# Oracle® Cloud Using the Zuora 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.



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**

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at https://www.oracle.com/corporate/accessibility/.

#### **Access to Oracle Support**

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <a href="https://support.oracle.com/portal/">https://support.oracle.com/portal/</a> or visit <a href="https://support.oracle.com/portal/">Oracle Accessibility Learning and Support if you are hearing impaired.</a>

#### **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.
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.



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# Understand the Zuora Adapter

Review the following topics to learn about the Zuora 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:**

- Zuora Adapter Capabilities
- Zuora Adapter Restrictions
- What Application Version Is Supported?
- Workflow to Create and Add a Zuora Adapter Connection to an Integration

## **Zuora Adapter Capabilities**

The Zuora Adapter enables users to integrate the Zuora application with Oracle Integration. You can configure the Zuora Adapter as a trigger or invoke connection in an integration in Oracle Integration.

The Zuora Adapter provides the following capabilities:

- For trigger endpoints:
  - Supports performing various types of events against the business objects, such as Accounts, Orders, Invoices, and Product Rate Plan Charge.
  - Supports custom fields.
  - Supports Zuora Composite Security Policy: OAuth policy for incoming requests and Client Credentials policy for outgoing calls.
- For invoke endpoints:
  - Supports performing operations (such as Create, Update, Delete, Retrieve, List, Cancel and Preview) on the following business objects:
    - \* Accounts
    - Catalog
    - \* Credit Memos
    - \* Fulfillments
    - \* Invoices
    - Orders
    - Order Line Items
    - \* Payments
    - Payment Gateways
    - Payment Methods



- Payment Gateway Reconciliation
- Product Rate Plans
- Product Rate Plan Charge
- \* Refunds
- \* Taxation Items
- Supports custom fields for the above listed business objects.
- Supports Client Credentials authentication.

The Zuora Adapter is one of many predefined adapters included with Oracle Integration. See the Adapters page in the Oracle Help Center.

#### **Zuora Adapter Restrictions**

Note the following Zuora Adapter restriction.

Custom field are not supported for the Fulfillments business object.



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 Zuora 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 https://instance_URL/ic/home
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 a Zuora 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</i> in <i>Oracle Integration 3</i> and Add the Zuora Adapter Connection to an Integration
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in Using Integrations in Oracle Integration 3
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</i> Integrations in Oracle Integration 3
6	Activate the integration.	Activate an Integration in Using Integrations in Oracle Integration 3
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in Using Integrations in Oracle Integration 3
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in <i>Using</i> Integrations in Oracle Integration 3
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in Using Integrations in Oracle Integration 3



# Create a Zuora 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
- Upload a Certificate to Connect with External Services
- Refresh Integration Metadata

# Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Zuora Adapter:

- Create an OAuth client for a user using the Zuora admin account and obtain the client ID and client secret. See Create an OAuth Client for a User.
- Create an OAuth provider in the Zuora application because it is required to trigger an
  integration designed with a Zuora Adapter trigger connection. See Add an OAuth 2.0
  Provider. The client ID, client secret, scope, and access token URL are passed when you
  create an OAuth 2.0 provider in the Zuora sandbox environment.



If the Unexpected error message is displayed in the Zuora sandbox environment, contact the Zuora support team and inquire about increasing the column size of the access token. This issue may occur due to the length of the access token. See Error When Obtaining an Access Token from Zuora.

- Pass the Zuora minor version (for example, 224.0) in the request header when you use the fields that require a minor version. This minor version is required for the following operations:
  - Create a credit memo from a charge
  - Create credit memos

#### 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.



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.

	De	Element
name to help others find en they begin to create is.		Name
ys the name in capital red in the <b>Name</b> field. If ifier name, don't include ample, SALES	leti yo	Identifier
ction) in which to use ger, invoke, or both). orted by the adapter are on. When you select a ction properties and propriate to that role are nnections page. If you at supports both invoke ct only one of those rror when you try to drag section you didn't select.	this Or dis rol se dis sel an rol	Role
ne you configure a bracle Service Cloud as only an invoke. Ber to a trigger section in uces an error.	Fo cor (Ri Dra	
ords (tags). You can ection keywords on the		Keywords
scription of the	En co	Description
		·



Element	Description
Share with other projects	<b>Note</b> : This field only appears if you are creating a connection in a project.
	Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.
	When you configure an adapter connection in a different project, the <b>Use a shared connection</b> 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.

#### 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.

- Go to the Properties section.
- 2. In the **HostName** field, enter the Zuora host name. The Zuora host name appears in the Zuora home URL. For example, https://hostname.zuora.com.

#### **Configure Connection Security**

Configure security for your Zuora Adapter connection.

- 1. Go to the **Security** section.
- 2. In the **Client Id secret** field, enter the client ID that you obtained after performing the prerequisite steps. See Prerequisites for Creating a Connection.
- 3. In the **Client Secret** field, enter the client secret that you obtained after performing the prerequisite steps. See Prerequisites for Creating a Connection.

#### **Test the Connection**

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

 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	A dialog prompts you to select the type of connection testing to perform:	
	<ul> <li>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.</li> </ul>	
	<ul> <li>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.</li> </ul>	

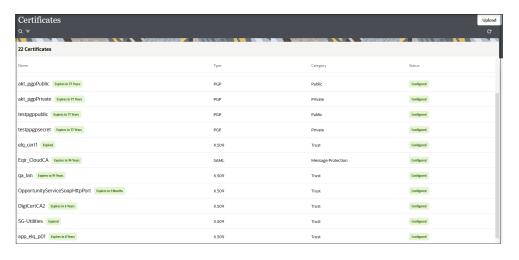
- Wait for a message about the results of the connection test.
  - If the test was successful, then the connection is configured properly.
  - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is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

# Upload a Certificate to Connect with External Services

Certificates allow Oracle Integration to connect with external services. If the external service/endpoint needs a specific certificate, request the certificate and then import it into Oracle Integration.

If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception error 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.

- 1. Sign in to Oracle Integration.
- In the navigation pane, click Settings, then Certificates.
   All certificates currently uploaded to the trust store are displayed on the Certificates page.
- 3. Click Filter 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.





- Click **Upload** at the top of the page.
   The Upload certificate panel is displayed.
- 5. Enter an alias name and optional description.
- 6. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
  - Digital Signature
  - X.509 (SSL transport)
  - SAML (Authentication & Authorization)
  - PGP (Encryption & Decryption)
  - Signing key

#### **Digital Signature**

The digital signature security type is typically used with adapters created with the Rapid Adapter Builder. See Learn About the Rapid Adapter Builder in Oracle Integration in *Using the Rapid Adapter Builder with Oracle Integration 3*.

- Click Browse to select the digital certificate. The certificate must be an X509Certificate.
   This certificate provides inbound RSA signature validation. See Implement Digital Signature Validation (RSA) in Using the Rapid Adapter Builder with Oracle Integration 3.
- 2. Click Upload.

#### 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.



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)**

- 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. The following supported cipher algorithms are FIPS-compliant:
      - AES128
      - AES192
      - AES256
      - TDES
  - c. Click Upload.

#### Signing key

A signing key is a secret key used to establish trust between applications. Signing keys are used to sign ID tokens, access tokens, SAML assertions, and more. Using a private signing key, the token is digitally signed and the server verifies the authenticity of the token by using a public signing key. You must upload a signing key to use the OAuth Client Credentials using JWT Client Assertion and OAuth using JWT User Assertion security policies in REST Adapter invoke connections. Only PKCS1- and PKCS8-formatted files are supported.

- 1. Select Public or Private.
- Click Browse to upload a key file.If you selected Private, and the private key is encrypted, a field for entering the private signing key password is displayed after key upload is complete.



- **3.** Enter the private signing key password. If the private signing key is not encrypted, you are not required to enter a password.
- 4. Click Upload.

## 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.



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.



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# Add the Zuora Adapter Connection to an Integration

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

The following sections describe the wizard pages that guide you through configuration of the Zuora Adapter as a trigger or invoke in an integration.

#### **Topics:**

- Trigger Basic Info Page
- Invoke Basic Info Page
- Summary Page

# Trigger Basic Info Page

Specify a name, description, business object, and event 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 connection. For example, if you are creating a database connection for adding new employee data, you may want to name it CreateEmployeeInDB. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:	
	<ul> <li>Blank spaces (for example, My DB Connection)</li> <li>Special characters (for example, #;83&amp; or minute of the context of the</li></ul>	
	righ(t)now4)  • Multibyte characters	
What does this endpoint do?	Enter an optional description of the connection's responsibilities.	
Select Business Object	Select the business object, such as Accounts, Orders, Invoices, or Product Rate Plan Charge.	
Trigger	Select an event name, such as Order Processed Event. The events available for selection are based on the business object selected.	



# Invoke Basic Info Page

Specify a name, description, and operation type on the Basic Info page of each invoke connection in your integration.

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the connection. For example, if you are creating a database connection for adding new employee data, you may want to name it CreateEmployeeInDB. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:
	<ul> <li>Blank spaces (for example, My DB Connection)</li> <li>Special characters (for example, #;83&amp;</li> </ul>
	or righ(t)now4)
	Multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities.
Select Business Object	Select a business object. The supported business objects are:
	<ul> <li>Accounts</li> </ul>
	<ul> <li>Catalog</li> </ul>
	<ul> <li>Credit Memos</li> </ul>
	<ul> <li>Fulfillments</li> </ul>
	• Invoices
	• Orders
	Order Line Items
	Payments
	<ul><li>Payment Gateways</li><li>Payment Methods</li></ul>
	<ul> <li>Payment Methods</li> <li>Payment Gateway Reconciliation</li> </ul>
	Product Rate Plans
	Product Rate Plan Charge
	Refunds
	Taxation Items
Action	Select an action to perform for the selected business object, such as Create an order, Cancel a payment, Delete a fulfillment, Update an account, Retrieve a refund part, List all products, Post invoices, and so on.  The actions/operations available for selection
	are based on the business object selected.



# **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 <b>Go back</b> .
	To cancel your configuration details, click Cancel.



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# Troubleshoot the Zuora Adapter

Review the following topics to learn about troubleshooting issues with the Zuora Adapter.

#### **Topics:**

- Minor Version Error
- Error When Obtaining an Access Token from Zuora

#### **Minor Version Error**

The following error occurs when you configure the **Create a credit memo from a charge** or **Create credit memos** operation and do not provide a Zuora minor version in the request header.

**Solution**: Ensure that you pass the Zuora minor version (for example, 224.0) in the request header when the fields you use require a minor version.

### Error When Obtaining an Access Token from Zuora

You must create an OAuth provider in the Zuora sandbox environment to trigger an integration designed with a Zuora Adapter trigger connection in Oracle Integration. The client ID, client secret, scope, and access token URL are passed when you create an OAuth 2.0 provider in the Zuora sandbox environment.

The following error may occur while obtaining an access token from the Zuora application.

Unexpected error

**Solution**: This issue may occur due to the length of the access token. Contact Zuora Support and inquire about increasing the column size of the access token.