Oracle® Construction and Engineering

Integrate Primavera P6 EPPM Resources and Schedule with Primavera Unifier

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About This Content

This document describes how to install, configure, and run this accelerator 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 Oracle Mapper with Oracle Integration 3*
- Oracle Integration documentation
- Oracle Primavera P6 EPPM 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.
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 Accelerator

This accelerator provides a ready-to-deploy integration project that automates data synchronization between Primavera P6 Enterprise Project Portfolio Management (P6 EPPM) and Primavera Unifier.

It streamlines the flow of synchronization for both **global reference data** (resources, roles, work rates) and **project schedule data** (WBS, activities, assignments), and can also push **actual activity dates** captured in Primavera Unifier back into Primavera P6 EPPM to keep both systems aligned.

> **Note**
>
> This accelerator is available as **P6 EPPM — Primavera Unifier | Integrate Resources and Schedule** in the Integration store.

Purpose

The purpose of this accelerator is to:

- Integrate **resources, roles, and work rates** from Oracle Primavera P6 EPPM into Primavera Unifier's master rate sheet to standardize costing and enable downstream schedule/cost flows.
- Synchronize **schedule data** (WBS, activities, assignments) from Oracle Primavera P6 EPPM to Primavera Unifier.
- Optionally synchronize **actual dates** for activities captured in Primavera Unifier back to Oracle Primavera P6 EPPM.

Delivered Integrations

This accelerator delivers a project that includes multiple pre-built integrations.

Main Integrations

1. **Oracle P6 Unifier Resources Roles Sync**

   Synchronizes global resources, roles, and their associated work rates from Primavera P6 EPPM to Primavera Unifier (master rate sheet).

2. **Oracle P6 Unifier Activities Sync**

   Retrieves project details from Primavera P6 EPPM (EPS structure) and synchronizes WBS, activities, and assignments to Primavera Unifier.

3. **Oracle Unifier P6 Activity Actuals Sync**

   Synchronizes actual start/finish dates for activities recorded in Primavera Unifier back to Primavera P6 EPPM.

Dependency

Always run **Oracle P6 Unifier Resources Roles Sync** first. This is because **Oracle P6 Unifier Activities Sync** requires resources/roles/rates to exist in Primavera Unifier.

Additional Helper Integrations

- **Oracle P6 Unifier Activities Sync Scheduler**

  Scheduled wrapper that triggers **Activities Sync** at predefined intervals with the required Primavera P6 EPPM and Primavera Unifier project identifiers. Use this for unattended, periodic schedule updates.

- **Primavera Unifier Status Update Service**

  Publishes integration **job-status updates** from Oracle Integration to Primavera Unifier. For integrations that support it, enables optional progress notifications so end users can see Started / In Progress / Completed / Failed directly in the Primavera Unifier user interface.

Integration Workflows Overview

The following sections describe the high-level behavior of each integration. For request payloads and detailed run steps, see Activate and Run the Accelerator.

Integrate Resources and Roles (Global Integration)

1. Trigger
   - The integration is initiated by sending a request to the deployed integration in Oracle Integration.
   - The request can optionally include filters to limit synchronization to specific resources or roles.
2. Initialization
   - Oracle Integration validates input parameters and prepares required runtime variables.
3. Data retrieval
   - The integration queries Oracle Primavera P6 EPPM for resources, roles, and their associated work rates.
4. Data creation/update
   - The retrieved records are created or updated in Primavera Unifier's master rate sheet.
   - Partial success handling - if individual records fail, the integration logs those items for audit while continuing with remaining data.
5. Completion summary
   - A final synchronization summary is presented, showing counts of successful and failed records.

> **Note**
>
> - **Unique IDs**: Each resource ID and role ID must be unique. Primavera Unifier does not allow duplicate identifiers.
> - **Single work rate**: Each resource/role supports only one work rate value (`pricePerUnit1`) because Primavera Unifier does not allow multiple work rates under the same cost and rate type.

Integrate WBS, Activities, and Assignments (Schedule Integration)

1. Trigger
   - The integration starts when a request is sent to the Oracle Integration-deployed integration, specifying both the Oracle Primavera P6 EPPM project ID and the Primavera Unifier project number for synchronization.
   - The request can optionally include options to also sync the current baseline from Oracle Primavera P6 EPPM or delete Primavera Unifier WBS/activities/assignments not present in Oracle Primavera P6 EPPM (full refresh)
2. Initialization
   - Oracle Integration validates input parameters and prepares required runtime variables.
3. Project linking
   - The integration reads project data from Oracle Primavera P6 EPPM (EPS structure) and establishes the link to the corresponding Primavera Unifier project.
   - Once linked, this relationship appears under the project's **Gateway** tab in Primavera Unifier.
4. Data retrieval
   - Oracle Integration fetches schedule data from Oracle Primavera P6 EPPM, including:
     - Work breakdown structure (WBS)
     - Activities
     - Assignments
5. Data creation/update
   - The integration creates or updates the above records in Primavera Unifier respected sheets.
   - For assignments, it cross-references resources and roles from Primavera Unifier's master rate sheet to maintain correct associations.
6. Optional baseline sync
   - If baseline synchronization is requested, the current baseline set in Oracle Primavera P6 EPPM is also created or updated in Primavera Unifier, enabling baseline comparison within Primavera Unifier.
7. Completion summary
   - The final report highlights how many records were synchronized and any items skipped due to errors.

> **Note**
>
> - **WBS full refresh**: Due to a current limitation, the integration cannot perform incremental WBS updates. Each run performs a complete refresh, deleting WBS records in Primavera Unifier that are no longer present in Oracle Primavera P6 EPPM.
> - **Baseline uniqueness**: Baseline project names should be unique across all projects to prevent naming conflicts.

Integrate Activity Actuals (Primavera Unifier to Oracle Primavera P6 EPPM)

1. Trigger
   - The integration starts when a request is sent to the Oracle Integration-deployed integration, specifying both the Oracle Primavera P6 EPPM project ID and the Primavera Unifier project number for synchronization.
2. Data retrieval
   - Oracle Integration reads activity data from the Primavera Unifier activity sheet.
   - The integration then queries Oracle Primavera P6 EPPM for project data.
3. Update in Oracle Primavera P6 EPPM
   - The integration updates the corresponding activities in Oracle Primavera P6 EPPM with the latest actual dates.
4. Completion confirmation
   - Results are logged in Oracle Integration and can be viewed via Integration Tracking.

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Before You Install the Accelerator

Complete the following tasks before you install or run the accelerator. These steps will guide you during connection setup and first runs.

Configure Oracle Primavera P6 EPPM

Perform the following tasks in Oracle Primavera P6 EPPM for this integration:

- Create or Use an Existing Project
- Set the Schedule Type for Primavera Unifier

Create or Use an Existing Project

A project is a temporary endeavor (with a defined start and finish) used to plan, schedule, and control work.

You can either create a new project in Oracle Primavera P6 EPPM, or select an existing one that you will synchronize with Primavera Unifier.

See Creating Projects in the *Oracle Primavera P6 EPPM User Guide* for details about how to create a project and add it to the EPS.

Set the Schedule Type for Primavera Unifier

In Oracle Primavera P6 EPPM, open the project and set the schedule type that Primavera Unifier will use:

- Go to **Project** → **EPS** → select the project → **Set Project Preferences** → **Integrations** → **Unifier** subsection
- In **Summary Sheet Integration**, select the appropriate **Schedule Type** for this project.

> **Note**
>
> This step is required because Primavera Unifier needs the schedule type to correctly synchronize WBS, activities, and assignments.

Configure Primavera Unifier

Perform the following tasks in Primavera Unifier for this integration:

- Create an Integration User
- Create or Use an Existing Shell (Project)
- Link the Oracle Primavera P6 EPPM Project in Primavera Unifier
- Align Calendars and Working Hours

Create an Integration User

The integration user refers to the user who is performing integration using the REST services.

See Creating Integration Users in the *Oracle Primavera Unifier Administration Help* for details about how to create the integration user.

> **Note**
>
> After you create the integration user, you will:
>
> 1. generate a Base64-encoded version of the integration user's user name and password
> 2. and then specify the Base64-encoded user name and password in the access token request that you configure as part of the the Primavera Unifier connection configuration

Create or Use an Existing Shell (Project)

A shell organizes all project/facility information and processes in one place.

You can either create a new shell or select an existing shell to receive Oracle Primavera P6 EPPM WBS, activities, assignments, roles, and resources.

See Creating a Shell in the *Oracle Primavera Unifier Administration Help* for details about creating a shell.

Link the Oracle Primavera P6 EPPM Project in Primavera Unifier

In the Primavera Unifier project (shell) **Details**, open the **Gateway Integration** tab and provide the **Project ID** of the Oracle Primavera P6 EPPM source project.

This establishes the system-to-system link used by the accelerator.

Align Calendars and Working Hours

Ensure P6 and Unifier calendars (working days/hours, holidays) are aligned.

If calendars are misaligned, Primavera Unifier may reject date updates or show shifted dates.

If needed, create custom calendars to be used by the Schedule Manager (see Creating Schedule Manager Custom Calendars in the *Oracle Primavera Unifier User Help*)

Generate Base64-Encoded User Credentials for Access Token Requests

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 Passwords Do I Need To Encode?

For this accelerator, you need to generate two encodings:

1. **Oracle Primavera P6 EPPM**: Generate a Base64-encoded version of your Oracle Primavera P6 EPPM user name and password. This encoded version will be used in the access token request that is documented in the section, P6 REST API (using the REST Adapter).
2. **Primavera Unifier**: Generate a Base64-encoded version of your Primavera Unifier integration user's user name and password. This encoded version will be used in the access token request that is documented in the section, Primavera Unifier API (using the REST Adapter) .

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 of your access token request.

Specifically, you will:

1. Replace the variable `<Base64-encoded-username-and-password>` in the access token request example in the section, P6 REST API (using the REST Adapter), with the encoded Oracle Primavera P6 EPPM user name and password.
2. Replace the variable `<Base64-encoded-username-and-password>` in the access token request example in the section, Primavera Unifier API (using the REST Adapter), with the encoded Primavera Unifier user name and password.

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Install and Configure the Accelerator

On your Oracle Integration instance, import the Oracle P6 EPPM ↔ Primavera Unifier Accelerator. After the project is installed, **configure the delivered connections** below and verify each shows **Test: Success** before you run any flow.

1. On the Oracle Integration Home page, in the **Get Started** section, click **Browse store**.
2. Search for this accelerator:
   P6 EPPM — Primavera Unifier | Integrate Resources and Schedule
3. After you find the accelerator, click **Get** on the accelerator card.
   A message confirms that the accelerator was successfully installed, and the accelerator card shows **In Use**.
4. Click Configure on the accelerator card. The project workspace opens, displaying all the resources of the accelerator.

Configure the Oracle Primavera P6 EPPM Connections

This accelerator uses two connections to Oracle Primavera P6 EPPM:

1. **P6 Adapter** - Uses the Oracle Primavera P6 EPPM Adapter to communicate with Oracle Primavera P6 EPPM for core project and schedule data.
2. **P6 REST API** - Uses the REST Adapter to access the Oracle Primavera P6 EPPM REST services for supplemental data not available via the Oracle Primavera P6 EPPM Adapter.

P6 Adapter (using the Oracle Primavera P6 EPPM Adapter)

1. In the **Connections** section, click **Actions** ⋯ on the connection, then select **Edit**.
2. In the **Properties** section, in the **Connection URL** field, enter the URL of your Primavera P6 EPPM instance.

   For example:

   `https://p6.oraclecloud.com/`
3. In the **Security** section, select the security policy you want to use (**Username Password Token** or **OAuth**).

   Enter the login credentials (user name and password) of your Oracle Primavera P6 EPPM 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**.

P6 REST API (using the REST Adapter)

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 P6 EPPM instance.

      Append your P6 REST gateway (OCI-hosted P6 uses `/p6ws`).

      For example: `https://p6.oraclecloud.com/p6ws`
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 POST 'https://<SERVER_URL>/p6ws/oauth/token' \
    -H 'authToken: <Base64-encoded-username-and-password>' \
    -H 'return_json: true' \
    -H 'Content-Length: 0'
```

      Where:

      - `<SERVER_URL>` is the base URL of your Oracle Primavera P6 EPPM instance (for example, `p6.oraclecloud.com`).
      - `<Base64-encoded-username-and-password>` is the Base64-encoded version of your Oracle Primavera P6 EPPM user name and password. See Generate Base64-Encoded User Credentials for Access Token Requests.
4. In the **Optional Security** section, enter the details in the following format:
   - `$access_token = access_token`
   - `$token_type = token_type`
   - `$access_token_usage = -H Authorization: ${token_type} ${access_token}`
   - These fields map the JSON 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**.

Configure the Primavera Unifier Connection

This accelerator uses only one connection to Primavera Unifier:

- **Primavera Unifier API** - Uses the REST Adapter to perform trigger and invoke operations to and from the Primavera Unifier REST API.

Primavera Unifier API (using the REST Adapter)

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://us1.unifier.oraclecloud.com/<company-code>
   ```

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 'Content-Type: application/x-www-form-urlencoded' \
         -H 'Authorization: Basic <Base64-encoded-username-and-password>'
   ```

   Where:

   - `<SERVER_URL>` is the base URL of your Primavera Unifier instance (e.g., `us1.unifier.oraclecloud.com/<company-code>`)
   - `<Base64-encoded-username-and-password>` is the Base64-encoded version of the user name and password of the Primavera Unifier integration user. See Generate Base64-Encoded User Credentials for Access Token Requests.

4. In the **Optional Security** section enter the details in the following format:

   - `$access_token = access_token`
   - `$token_type = token_type`
   - `$access_token_usage = -H Authorization: ${token_type} ${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.

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 Accelerator

After you configure all connections, activate all of the integrations, and then run them from the project workspace.

Activate the Integrations

You can activate the integrations all at once, or you can activate each integration individually.

Preferred: Activate the Project (one click for all integrations)

Activating at the project level activates every selected integration (and version) in a single step.

1. Navigate to the **Projects**. In the projects list, find the accelerator to activate.
2. Hover the accelerator project then click **Activate**.
3. In the panel for activating the project:
   a. Select the default **Project deployment**.
   b. Select an appropriate **Tracing level** option (Production/Audit).
4. Click the **Activate** button (bottom-right) to confirm.
5. A confirmation message will appear. Refresh the page to see the updated **Activated** status of the project.

Alternative: Activate Each Integration in the Project Individually

Repeat for all the integrations delivered by the accelerator.

1. Navigate to the **Projects**. In the projects list, find the accelerator and open it for editing - Hover the accelerator project then click **Edit**.
2. In the **Projects workspace** → **Integrations**, hover over the integration, click **Actions (…)** → **Activate**.
3. In the **Activate integration** panel, choose the **Tracing level** that fits your run (Minimal: *Production*, Troubleshooting: *Debug*), then click **Activate**.

   You can change tracing level later via **Actions** → **Configure activation**.
4. A confirmation message will appear. Refresh the page to confirm the **Activated** status.

Run the integrations

Run 'Oracle P6 Unifier Resources Roles Sync'

> **Note**
>
> Run this integration first. The **Activities Sync** depends on resources/roles/rates being present in Unifier. Activate this integration and complete one successful run before running the schedule sync.

1. In the Integrations section of the project workspace, click **Actions** on the integration flow, then select **Run**.
2. On the **Configure and run** page, in the Request section, click the **Body tab** to enter the required JSON payload.
3. Click **Run** and watch the **Activity Stream** / **Tracking** to verify success.

Request payload (example)

```
{
      "p6FilterExpressions": {
        "resources": "Id LIKE 'WS-%' AND ResourceType != 'NonLabor'",
        "roles": "Id LIKE 'WS-%'"
      },
      "unifierJobId": "123456"
    }
```

Element	Required	Data Type	Description
`p6FilterExpressions.resources`	Yes	String	P6 filter to limit **Resources**. If omitted/empty, all accessible resources are synced.
`p6FilterExpressions.roles`	Yes	String	P6 filter to limit **Roles**. If omitted/empty, all accessible roles are synced.
`unifierJobId`	No	String	Optional correlation ID for Primavera Unifier job tracking (if launched from Unifier).

About P6 Filters

Filters follow Oracle P6 EPPM Web Services syntax. See Using Filters in the *Oracle Primavera P6 EPPM Web Services Programming Guide* for examples and allowed operators/fields.

Run 'Oracle P6 Unifier Activities Sync' (WBS, Activities, Assignments)

Prerequisite: Run Resources & Roles Sync successfully first.

You can run the Activities sync in two ways: either manually or by schedule.

Option A - Direct trigger (HTTP POST) (recommended for ad-hoc runs)

1. In the Integrations section of the project workspace, click **Actions** on the integration flow, then select **Run**.
2. On the **Configure and run** page, in the Request section, click the **Body tab** to enter the required JSON payload.
3. Click **Run** and watch the **Activity Stream** / **Tracking** to verify success.

Request payload (example)

```
{
      "p6": {
        "projectId": "PROJ-2001",
        "synchronizeBaselineProjects": true
      },
      "unifier": {
        "projectNumber": "UN-2025-001",
        "removeUnreferencedData": true
      }
    }
```

Element	Required	Data Type	Description
p6.projectId	Yes	String	Oracle P6 EPPM project identifier to sync **from** (use the P6 Project ID used by your environment).
p6.synchronizeBaselineProjects	No	Boolean	When `true`, also create/update the current baseline from Oracle P6 EPPM in Primavera Unifier. Default: `false`.
unifier.projectNumber	Yes	String	Target Primavera Unifier project/shell identifier number to sync **to**.
unifier.removeUnreferencedData	No	Boolean	When `true`, delete Primavera Unifier WBS/activities/assignments not present in Oracle P6 EPPM (full refresh). Default: `false`.

Option B — Oracle P6 Unifier Activities Sync Scheduler (preferred for recurring, unattended runs)

1. In the Integrations section of the project workspace, click **Actions** on the scheduled integration flow, then select **Run** (first-time parameterization)
   - – Select **Add Schedule** to set the recurrence interval.
2. For the first time parameterization set the **Request type** as Ad hoc request.
3. Provide the same **payload fields** as the direct trigger (the scheduler passes them through to the underlying Activities Sync):
   - – **P6-ProjectId** - `p6.projectId` (required)
   - – **synchronizeProjectBaselines** - `p6.synchronizeBaselineProjects` (optional)
   - – **Unifier-ProjectNumber** - `unifier.projectNumber` (required)

- **removeUnreferencedDataInUnifier** - `unifier.removeUnreferencedData` (optional)

4. Click **Run** and watch the **Activity Stream** / **Tracking** to verify success. If the schedule was also set, the scheduler will now trigger the Activities Sync at the configured cadence.

Run 'Oracle Unifier P6 Activity Actuals Sync'

1. In the **Integrations** section of the project workspace, click **Actions** on the integration flow, then select **Run**.
2. On the **Configure and run** page, in the **Request** section, click the **Body** tab to enter the required JSON payload.
3. Click **Run** and watch the **Activity Stream / Tracking** to verify success.

Request payload (example)

```
{
        "p6": {
          "projectId": "PROJ-2001"
        },
        "unifier": {
          "projectNumber": "UN-2025-001"
        }
      }
```

Element	Required	Data Type	Description
`p6.projectId`	Yes	String	Oracle Primavera P6 EPPM project identifier to apply actuals to.
`unifier.projectNumber`	Yes	String	Primavera Unifier project/shell that is the source of the actuals.

Run the Integrations via REST

Use this method if you prefer to invoke integrations through REST instead of the Oracle Integration user interface.

1. In the Integrations section of the project workspace, click **Actions** on the integration flow, then select **Run**.
2. On the **Configure and run** section, open the **Endpoint Metadata**.
3. Copy the **Endpoint URL** and review the **Resource** information (HTTP method, request/response schemas). Use this with your REST client (Postman/curl). Oracle also supports publishing OpenAPI documents for REST-triggered integrations for easy client import.

Monitor the Integrations

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

Monitor Integrations from the Project

1. In the accelerator project workspace, click **Observe** section.

2. Use **Instances** to see all runs; filter by **Status** (e.g., *Errored*) and time. Click an instance to open the **Activity Stream**, which shows each step, payload movement, and any faults.
3. For failed instances, use the **Errors** panel to review messages and (where applicable) resubmit or discard.

Monitor Integrations from Global Observability

1. Open **Observability** pages from the left navigation for a cross-project view of health, performance, and errors.

   See Monitor Integrations in a Project in *Using Integrations in Oracle Integration 3*
2. You can also retrieve an instance's activity stream via REST at `/ic/api/integration/v1/monitoring/instances/{id}/activityStream` for automation logs.

   See Monitor Integrations During Runtime in *Using Integrations in Oracle Integration 3*.

Glossary

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