

Oracle® Construction and Engineering Primavera Unifier BP Sync Starter Recipe



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About This Content

This document describes how to install, configure, and run this recipe in Oracle Integration 3.

Related Resources

For more information, 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
- [Primavera Unifier documentation](#)

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.

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About This Recipe

This recipe includes a basic integration workflow for updating business processes (BP's) in Primavera Unifier, and is intended to be used as a template from which you can create other Primavera Unifier recipes in Oracle Integration.

Note

This recipe is available as **Primavera Unifier | BP Sync Starter Recipe** in the Integration Store. Oracle provides this recipe as a sample only. The recipe is meant only for guidance, and is not warranted to be error-free. No support is provided for this recipe.

Overview

This recipe delivers a project that contains the following integrations and connections:

Integrations:

- **Primavera Unifier BP Basic Sync:** This integration retrieves Action Item details, performs updates using the Primavera Unifier Adapter connection, and transmits a 'Failed' or 'Completed' status to Unifier using the REST Adapter connection.
- **Primavera Unifier BP REST Sync:** This integration fetches Action Item details, initiates the process by sending a 'Start' status, performs the necessary updates, and completes the workflow by sending a 'Completed' status to Unifier using the REST Adapter connection.
- **Primavera Unifier Job Status Sync:** This integration transmits Start, Interim, and Completed status updates to Unifier using the REST Adapter connection.

Connections:

- **Primavera Unifier Adapter Connection:** Uses the Primavera Unifier Adapter to connect to Unifier.
- **Primavera Unifier Rest Connection:** Uses the REST Adapter to connect to Unifier.

To use this recipe, you must:

1. [Perform the prerequisite configuration tasks](#)
2. [Install the recipe](#)
3. [Configure the delivered connections](#)
4. [Configure lookups](#) (only for multi-tenant configurations)
5. [Activate the integrations](#)

System and Requirements

- Oracle Integration 3
- Primavera Unifier
- Primavera Unifier user account with administration role

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Before You Install the Recipe

Before installing and configuring the recipe, there are some tasks you need to perform.

Specifically, you must:

1. [Perform the required general configuration tasks in Primavera Unifier.](#)
2. [Set up the Primavera Unifier environment to invoke the recipe.](#)
3. [Generate a Base64 encoded version of your Primavera Unifier user name and password.](#)
4. [Obtain Tenant Information for the Access Token Request](#) (only needed for multi-tenant configurations)

General Primavera Unifier Configuration

Some general Primavera Unifier configuration is required.

In Primavera Unifier, do the following:

- **Create an Integration User:** You need to specify the user name and password of an integration user when you configure the Primavera Unifier connections. See [Creating Integration Users](#).
- **Get Relevant Permissions:** Ensure that you have the relevant permissions in Primavera Unifier to configure Oracle Integration. To set these permissions in Primavera Unifier, go to the **Company Workspace**, switch to **Admin mode**, select **User Administration**, then select **Access Control**, then select **Administration Mode Access**, then select **Integrations**, then select **Oracle Integration Cloud**. See [Initial Oracle Integration Setup](#).
- **Add Primavera Unifier as a Trusted Application in Oracle Integration:** Ensure that Primavera Unifier is added as a trusted application using client credentials grant type in Oracle Integration. You will need the **Client ID**, **Client Secret**, and **App Scope** information that gets generated for Primavera Unifier in the procedure, [Initial Oracle Integration Setup](#). Contact Oracle Support for this information.

Set Up the Unifier Environment to Invoke the Recipe

After you have completed the general configuration, you must set up the Primavera Unifier environment to invoke the business process recipe.

1. Generate the access token in Unifier.
 - a. Login to Unifier and navigate to **Company Workspace**.
 - b. Switch to **Admin** mode.
 - c. Under the Company Workspace, click **Integrations**, then click **Oracle Integration Cloud**.
 - d. On the **Connect** tab, click **Save & Generate Access Token**.
2. Add the integration.
 - a. Switch from the **Connect** tab to the **Integrations** tab.

- b. Click **Add Integration** and then fill in the following fields:
 - In the **Integration Name** field, enter an alias for the integration (e.g., Unifier Sync for Action Item).
 - In the **OIC Name** field, enter an alias for Oracle Integration Cloud (e.g., Unifier Business Process Sync).
 - In the **API Path** field, enter the Oracle Integration endpoint (excluding the Oracle Integration environment URL).
- c. Configure the business process in your project.
 - i. Open the project that contains the business process you want to configure.
 - ii. Switch to **Admin** mode in the project.
 - iii. Navigate to **Business Process > Action Item**.
 - iv. Click on Workflow Setup.
 - v. Select **Ball in Court**, then click **Open**.

The Workflow Setup dialog box opens.
 - vi. In the **Send for Action** dropdown, select the integration name created in step 2 above.
 - vii. Click **Apply**.
3. Create a new action item.
 - a. Switch to User mode in the project.
 - b. Go to **Project Management > Action Item**.
 - c. Click **Create**.
 - d. In the **Create New Action Item** dialog box, do the following:
 - In the **Title** field, enter the **Action Item Title**.
 - In the **Assigned To** field, select **Company Administrator**.
 - Click **Send**.
 - e. In the **Workflow Action Details** dialog box, from the **Workflow Actions** dropdown, select **Send for Action**.
4. Export the integration log.
 - a. Open the created Action Item.
 - b. Navigate to Integration Log.
 - c. Click **Export to CSV**.

The log will be displayed in CSV format.

Generate a Base64 Encoded User Name and Password

A Base64 encoded user name and password is required for the access token requests in the REST connections that you will configure later in this document.

Which User Name and Password Do I Need To Encode?

For this recipe, you need to generate an encoded Unifier user name and password that will be used in the access token request you configure for either of these connections:

- the [REST Adapter Connection](#)
- or
- the [REST Adapter Connection for Multi-Tenant Configurations \(advanced\)](#)

Note

This recipe only delivers one REST Adapter connection, but it gets configured differently for multi-tenant configurations.

How Do I Encode the User Name and Password?

To generate an encoded version of your user name and password:

1. Go to <https://www.base64encode.org/>.
2. Enter the user name and password in the following format:
`username:password`
3. Click **Encode**.

Where Do I Enter the Encoded User Name and Password in the Access Token Request?

Once generated, you can copy the encoded user name and password and paste it in the appropriate location in your access token request.

Specifically, when you get to the sections that discuss configuring the access token request in the REST Adapter Connection, you will replace the variable `<Base64-encoded-username-and-password>` in the access token request example with the encoded user name and password.

See the following sections to find out where you need to paste the encoded user name and password:

- [REST Adapter Connection](#)
- [REST Adapter Connection for Multi-Tenant Configurations \(advanced\)](#)

Obtain Tenant Information for the Access Token Request

When configuring the access token request for the REST Adapter connection for multi-tenant configurations, you will need to supply certain Unifier tenant information. This section discusses how to obtain this information.

To obtain your Unifier tenant information, you can send an HTTP header request to the Unifier authentication token endpoint using a curl command. This request will return a response that contains the Unifier tenant information you need to configure the access token request. It also contains information needed to configure lookups.

To send the HTTP header request:

1. Run the following curl command:

```
curl --location 'https://<SERVER_URL>/ws/rest/service/v2/auth/token' \  
--header 'Authorization: Basic <Base64-encoded-username-and-password>'
```

Where:

- `<SERVER_URL>` is the base URL of your Primavera Unifier environment, including your region (if there is one), host server, your specific company code. For example:
`https://<region>.unifier.oraclecloud.com/<companycode>`
- `<Base64-encoded-username-and-password>` is the Base64 encoded version of your Primavera Unifier user name and password.

For information about how to obtain this, see [Generate a Base64 Encoded User Name and Password](#).

2. This generates a response that looks like this:

```
{
  "data": {
    "endpoint": "<endpoint>",
    "access_token": "<access_token>",
    "expires_in": xxxx,
    "request_headers": {
      "x-unifier-tenant-code": "<tenant-code>",
      "x-unifier-tenant": "<tenant>"
    }
  },
  "message": [],
  "status": 200
}
```

3. From the response above, copy the following values:

- a. Copy the values for `<tenant-code>` and `<tenant>` and add them to the access token request. Specifically, replace the `<Tenant-Code>` variable in the access token request example with the value for `<tenant-code>` from the response above, and replace the `<MultiTenantHeader>` variable in the access token request example with the value for `<tenant>` from the response above.

For details, see [REST Adapter Connection for Multi-Tenant Configurations \(advanced\)](#).

- b. Copy the values for `<endpoint>`, `<access token>`, `<tenant-code>`, and `<tenant>` and add those values to the corresponding lookups in the delivered lookup table.


For details, see [Configure Lookups](#)

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Install and Configure the Recipe

On your Oracle Integration instance, install the recipe to deploy the project. Once installed, you can configure the delivered connections and lookup information.

Install the Recipe

1. On the Oracle Integration Home page, in the **Get Started** section, click **Browse store**.
2. Search for this recipe:
Primavera Unifier | BP Sync Starter Recipe
3. After you find the recipe, click **Get** on the recipe card.
A message confirms that the recipe was successfully installed, and the recipe card shows **In Use**.
4. Click **Configure**  on the recipe to configure its resources.
The project workspace opens, displaying all the resources of the recipe.

After installing the recipe, and before the integrations can be activated and run, you need to configure the two delivered connections:

- **Primavera Unifier Adapter Connection** - Uses the Primavera Unifier Adapter to connect to Primavera Unifier.
- **Primavera Unifier Rest Connection** - Uses the REST Adapter to connect to Primavera Unifier.

Configure the Primavera Unifier Connections

After installing this recipe, you need to configure both of the delivered connections.

This recipe delivers two connections which the integrations will use to connect to Primavera Unifier through Oracle Integration:

- **Primavera Unifier Adapter Connection:** Uses the Primavera Unifier Adapter to connect to Primavera Unifier.
- **Primavera Unifier Rest Connection:** Uses the REST Adapter to connect to Primavera Unifier.

Follow the steps in the sections below to configure these connections.

Primavera Unifier Adapter Connection

To configure the connection:

1. In the **Connections** section, click **Actions** ... on the **Primavera Unifier Adapter Connection**, then select **Edit**.
2. In the **Properties** section, in the **Connection URL** field, enter the base URL of your Primavera Unifier environment, including your region (if there is one), the host server, and your specific company code.

For example:


`https://<region>.unifier.oraclecloud.com/<companycode>`

If there is no region, the base connection URL is:

`https://unifier.oraclecloud.com/<companycode>`

3. In the **Security** section, in the **Username** and **Password** fields, enter the login credentials of the Primavera Unifier integration user.
4. Click **Save**. If prompted, click **Save** again.
5. Click **Test** to ensure that your connection is successfully configured. In the resulting dialog box, click **Test** again.

A message confirms if your test is successful.


6. To return to the project workspace, click **Go back** .

REST Adapter Connection

If this is a single tenant configuration (most common), then follow the steps below to configure the connection.

If this is a multi-tenant configuration (less common), then see [REST Adapter Connection for Multi-Tenant Configurations \(advanced\)](#).

To configure the connection:

1. In the **Connections** section, click **Actions**  on the **Primavera Unifier Rest Connection**, then select **Edit**.
2. In the **Properties** section, do the following:
 - a. In the **Connection type** field, select **REST API Base URL**.
 - b. In the **Connection URL** field, enter the base URL of your Primavera Unifier environment, including your region (if there is one), the host server, and your specific company code.

For example:

`https://<region>.unifier.oraclecloud.com/<companycode>`

If there is no region, the base connection URL is:

`https://unifier.oraclecloud.com/<companycode>`

3. In the **Security** section, do the following:
 - a. In the **Security policy** field, select **OAuth Two Legged Custom Flow**.
 - b. In the **Access Token Request** field, enter the access token request in the following format:

```
-X GET -H "Content-Type: application/x-www-form-urlencoded" -H
"Authorization: Basic <Base64-encoded-username-and-password>" -d
'grant_type=client_credentials' https://<SERVER_URL>/ws/rest/service/v2/
auth/token
```

Where:

- `<Base64-encoded-username-and-password>` is the Base64 encoded version of your Primavera Unifier user name and password.


For information about how to obtain this, see [Generate a Base64 Encoded User Name and Password](#).

- `<SERVER_URL>` is the base URL of your Primavera Unifier environment, including your region (if there is one), host server, your specific company code. For example:

`https://<region>.unifier.oraclecloud.com/<companycode>`

4. Click **Save**. If prompted, click **Save** again.
5. Click **Test** to ensure that your connection is successfully configured. In the resulting dialog box, click **Test** again.


A message confirms if your test is successful.

6. To return to the project workspace, click **Go back** .

REST Adapter Connection for Multi-Tenant Configurations (advanced)

The configuration of the REST Adapter connection is mostly the same for multi-tenant configurations as it is for single tenant configurations, with the exception of the way you configure the **Access Token Request**. See below.

To configure the connection:

1. In the **Connections** section, click **Actions**  on the **Primavera Unifier Rest Connection**, then select **Edit**.
2. In the **Properties** section, do the following:
 - a. In the **Connection type** field, select **REST API Base URL**.
 - b. In the **Connection URL** field, enter the base URL of your Primavera Unifier environment, including your region (if there is one), the host server, and your specific company code.

For example:

`https://<region>.unifier.oraclecloud.com/<companycode>`

If there is no region, the base connection URL is:

`https://unifier.oraclecloud.com/<companycode>`

3. In the **Security** section, do the following:
 - a. In the **Security policy** field, select **OAuth Two Legged Custom Flow**.
 - b. In the **Access Token Request** field, enter the access token request in the following format:

```
-X GET -H "Content-Type: application/x-www-form-urlencoded" -H
"Authorization: Basic <Base64-encoded-username-and-password>" -H "x-
unifier-tenant:<MultiTenantHeader>" -H "x-unifier-tenant-code: <Tenant-
Code>" -d 'grant_type=client_credentials' https://<SERVER_URL>/ws/rest/
service/v2/auth/token
```

Where:

- `<Base64-encoded-username-and-password>` is the Base64 encoded version of your Primavera Unifier user name and password.

For information about how to obtain this, see [Generate a Base64 Encoded User Name and Password](#).

- `<MultiTenantHeader>` is the Unifier tenant name.
- `<Tenant-Code>` is the Unifier tenant code.


For information about how to obtain values for `<MultiTenantHeader>` and `<Tenant-Code>`, see [Obtain Tenant Information for the Access Token Request](#). In that section, you will run a curl command that returns a response that includes the required tenant information above. From that response, you will copy the values for `<tenant>` and `<tenant-code>`. Then you will return here to finish configuring the access token request, and you will replace the `<MultiTenantHeader>` variable above with the value for `<tenant>` that you obtained from the curl command response, and you will replace the `<Tenant-Code>` variable above with the value for `<tenant-code>` that you obtained from the curl command response.

- `<SERVER_URL>` is the base URL of your Primavera Unifier environment, including your region (if there is one), host server, your specific company code. For example:

```
https://<region>.unifier.oraclecloud.com/<companycode>
```

4. Click **Save**. If prompted, click **Save** again.
5. Click **Test** to ensure that your connection is successfully configured. In the resulting dialog box, click **Test** again.

A message confirms if your test is successful.

6. To return to the project workspace, click **Go back** .

Note

After configuring this connection, you will also need to copy the values for `<endpoint>`, `<access token>`, `<tenant-code>`, and `<tenant>` that you obtained from the curl command response mentioned above (see [Obtain Tenant Information for the Access Token Request](#)) and add those values to the corresponding lookups in the delivered lookup table. For details, see [Configure Lookups](#).

Configure Lookups


Configuration of lookups in this recipe is optional, unless this is a multi-tenant configuration.

This recipe contains one lookup table, labeled **ORCL_UNIFIER_CONFIG_ERROR_LOOKUP**.

For single tenant configurations (most common), configuration of lookups in this table is optional, and is only needed if you want to configure a list of email addresses that error notification emails should be sent to.

For multi-tenant configurations (less common), configuration of additional lookups is required.

To configure lookups:

1. In the **Lookups** section, click **Actions**  on the lookup table, then select **Edit**.
2. Optional: For the lookup named **ErrorEmailAlertRecipientList**, in the **Value** field, enter the email addresses, separated by a comma, of the people who should receive email notifications for any errors that might occur.
3. For multi-tenant configurations, configure the following additional lookups.

- a. If you have not done so already, follow the instructions in the section, [Obtain Tenant Information for the Access Token Request](#).


In that section, you will send an HTTP header request using a curl command. The request returns a response that contains the required Unifier tenant information needed for both the access token request, and also the lookups mentioned below.

- b. For each of the lookups below, enter the corresponding values from the curl command response.

Specifically:

- For the **MultiTenantEndpoint** lookup, in the **Value** field, enter the value for `<endpoint>` from the curl command response.
- For the **MultiTenantHeader-x-unifier-tenant-code** lookup, in the **Value** field, enter the value for `<tenant-code>` from the curl command response.
- For the **MultiTenantHeader-x-unifier-tenant** lookup, in the **Value** field, enter the value for `<tenant>` from the curl command response.
- For the **access_token** lookup, in the **Value** field, enter the value for `<access_token>` from the curl command response.

```
{
  "data": {
    "endpoint": "<endpoint>",
    "access_token": "<access_token>",
    "expires_in": xxxx,
    "request_headers": {
      "x-unifier-tenant-code": "<tenant-code>",
      "x-unifier-tenant": "<tenant>"
    }
  },
  "message": [],
  "status": 200
}
```

4. Click **Save**.
5. To return to the project workspace, click **Go back** .

4

Activate the Integrations

Before the integrations can run, you must activate them.

This recipe contains the following three integration flows:

- **Primavera Unifier BP Basic Sync**
- **Primavera Unifier BP REST Sync**
- **Primavera Unifier Job Status Sync**

Repeat the following steps to activate each of the three integrations listed above.

1. In the **Integrations** section of the project workspace, hover over the integration flow you want to activate, click **Actions** ■■■, then select **Activate**.
2. In the **Activate integration** panel, choose an appropriate tracing level, then click **Activate**.
A message confirms that the integration has been activated. Refresh the page to view the updated status of the integration.

To monitor the running of each integration:

1. In the project workspace, click **Observe**. You'll see the integration flow being triggered and running successfully.
2. To manage errors in your project, see *Manage Errors in a Project*.