Oracle® Cloud Using the QuickBooks 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

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Access to Oracle Support

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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.
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 QuickBooks Adapter

Review the following conceptual topics to learn about the QuickBooks 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:

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

QuickBooks Adapter Capabilities

The QuickBooks Adapter enables you to create an integration with the QuickBooks application. You can configure the QuickBooks Adapter as an invoke connection in an integration in Oracle Integration.

The QuickBooks Adapter provides the following benefits:

- Supports connecting to private resources that are in your virtual cloud network (VCN) with a private endpoint. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3* and Configure the Endpoint Access Type. This type of connection does not use the connectivity agent.
- Provides metadata caching support.
- Provides invoke (target) connection support for performing the following types of actions against the selected module and operation:
 - Create (create records in QuickBooks)
 - Update (update records in QuickBooks)
 - Query (get a record from QuickBooks)
 - Delete (delete records from QuickBooks)
- Supports QuickBooks APIs protected using OAuth 2.0 three-legged authentication (authorization code credentials).

The QuickBooks Adapter is one of many predefined adapters included with Oracle Integration.

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 QuickBooks 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 QuickBooks Adapter Connection
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Create Integrations in Using Integrations in Oracle Integration 3 and Add the QuickBooks 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 Using Integrations in Oracle Integration 3
6	Activate the integration.	Activate Integrations in Using Integrations in Oracle Integration 3
7	Monitor the integration on the dashboard.	Monitor Integrations in Using Integrations in Oracle Integration 3
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages in Using 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 QuickBooks 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

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the QuickBooks Adapter.

- Create an Intuit Developer Account
- Create an Application
- Add a Redirect URL
- Add a Sandbox or Production Company

Create an Intuit Developer Account

You must create an Intuit developer account. See Create an Intuit developer account.

Create an Application

To generate the client ID and client secret, you must create an application using the QuickBooks Developer Dashboard.

1. Log in to your QuickBooks Developer account with the following URL:

https://developer.intuit.com/app/developer/homepage

- 2. Click Dashboard, then click Create an app.
- 3. Select QuickBooks Online and Payments.
- Enter a name for your application and select the com.intuit.quickbooks.accounting checkbox under Select a scope.
- 5. Click **Create app**. The application is created.
- On the Develop your app page, click Keys & credentials under Development Settings.
 The client ID and client secret for the sandbox environment appear.
- Click Keys & credentials under Production Settings and perform the required steps.
 The client ID and client secret for the production environment appear.
- 8. Copy the client ID and client secret.



You'll need to enter these values on the Connections page when you configure security for your QuickBooks Adapter connection in Oracle Integration. See Configure Connection Security.

Add a Redirect URL

- 1. Log in to your QuickBooks developer account.
- 2. Click Dashboard.
- 3. Select and open your application.
- Click Keys & credentials under Development Settings to set your sandbox redirect URI or click Keys & credentials under Production Settings to set your production redirect URI.
- 5. Scroll down to the **Redirect URIs** section, and click **Add URI**.
- 6. Click Save.

Add a Sandbox or Production Company

You must have a sandbox or production company profile created in the QuickBooks application. See Create and test with a sandbox company. You can go to www.quickbooks.in to create your production company profile.

You'll need to select the company name on the Connections page when you configure security for your QuickBooks Adapter connection in Oracle Integration. 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.



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.



Element	Description
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	Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select. For example, 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.
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	Note : 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 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.

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.



After you clone an integration, customize a prebuilt integration, or import an existing integration into Oracle Integration, you update the connection information according to the requirements of your integration environment. For custom fields or updated fields to appear in the mapper, you must refresh the endpoints in Oracle Integration. See Refresh Endpoints for Integrations in Using Integrations in Oracle Integration 3.

- 1. Go to the **Properties** section.
- 2. In the **QuickBooks Environment** field, select the environment. Your selection enables the QuickBooks Adapter to connect to the appropriate endpoint.
 - Sandbox: A self-contained, testing environment that imitates a QuickBooks production environment. The sandbox environment enables you to test and debug your QuickBooks APIs before running them in QuickBooks' live production environment.
 - Production: QuickBooks' live production environment for running your QuickBooks APIs.

Configure Connection Security

Configure security for your QuickBooks Adapter connection by selecting the security policy and specifying the appropriate security details.

- 1. Go to the Security section.
- 2. In the **Client Id** field, enter the client ID that you obtained after performing the steps in the prerequisites section. See Create an Application.
- 3. In the **Client Secret** field, enter the client secret that you obtained after performing the steps in the prerequisites section. See Create an Application.
- 4. (Optional) In the **Scope** field, enter com.intuit.quickbooks.accounting. This is the only scope supported by the QuickBooks Adapter. You select it while creating an application in the QuickBooks application. See Create an Application.
 - If you do not provide any value for the scope, com.intuit.quickbooks.accounting is added by default.
- Click Provide Consent to verify the connection properties and get an access token.
 - The QuickBooks application page is displayed.
- Select the company name that you specified in the QuickBooks application. See Add a Sandbox or Production Company.
- 7. Once you see an access allowed message, you can test your connection.



Configure the Endpoint Access Type

Configure access to your endpoint. Depending on the capabilities of the adapter you are configuring, options may appear to configure access to the public internet, to a private endpoint, or to an on-premises service hosted behind a fire wall.

- Select the Endpoint Access Type
- Ensure Private Endpoint Configuration is Successful

Select the Endpoint Access Type

Select the option for accessing your endpoint.

Option	This Option Appears If Your Adapter Supports
Public gateway	Connections to endpoints using the public internet.
Private endpoint	Connections to endpoints using a private virtual cloud network (VCN). Note: To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Infrastructure Console. Failure to do so results in errors when testing the connection. See Connect to Private Resources in Provisioning and Administering Oracle Integration 3 and Troubleshoot Private Endpoints in Using Integrations in Oracle Integration 3.

Ensure Private Endpoint Configuration is Successful

- To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Infrastructure Console. Failure to do so results in errors when testing the connection. See Connect to Private Resources in *Provisioning and Administering Oracle* Integration 3.
- When configuring an adapter on the Connections page to connect to endpoints using a
 private network, specify the fully-qualified domain name (FQDN) and not the IP address.
 If you enter an IP address, validation fails when you click **Test**.
- IPSec tunneling and FastConnect are not supported for use with private endpoints.

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:
	 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.

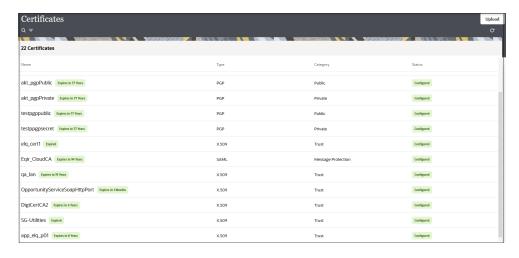
- Wait for a message about the results of the connection test.
 - If the test was successful, then the connection is configured properly.
 - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is successful.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



Add the QuickBooks Adapter Connection to an Integration

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

The following sections describe the wizard pages that guide you through configuration of the QuickBooks Adapter as an invoke in an integration. You cannot configure the QuickBooks Adapter as a trigger in an integration.

Topics:

- · Basic Info Page
- Invoke Action Page
- Invoke Operation Page
- Summary Page

Basic Info Page

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

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

Invoke Action Page

Select the type of action to perform.

Element	Description
Select an action type	 Query information: Retrieves information from the QuickBooks application corresponding to the selected module and operation.
	 Create, update, or delete information: Creates a new record, updates an existing record, or deletes a record in/from a QuickBooks application. For example, Create Accounts, Create Purchase Order, Update Invoice, and Delete Bill.

Invoke Operation Page

Select the module and operation to perform in the QuickBooks application.

Element	Description
Select operation type (Displayed if the Create, update, or delete information option is selected on the Action page.)	Displays the following options: Create , Delete , and Update .
Select module	Select a module, such as Invoice , Account , Customer , Sales Receipt , and so on.
Filter by module name	Type a keyword or the initial letters of the module name to filter the display of names in the list.
Select operation	Select an operation name, such as Get Payment .
Filter by operation name	Type a keyword or the initial letters of the operation name to filter the display of names in the list.

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.

