Sync Primavera Unifier Project Shell with Oracle Fusion Cloud ERP

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Contents

About This Content

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

Related Resources

See these Oracle resources:

- Oracle Cloud at https://www.oracle.com/cloud/
- *Using Integrations in Oracle Integration 3*
- *Using the REST Adapter with Oracle Integration 3*
- *Using the Oracle ERP Cloud Adapter with Oracle Integration 3*
- Oracle Integration documentation
- Primavera Unifier documentation
- Oracle Fusion Cloud ERP documentation
- File-Based Data Import (FBDI) for Project Management

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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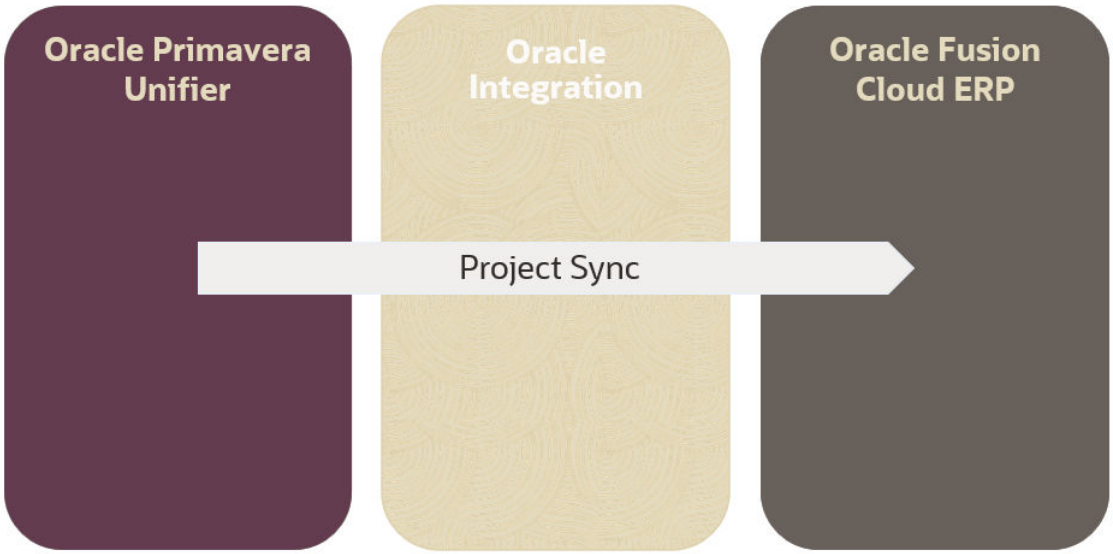
About This Recipe

This recipe is used to synchronize project shell data from Primavera Unifier to Oracle Fusion Cloud ERP.

> **Note**
>
> This recipe is available as **Primavera Unifier — Oracle Cloud ERP | Sync Project Shell** 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.

Purpose

This recipe is intended for customers who use Primavera Unifier for their project execution and Oracle Fusion Cloud ERP as their corporate ERP solution. It provides seamless and reliable project synchronization between these two products, by automating the flow of project data from Primavera Unifier project shells into Oracle ERP projects.



Delivered Integrations

This recipe delivers a project called **Primavera Unifier and Oracle Fusion Cloud ERP sync** which contains a single integration:

- **Scheduled Unifier to Fusion ERP Projects Sync**:

This flow enables the automated extraction and transformation of project shell data from Primavera Unifier into Oracle ERP projects. Leveraging Oracle Integration, the process is triggered on a scheduled basis via change data detection, retrieving newly created or updated Primavera Unifier project shells. Validations and data mappings occur within Oracle Integration. The data is prepared and loaded using the file-based data import (FBDI) interface. Upon completion, new projects are created, or existing projects updated, in Oracle ERP, keeping both platforms in sync and supporting enterprise processes for project tracking, reporting, and controls.

Key features of this integration include:

- Scheduled integration supporting initial bulk load for the first run and incremental data sync of projects thereafter.
- Oracle Integration is the integration platform for automated data extraction, validation, transformation, and upload.
- Data is extracted from Primavera Unifier project shells using Primavera Unifier user-defined reports (UDR).
- Automated upload to Oracle ERP using file-based data import (FBDI) for projects.

Integration Technology

This recipe is a scheduled Oracle Integration project. Each integration run is controlled by schedule parameters that specify what projects to synchronize. It contains one integration flow.

The integration uses the Oracle ERP Cloud Adapter for Oracle Fusion Cloud ERP operations and the standard REST Adapter for Primavera Unifier APIs.

To use this integration, you need to install the recipe and configure the connections. Then, activate and run the integration using the Oracle Integration interface.

Integration Workflow Overview

> **Note**
>
> The steps below describe the high-level behavior of this integration. For detailed run steps, see Activate and Run the Recipe.

Project sync integration (Primavera Unifier to Oracle Fusion Cloud ERP)

1. Projects are created and maintained in Primavera Unifier.
2. Based on the predefined schedule, the integration is pooling a list of changed projects data based on the last run date of the scheduler, retrieving newly created or updated Primavera Unifier projects. If no projects are specified, or for the first run of the integration, all projects will be available for synchronization to Oracle ERP.
3. Data received from Primavera Unifier is validated and transformed for upload to Oracle ERP.

   Partial success of the data validation is not allowed. If even one project fails in data validation, the entire batch is not processed and an error is raised in Oracle Integration (and if setup, email notifications are sent to a predefined recipient list). Any errors on projects validation need to be fixed first on the Primavera Unifier side before the batch can be processed.

4. The data is prepared and loaded using Oracle ERP's file-based data import (FBDI) interface.
5. Oracle Integration creates new projects or update existing projects in Oracle ERP.
6. After the sync, the integration checks the status of the background job in Oracle ERP showing success/failure scenarios.

> **Note**
>
> Scheduled integration supports initial bulk load for the first run and incremental data sync of projects thereafter. Data is extracted from Primavera Unifier project shells using Primavera Unifier user-defined reports (UDR).

Data Mapping

Data mapping spreadsheets describe which fields in Primavera Unifier map to which fields in Oracle Fusion Cloud ERP.

Click the link below to download a zip file that contains the data mapping sheet for this integration:

Data Mapping Sheets

The zip file includes the following data mapping sheet:

- `Unifier ERP Project Sync`

System and Access Requirements

- Oracle Integration 3
- Primavera Unifier and a user account with administration role
- Oracle Fusion Cloud ERP 25D or later and a user account with necessary integration and data roles and privileges

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Before You Install the Recipe

Complete the setup steps below before you install and run this recipe.

1. Perform the required configuration tasks in Oracle Fusion Cloud ERP.
2. Perform the required configuration tasks in Primavera Unifier.
3. Prepare Base64-Encoded Credentials.

Configure Oracle Fusion Cloud ERP

To configure Oracle ERP for this recipe, complete the initial setup outlined below:

Create an integration user (recommended)

You can create a new or use an existing integration user account in Oracle ERP to connect with Oracle Integration and manage integrations. Make sure necessary user roles and permissions are set up properly.

Project source application configuration

1. Navigate to **Setup and Maintenance**.
2. Select **Setup: Project Financial Management**, and then **Functional Area**, and then **Project Foundation**.
3. Select **Show "All Tasks"**, and then **Manage Source Applications**.
4. Select the **Standard Lookup Type**: `PJF_PM_PRODUCT_CODE`.
5. Click **Add** to add a new **Lookup Code** for `ORAC_UNIFIER`:
   - **Lookup Code**: `ORAC_UNIFIER`
   - **Enabled**: Yes
   - **Start Date**: 1/1/51
   - **Meaning**: Primavera Unifier
   - **Description**: Project data is imported or updated from Primavera Unifier

Configure Primavera Unifier

To configure Primavera Unifier for this recipe, complete the initial setup outlined below:

Create an integration user

You will use this account when configuring the Primavera Unifier connections delivered in this recipe.

For details, see Creating Integration Users.

Grant required permissions

Ensure the integration user can access the modules used by the recipe (Project Shell areas).

To grant these permissions in Primavera Unifier, go to **Company Workspace**, switch to **Admin mode**, then select **User Administration**, and then **Access Control**.

Configure custom data view

To get a list of projects with necessary data, create a custom data view in Primavera Unifier:

1. Go to **Company Workspace**, switch to **Admin mode**, then select **Data Structure Setup**, and then **Data Views**.
2. Click **New**.
3. Fill in the following required fields along with the SQL definition provided below:
   - **Prefix**: `Unifier_`
   - **Name**: `project_erp_report`
   - **Label**: `Projects to ERP report`
   - **Description**: `Used in Project UDR for Unifier - Fusion ERP integration`
   - **SQL Definition**:

```
SELECT DISTINCT
    x.*
FROM (
    SELECT
        p.ue_prj_ProjNameSSN AS project_name,
        p.ue_prj_ProjNumSSN  AS project_number,
        CASE
            WHEN p.ue_prj_TemplateNameTB128 IS NULL
              OR p.ue_prj_TemplateNameTB128 = '' THEN 'UNDEFINED_TEMPL'
            ELSE p.ue_prj_TemplateNameTB128
        END AS shell_template,

        p.pid      AS project_id_from_project,
        xorg.pid   AS organization,
        usi.companyid AS legal_entity,
        p.description AS description,

        p.ue_prj_ProjManagerPKUS      AS project_manager,
        p.k__ue_prj_ProjManagerPKUS   AS project_manager_id,

        TO_CHAR(
            NVL(
                p.ue_prj_ProjActStartDateDP,
                NVL(
                    p.ue_prj_ProjPlnStartDateDP,
                    NVL(
                        p.ue_prj_ProjPlnStartDateDO,
                        p.uuu_project_start_date
                    )
                )
```

```
        ),
        'YYYY/MM/DD'
    ) AS project_start_date,

    TO_CHAR(
        NVL(p.ue_prj_ProjActEndDateDP, p.ue_prj_ProjEndDateDO),
        'YYYY/MM/DD'
    ) AS project_end_date,

    -- 0: Inactive, 1: Active, 2: On-Hold, 3: View-Only
    CASE p.uuu_shell_status
        WHEN 0 THEN 'Inactive'
        WHEN 1 THEN 'Active'
        WHEN 2 THEN 'On-Hold'
        WHEN 3 THEN 'View-Only'
    END AS project_shell_status_details,

    p.uuu_shell_status      AS project_status,
    p.ue_prj_ProjTypeIPD    AS project_type_spd,
    usi.last_modified_date  AS last_shell_update,

    0 AS new_project,
    usi.createdate AS create_date
FROM unifier_us_xprj_view p
LEFT JOIN unifier_shell_link_view uslv
    ON uslv.child_id = p.pid
LEFT JOIN unifier_shell_info_view usi
    ON usi.pid = p.pid
LEFT JOIN unifier_us_xprj_view p1
    ON p1.pid = uslv.child_id
LEFT JOIN unifier_us_xorg xorg
    ON xorg.pid = usi.rootid
   AND xorg.uuu_shell_status = 1
WHERE uslv.child_id_model = 'us_xprj'
  AND usi.istemplate = 0
ORDER BY uslv.child_id
) x;
```

4. Select the newly created data view, click **Status** and select **Published**.

For details, see Creating a Shell.

Configure a user defined report (UDR)

In Primavera Unifier, prepare a user defined report (UDR) which will get the changed project data for the active and on hold projects. The UDR will accept a last run date (with time) parameter from Oracle Integration. The UDR will bring all the changed projects from last run date to current date. For the first run, the last run date will be passed as blank. This will synchronize all the projects from Primavera Unifier into Oracle Fusion Cloud ERP.

1. Go to **Settings**, and then **User mode**, and then **Reports**, and then **User-Defined**.
2. Click **Create** and select **From System Data Source**.
3. On the **General** tab, enter the following:
    - **Report Name**: `OIC_Project_Integration_UDR_DW`
    - **Report Title**: `OIC_Project_Integration_UDR_DW`

- **Description**: `User defined report (UDR) to retrieve the changed project data since specified date-time.`
- **Data Type**: `Project ERP report`
- **Report Type**: `Tabular`
- **Access Type**: `System`
- **Enable for Integration**: `True`
- **Accessible**: Not Selected
- **Default Time Zone**: **(UTC) Coordinated Universal Time**

4. Under **Columns**, select:
   - _project_erp_report / PROJECT_NAME → PROJECT_NAME
   - _project_erp_report / PROJECT_NUMBER → PROJECT_NUMBER
   - _project_erp_report / SHELL_TEMPLATE → SHELL_TEMPLATE
   - _project_erp_report / PROJECT_ID_FROM_PROJECT → PROJECT_ID_FROM_PROJECT
   - _project_erp_report / ORGANIZATION → ORGANIZATION
   - _project_erp_report / LEGAL_ENTITY → LEGAL_ENTITY
   - _project_erp_report / DESCRIPTION → DESCRIPTION
   - _project_erp_report / PROJECT_MANAGER → PROJECT_MANAGER
   - _project_erp_report / PROJECT_MANAGER_ID → PROJECT_MANAGER_ID
   - _project_erp_report / PROJECT_START_DATE → PROJECT_START_DATE
   - _project_erp_report / PROJECT_END_DATE → PROJECT_END_DATE
   - _project_erp_report / PROJECT_STATUS → PROJECT_STATUS
   - _project_erp_report / PROJECT_SHELL_STATUS_DETAILS → PROJECT_SHELL_STATUS_DETAILS
   - _project_erp_report / PROJECT_TYPE_SPD → PROJECT_TYPE_SPD
   - _project_erp_report / LAST_SHELL_UPDATE → LAST_SHELL_UPDATE
   - _project_erp_report / CREATE_DATE → CREATE_DATE
   - _project_erp_report / NEW_PROJECT → NEW_PROJECT
5. Under **Query**, select:
   - **Data Element**: _project_erp_report / LAST_SHELL_UPDATE , Label: LastUpdateDate, Condition : greater than or equals
   - **Data Element**: _project_erp_report / PROJECT_SHELL_STATUS_DETAILS , Label:PROJECT_SHELL_STATUS_DETAILS, Condition : contains, Values: 'Active','On-Hold'
6. Under **Layout**, select:
   - **Page Orientation**: Landscape
   - **Paper Size**: Unlimited

Prepare Base64-Encoded Credentials

REST Adapter connections that use OAuth authentication require a Base64-encoded username:password value to request an access token.

Read the sections below to find out which credentials need to be encoded, how to generate Base64-encoded credentials, and which connections need the encoded credentials.

Which Credentials Need To Be Encoded

For this project, you need to generate one encoding:

1. **Primavera Unifier**: Encode your Primavera Unifier integration user username and password. This is used by the **Unifier Rest API** connection.

How To Generate Base64-Encoded Credentials

1. Go to https://www.base64encode.org/.
2. Enter the user name and password in the following format:

   `username:password`
3. Click **Encode**.

> **Note**
>
> Base64 is not encryption, it is only an encoding. For production credentials, avoid entering usernames/passwords into public online tools. If you must use an online encoder, use it only for non-production accounts. For production credentials, you should generate the value locally using your organization's approved method.

Where To Use the Encoded Credentials

Once you generate the encoded credentials, you can copy and paste them into the access token request of the appropriate connection:

1. See Configure the Primavera Unifier Connection for details. In the access token request example of this connection, you will replace `<Base64-encoded-username-and-password>` with the encoded Primavera Unifier user name and password value.

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Install and Configure the Recipe

On your Oracle Integration instance, install the recipe to deploy the project and configure the delivered connections and integration.

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 — Oracle Cloud ERP | Sync Project Shell
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 card.

   The project workspace opens, displaying all the resources of the recipe.

Configure the Oracle Fusion Cloud ERP Connections

This recipe uses two connections that are required for connecting with Oracle Fusion Cloud ERP through Oracle Integration:

- **ERPCloudForProjectSync** - used to send data to Oracle ERP.
- **ERP REST Adapter** - used to retrieve project data from Oracle ERP.

ERPCloudForProjectSync Connection

This connection uses the Oracle ERP Cloud Adapter to invoke project FBDIs in order to create projects in Oracle ERP.

1. In the **Connections** section, click **Actions** ⋮ on the connection, then select **Edit**.
2. In the **Properties** section, do the following:
   - In the **ERP Cloud Host** field, enter the URL of your Oracle Fusion Cloud ERP instance.

     For example: `https://fusionerp.oraclecloud.com`
3. In the **Security** section, do the following:
   a. In the **Security policy** field, select the security policy you want to use.
   b. If you select **Username Password Token**, then in the **User Name** and **Password** fields, enter the login credentials of your Oracle Fusion Cloud ERP integration user account.
4. Click **Test** to ensure that your connection is successfully configured.

   A message confirms if your test is successful.

5. Click **Save**. If prompted, click **Save** again.
6. To return to the project workspace, click **Go back** .

ERP REST Adapter Connection

This connection uses the standard REST Adapter to make calls to the Oracle Fusion Cloud ERP REST API.

1. In the **Connections** section, click **Actions** on the 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 URL of your Oracle Fusion Cloud ERP REST API instance.

      For example: `https://fusionerp.oraclecloud.com`
3. In the **Security** section, do the following:
   a. In the **Security policy** field, select the security policy you want to use.
   b. If you select **Basic Authentication**, then in the **User Name** and **Password** fields, enter the login credentials of your Oracle Fusion Cloud ERP integration user account.
4. Click **Test** to ensure that your connection is successfully configured.

   A message confirms if your test is successful.
5. Click **Save**. If prompted, click **Save** again.
6. To return to the project workspace, click **Go back** .

Configure the Primavera Unifier Connection

This recipe includes one connection for Primavera Unifier:

- **Unifier Rest API**

This connection uses the standard REST Adapter to make calls to the Primavera Unifier REST API.

To configure the **Unifier Rest API** connection:

1. In the **Connections** section, click **Actions** on the 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 URL of your Primavera Unifier instance, including your region (if applicable), 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 Custom Two Legged Flow**.

b. In the **Access Token Request** field, enter the access token request in the following format:

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

Where:

- `<SERVER_URL>` is the base URL of your Primavera Unifier instance, including your region (if applicable), host server, and your specific company code (for example: `<region>.unifier.oraclecloud.com/<companycode>`).
- `<Base64-encoded-username-and-password>` is the encoded Primavera Unifier user name and password value. See Prepare Base64-Encoded Credentials.

4. In the **Optional Security** section enter the details in the following format:
   - `Refresh Token Request` = not applicable/leave blank
   - `$access_token` = `access.[tT]oken`
   - `$refresh_token` = `refresh.[tT]oken`
   - `$expiry` = `expires_in`
   - `$token_type` = `token.[tT]ype`
   - `$access_token_usage` = `-H Authorization: Bearer ${access_token}`
     Add **Multi-tenancy headers** to the access token usage (if applicable):

     `-H x-unifier-tenant:<tenant-id> -H x-unifier-tenant-code:<tenant-code>`
     You can confirm the exact header names/values by issuing the same token call in Postman/curl and inspecting the successful response for your tenancy.

     These fields map the JSON values from the token response and instruct Oracle Integration how to pass the token.
5. Click **Test** to ensure that your connection is successfully configured. A message confirms if your test is successful.
6. Click **Save**. If prompted, click Save again.
7. To return to the project workspace, click **Go back**.

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Activate and Run the Recipe

After configuring all of the connections, activate and run the integration.

Activate the Integration

Activating at the project level activates all the integrations in the project in a single step. In this case, there is only one integration, so activating at the project level is the same as activating at the integration level.

1. In the navigation pane, select **Projects**.
2. Search for this project:

   Primavera Unifier and Oracle Fusion Cloud ERP sync

3. Hover over the project and click **Activate** .
4. In the **Activate project** panel, do the following:
   a. Select **Project deployment**.
   b. Select an appropriate **Tracing level** (*Production*, *Audit*, or *Debug*).
   c. Click the **Activate** button.

   A confirmation message appears.

   You can change the tracing level later by selecting **Actions**, and then **Configure activation**.
5. Refresh the page to see the updated **Activated** status of the project.

Run the Integration

This recipe delivers a single integration:

- **Scheduled Unifier to Fusion ERP Projects Sync**

To run the integration:

1. In the **Integrations** section of the project workspace, click **Actions** on the integration, then select **Run**.
2. On the **Configure and run** page, enter values for the following schedule parameters:
   - **reportName**: Enter the name of the user-defined report you created in Primavera Unifier for this integration (see Configure a user defined report (UDR)).

     For example: `OIC_ProjectShell_Integration_UDR_DW`
   - **lastProjectUpdateDate**: You can specify a time stamp in UTC (Coordinated Universal Time) format to retrieve reports from Primavera Unifier that have been created or changed or updated since this date-time stamp.

     For example: `2026-1-1 10:00:00`

We do not pass time zone information, only the full date/time information, and the report is set up to default to UTC time zone. If scheduler is active, this parameter is updated by the last time run date/time timestamp converted to UTC time zone. If this parameter is left blank, all projects from Primavera Unifier will be synchronized.

3. Click **Run** and then monitor the instance to verify success.

Monitor the Integration

You can monitor instances and errors directly within the project workspace and also from the global observability pages.

Monitor from the Project

1. In the project workspace, click **Observe**.
2. Click **Instances** to see all runs.

   You can filter by **Status** (for example, *Succeeded* or *Errored*) and **Time window** (time range).

   Click an instance to open the activity stream, which shows step-by-step execution and faults.
3. Use the **Errors** panel to review failures and take action (resubmit or discard) where available.

Related Topics

- Monitor Integrations in a Project

Monitor from Global Observability

Use global observability for cross-project monitoring of health, performance, and errors.

1. In the navigation pane, click **Observability**.
2. Click **Dashboards** to review instance trends, error rates, and performance across projects.

Related Topics

- Monitor Integrations During Runtime