

Oracle® Cloud

Using the Box Adapter with Oracle Integration Generation 2



F22766-07
December 2022



Oracle Cloud Using the Box Adapter with Oracle Integration Generation 2,

F22766-07

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Contents

Preface

Audience	v
Documentation Accessibility	v
Diversity and Inclusion	v
Related Resources	vi
Conventions	vi

1 Understand the Box Adapter

Box Adapter Capabilities	1-1
What Application Version Is Supported?	1-2
Workflow to Create and Add a Box Adapter Connection to an Integration	1-2

2 Create a Box Adapter Connection

Prerequisites for Creating a Connection	2-1
Sign Up for a Box Developer Account	2-1
Create an OAuth Application	2-1
Get Your Client ID and Secret	2-2
Enter Your Redirect URL	2-2
Get Your Signature Keys	2-3
Create a Connection	2-3
Configure Connection Security and Access	2-4
Test the Connection	2-5

3 Add the Box Adapter Connection to an Integration

Basic Info Page	3-1
Trigger Operations Page	3-2
Invoke Actions Page	3-2
Invoke Operations Page	3-3
File and Folder Operations	3-3
Metadata Operations	3-3

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

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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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
<http://cloud.oracle.com>
- *Using Integrations in Oracle Integration Generation 2*
- *Using the Oracle Mapper with Oracle Integration Generation 2*

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 Box Adapter

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

Topics:

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

Note:

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

Box Adapter Capabilities

The Box Adapter is one of many predefined adapters included with Oracle Integration. You can configure the Box Adapter as a connection, and then create an integration with Box.

Box offers content management and file sharing as a cloud service. Box provides a place to manage, secure, share, and govern all content for your internal and external collaboration and processes.

The Box Adapter offers both outbound and inbound integration with Box on the Oracle Integration platform. You can create outbound integrations that invoke the Box application so you can manage content and work with metadata from a file and folder perspective. You can also create inbound integrations that trigger a notification from Box when a specific file or folder event occurs.

The Box Adapter provides the following benefits:

- Lets you perform file operations such as get information about a file; download, upload, delete, or copy a file; and apply a watermark to a file.
- Lets you perform folder operations such as get information about a folder; create, update, or delete a folder; and apply a watermark to a folder.
- Lets you attach metadata enterprise templates to files and folders. These templates are essentially custom business objects that consist of a set of user-defined properties. You can create an enterprise template instance, and then attach it to files and folders. Also, you can attach more than one type of enterprise template instance to a file or folder.
- Lets you use webhooks to detect events in realtime in Box such as when a folder is created or a file is modified.

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Connectivity Certification Matrix.

See [Connectivity Certification Matrix](#).

Workflow to Create and Add a Box 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 the adapter tasks and the 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 Box Adapter Connection
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Create Integrations in <i>Using Integrations in Oracle Integration Generation 2</i> and Add the Box 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 Generation 2</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 Generation 2</i>
6	Activate the integration.	Activate Integrations in <i>Using Integrations in Oracle Integration Generation 2</i>
7	Monitor the integration on the dashboard.	Monitor Integrations in <i>Using Integrations in Oracle Integration Generation 2</i>
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 <i>Using Integrations in Oracle Integration Generation 2</i>
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in <i>Using Integrations in Oracle Integration Generation 2</i>

2

Create a Box Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Topics:

- [Prerequisites for Creating a Connection](#)
- [Create a Connection](#)

Prerequisites for Creating a Connection

Before you can create a connection with the Box Adapter, you must satisfy the following prerequisites.

- [Sign Up for a Box Developer Account](#)
- [Create an OAuth Application](#)
- [Get Your Client ID and Secret](#)
- [Enter Your Redirect URL](#)
- [Get Your Signature Keys](#)

Note:

You need to get these keys only if you want to use a webhook notification to trigger the start of an integration flow. These keys validate that the notification originated from Box.

Sign Up for a Box Developer Account

To integrate, extend, and build applications with the Box Platform and Oracle Integration, you must have a Box developer account.

To create an account, visit the Box Developers website (<https://developer.box.com>), click **Sign Up**, and follow the on-screen instructions.

Don't forget to review the terms and documentation after you get your account.

Create an OAuth Application

To obtain the proper access token to execute the Box API securely, the Box Adapter uses the Box OAuth 2.0 authentication and authorization framework.

For information about OAuth 2.0 supported by Box, see the documentation on the Box website:

<https://developer.box.com/en/guides/authentication/>

To create an OAuth application on the Box platform and enable this authentication route:

1. Sign in to the Box Developer console.
2. Click **Create New App**.
3. In the resulting page to choose the application type, select **Custom App**.
4. In the Custom App dialog, select the option **User Authentication (OAuth 2.0)**.
5. Enter a unique name for your app in the **App Name** field.
6. Click **Create App**.

Your application is now configured and ready to be used.

Get Your Client ID and Secret

When you create the OAuth application, Box automatically generates a client ID and a client secret.

To get your client values:

1. Sign in to the Box Developer console.
2. Click **Configuration**.
3. Scroll the page to the **OAuth 2.0 Credentials** section.
4. Copy the values for your client ID and client secret. You'll need to enter those values in the Credentials dialog when you configure security for your connection in Oracle Integration.

Enter Your Redirect URL

Enter the OAuth callback URL of your Oracle Integration instance.

1. Sign in to the Box Developer console.
2. Click the **Configuration** tab at the top of the page.
3. Scroll to the **OAuth 2.0 Redirect URI** section.
4. In the **Redirect URI** field, enter the OAuth callback URL of your Oracle Integration instance. Your redirect URI should have the following syntax. Port 443 is required.

```
https://Oracle-Integration-instance's-FQDN:443/icsapis/agent/oauth/  
callback
```

Where *Oracle-Integration-instance's-FQDN* is the fully-qualified domain name of your Oracle Integration instance (for example, `oicinstance.example.com`).

Get Your Signature Keys

If you want to use a webhook notification to trigger the start of an integration flow, you need to generate the keys for primary and secondary signatures. These keys validate that the notification originated from Box.

The Box Adapter secures webhook notifications by verifying the notifications against **signature keys**. These keys are used to sign every notification from Box to ensure that the notification is authentic.

To ensure no downtime, Box uses two signature keys for signing webhook notifications. Verifying either signature can be deemed as sufficient to verify the authenticity of the message. Therefore, one key can be regenerated and changed in Oracle Integration enabling the remaining key to still work. The other key can be updated once the first key has been updated. This two-key approach ensures that there's no downtime in notification verification.

To get the signature keys:

1. Sign in to the Box Developer console.
2. Open the OAuth application that you created.
3. Click the **Webhooks** tab.
4. Generate the keys for the primary and secondary signatures.
5. Copy the values for the signature keys. You'll need to enter those values in the Credentials dialog when you configure security for your connection in Oracle Integration.

Create a Connection

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

To create a connection in Oracle Integration:

1. In the left navigation pane, click **Home > Integrations > Connections**.
2. Click **Create**.

Note:

You can also create a connection in the integration canvas of:

- An orchestrated integration (See Define Inbound Triggers and Outbound Invokes.)
- A basic routing integration (See Add a Trigger (Source) Connection.)

3. In the Create Connection — Select Adapter dialog, 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 and click



Search.

4. In the Create Connection dialog, enter the information that describes this connection.

- a. Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the **Identifier** field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
 - b. Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
 - c. 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, let's say 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.
 - d. Enter an optional description of the connection.
5. Click **Create**.

Your connection is created. You're now ready to configure the connection details, such as connection properties, security policies, connection login credentials, and (for certain connections) agent group.

Configure Connection Security and Access

Your application (or endpoint) requires that users and services provide security credentials for access. When creating a Box connection, you must specify the login credentials and grant access to the Box application.

1. Go to the **Security** section.
 - a. In the **Client ID** and **Client Secret** fields, enter the values you recorded when you created an OAuth application with Box.com. See [Prerequisites for Creating a Connection](#).
 - b. In the **Scope** field, enter the list of authorization permissions for the target application. The Box Adapter supports the following scopes:
 - **root_readwrite**: Set the root_readwrite scope if you want to perform file or folder operations in an invoke configuration.
 - **manage_webhook**: Set the manage_webhook scope if you want to use webhook operations in a trigger configuration.See the documentation on the Box.com website for details about these scopes.
 - c. In the **Primary Signature Key** and **Secondary Signature Key** fields, optionally enter the values. See [Get Your Signature Keys](#).
2. Conduct the authorization code flow and grant access.
 - a. Click **Provide Consent**.
 - b. In the Authentication Required dialog, click **OK**.
 - c. In the Log in to grant access to Box page, click **Authorize**.
 - d. Click **Grant access to Box**.

A message confirms that Oracle Integration successfully conducted the authorization and procured the access token. Access to the Box application is allowed.

Your final step in creating a connection is to test the connection. You need to verify that the login credentials are valid and that you can access the Box application successfully.

Test the Connection

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

1. In the page title bar, click **Test**.
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, verify URLs and credentials, and download the diagnostic logs for additional details. Continue to test until the connection is successful.
3. When complete, click **Save**.

3

Add the Box Adapter Connection to an Integration

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

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

Topics:

- [Basic Info Page](#)
- [Trigger Operations Page](#)
- [Invoke Actions Page](#)
- [Invoke Operations Page](#)
- [Summary Page](#)

Basic Info Page

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

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: <code>This connection receives an inbound request to synchronize account information with the cloud application.</code>

Trigger Operations Page

The Box Adapter also supports inbound notifications (a trigger) from Box in the form of a **webhook notification**. With this feature, you can create an integration flow that listens for an event notification from Box.

The Box Adapter secures webhook notifications by verifying the notifications against signature keys that are used to sign every notification from Box to ensure that the notification is authentic. These signature keys, along with the `manage_webhook` scope, must be defined properly in the security credentials for the connection. See [Prerequisites for Creating a Connection](#).

Use the Trigger Operations page in the Adapter Endpoint Configuration Wizard to select the particular file or folder events that you want to receive a notification for.

Element	Description
Target File/Folder ID	Enter the ID for the file or folder for which Box will send a notification to you if the selected events occur. You obtain the ID from the Box website. For example: <code>https://app.box.com/folder/ID_Value</code> The adapter reaches out to Box, validates the ID, and determines the object type (file or folder) of the specified ID.
Target Object Type	Automatically populated with either FILE or FOLDER based on the ID you entered.
Event Type	Select the type of event that you want a notification for.
Event Name	Scroll the list or filter by name to view the available events. Move entries between the Available Event Names column and the Selected Event Names column to choose one, some, or all more events that you want a notification for. Your integration flow will listen for the selected events.

Invoke Actions Page

The Box Adapter supports outbound operations (an invoke) to Box that can manage files and folders as well as work with the metadata for files and folders. Use the Invoke Actions page in the Adapter Endpoint Configuration Wizard to select the **type of action** you want to perform.

Element	Description
Manage Files and Folders	Select this option to show the operations related to managing file and folders such as creating, modifying, moving, and deleting folders, uploading and downloading files, and getting detailed information about files and folders.
Manage Metadata Instances	Select this option to show the available metadata templates and the operations related to creating, updating, deleting, and retrieving metadata instances for files and folders.

Invoke Operations Page

Use the Invoke Operations page in the Adapter Endpoint Configuration Wizard to specify what outbound operation to perform on the files or folders stored on the Box cloud service.

The operations available to you depend on whether you selected the **Manage Files and Folders** option or the **Manage Metadata Instances** option on the Invoke Actions page.

File and Folder Operations

If you selected the **Manage Files and Folders** option, then you can select the following operations.

Element	Description
Get File Info	Retrieves the details about a file.
Download File	Retrieves the actual data of the file.
Upload File	Uses the upload API to allow users to add a new file. The Box Adapter automatically uses the appropriate Box API (Upload or Chunk Upload) based on the file size. Files can be handled to the limits of Oracle Integration (1GB).
Delete File	Discards a file to the trash.
Copy File	Creates a copy of a file in another folder.
Get Folder Info	Retrieves details for a folder, including the first 100 entries in the folder. To fetch more items within the folder, use the Get Folder Items operation.
Get Folder Items	Retrieves all the files, folders, or web links contained within a folder. To request information about the folder itself, like its size, use the Get Folder Info operation.
Create Folder	Creates a new folder.
Update Folder	Updates a folder.
Delete Folder	Discards a folder to the trash.
Get Enterprise Templates	Retrieves all metadata templates within a user's enterprise.
Get Shared Link	Retrieves the shared link for a file or folder.
Create or Update Shared Link	Creates or updates the shared link for a file or folder.
Apply Watermark on File	Applies or updates the watermark for a corresponding Box file.
Apply Watermark on Folder	Applies or updates the watermark for a corresponding Box folder.

For details about each operation, see the Box documentation.

Metadata Operations

Box supports the notion of custom metadata that can be attached to files or folders. Box allows you to create metadata templates, which is just another word for business objects.

A **metadata template** gives you the ability to create any arbitrary business object and then associate that object with file or folder content. For example, you can create a business object with 6 fields, or 10 fields, or whatever it might be. You can then attach that object to a file. With metadata templates, you add value to content management.

If you selected the **Manage Metadata Instances** option on the Invoke Actions page, then the Invoke Operations page lists the available metadata operations. You can select one of the following operations.

Element	Description
Get Metadata on File	Retrieves a metadata instance for a file.
Create Metadata on File	Creates a metadata instance for a file.
Update Metadata on File	Updates a piece of metadata on a file. The metadata instance can be updated only if the instance already exists. When editing metadata, only values that adhere to the metadata template schema will be accepted. The update is applied atomically. If any errors occur during the application of the operations, then the metadata instance will not be changed.
Delete Metadata on File	Deletes the metadata instance for a file.
Get Metadata on Folder	Retrieves a metadata instance for a folder.
Create Metadata on Folder	Creates a metadata instance for a folder.
Update Metadata on Folder	Updates a piece of metadata on a folder. The metadata instance can be updated only if the instance already exists. When editing metadata, only values that adhere to the metadata template schema will be accepted. The update is applied atomically. If any errors occur during the application of the operations, then the metadata instance will not be changed.
Delete Metadata on Folder	Deletes the metadata instance for a folder.

You must also select the metadata template to use for the operation. The Select Template field lists the templates that have been created.

To create a template, sign in to the Box Developer console. Select **Admin Console**, select **Content** to open the Content Manager, select the **Metadata** tab, and then click **Create New**.

For details about each operation and metadata templates, see the Box documentation.

Summary Page

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

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