Oracle® Construction and Engineering

Using the Oracle Primavera P6 EPPM Adapter with Oracle Integration 3

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Preface

This guide describes how to configure this adapter as a connection in an integration in Oracle Integration.

> **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 the Oracle Primavera P6 EPPM Adapter adapter in integrations in Oracle Integration.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at `https://www.oracle.com/corporate/accessibility/`.

Access to Oracle Support

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Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our

initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

See these Oracle resources:

* Oracle Cloud at `http://cloud.oracle.com`
* *Using Integrations in Oracle Integration 3*
* *Using the Oracle Mapper with Oracle Integration 3*
* Oracle Integration documentation on Oracle Help Center.
* Oracle Primavera P6 EPPM Documentation on Oracle Help Center.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the Oracle Primavera P6 EPPM Adapter

Review the following topics to learn about the Oracle Primavera P6 EPPM Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

- Oracle Primavera P6 EPPM Adapter Capabilities
- Oracle Primavera P6 EPPM Adapter Restrictions
- What Application Version Is Supported?
- Workflow to Create and Add a Connection to an Integration

Oracle Primavera P6 EPPM Adapter Capabilities

The Oracle Primavera P6 EPPM Adapter enables you to create an integration in Oracle Integration. It helps you integrate P6 EPPM with other Oracle or non-Oracle applications.

The P6 EPPM Adapter is one of many predefined adapters included with Oracle Integration. You can configure the P6 EPPM Adapter as an invoke connection in an integration in Oracle Integration.

The P6 EPPM Adapter provides the following capabilities:

- Allows for a connection set up between P6 EPPM and other Oracle or non-Oracle applications or endpoints.
- Eliminates the need to use the generic technology adapter and enables users to easily integrate P6 EPPM with other applications without the full knowledge of Oracle Integration or P6 EPPM APIs.
- Provides for a shorter time frame to create an integration with P6 EPPM.
- Provides the ability to read a project schedule from P6 EPPM in a single call and easy selection of business objects needed for integration.
- Provides flexible data mapping across multiple business objects.
- Automatically creates or updates data without specifying if the data already exists.
- Provides the ability to run job services in P6 EPPM. For example, you can use the adapter to run the Apply Actuals service.
- Provides the ability to read and write the following data in P6 EPPM in a single call:
  - Global Data: Calendar, Rates, Resources, Roles, Workspaces
  - Project Data: Activity, Assignments, Calendar, Project Header, Rates, Relationships, Resources, Risks, Roles, Tasks, WBS
  - User-defined Fields

    –   Codes

Oracle Primavera P6 EPPM Adapter Restrictions

Note the following Oracle Primavera P6 EPPM Adapter restrictions.

- The adapter does not support deleting data in P6 EPPM.

- It does not support the synchronization of spread values in a project schedule.

- It supports synchronization of only the following business objects in P6 EPPM:

  – Global Data: Calendar, Rates, Resources, Roles

  – Project Data: Activity, Assignments, Calendar, Project Header, Rates, Relationships, Resources, Risks, Roles, Tasks, WBS

  – User-defined Fields (UDFs)

  – Codes

> **✎ Note:**
>
> There are overall service limits for Oracle Integration. A service limit is the quota or allowance set on a resource. See Service Limits.

What Application Version Is Supported?

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

Workflow to Create and Add a Connection to an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration.

This table lists the workflow steps for both adapter tasks and overall integration tasks, and provides links to instructions for each step.

Step	Description	More Information
1	Access Oracle Integration.	Go to `https://`*`instance_URL`*`/ic/home`
2	Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.	Create a Oracle Primavera P6 EPPM Adapter Connection
3	Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration.	Create Integrations in *Using Integrations in Oracle Integration 3* and Add the Oracle Primavera P6 EPPM Adapter Connection to an Integration

Step	Description	More Information
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in *Using Integrations in Oracle Integration 3*
5	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Manage Lookups in *Using Integrations in Oracle Integration 3*
6	Activate the integration.	Activate an Integration in *Using Integrations in Oracle Integration 3*
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in *Using Integrations in Oracle Integration 3*
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in *Using Integrations in Oracle Integration 3*
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in *Using Integrations in Oracle Integration 3*

2

Create a Oracle Primavera P6 EPPM 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
- Upload an SSL Certificate

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Oracle Primavera P6 EPPM Adapter:

- **Create a user account in P6 EPPM**: To connect with P6 EPPM, you must create a user account in P6 EPPM. Refer to the Creating User Accounts for P6 EPPM topic in the *P6 EPPM Application Administration Guide* to learn how to create a user account.

- **Set up an Integration User Account with OAuth Authentication Type**: An integration user account is a generic user account used to manage integrations between P6 EPPM and other applications. You can set up an integration account to keep track of the data modified through integrations and to avoid issues arising from using a standard user account, such as account lockouts or an employee managing the integrations leaving the organization. To create an integration user account, refer to the Creating User Accounts for P6 EPPM topic in the *P6 EPPM Application Administration Guide*, and use that account exclusively for integrations.

Create a Connection

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

To create a connection in Oracle Integration:

1. In the navigation pane, click **Design**, then **Connections**.

2. Click **Create**.

> ✏️ **Note:**
>
> You can also create a connection in the integration canvas. See Define Inbound Triggers and Outbound Invokes.

3. In the Create connection panel, select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field.

4. Enter the information that describes this connection.

   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. Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select.
   For example, assume you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an **invoke**. Dragging the adapter to a **trigger** section in the integration produces an error.

   c. Enter optional keywords (tags). You can search on the connection keywords on the Connections page.

   d. Enter an optional description of the connection.

5. Click **Create**.

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

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.

2. In the **Connection URL** field, specify your P6 EPPM URL.

Configure Connection Security

Configure security for your Oracle Primavera P6 EPPM Adapter connection.

1. Go to the **Security** section.

2. In the **User Name** field, enter the P6 EPPM integration user account username.

3. In the **Password** field, enter the P6 EPPM integration user account password.

> **Note:**
>
> The P6 EPPM Adapter uses the username and password to obtain and refresh the OAuth token used to connect with Unifier.

Test the Connection

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

1. In the page title bar, click **Test**. What happens next depends on whether your adapter connection uses a Web Services Description Language (WSDL) file. Only some adapter connections use WSDLs.

If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.
Uses a WSDL	A dialog prompts you to select the type of connection testing to perform: • **Validate and Test**: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL. • **Test**: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

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 and verify URLs and credentials. Continue to test until the connection is successful.

3. When complete, click **Save**.

Upload an SSL Certificate

Certificates are used to validate outbound SSL connections.

If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception error is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration.

1. Sign in to Oracle Integration.

2. In the navigation pane, click **Settings**, then **Certificates**.
   All certificates currently uploaded to the trust store are displayed on the Certificates page.

3. Click **Filter** 🔽 to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.

4. Click **Upload** at the top of the page.
   The Upload certificate panel is displayed.

5. Enter an alias name and optional description.

6. In the **Type** field, select the certificate type. Each certificate type enables Oracle
   Integration to connect with external services.

   • X.509 (SSL transport)

   • SAML (Authentication & Authorization)

   • PGP (Encryption & Decryption)

   • Signing key

X.509 (SSL transport)

1. Select a certificate category.

   a. **Trust**: Use this option to upload a trust certificate.

      i. Click **Choose File**, then select the trust file (for example, `.cer` or `.crt`) to
         upload.

   b. **Identity**: Use this option to upload a certificate for two-way SSL
      communication.

      i. Click **Choose File**, then select the keystore file (`.jks`) to upload.

      ii. Enter the comma-separated list of passwords corresponding to key
          aliases.

      > **✎ Note:**
      >
      > When an identity certificate file (`.jks`) contains more than one
      > private key, all the private keys must have the same password. If
      > the private keys are protected with different passwords, the
      > private keys cannot be extracted from the keystore.

      iii. Enter the password of the keystore being imported.

   c. Click **Upload**.

SAML (Authentication & Authorization)

1. Note that **Message Protection** is automatically selected as the only available certificate category and cannot be deselected. Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported with this type of certificate.

2. Click **Choose File**, then select the certificate file (`.cer` or `.crt`) to upload.

3. Click **Upload**.

PGP (Encryption & Decryption)

1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.

   a. **Private**: Uses a private key of the target location to decrypt the file.

      i. Click **Choose File**, then select the PGP file to upload.

      ii. Enter the PGP private key password.

   b. **Public**: Uses a public key of the target location to encrypt the file.

      i. Click **Choose File**, then select the PGP file to upload.

      ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**.

         • **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content.

         • **No** causes the message to be sent in binary format.

      iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. The following supported cipher algorithms are FIPS-compliant:

         • AES128

         • AES192

         • AES256

         • TDES

   c. Click **Upload**.

Signing key

A signing key is a secret key used to establish trust between applications. Signing keys are used to sign ID tokens, access tokens, SAML assertions, and more. Using a private signing key, the token is digitally signed and the server verifies the authenticity of the token by using a public signing key. You must upload a signing key to use the OAuth Client Credentials using JWT Client Assertion and OAuth using JWT User Assertion security policies in REST Adapter invoke connections. Only PKCS1- and PKCS8-formatted files are supported.

1. Select **Public** or **Private**.

2. Click **Choose file** to upload a key file.
   If you selected **Private**, and the private key is encrypted, a field for entering the private signing key password is displayed after key upload is complete.

3. Enter the private signing key password. If the private signing key is not encrypted, you are not required to enter a password.

3

Add the Oracle Primavera P6 EPPM Adapter Connection to an Integration

When you select and place the Oracle Primavera P6 EPPM Adapter into the invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of the P6 EPPM Adapter endpoint properties.

The following topics describe the wizard pages that guide you through configuration of the P6 EPPM Adapter as an invoke in an integration.

Topics:

- Basic Info Page
- Invoke Object Selection Page
- Invoke Field Selection Page
- Summary Page

Basic Info Page

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

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and hyphens in the name. You can't include the following characters: • No blank spaces (for example, `My Inbound Connection`) • No special characters (for example, `#;83&` or `righ(t)now4`) except underscores and hyphens • No multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example: `This connection receives an inbound request to synchronize account information with the cloud application.`
Select an operation name	Select an operation for the adapter.
What is the endpoint's relative resource URI?	Displays the endpoint's relative resource URI.
Request Object	Displays the request object based on your selected operation to send a request object to invoke.
Response Object	Displays the response object based on your selected operation to get the response object from P6 EPPM.

Invoke Object Selection Page

Select the objects you want the API to read.

Element	Description
Select objects for the operation <operation name>	Select the objects you want to create or update in P6 EPPM for the operation you selected in the previous step.

Invoke Field Selection Page

Select the fields that you want to synchronize for the selected objects.

Element	Description
Select fields for the operation <operation name>	Select the object whose fields you want to synchronize.
Select Fields	Select the fields in the **Available Fields** column and move them to the **Selected Fields** column.

> **Note:**
>
> For some objects, the commonly used fields are pre-selected. You can add additional fields, or remove the ones you do not need. For example, for Project, the commonly used fields are pre-selected.

> **Note:**
>
> You can use the **Reset Fields** button to reset the fields to default.

Summary Page

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

Element	Description
Summary	Displays a summary of the configuration values you defined on previous pages of the wizard.
	The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file.
	To return to a previous page to update any values, click the appropriate tab in the left panel or click **Back**.
	To cancel your configuration details, click **Cancel**.