panel, 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.
4. Enter the information that describes this connection.

Element	Description
Name	Enter a meaningful name to help others find your connection when they begin to create their own integrations.
Identifier	Automatically displays the name in capital letters that you entered in the Name field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
Role	<p>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.</p> <p>For example, assume 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.</p>
Keywords	Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
Description	Enter an optional description of the connection.
Share with other projects	<p>Note: This field only appears if you are creating a connection in a project.</p> <p>Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.</p> <p>When you configure an adapter connection in a different project, the Use a shared connection field is displayed at the top of the Connections page. If the connection you are configuring matches the same type and role as the publicly available connection, you can select that connection to reference (inherit) its resources. See Add and Share a Connection Across a Project.</p>

5. Click **Create**.

Your connection is created. You're now ready to configure the connection properties, security policies, and (for some connections) access type.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. In the **Project ID** field, enter the project ID. See [Prerequisites for Creating a Connection](#).
3. (Only for trigger connections) In the **Service Account** field, enter your service account name. See [Prerequisites for Creating a Connection](#).

 **Note:**

Ensure that you provide a valid service account. You may be able to create a connection with an invalid service account name. However, you can't activate the integration.

Configure Connection Security

Configure security for your GCP Pub Sub Adapter connection.

1. Go to the **Security** section.
2. In the **Google Client ID secret** field, enter the Google client ID that you obtained after performing the prerequisite steps. See [Prerequisites for Creating a Connection](#).
3. In the **Google Client Secret** field, enter the client secret that you obtained after performing the prerequisite steps. See [Prerequisites for Creating a Connection](#).
4. Click **Provide Consent** to verify the connection properties and get an access token.

The GCP application login page is displayed.

5. Enter your GCP login credentials.
6. Once you see an `Authenticated` message, you can test your connection.

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 adapter connection uses a Web Services Description Language (WSDL) file. Only some adapter connections use WSDLs.

If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.

If Your Connection...	Then...
Uses a WSDL	<p>A dialog prompts you to select the type of connection testing to perform:</p> <ul style="list-style-type: none"> • 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 and verify URLs and credentials. Continue to test until the connection is successful.
3. When complete, click **Save**.


Refresh Integration Metadata

You can manually refresh the currently-cached metadata available to adapters that have implemented metadata caching.

Metadata changes typically relate to customizations of integrations, such as adding custom objects and attributes to integrations. There may also be cases in which integrations have been patched, which results in additional custom objects and attributes being added. This option is similar to clearing the cache in your browser. Without a manual refresh, a staleness check is only performed when you drag a connection into an integration. This is typically sufficient, but in some cases you may know that a refresh is required. For these cases, the **Refresh Metadata** menu option is provided.

Note:

The **Refresh Metadata** menu option is only available with adapters that have implemented metadata caching.

1. In the navigation pane, click **Design**, then **Connections**.
2. Hover over the connection to refresh.
3. Click **Actions** , then select **Refresh metadata**.
A message is displayed indicating that the refresh was successful.

3

Add the GCP Pub Sub Adapter Connection to an Integration

When you drag the GCP Pub Sub Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through configuration of the GCP Pub Sub Adapter as a trigger or an invoke in an integration.

Topics:

- [Basic Info Page](#)
- [Trigger Configuration Page](#)
- [Invoke Configuration 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: <ul style="list-style-type: none">• 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.

Trigger Configuration Page

Select the topic and other details for subscribing to messages from a GCP Pub Sub topic.



Note:

A topic, subscription filter, and message ordering can't be updated or changed after the integration is activated for consumption of messages from a GCP Pub Sub topic. If you want to edit the topic, subscription filter, and message ordering deletion, you must select the **Delete Event Subscription** check box in the dialog that appears when you click the deactivate icon to deactivate the integration.

Element	Description
Select a topic	Select the topic on which to perform the operation. You can also enter the beginning letters of the topic to filter the display of topics. You subscribe to messages in topics. Note: The GCP Pub Sub Adapter displays 1000 topics at a time for selection on the Configuration page.
Schema type associated with topic	Displays the schema type associated with the topic. Note: Do not edit this value.
Message encoding	Displays the message encodings. Note: Do not edit these values.
Provide JSON Sample (Displays if you select a topic without any schema associated.)	Enter sample JSON to describe the structure of data.
AVRO Schema associated with Topic (Displays if you select a topic with the Avro schema.)	Displays the Avro schema associated with the topic. Note: Do not edit these values.
Subscription Filter	Specify the subscription filter.
Acknowledgment deadline	Enter a value between 10 to 600 seconds. The default value is 10 seconds.
Enable dead lettering	Select the check box.
Order messages with an ordering key	Select the check box.
Retain acknowledgment messages	Select the check box.
Specify message retention duration	Specify the retention duration for unacknowledged messages. You can specify the time in days, hours, and minutes.

Invoke Configuration Page

Specify the topic and other details for publishing messages to a GCP Pub Sub topic.

Element	Description
Select topic	Select the topic on which to perform the operation. You can also enter the beginning letters of the topic to filter the display of topics. A topic is a category in which applications can add, process, and reprocess messages. You can publish messages to a GCP topic. Note: The GCP Pub Sub Adapter displays 1000 topics at a time for selection on the Configuration page.
Schema type associated with topic	Displays the schema type associated with a topic. Note: Do not edit this value.
Message encoding	Displays the message encodings. Note: Do not edit these values.
Provide JSON Sample (Displays if you select a topic without any schema associated.)	Enter sample JSON to describe the structure of data.
AVRO Schema associated with Topic (Displays if you select a topic with the Avro schema.)	Displays the Avro schema associated with the topic. Note: Do not edit these values.

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 Go back . To cancel your configuration details, click Cancel .

4

Implement Common Patterns Using the GCP Pub Sub Adapter

You can use the GCP Pub Sub Adapter to implement the following common patterns.

Topics:

- [Publish Shopify Orders to a GCP Topic Using the GCP Pub Sub Adapter](#)
- [Subscribe to a GCP Pub Sub Topic and Use Retrieved Data to Create a Product in Shopify](#)



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.

Publish Shopify Orders to a GCP Topic Using the GCP Pub Sub Adapter

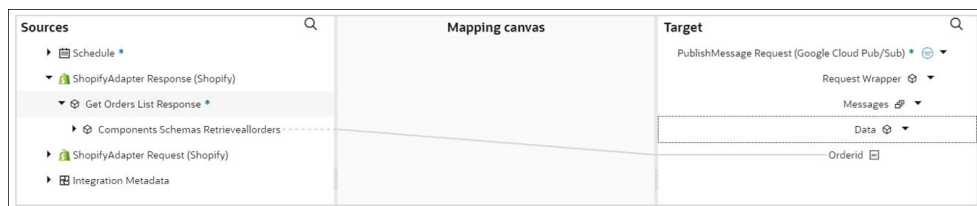
You can publish Shopify Orders data to a GCP topic using the GCP Pub Sub Adapter. Similarly, you can publish data from other applications to a GCP topic using the GCP Pub Sub Adapter.

In this scenario, the Shopify Adapter serves to retrieve Orders data from the Shopify platform to Oracle Integration. This retrieved data is subsequently transmitted and published as a message to a GCP topic.

This implementation pattern provides an overview of the steps:

1. Create Shopify Adapter and GCP Pub Sub Adapter connections.
2. Create a scheduled integration.
3. Drag the Shopify Adapter into the integration canvas.
4. Configure the Shopify endpoint as follows:
 - a. On the Basic Info page, provide a name.
 - b. On the Action page, select the **Query** operation to retrieve the data.
 - c. On the Operations page, select the following values:
 - **Orders** from the **Select Module** list

- **Order** from the **Select Object** list
 - **Retrieve a list of orders** from the **Select Operation** list
- d. Review your selections on the Summary page.
5. Drag the GCP Pub Sub Adapter into the integration canvas.
 6. Specify the following details in the Adapter Endpoint Configuration Wizard.
 - a. On the Basic info page, provide an endpoint name.
 - b. On the Configuration page, select **TestTopic** from the **Select Topic** list.
 - c. Provide the JSON format sample payload.
 - d. Review your selections on the Summary page.
 7. In the mapper, map the fields from the source (**Shopify Adapter response**) to the target (**Publish Message Request**) to pass the data to the GCP topic. The Shopify response provides an input to the GCP Pub Sub Adapter.



8. Click **Validate**.

The completed integration looks as follows.



9. Add the tracking element in the **Business identifier** field and save the flow.
10. When complete, activate the integration.

As a result, the GCP Pub Sub Adapter publishes the data to a GCP topic if the data is in the expected format.

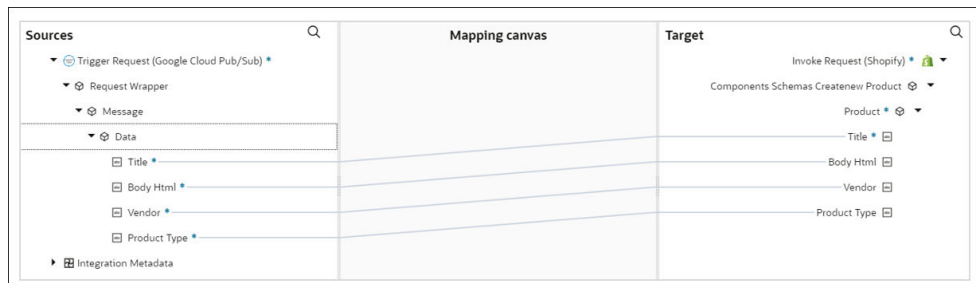
Subscribe to a GCP Pub Sub Topic and Use Retrieved Data to Create a Product in Shopify

You can create a product in Shopify using data retrieved by subscribing to the GCP Pub Sub topic using the GCP Pub Sub Adapter.

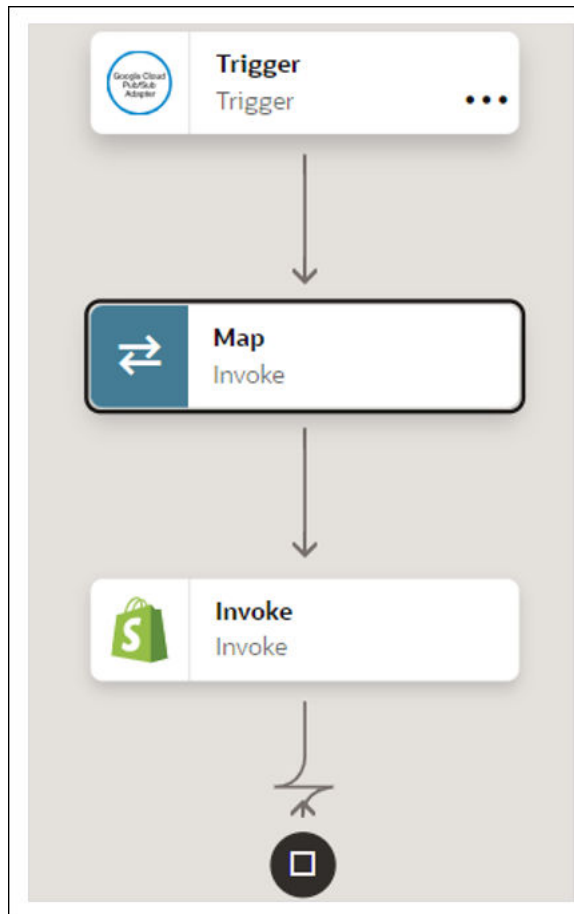
The GCP Pub Sub Adapter retrieves the data by subscribing to the GCP Pub Sub topic. Using this data, a product is then created in Shopify with the help of the Shopify Adapter.

1. Create the Shopify Adapter and GCP Pub Sub Adapter connections.
2. Create an application integration.
3. Drag a GCP Pub Sub Adapter into the integration canvas as a trigger connection.
4. Configure the GCP Pub Sub Adapter as follows.

- a. On the Basic Info page, provide a name.
 - b. On the Configuration page, select the **Products_shopify** topic.
Sample payload is automatically selected.
 - c. On the Summary page, review your selections.
5. Drag a Shopify Adapter into the integration canvas.
 6. Configure the Shopify Adapter as follows:
 - a. On the Basic Info page, provide an endpoint name.
 - b. On the Operations page, select the **Create** operation.
 - c. Select **Products** as a module.
 - d. Select **Product** as an object.
 - e. Select create a new product as an operation.
 - f. On the Summary page, review your selections.
 7. In the mapper, map the fields from the GCP Pub Sub response to pass the data to the Shopify Adapter. The GCP Pub Sub response provides an input to the Shopify Adapter to create a product.



8. Click **Validate**.
- The completed integration looks as follows.



9. Add the tracking element in the **Business identifier** field and save the flow.
10. When complete, activate the integration. As a result, the Shopify Adapter creates a product using data retrieved from subscribing to the GCP Pub Sub topic with the help of the GCP Pub Sub Adapter.