Oracle
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Gateway, Primavera Cloud, and Unifier Setup Guide

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Overview

Primavera Gateway is an application that facilitates sharing and synchronizing project, resource, and other data between Primavera applications and enterprise applications. By using providers, which are used as a channel to connect with the corresponding enterprise application, Primavera Gateway enables you to combine management and scheduling functionality of Primavera applications with other enterprise products. Providers reside on either side of a data flow connecting a source application with a destination application. For a quick synopsis, watch the ***Overview of Primavera Gateway*** (***https://players.brightcove.net/2985902027001/SyXjZnYeeb_default/index.html?videoId=6174404031001***) video.

Data can be exchanged between Primavera Cloud and Unifier by using any of the following interfaces:

- Using the Oracle Primavera Cloud application user interface

  For more details on how this is accomplished using the Integration app, refer to the Oracle Primavera Cloud user documentation.
- Using the Primavera Gateway user interface

  Gateway administrators and developers can also set up business flows and users can schedule synchronization jobs between the two applications.

The following providers are delivered with Primavera Gateway:

- Unifier provider

  The Unifier provider enables you to send and receive schedule activity data to / from Primavera Cloud for activity sheets in Unifier. Primavera Gateway supports this integration with the Primavera Cloud provider.
- Primavera Cloud provider

  The Primavera Cloud provider enables you to send and receive schedule activity data to / from Unifier. Primavera Gateway supports this integration with the Primavera Cloud provider.

This guide describes the available business flows, associated field mapping templates, synchronizations, source and destination parameters to set up a data exchange in the Gateway application between Oracle Primavera Cloud and Primavera Unifier.

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Managing Personal Information

Consent notices enable you to convey to your users how personal information (PI) is collected, processed, stored, and transmitted, along with details related to applicable regulations and policies. Consent notices also alert users that the action they are taking may risk exposing PI. Primavera Gateway helps you to ensure that you have requested the appropriate consent to collect, process, store, and transmit the PI your organization holds as part of Primavera Gateway data.

For more details on how to configure consent forms and manage PI data in Gateway, see *Primavera Gateway Administration Guide*.

Setting Up the Unifier - Primavera Cloud Integration Environment

To setup a Unifier - Oracle Primavera Cloud integration:

1) Contact Oracle with your service request to install:
   - Primavera Unifier
   - Oracle Primavera Cloud
   - Primavera Gateway with Primavera Cloud and Unifier provider deployments preconfigured in the application.
2) Upon receiving access to Primavera Unifier, configure Unifier application with Gateway settings.

   For more details, see ***Configuring Unifier with Gateway Settings*** (on page 9).
3) Upon receiving access to Oracle Primavera Cloud, configure Oracle Primavera Cloud application with Gateway settings.

   For more details, see ***Configuring Oracle Primavera Cloud with Gateway Settings*** (on page 9).
4) Upon receiving access to Primavera Gateway, configure Gateway settings. For more details, see ***Configuring Gateway Settings*** (on page 10).

Configuring Applications for Using Gateway

This chapter describes how to:

- configure Primavera Cloud, and Unifier applications to connect with Primavera Gateway
- configure the settings in Primavera Gateway application

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Configuring Unifier with Gateway Settings

For activity sheet integration, setup connectivity with Gateway in Unifier as follows:

1) Sign in to Unifier with administrator credentials.
2) In the side bar, select **Admin** and then, select **Gateway**.
3) Select **Open** to enter or edit Gateway integration settings.
4) In the **Integration Settings** window:
   - Set up connectivity with Gateway API in the format: *https://<hostname>:<port>/gatewayapi*
   - Select the default export and import synchronizations that are to be executed from within Unifier

For more details on setting up the *Gateway Node in Unifier,* see *Unifier Help*.

> **Note**: The projects that are to be linked in both applications must have identical **Project Number** and **Project ID** in the respective products.

Configuring Oracle Primavera Cloud with Gateway Settings

For activity sheet integration with Unifier, set up connectivity with Gateway in Oracle Primavera Cloud as follows:

1) In the object selector, select **Global Admin**.
2) In the sidebar, select **Integration**.
3) Select the **Oracle Gateway** tile, and then select the **Connect** tab.
4) Enter the following connection details:
   - **Server URL**: Enter the Gateway **API URL** in the format: *https://<hostname>:<port>/gatewayapi*
   - **Username***:* Your Primavera Gateway username.
   - **Password***:* Your Primavera Gateway password.

5) Select **Test Connection**. The application will indicate whether it can connect to Primavera Gateway using the above settings. If the application cannot connect to Primavera Gateway, modify the above fields.
6) In the **Primavera Cloud Deployment Name** field, enter the application deployment configured in Primavera Gateway to transfer data between Primavera Cloud and Unifier.
7) Select + **Add...**.
8) In the **Action**. field of the **Add Synchronization** dialog box, select **Export** to export data to Unifier.
   a. In the **Type** list, select *Project*.
   b. In the **Synchronization Name** field, select the name of the default synchronization to be used to export data.
   c. Select **Add**.
9) Select **Save**.

Configuring Primavera Gateway

Gateway administrators and developers can configure Primavera Gateway by setting up:

- Application-level configuration properties on the **Settings** page
- Deployments to connect with applications for sending and receiving data
- Configuration Data to seamlessly replicate Gateway configurations, and specific synchronizations
- Field Mapping Templates for business flows
- Custom Steps for business flows
- File Converters to enable sending and receiving data in supported file formats
- Add-Ins to manage customizations
- Consent Forms to activate consent notice for users

These tasks must be completed before you begin to transfer data between applications. The following section describes how to complete each task.

Configuring Gateway Settings

Use the **Settings** page to specify settings for the installed Gateway application. For example, specify the Help location, or the job timeout value in minutes.

> **Note**: The settings available in this dialog box may vary depending on the application connections that have been set up in Gateway.

To configure Gateway application settings:

1) Select and then select **Settings**.
2) Update the settings as necessary and select **Save** when finished.
   On the **General** tab:

- **Help URL**: Enter the help system hosted by Oracle as *http://docs.oracle.com/cd/F37377_01/help/en/index.htm.* By default the Help URL displays the most recently delivered version.
- **Maximum number of job logs to display**: Enter a value to control the number of logs displayed on the Monitoring page. By default displays 2000 job logs.
- **Auto delete jobs after XX days (0 turns off auto delete)**: Enter the number of days that a job log can be retained before it is auto deleted. Enter 0 to turn off auto delete. By default, displays 30 for new customers.
- **Maximum wait time for the parallel load/convert steps to complete (in minutes):** Enter the number of minutes after which a synchronization job process is to be timed out. The job status of a timed-out synchronization is set to **Failed.** By default, the timeout is set to **30** minutes.
- **Maximum concurrent jobs in a node:** Enter the maximum number of jobs that can be executed concurrently at a node. By default 4 jobs can be executed concurrently.
- **Job polling Interval (in seconds):** Enter the wait time interval in seconds to check the database if there are new jobs to run. By default, the wait interval is set to 2 seconds.
- **Job timeout value (in minutes)**: Enter the wait time interval in minutes to timeout a synchronization job. By default, the timeout is set to **30** minutes.
- **Maximum File Size Limit (in MB)**: Enter the maximum file size limit for uploading files from Gateway user interface or from external applications. The file size limit applies to all providers and all supported file formats: CSV, XML, XLS, and XLSX. By default, the maximum file size limit is set to 50 MB.
- **Maximum job log size for XML format (in MB)**: Enter the maximum file size limit for job log size. Job log files over 10 MB (default) are saved in JSON format by default.
- **Enable Configurable Consent Forms**: Select this check box to display the **Consent Forms** tab on the Configuration page in Gateway. If you enable this option and then proceed to configure and enable specific consent forms, your users will need to give their consent to gain full access to specific features and functions of Gateway. By default, the check box is deselected.
- **Disable Logging For Jobs**: For integrations with Unifier, select this check box to improve performance with large sets of earned value management data. By default, the check box is deselected.
- **Enable Object Logging for Jobs**: Select this check box to disable the display of data at the object level in the **Data Details** tab of the **Monitoring** page, and improve performance.
- **Maximum wait time for GSL Custom Steps to Complete (in seconds)**: Enter the maximum wait time in seconds when processing a GSL custom step. By default, the wait time is set to *5* seconds.

If you choose to integrate with P6, enter the following information on the **P6** tab:

- **Create new resource code values during synchronization to P6**: Select this check box to enable the creation of new resource code values in the P6 EPPM resource code dictionary if these values do not already exist. By default, the check box is selected.
- **Create new project code values during synchronization to P6**: Select this check box to enable the creation of new project code values in the P6 EPPM project code dictionary if these values do not already exist. By default, the check box is selected.

- **Create new activity code values during synchronization to P6**: Select this check box to enable the creation of new global activity code values in the P6 EPPM activity code dictionary if these values do not already exist. By default, the check box is selected.
- **Include time zone when exporting from P6:** Select this check box to export P6 server time zone information along with P6 date and time fields. By default, this option is **not** selected, except for spread interval data in P6.

  Note: This time zone setting applies only for a Primavera Cloud - P6 integration.

  Send P6 Spread to Unifier as a file: Select this check box to improve the performance of job runs related to a P6 - Unifier synchronizations that include daily spread fields. The daily spread fields on the P6 side are packaged into a separate zip file and sent direct to Unifier bypassing Gateway, whereas all non-spread fields in the synchronization are sent to Unifier using Gateway. By default, the check box is deselected.

  When this check box is deselected, Gateway packages all fields, including the daily spread fields in the synchronization, and sends it to Unifier.
- **Update activity resource assignments when assigned UDF values match**: Enter the UDF code value that is assigned to resource assignments which you want to update during a synchronization. Use this to update the resource assignment with the matching UDF value when the assignment exists multiple times on an activity. By default no UDF value is set.
- **Maximum wait time for the summarizer to complete (in seconds)**: Enter the amount of time in seconds to wait for the summarizer to complete before a warning is given. By default the wait time is set for 120 seconds.
-

On the **Mail Configuration** tab:

- **SMTP Server**: Enter the SMTP server address of your email server.
- **Port Number**: Enter the port number of your email server.
- **Email Security**: Select the applicable email security type. Choices include, **SSL**, **TLS**, and **None**.
- **Email Address**: Enter the email address for the user who is to be notified for a specific status of synchronization jobs. These statuses include: *Completed*, *Review*, *Cancelled*, *Completed with Errors*, *Completed with Warnings*, and *Failed*.
- **Authorized User**: Enter the user name for this email account.
- **Password**: Enter the password for the authorized user.
- **Bounce Email Address**: Enter an alternate email address to be used if mail fails to be delivered to the first email address.

On the **Server** tab:

- **Server Log Detail Level**: From th list, select the type of detailed information to be included in the server log file. Choices include:
  - **Error** (default): Select this value to display application errors in the log file.
  - **Info**: Select this value to display a brief description in the log file.
  - **Debug**: Select this value to display a general debugging event.

- **Off**: Select this value to not generate any server log details.

Editing or Copying a Primavera Cloud Deployment Connection

To move data between applications, Primavera Gateway needs to know where to get and send information. Set this up by adding application deployment connections by specifying an **Endpoint** URL for each application.

For Primavera Cloud service, contact Oracle Support to:

- add one or more Primavera Cloud deployments
- copy an existing Primavera Cloud deployment

You can then edit a Primavera Cloud deployment connection as follows:

1) Sign in to Primavera Gateway with administration credentials.
2) In the sidebar, select **Configuration**.
3) Select the **Deployments** tab.
4) Select ✎ **Edit...** to invoke the **Deployment** wizard.
5) In the **General** step, select *Primavera Cloud* from the **Select Application Provider** list, and rename the deployment.
6) In the **Deployment** step, the following information is provided by Oracle Support:
   - **User Name:** The name of the user with administration access to the Primavera Cloud application.
   - **Password:** The password to the Primavera Cloud application.
   - **End Point:** The URL to connect to the Primavera Cloud application in the format: *http:///<server>:port/api*
7) Select **Test Connection** to ensure connectivity with Primavera Cloud is established.
8) Select **Save**.

Adding or Editing a Unifier Deployment Connection

To move data between applications, Primavera Gateway needs to know where to get and send information. You set this up by adding application deployment connections by specifying an **Endpoint** URL for each application.

For Unifier Cloud service, contact Oracle Support to:

- add one or more Unifier deployments
- copy an existing Unifier deployment

For on-premises Unifier installations, add or edit a Unifier deployment connection as follows:

1) Sign in to Primavera Gateway with administration credentials.
2) In the sidebar, select **Configuration**.
3) Select the **Deployments** tab.
4) Select + **Add...** or ✎ **Edit...** to invoke the **Deployment** wizard.
5) In the **General** step, select *Unifier* from the **Select Application Provider** list, and name the deployment.

6) In the **Deployment** step, set up Unifier connectivity from Gateway:
7) In the **Unifier authentication type** list, choose *Basic* or *OAuth*.

   If you chose *Basic* authentication, enter the following information

   - **Short Name:** Enter the short name of the company used in Unifier.
   - **Authentication Code:** Enter the authentication code to use when data is integrated with Unifier from external systems using web services.
   - **End Point URL:** Enter the URL to connect with Unifier application in the format: *http://<host name>:<port>*

   If you chose *OAuth* authentication, enter the following information:

   - **User Name**: Enter the name of a Unifier administrator with access to projects in Unifier.
   - **Password**: If you chose *OAuth* authentication, enter the case-sensitive password of the Unifier administrator.
   - **End Point URL:** Enter the URL to connect with Unifier application in the format: *http://<host name>:<port>*
8) Select **Test Connection** to ensure connectivity with Unifier is established.
9) Select **Save**.

Tips

- You can also edit a deployment and select **Save** in any step to exit the wizard.

Copying Provider Deployments

(On-premises only) To use a provider deployment in multiple distinct environments efficiently and effectively, you can simply create a copy of the current deployment and reuse. When a deployment is copied, all the attributes and values of the current provider deployment are carried over to the copy by default. Edit the copied version as needed to support the specific environment.

For cloud applications, you can copy a current deployment, but you will need to contact Oracle Support to request the **User Name**, **Password**, and **End Point URL** information to be populated in the copied deployment.

To copy a provider deployment:

1) In the sidebar, select **Configuration**.
2) Select the **Deployments** tab.
3) Select the deployment you want to copy, select the **Actions** ▼ menu, and then select **Copy**.
4) In the **General** step of the **Deployment** wizard:
   a. In the **Deployment Name** field, rename the deployment.

      The default name of the copied deployment is always created with the word, *Copy*. For example, a copy of the *Unifier Deployment* will be named as *Unifier Deployment Copy* by default.
   b. In the **Description** field, edit the description of the copied deployment.

> **Note:** Select **Next** on each screen to advance to the next step.

5) In the **Deployment** step:
   a. Edit the connection information from Gateway as needed.

   > **Note**: Passwords cannot be copied, and must be entered manually.

   b. Select **Test Connection** to ensure connectivity with the source or destination application.
6) Select **Save** to add the deployment.

Adding or Editing Field Mapping Templates

Field mapping templates are used by master data and project data business flows to transfer data between any two applications supported by Primavera Gateway.

A field mapping template contains a list of business objects and fields that are to be transferred from the source application to the destination application. It also contains information on how each source business object and a destination business object is mapped with a corresponding Gateway business object. The field-mapping templates determine how a Gateway object, and the corresponding provider object with its supported fields are used in a business flow.

A business flow is a combination of a specific set of field mapping templates that fulfill a data transfer requirement. To create a business flow that processes specific data between any two applications, appropriate field-mapping templates must be created and included in a business flow to support data transfer in a business flow.

Gateway delivers field-mapping templates for Gateway objects that can be used in business flows. Alternatively, you can also create additional field-mapping templates to suit your requirements.

> **Note**: Field-mapping templates can be created using Groovy code or the canonical format (Direct) format of Gateway.

To add or edit field mapping templates:

1) In the sidebar, select **Configuration** and then select the **Field Mapping Templates** tab.
2) Select a Gateway business object from the drop-down.

   All field-mapping templates associated with the Gateway business object display in the field-mapping template table.
3) To add a field-mapping template, select + **Add...**.

   or

   In the **Field Mapping Name** column, select a field mapping template and then select ✎ **Edit...**.
4) In the **General** step:
   a. In the **Template Name** field, enter a name for the field mapping template.

      This is the only field that can be changed if you choose to edit a field mapping template.

b. Select the type of template being created from the **Template Type** list.
   - Select **Groovy** if the template will use Groovy code.
   - Select **Direct** if the template will use the canonical format of Gateway.

c. Select a provider from the **Provider 1** list.

d. Select a provider from the **Provider 2** list.

e. Select the object to be supported by the field mapping template from the **Provider 1 Object** list.

f. Select the object to be supported by the field mapping template from the **Provider 2 Object** list.

g. (Optional) Select **Use Criteria Step** to set a specific condition to filter data within the field-mapping template.

> **Note:** Select **Next** on each screen to advance to the next step.

5) In the **Criteria** step, specify the condition for field mappings:
   a. Select the field from the **Fields** list of **Provider 1**.
   b. Select the field from the **Fields** list of **Provider 2**.
   c. Enter the **Conditions** to be satisfied by **Provider1** and **Provider 2** fields respectively.
   d. Select **Validate Condition** to validate the syntax entered in the **Condition** text box for the provider fields.
6) In the **Mappings** step, specify field mappings supported by the template:
   a. Select **Auto Generate** to generate mappings for fields that are common to both providers and Gateway.

      For identical fields existing in both providers and Gateway, field mapping names are auto-suggested and populated for each provider.
   b. Specify additional field mappings as follows:
      1. Select the fields supported by the template in the list of both providers, and **Gateway**.
      2. Select **Add**.
      3. Repeat Step b to add multiple fields.
7) In the **Summary** step:
   a. Review all the selections made in the previous steps.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** to add the field-mapping template.

> **Note:** Multiple provider objects can be mapped to a single provider object. For example, when you select *Sample* as **Provider 1** and *P6* as **Provider 2**, both objects in the Sample provider, **WorkOrder** and **WBS**, map to the **WBS** object in P6 EPPM.

Copying Field Mapping Templates

Copy a field-mapping template if you want to maintain similar versions of an existing template that can be used for different purposes within a specific integration scenario.

> **Note**: Providers and provider objects cannot be changed when a template is copied or edited.

To copy a field-mapping template:

1) In the sidebar, select **Configuration** and then select the **Field Mapping Templates** tab.
2) In the **Field Mapping Templates** section, select a Gateway object from the **Select Business Object** list.

   A master list of all mapping templates supporting the Gateway business object across all integrations displays.
3) In the **Field Mapping Name** column, select a template that you want to copy, select the **Actions** ▼ menu, and then select **Copy.**

   The **Template** wizard displays a copy of the selected mapping template.

Editing the Copied Template

Edit the copied template as follows:

1) In the **General** step, rename the template and select **Next**.

> **Note:** Select **Next** on each screen to advance to the next step.

2) In the **Mappings** step, select the field that is to be supported as follows:
3) Select the field to be supported in the data dictionary of the providers selected as **Provider 1** and **Provider 2**, and **Gateway**, and then select **Add**.
4) (Optional) Select field-mappings that need not be supported and then select **Delete**.
5) In the **Summary** step, review all the selections made in the previous steps:
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** to add the provider object to the data dictionary.

   The mapping template can now be used in a business flow.

For a detailed example, see *Gateway Help*.

Viewing Field Mapping Templates

View field mapping templates for objects to determine whether you would need to create a new field mapping template or edit a field mapping template as follows:

1) In the sidebar, select **Configuration** and then select the **Field Mapping Templates** tab.
2) In the **Field Mapping Templates** section, select a Gateway object from the **Select Business Object** list.

A list of all field mapping templates associated with the selected Gateway business object displays.

Deleting Field Mapping Templates

Before deleting a field mapping template, ensure the following:

- Review all business flows using the field mapping template you plan to delete.
- Use the business flow wizard to deselect the field mapping template from all business flows.

Delete mapping templates as follows:

1) In the sidebar, select **Configuration** and then select the **Field Mapping Templates** tab.
2) From the **Select Business Object** list, select the business object associated with the field mapping template you want to delete.
3) In the **Field Mapping Name** column, select the mapping template you want to delete, select the **Actions** ▼ menu, and then select **Delete.**
4) In the **Confirmation** dialog box, select **Confirm**.

Exporting Configuration Data Files by Provider

Export Gateway configuration data directly from the user interface to replicate Gateway environments as follows:

1) In the sidebar, select **Configuration** and then select the **Import/Export** tab.
2) In the **Export Configuration Data** section, select **By Provider**.
3) Use the **Ctrl** or **Shift** keys to select any of the following providers from the **Provider** list:
   - EnterpriseTrack
   - File
   - Gateway
   - P6
   - Primavera Cloud
   - Sample
   - Unifier
4) By default all the data files are selected for export from the **Data** list. So, use the **Ctrl** or **Shift** keys to *deselect* any of the following configuration data files:
   - Business Flow / Synchronization
   - Cross Reference
   - Customization
   - Event Provider
   - Flow Definition
   - Field Mapping Template
   - File Converters, only if the File provider is installed
   - Metadata
   - Provider

- Value Mapping

5) Select **Export** to generate a zip file.
6) Select **Save** to save the zip file.

   The default naming convention for any generated zip file is: *<Provider1Provider2...ProviderN>_ConfigurationFiles_V<GatewayVersion>_<ExportDateFormat_mmddyyyy>*

> **Tip:** The exported data will not contain passwords. So, you must re-enter the password after importing data into Gateway.

Exporting Configuration Data Files by Synchronization

If you create a new business flow for a new synchronization, you can check what objects, fields, cross references, field mapping templates, flow definitions, metadata, value mappings, provider, and business flow will be used by the synchronization, *before* actually running the synchronization in Primavera Gateway, by exporting Gateway configuration data associated with only the specific synchronizations.

To export data files associated with specific synchronizations:

1) In the sidebar, select **Configuration.**
2) Select the **Import/Export** tab.
3) In the **Export Configuration Data** section, select **By Synchronization**.
4) Use the **Ctrl** or **Shift** keys to select multiple synchronizations from the **Synchronization** list.
5) By default all the data files are selected for export from the **Data** list. So, use the **Ctrl** or **Shift** keys to *deselect* any of the following configuration data files:
   - Business Flow / Synchronization
   - Cross Reference
   - Customization
   - Event Provider
   - Field Mapping Template
   - File Converters, only if the File provider is installed
   - Flow Definition
   - Metadata
   - Provider
   - Value Mapping
6) Select **Export** to generate a zip file.
7) Select **Save** to save the zip file.

   The default naming convention for any generated zip file is: Synchronizations_*V<GatewayVersion>_<ExportDateFormat_mmddyyyy>.*

> **Notes:**
>
> - Any custom step created for a business flow using the formula editor in the **Custom Steps** tab of the **Configuration** page will also be

included in the export.

- If multiple synchronizations are selected for export, then the configuration data of all the synchronizations is zipped in the generated export file.
- The exported data will not contain passwords. So you must re-enter the password after importing data into Gateway.

Importing Configuration Data Files

To import configuration data files to Primavera Gateway: :

1) Create a zip file containing any of the following configuration data files of a provider:
   - Business Flow / Synchronization
   - Cross Reference
   - Customization
   - Event Provider
   - Field Mapping Template
   - Flow Definition
   - File Converters, only if the File provider is installed
   - Metadata
   - Provider
   - Value Mapping
2) In the sidebar, select **Configuration.**
3) Select the **Import/Export** tab.
4) In the **Select File** field, select the **••• Picker** button and browse to a .zip file or an XML file to be imported.
5) Select **Import**.

   A success message displays.

- **Notes:**
- Only one zip file can be imported at a time.
- Any exported custom step created for a business flow using the formula editor in the **Custom Steps** tab of the **Configuration** page when imported, will now be included in the *<provider_name>.xml* file. All other custom steps created by alternative methods are by default included in the *Customization.xml* file.
- In the metadata files, you can edit the `Entity Name` for fields to uniquely identify that as a row of data supported by an object. The Entity Name descriptions display on the **Data Details** tab of the **Monitoring** page.
- After importing the metadata (metadata.xml) into Gateway, you can send and receive data only after re-entering the deployment's

password manually.

(On-premises only) When uploading jar and XML files, it is recommended that you upload the files from the **DBSetup Configuration Utility** when possible.

Adding Custom Steps Using Gateway Scripting Language

A business flow is executed as an ordered sequence of flow steps. Custom steps can be added only after data is loaded from the source application or before being updated in a destination application.

Note: Custom steps can only be defined for a specific provider, the role of the provider in a business flow, and the type of business flow. For example you can add a custom step to the P6 provider which can be used by any project data business flow where P6 is the source application.

To add a custom step:

1) Sign in to Primavera Gateway as an administrator or developer.
2) In the sidebar, select **Configuration.**
3) Select .the **Custom Steps** tab.
4) Select the + **Add...** button.
5) In the **Custom Step** wizard, enter the following information:
   a. In the **Name** field, enter a name for the custom step.
   b. Select a provider from the **Provider** list.
   c. Select the role of the provider in any business flow from the **Flow Side** list. Choices include:
      - *Source*: The provider is a source application in a business flow.
      - *Destination*: The provider is a destination application in a business flow.
   d. Select the type of flow that the custom step is to be associated from the **Flow Type** list. Choices include:
      - *Master Data*: The custom step is associated with a master data business flow.
      - *Project Data*: The custom step is associated with a project data business flow.
   e. In the **Sequence Number** field, enter or select a number to specify the location of the custom step in the flow step sequence of the data flow.

      If the provider is a source application, you can add a custom step in the **Sequence Number** range 11 - 19 only.

      If the provider is a destination application, you can add a custom step in the **Sequence Number** range 61 - 79 only.

Note: Do not add custom steps after **Sequence Number** *80* associated with the last flow step, *Update Destination*, as it will not be used by any business flow.

6) Select the **Enable** check box to activate the custom step in the master data or project data flow type of the provider.
7) Select **Save.**
8) In the **Formula** section, enter code and validate the custom step using Gateway scripting language.

   For more details, see *Gateway Scripting Guide*.
9) Select **Save**.

Using Add-Ins to Manage Customizations

You can configure Primavera Gateway according to the needs of your organization by adding customizations. These customizations can be imported into Primavera Gateway using the **Import** option or the configuration utility (available with on-premises installations only) to make it available in the Gateway user interface. Customizations delivered by these methods are listed in the **Add-Ins** tab of the **Configuration** page.

Use the **Add-Ins** tab to manage these customizations from within the user interface. You can delete or search for customizations added in Primavera Gateway.

Deleting Add-Ins

To delete customizations Primavera Gateway that were imported or added through the configuration utility:

1) In the sidebar, select **Configuration**.
2) Select the **Add-Ins** tab.
3) Select the row that needs to be deleted, and then select **Delete**.
4) In the **Confirmation** dialog box, select the **Confirm** button to delete the customization from Primavera Gateway.

Configuring Consent Notices for Primavera Gateway

To configure consent notices for Primavera Gateway:

1) Sign in to Primavera Gateway as an administrator or developer.
2) Select ✕ and then select **Settings**.
3) In the **General** tab, select **Enable Configurable Consent Forms**.
4) In the sidebar, select **Configuration**.
5) Select the **Consent Forms** tab.
6) In the **Name** field, select a consent form, and then select ✎ **Edit...**.

Note: The **Cookies Consent** is automatically enabled when any consent

form is enabled.

7) The **Edit <Consent Form Name>** dialog box displays. For example, *Edit Login Consent Form* displays.
8) Select **Enable Consent Message** to allow the notice to be shown to users of the selected consent form.

   For Gateway administrators, enable *all* consent forms.

   For Gateway administrators with no data access and Gateway developers, enable all consent forms except **Download Consent**.

   For Gateway users, enable **Login Consent**, and **Download Consent**.

   For Gateway users with no data access, enable **Login Consent** only.
9) Enter and format the text for the consent notice in the **Consent Message** area.

   Note: Work with your data security and legal teams to determine the wording of the consent notice.

10) Select **Save**.
11) Continue to configure consent notices for other consent forms.

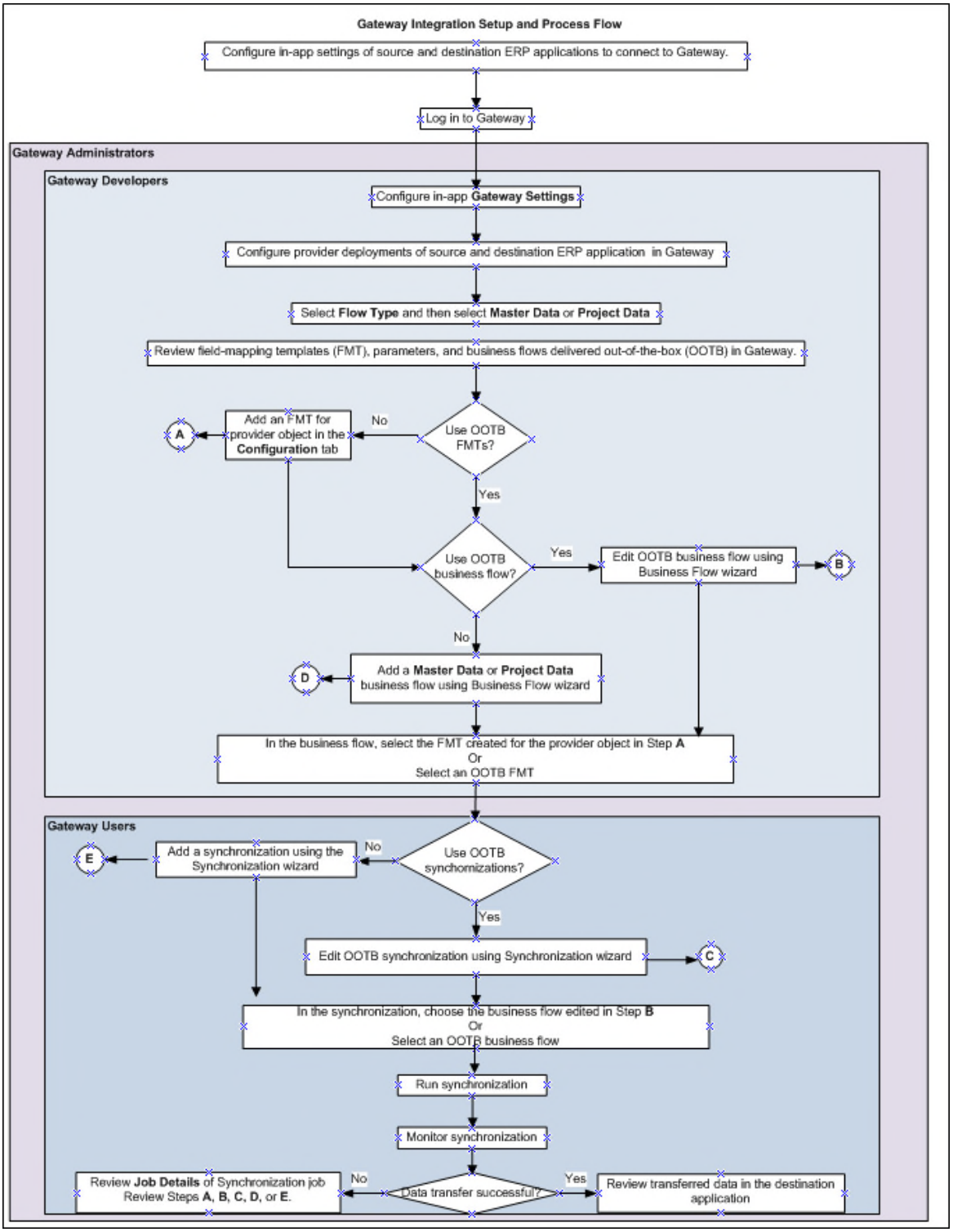
Gateway Setup and Data Transfer Process Flow

This process flow provides a visual outline of key decision points you will need to make when setting up an integration between any two ERP applications, using Gateway. Use this process flow in conjunction with chapters in this guide as well as the detailed examples provided in *Gateway Online Help*.

To troubleshoot issues when transferring data encountered in:

- Step A of the process flow, refer to the procedures in the chapter, *Working with Field Mapping Templates*.
- Step B or D of the process flow, refer to the procedures in the chapter, *Defining Business Flows*.

- Step C or E of the process flow, refer to the procedures in the chapter, *Defining Synchronizations*.



Working with Data Dictionaries

Provider data dictionaries and the Gateway data dictionary can be customized to include new objects and new fields in real-time and on-demand. You can perform the following types of tasks in the Gateway, Unifier, and File data dictionaries:

- Add objects and fields to data dictionaries
- Edit objects and fields in data dictionaries
- Delete objects and fields from data dictionaries

The Primavera Cloud, and P6 data dictionaries can be modified to:

- Edit existing objects
- Add, edit, update, and delete existing fields

This chapter describes all features supported in the above dictionaries.

Advantages

This feature provides great flexibility to customize the Gateway data dictionary and all provider data dictionaries to create and support additional objects and fields directly through the user interface. These objects can then be used in field-mapping templates, business flows, and synchronizations.

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Features of Provider Data Dictionaries

All providers extend complete or partial support for objects and fields that are dynamically created in an enterprise application. For example, when new business process objects and fields created in Unifier user interface, corresponding Gateway objects can be created within Unifier to support a Gateway integration. In Gateway, you can add and edit new objects and fields in File, Gateway, and Unifier data dictionaries corresponding to objects created in the native ERP application. All other provider data dictionaries allow you to only add, edit, and delete fields within a business object.

The following table outlines the features supported by each provider data dictionary.

	Provider Data Dictionaries

Support	Complete			Partial			
Features	**Gateway**	**File**	**Unifier**	**Enterprise Track**	**MSP (on-premises only)**	**P6**	**Primavera Cloud**
Add Features at Object Level							
Add objects to data dictionary	Yes	Yes	Yes	No	No	No	No
Copy objects to data dictionary	Yes	Yes	Yes	No	No	No	No
Add fields to an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Add flow type (master or project) supported for an object	Yes	Yes	Yes	No	No	No	No
Add Flow Direction (source, destination, or both) for an object	Yes	Yes	Yes	No	No	No	No
Add cross-reference key mappings for an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Add Features at Field Level							
Add fields to an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edit Features at Object Level							
Edit object name and description	Yes	Yes	Yes	No	No	No	No
Edit fields supported by an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edit flow type (master or project) supported for an object	Yes	Yes	Yes	No	No	No	No

	Provider Data Dictionaries						
Support	**Complete**			**Partial**			
Features	**Gateway**	**File**	**Unifier**	**Enterprise Track**	**MSP (on-premises only)**	**P6**	**Primavera Cloud**
Edit flow direction (source, destination, or both) of an object	Yes	Yes	Yes	No	No	No	No
Edit cross-reference key mappings of an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edit Features at Field Level							
Edit fields supported by an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Delete Features at Object Level							
Delete objects	Yes	Yes	Yes	No	No	No	No
Delete fields supported by an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Delete flow type (master or project) supported for an object	Yes	Yes	Yes	No	No	No	No
Delete flow direction (source, destination, or both) of an object	Yes	Yes	Yes	No	No	No	No
Delete cross-reference key mappings of an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Provider Data Dictionaries						
Support	**Complete**			**Partial**			
Features	**Gateway**	**File**	**Unifier**	**Enterprise Track**	**MSP (on-premises only)**	**P6**	**Primavera Cloud**
Delete Features at Field Level							
Delete fields supported by an object	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Adding Objects and Fields to Data Dictionaries

New *objects* can only be added in specific data dictionaries. To add a new object to a data dictionary:

1) In the sidebar, select **Data Dictionary** and select any of the following dictionaries:
   - Gateway
   - File
   - Unifier

   Notes:
   - For a checklist of all the features supported in each data dictionary, refer to the ***Features of Provider Data Dictionaries*** (on page 27).
   - XML file format is not supported for objects added manually within the Gateway user interface. To ensure these objects and fields are included by Gateway during a data transfer you must set up a business flow and synchronization where the File provider is set as the destination provider, and select CSV, XLS, or XLSX file formats to ensure these objects will be available in the destination output.

2) Select + **Add...** to add a new provider object to a data dictionary

   The **Object and Fields** wizard displays.

3) In the **General** step describe the object:
   a. Enter an **Object Name** for the new business object.
   b. Select a **Category** for the business object. Choices include: **No Category** (for Gateway only), **BP**, **DynamicBP**, **DynamicUDR**, and **SOAP**.
   c. Enter a **Description** of the business object.

> **Note:** Select **Next** on each screen to advance to the next step.

4) In the **Fields** step to add one or more fields supported by the business object:
   a. Enter a **Field Name** for the new field.
   b. In the **Field Type** field, select the data type of the field. Choices include: **Boolean, DateTime, Double, ForeignKey, Integer,** and **String**.
   c. If you add a **ForeignKey** field, then select the **Join to Object** to join the new field with an existing object in that provider's dictionary.
   d. Select **Read Only Field** to indicate the field value cannot be modified.
   e. Select any of the following actions:
      - Select **Add** to add the field to the field table.
      - Select **Delete** to delete a field from the field table.
   f. Repeat the above sequence to add multiple fields to the business object.
5) In the **Flow Control** step to indicate the combination of flow type and flow direction to be associated with the business object:
   a. In the **Flow Type** field, indicate if the business object will be available in a **Master Data** or **Project Data** flow, or both.
   b. In the **Flow Type Direction** field, indicate if the business object will be available in the **Source** or **Destination** provider, or both.
   c. Select any of the following actions:
      - Select **Add** to add the flow control combination to the flow table.
      - Select **Delete** to delete a flow control combination from the flow table.
   d. Repeat the above sequence to add multiple flow control combinations to the business object.
6) In the **Cross reference** step setup the cross-reference key field to be associated with the Gateway object.
   a. In the **Key Field** field, select the field within the object that is to be used as the cross-reference key by the Gateway object.
   b. In the **Gateway Objects** field, select the Gateway business object from the drop-down to map the cross-reference key of the provider object.

   > **Note:** You can also map the provider object to a new Gateway object that has already been added using this procedure. For more details, see ***Changing Cross-Reference Keys of Data Dictionary Objects*** (on page 37).

   c. Select **Add** to add the cross-reference key and Gateway object combination to the Key table.
   d. Select **Delete** to delete a cross-reference and business object combination from the Key table.
7) In the **Summary** step review a summary of all the selections made in the previous steps:
   a. Expand each tab title to review the selections made in that tab.
   b. Select any of the following actions:

- Select **Back** to navigate to a specific tab and make changes.
- Select **Save** to add a new provider object or update an existing object in the data dictionary.

Editing Objects and Fields in Data Dictionaries

Depending on the selected data dictionary, a business object in a data dictionary can be edited in two ways:

- Edit an object or
- Edit a field supported by an object

Editing an Object

Edit an object to update the name and description of the object, fields supported by an object, flows supported by an object or cross-reference keys of an object.

To edit an object:

1) In the sidebar, select **Data Dictionary.**
2) Select any of the following provider data dictionaries: **Gateway**, **File**, or **Unifier**.
3) Select the row listing the object you want to edit, and then select **Edit...** on the **Data Dictionary** page.

   The **Object and Fields** wizard displays.
4) If you edit an object in the Gateway, File, or Unifier data dictionaries, select the **General** step to edit the **Object Name Category**, and **Description** of the object.

   Otherwise select **Next**.

   Note: Select **Next** on each screen to advance to the next step.
5) In the **Fields** step, add fields, or edit current fields supported by the business object:
   a. (Required) Enter a **Field Name** for the new field.
   b. In the **Field Type** field, select the data type of the field. Choices include: **Boolean, DateTime, Double, ForeignKey, Integer,** and **String**.
   c. If you add a **ForeignKey** field, then select the **Join to Object** to join the new field with an existing object in that provider's dictionary.
   d. Select **Read Only Field** to indicate the field value cannot be modified.
   e. (Required) In the **Description** field, enter a short description of the object.
   f. Select any of the following actions:
      - Select **Add** to add the field to the field table.
      - Select **Update** to edit an existing field in the field table.
      - Select **Reset** to undo all the changes made in the step.
      - Select **Delete** to delete a field from the field table.
   g. Repeat this sequence in the **Fields** step to add multiple fields to a provider object.
6) If you edit an object in the Gateway, File, or Unifier data dictionaries, then select the **Flow Control** step. Select any of the following actions:

- Select **Add** or **Edit** the **Flow Type** and **Flow Direction** combination to be associated with the provider object only.
- Select **Delete** to delete an existing **Flow Type** and **Flow Direction** combination.

7) In the **Cross Reference** step, setup the cross-reference key field to be associated with the Gateway object.
   a. In the **Key Field** field, select the field to be used as the cross-reference key for the object in Gateway.
   b. In the **Gateway Objects** field, select the Gateway business object from the drop-down to map the cross-reference key of the provider object.

> **Note:** You can also map the provider object to a new Gateway object that has already been added using this procedure.

   c. Select any of the following actions:
      - Select **Add** to add the cross-reference key and Gateway object combination to the Key table.
      - Select **Delete** to delete a cross-reference and business object combination from the Key table.

8) In the **Summary** step, review a summary of all selections made.
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** toto confirm the changes made to the provider object.

> **Note:** See the *Gateway Online Help* for an example of editing at the object level.

Editing a Field Supported by an Object

A business object can support multiple fields. A business object can be edited to add additional fields, and edit, or delete existing fields supported by the object.

To edit a field within an object:

1) In the sidebar, select **Data Dictionary.**
2) Select a provider data dictionary. For example, *Primavera Cloud*.
   A list of objects supported in the data dictionary displays.
3) Select an object in the data dictionary. For example, *Currency*.
   A list of fields supported by the object displays.
4) Select **Edit...**.
   The **Object and Fields** wizard displays.
5) In the **General** step, select **Next**.

> **Note:** Select **Next** on each screen to advance to the next step.

6) In the **Fields** step, add fields, or edit current fields supported by the object:

a. Enter a **Field Name** for the new field.
b. In the **Field Type** field, select the data type of the field. Choices include: **Boolean, DateTime, Double, ForeignKey, Integer,** and **String**.
c. If you add a **ForeignKey** field, then select the **Join to Object** to join the new field with an existing object in that provider's dictionary.
d. Select **Read Only Field** to indicate the field value cannot be modified.
e. Select any of the following actions:
   - Select **Add** to add the field to the field table.
   - Select **Reset** to undo all the changes made in the step.
   - Select **Delete** to delete an existing field from the field table.
f. Repeat this sequence in the **Fields** step to add multiple fields to a provider object.

7) In the **Flow Control**, and **Cross Reference** steps, select **Next**.
8) In the **Summary** step, review a summary of all selections made.
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** to confirm the changes made to the provider object.

Adding or Editing Codes and UDFs to Data Dictionaries

Codes, UDFs, or Notes can only be added to P6 and Primavera Cloud data dictionaries.

To add a new Code, Note, or UDF, to a data dictionary:

1) In the sidebar, select **Data Dictionary** and select any of the following dictionaries:
   - P6
   - Primavera Cloud

> **Notes:** For a checklist of all the features supported in each data dictionary, refer to the ***Features of Provider Data Dictionaries*** (on page 27).

2) Select an object from the data dictionary that you want to modify.
   For example, select the **Activity** object in the Primavera Cloud data dictionary
3) Select **Edit...** on the **Data Dictionary** page.
4) The **Object and Fields** wizard displays.
5) In the **General** step, select **Next**.

> **Note:** Select **Next** on each screen to advance to the next step.

6) In the **Fields** step:
   a. In the **Field Name** field, enter a name for the new field to be added in Gateway.
   b. In the **Field Type** field, select the data type of the new field being added in Gateway. Choices include: *Boolean, DateTime, Double, ForeignKey, Integer,* and *String*.

If you selected *ForeignKey*, then select the **Join to Object** to join the new field with an existing object in the provider dictionary.

c. In the **Field Name in <Data Dictionary>** field, enter the actual name of the code or UDF as displayed in the native application.

For example, enter the UDF code as displayed in the Primavera Cloud application.

d. In the **Category** field, select the category type of the code or UDF being added. Depending on the selected data dictionary, choices include: *Code, Cost UDF, List UDF, Note,* or *UDF*.

e. Select the **Read Only** check box if you want to indicate the field value cannot be modified.

f. Select the **Add** link to add the code or UDF to the Fields table.

g. Repeat this step sequence to add multiple UDFs or codes.

7) Select **Next** consecutively until you reach the **Summary** step.

8) In the **Summary** step, review a summary of all selections made.

a. Expand each step title to review the selections made in that step.

b. Select any of the following actions:

- Select **Back** to navigate to a specific step and make changes.
- Select **Save** to confirm the changes made to the provider object.

Copying Objects in Data Dictionaries

When you need to create a new business object similar to an existing object in the data dictionary, copy the current object to create an initial version which can then be edited and modified as follows:

1) In the sidebar, select **Data Dictionary** and choose any of the following provider data dictionaries:

- Gateway
- File
- Unifier

> **Note:** For a checklist of all the features supported in each data dictionary, refer to the ***Features of Provider Data Dictionaries*** (on page 27).

2) Select the row listing the business object you want to copy, select the**Actions** ▼ menu and then select **Copy**.

The **Object and Fields** wizard displays a copy of the current object.

3) In the **General** step, rename the object.

The default name of the object copy is always created with the word, *Copy*. For example, *exchange_rate Copy*.

> **Note:** Select **Next** on each screen to advance to the next step.

4) In the **Fields** step, add, edit, or delete fields supported by the business object.

5) In the **Flow Control** step, add, edit, or delete the data flows supported by the business object.
6) In the **Cross reference** step, add, or edit the cross-reference key field to be associated with the corresponding *Gateway* object.
7) In the **Summary** step, review a summary of all the selections made in the previous steps:
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** to add the provider object to the data dictionary.
8) Add a business flow using the duplicated business object. For more details, see ***Adding Business Flows*** (on page 39).

   or

   Duplicate a business flow that uses the duplicated business object. For more details, see ***Copying Business Flows*** (on page 40)

> **Note**: For a detailed example of a duplicating business object, see the *Gateway Online Help*.

Deleting Objects from Data Dictionaries

Objects can be deleted from Gateway, File and Unifier data dictionaries only.

To delete an object from a data dictionary:

1) In the sidebar, select **Data Dictionary** and choose any of the following provider dictionaries:
   - Gateway
   - File
   - Unifier
2) Select the row listing the object you want to delete.

   Tip: Use the **CTRL** or **Shift** Keys to select multiple objects.
3) From the **Actions** ▼ menu, select **Delete.**
4) In the **Confirmation** dialog box select **Confirm** to delete the object from the data dictionary.

> **Notes:**
>
> - All fields supported by the object will also be deleted.
> - If the object is used in a field mapping template, the template will also be deleted.
> - If the object is used in a business flow, the link to the field mapping template in the business flow will be deleted.

Deleting Fields from Data Dictionaries

Fields can be deleted as follows:

1) In the sidebar, select **Data Dictionary,** and select a provider data dictionary.
2) In the **Business Object** column, select an object in the data dictionary.
3) Select the row listing the field you want to delete.
4) Select the **Actions** ▼ menu and then select **Delete.**

> **Note:** If the field is associated with a field mapping template, then the field will be deleted from all mapping templates.

5) In the **Confirmation** dialog box, select **Confirm** to delete the field.

Changing Cross-Reference Keys of Data Dictionary Objects

When you change the cross-reference key field for an object in any data dictionary, if that provider object has already been used in a flow and synchronization, then that synchronization will no longer work. To use the changed cross-reference key field:

For Cloud

- Create a new field mapping template that uses the changed cross-reference field, update the business flow, and add a new synchronization.
- Contact Oracle Support to have a new provider application deployment for the source or destination application created, and use the new deplo*yment in* the existing synchronization.

For On-Premises

Perform any of the following tasks:

- Create a new field mapping template that uses the changed cross-reference field, update the business flow, and add a new synchronization.
- Add a new provider application deployment for the source or destination application, and use the new deployment in the *existing* synchronization.

Otherwise, the following error message displays: *Cross-reference entry cannot be found.*

Working with Business Flows

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Adding Business Flows

To add a business flow in Primavera Gateway:

1) In the sidebar, select **Flow Type**, and choose **Master Data** or **Project Data**.
2) Select the **Business Flows** tab.
3) Select + **Add...**.
4) In the **General** step of the **Business Flow** wizard:
   a. Select the source application from the **Source** list.
   b. Select the destination application from the **Destination** list.
   c. In the **Business Flow Name** field, enter or edit the name for the business flow.
   d. (Optional) Select the **Compare Flag** check box if you want to review the transferred objects and fields before the destination application is updated. This business flow will be used by **Run with Review** synchronizations.
   e. (Optional) Select the **Use Custom Steps** check box if you have added the following types of custom steps:
      - (On-premises only) Internal Java custom steps
      - External Java custom steps using the **Customization SDK**
      - Custom Steps using Gateway Scripting Language

      If you subsequently choose to not use custom steps in your business flow, the following warning message displays when you deselect this option: *Deselecting the Use Custom Steps option will remove all custom steps already included in the job run sequence. Select Cancel to include the Use Custom Steps option.*
   f. In the **Description** field, enter a short explanation and use of the business flow.

> **Note:** Select **Next** on each screen to advance to the next step.

5) In the **Mappings** step:
   a. Select the **Gateway Object Name** and the **Field-Mapping Name** for each object to be supported in the business flow.
   b. In the **Applied For** field, select the type of action that will be performed for each object:
      - *Create*: Creates new values

- *Update*: Updates existing values
- *Both*: Create and update values

> **Note**: You can also add a new field-mapping template for a business object in the **Customization** tab, and then select it in the **Mappings** step.

6) In the **Source App Parameters** step, select the source field values, if any, and the attributes of the source parameters.
7) In the **Destination App Parameters** step, select the destination field values, and the attributes of the destination parameters.
8) (Optional) In the **Custom Steps** step, select the custom steps that have been created.
9) In the **Summary** step, review a summary of all the selections made in the previous steps:
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save.**

   The business flow can now be used in a synchronization.

Tips:

- Select **Edit...** to edit an existing business flow and then move through the wizard to update the objects and fields as needed.
- Always name the business flows such that it will help you remember the type and direction of information in the flow. For example, *Send Project Data from P6 to Unifier*.
- You can also use External Custom Steps in a data flow. For a detailed example, download the documentation from the **Help** menu.

Copying Business Flows

When you need to create a new business flow similar to an existing flow, copy the current business flow and then edit as needed.

To copy a business flow:

1) In the sidebar, expand the **Flow Type** menu and then select **Master Data** or **Project Data**.
2) In the **Name** column, select the business flow you want to copy, select the **Actions** menu and then select **Copy**.

   The **Business Flow** wizard displays a copy of the current business flow with the word *Copy*. For example, *Send Unifier Roles to P6 Copy.*
3) In the **General** step, rename the business flow and select **Next**.

> **Note:** Select **Next** on each screen to advance to the next step.

4) In the **Mappings** step, for each business object to be supported in the business flow:
   a. Select the **Gateway Object Name** and the **Field Mapping Name**.

b. Select any of the following actions from the **Applied For** list:

- *Create*: Creates new values
- *Update*: Updates existing values
- *Both*: Create and update values

> **Note**: You can also add a new field mapping template for a business object in the **Customization** tab, and then select it in the **Mappings** step.

5) In the **Source App Parameters** step, select the source field values, if any, and the attributes of the source parameters.
6) In the **Destination App Parameters** step, select the destination field values, and the behavior of the destination parameters.
7) In the **Summary** step, review all the selections made in the previous steps:
   a. Expand each step title to review the selections made in that step.
   b. Select any of the following actions:
      - Select **Back** to navigate to a specific step and make changes.
      - Select **Save** to add the duplicated business flow.

Deleting Business Flows

To delete a business flow:

1) Sign in to Gateway as a developer or an administrator.
2) In the sidebar, expand the **Flow Type** menu, and then select **Master Data, Project Data** or **Migration Data**.
3) Select the row listing the business flow you want to delete, and then select **Delete** from the **Actions** ▼ menu.
4) In the **Confirmation** dialog box, select **Confirm**.

Executing a Business Flow

A business flow is executed as a distinct sequence of flow steps. Each flow step executes a specific action within a flow. For example, the **Load** step loads data from the source application.

The flow step sequence of a business flow can be modified by adding additional custom steps to the sequence. Primavera Gateway allows you to create custom steps through various methods. This section describes the flow step sequence used in each type of business flow.

The following types of flow steps are used in any Gateway business flow:

- Load

  This step loads the source data and passes it on to the next step.
- Convert

  This step converts the source data to the Gateway data structure and the destination data structure.
- Compare

This step compares the source and destination data and identifies changed, deleted, and added objects so that the system can synchronize the data efficiently.

To ensure that the data follows the same structure when it is compared, both the source and the destination data must be converted to the Gateway format before it can be compared. When identifying objects that are deleted in the source data, the compare step uses the cross reference table to determine whether the data has been synchronized in the past, the presence of the data in the cross reference table indicates that the data has been synchronized in the past. During the Compare step, the system marks objects that have been deleted in the source data for deletion in the destination system only if the record is in the cross reference table and a delete parameter is associated with the flow.

This step compares the source and destination data and identifies the delta or differences for the next step.

- Review

  (Optional) This step enables you to review the source data before updating the data in the destination application.

- Update

  This step saves the data into the destination system.

- (Optional) External Custom Step

  This step loads the external custom step if defined for a data flow specific to an integration. The external custom step can be added anywhere in the above flow sequence.

Flow Step Sequence in a Master Data Business Flow

The Master data flow type, if applicable to an integration, is used to specifically transfer master data between two applications or *distinct environments* of the same application. For example, to transfer data from a P6 Testing environment to P6 production environment or transfer data from P6 to Primavera Cloud.

The flow step sequence for master data is organized as follows:

- **Load from Source:** This step loads the master data from the source application into the Gateway framework so that it can be processed.
- **Convert from Source to Gateway Format:** This step converts the source master data from the source format to the Gateway format.
- **Load from Destination**: This step loads master data from the destination application into the Gateway framework so that it can be processed.
- **Convert from Destination to Gateway Format:** This step converts destination's master data to the Gateway format. The converted data is used for the **Compare** step.
- **Compare Data**: This step compares the converted source Gateway data with the destination Gateway data. This step compares each object and uses the following rules to determine how the data is synchronized in the **Update Destination** step.
  - If the data is in the source object but not in the destination object, the data is created in the destination object during the **Update Destination** step.
  - If the data is in the destination object but not in the source node, the system performs the following steps:

* Inspects the cross reference tables to determine whether the data has ever been synchronized.

* Determines whether the Delete parameter has been set for the flow.

If the data is in the cross-reference tables and the delete parameter has been set for the flow, the data is deleted from the destination during the **Update Destination** step. Otherwise, the data is not deleted in the **Update Destination** step.

- Objects that contain updated data are marked for synchronization.
- Objects that contain the same data in both the source and the destination nodes are ignored.

- **Convert to Destination Format:** This step converts the master data from Gateway format to the destination format.
- **Review data:** (Optional) This step enables you to review the source data before updating the data in the destination application.
- **Update Destination:** This step saves the master data into the destination application's database.

Flow Step Sequence in a Project Data Business Flow

The Project data business flow is used to transfer project data between two applications or between *two distinct deployments* of the same application. For example, to transfer project data from a *P6 Testing environment to P6 production environment*.

The flow step sequence in a project data business flow is organized as follows:

- **Load from Source:** This step loads the project data from the source application into the Gateway framework so that it can be processed.
- **Convert from Source to Gateway Format:** This step converts the source project data from the source format to the Gateway format.
- (Optional) **Load from Destination:** This step loads the project data from the destination application into the Gateway framework so that it can be processed.
- **Convert from Destination to Gateway Format:** This step converts the destination project data to the Gateway format.
- (Optional) **Compare Project Data:** This step compares the converted source Gateway data with the destination Gateway data. This step compares each object and uses the following rules to determine how the data is synchronized in the **Update Destination** step.
  - If the data is in the source object but not in the destination object, the data is created in the destination object during the **Update Destination** step.
  - If the data is in the destination object but not in the source node, the system performs the following steps:

    * Inspects the cross reference tables to determine whether the data has ever been synchronized.

    * Determines whether the Delete parameter has been set for the flow.

    If the data is in the cross-reference tables and the delete parameter has been set for the flow, the data is deleted from the destination during the **Update Destination** step. Otherwise, the data is not deleted in the **Update Destination** step.
  - Objects that contain updated data are marked for synchronization.

    - Objects that contain the same data in both the source and the destination nodes are ignored.
- **Convert to Destination Format:** This step converts the project data from Gateway format to the destination format.
- (Optional) **Review data:** This step enables you to review the source data before updating the data in the destination application.
- **Update Destination:** This step saves the project data into the destination application's database.

Flow Step Sequence in a Migration Data Business Flow

The **Migration Data** business flow is used to transfer P6 project data between two *distinct deployments* of the same application using P6 Export and Import Web Services.

For example, use this data flow to transfer project data from a *P6 on-premises environment to P6 cloud environment*.

The flow step sequence in the migration data business flow is organized as follows:

- **Export from Source**: This step exports the P6 project data into the Gateway so that it can be processed.
- **Update Destination**: This step saves the project data into the destination application's database.

Flow Step Sequence for Compare Step in Business Flows

A flow that supports a **Compare** step loads the project from both sides, determines the delta between each side, and uses only the difference to synchronize the data during the final update.

Unlike the normal flow that consists of four steps (load, convert to Gateway, convert from Gateway, and Update Destination), a flow that supports the Compare step includes the following additional steps:

- Load data from the other application
- Convert the data to the Gateway format
- Compare

The Compare step is supported by the Gateway framework code; providers do not have to implement it. Providers will need to implement the extra load and convert steps as these must be implemented by the provider of the destination application. The destination provider must ask for the key of the project that is being loaded to the source side of the implementation when supporting the compare functionality.

Source Provider

In the project data flow, the source provider needs to communicate to the destination side which project it is loading when the Primavera Gateway loads the initial project data from the source side. To do that, the source provider must implement the **getProjectKeyForCompare** method in the **FlowProvider** interface.

Normally, a provider will determine which project it is to load from the filter or the parameters that users set in the Gateway user interface. The implementation of the method needs to return a Gateway side value of this project key.

The following is a sample code snippet from the Project Data flow in **SampleProvider.java**:

```
	@Override
	public Map<String, String> getProjectKeyForCompare(String flowType, FlowContext context)
throws ProviderException {
		SampleFlowType type = getFlowType(flowType);
		switch (type) {
		case SyncProjectImport:
			String sampleProjectKey = (String) context.getParameter("ImportProjectId");
			if (StringUtils.isEmpty(sampleProjectKey)) {
				return null;
			} else {
				Map<String, String> keyMap = new HashMap<String, String>();
				keyMap.put("ObjectId", context.getXRefValueByGuest("Project",
sampleProjectKey));
				keyMap.put("Id", sampleProjectKey);
				return keyMap;
			}
		default:
			throw new UnsupportedOperationException("Compare not supported.");
		}
	}
```

Destination Provider

Similarly, in the project data flow, the destination provider needs to ask for the project key so that it can load the same project. To do that, the destination provider must implement the methods in the **LoadStepContext** interface.

The LoadStepContext interface has two methods for this use case:

- **isLoadStepForCompare** method can tell you whether this load step is invoked as a companion load step for the Compare mechanism.
- **getProjectKeyForCompare** method can tell you which project you should load. The project key returned by **getProjectKeyForCompare** is already a destination side value.

The following is a code snippet from the Project Data flow in **ProjectLoadStep** of the Sample provider:

```
if (context.isLoadStepForCompare()) {
	Map<String, String> projectKeys = context.getProjectKeyForCompare();
		String projectId = null;
		if (projectKeys != null) {
			String objectId = projectKeys.get("ObjectId");
			if (StringUtils.isEmpty(objectId)) {
				projectId = projectKeys.get("Id");
			} else {
				projectId = objectId;
			}
		}
		if ((projectId == null) || projectId.isEmpty()) {
			return new PDIDocumentImpl();
		} else {
			return getOneProject(projectId, context);
		}
	}
```

Flow Step Sequence for External Java Custom Steps in Business Flows

An external custom step can be used in a project data or master data flow, and can be limited to an integration between specific provider applications. For example, you would use a project data flow with an external custom step to transfer project data from a Sample to File integration.

The flow step sequence for external Java custom steps can be organized as follows:

- **Load from Source:** This step loads the data from the source application into the Gateway framework so that it can be processed.
- **(Optional) <External Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the external custom step to the source data.

  For more details on how to create an external custom step, download the External Custom Step SDK from the ⓘ **Help** menu in Gateway.
- **Convert from Source to Gateway Format:** This step converts the source data to the Gateway format.
- **Convert to Destination Format:** This step converts the data from Gateway format to the destination format.
- **(Optional) <External Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the external custom step to the destination data.
- **Update Destination:** This step saves the data into the destination application's database.
- **(Optional) <External Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the external custom step to the destination data.

Flow Step Sequence for Internal Java Custom Steps for On-Premises

An internal custom step can be used in a project data or master data flows, and can be limited to an integration between specific provider applications. Internal custom steps must be coded in Java and can be used anywhere in a flow step sequence. For example, use an internal custom step to transfer project data from a Sample to File integration.

The flow steps are organized as follows:

- **Load from Source:** This step loads the data from the source application into the Gateway framework so that it can be processed.
- **(Optional) <Internal Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the internal custom step to the source data.
- **Convert from Source to Gateway Format:** This step converts the source data to the Gateway format.
- **Convert to Destination Format:** This step converts the data from Gateway format to the destination format.
- **(Optional) <Internal Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the internal custom step to the destination data.
- **Update Destination:** This step saves the data into the destination application's database.
- **(Optional) <Internal Custom Step Name>:** This step can be used anywhere in the flow sequence. In this case, this step loads the internal custom step to the destination data.

Flow Step Sequence for Custom Steps in Gateway Scripting Language for Business Flows

For a specific provider, a custom step can be added to the flow step sequence of any business flow from within the Gateway user interface using Gateway scripting language. This flow step is an alternative option to:

- Adding a external custom step using Java
- Adding a internal custom step using Java

> **Note**: Gateway scripting language is distinct from *Groovy* Scripting Language. For more details on how to code a custom step, see *Gateway Scripting Language Guide*.

A business flow is executed as an ordered sequence of flow steps. So, the positioning of a custom step depends on the role of the provider in a business flow.

Use the following table to position a custom step in the default flow step sequence:

If Provider Role in Business Flow is...	Add Custom Step...
Source	with a sequence number in the range 1 - 19.
Destination	with a sequence number in the range 61 - 79.

The steps can then be organized as follows:

- (Optional) **<Custom Step Name>:** This step runs the custom step to the source data. It can be added in the flow sequence for a *source* provider with a sequence number in the range 1 - 9.
- **Load from Source:** This step loads the data from the source application into the Gateway framework so that it can be processed.

- (Optional) **<Custom Step Name>:** This step runs the custom step to the source data. It can be added in the flow sequence for a *source* provider with a sequence number in the range 11 - 19.
- **Convert from Source to Gateway Format:** This step converts the source data to the Gateway format.
- **Convert to Destination Format:** This step converts the data from Gateway format to the destination format.
- (Optional) **<Custom Step Name>:** This step runs the custom step to the destination data. It can be added in the flow sequence for a *destination* provider with a sequence number in the range 61 - 69.
- **Review data:** This step enables you to review the source data before updating the data in the destination application.
- (Optional) **<Custom Step Name>:** This step runs the custom step to the destination data. It can be added in the flow sequence for a *destination* provider with a sequence number in the range 71 - 79.
- **Update Destination:** This step saves the data into the database of the destination application.

> **Note**: Although custom steps can be added after the last **Update Destination** flow step (sequence number 80), these will not be processed by the business flow.

Using Business Flows Delivered in Gateway

Project data can be transferred between Primavera Cloud and Unifier

To use business flows delivered in Gateway:

1) In the sidebar, select **Flow Type**.
2) Select **Project Data**.
3) Select the **Business Flows** tab.
4) In the **Name** column, select a business flow delivered in Gateway.
5) Select Edit....
   The **Business Flow** wizard displays.
6) Complete the steps in the wizard and select **Save**.

Project Data Flow Type

Use the **Project Data** flow type to transfer project data business objects identified in the Business Objects Supported in Project Data Flow. The following project data business flows are delivered for a Unifier - Primavera Cloud integration in Gateway:

- Send Activity data from Primavera Cloud to Unifier
- Send Activity data from Unifier to Primavera Cloud

> **Note:** When you are creating a business flow, and choosing the mapping templates for a object, you can mark a mapping template as **Create Only**, **Update Only** or **Both**. For Project Data business flows, if all the mapping templates are create-only templates, then update is not allowed.

Each business flow uses one or more field mapping templates that handle the data transfer of specific business objects and its corresponding fields. You can edit these delivered business flows or also create additional business flows and field mapping templates to fit your needs. After creating new business flows or editing the above business flows you can create synchronization jobs that use the defined project data business flows to transfer project data. For more details, see Working with Synchronizations.

Business Objects Supported in Project Data Flow

The following business objects are supported between the Oracle Primavera Cloud and Unifier applications in the **Project Data** flow type. These business objects can be transferred using the field mapping templates delivered in Gateway. To view a list of field mapping templates provided in Gateway, see Field Mapping Templates for Project Data Business Objects.

When *Primavera Cloud* is the *source* provider, the following business objects are supported between the Primavera Cloud and Unifier applications in the Project Data flow type:

Oracle Primavera Cloud Source Business Objects	Gateway Business Objects	Unifier Destination Business Objects
Activity	Activity	P6ActivitySheet
Project	Project	Project

When *Primavera Cloud* is the *destination* provider provider, the following business objects are supported between the Primavera Cloud and Unifier applications in the Project Data flow type:

Unifier Source Business Objects	Gateway Business Objects	Oracle Primavera Cloud Destination Business Objects
P6ActivitySheet	Activity	Activity
Project	Project	Project

Field Mapping Templates for Project Data Business Objects

The following tables lists all field mapping templates and the business flow that supports each project data business object. Each business object can be supported by more than one field mapping template. You can edit the delivered business flows to include or exclude business objects by selecting the corresponding field mapping templates or also create your own if these templates don't fit your needs. Additional business objects can also be supported in the templates you choose to create. For a detailed listing, see Unifier ***Business Objects Supported in Project Data Flow*** (on page 49).

Primavera Cloud Source Business Objects	Associated Field Mapping Template	Used in...
Activity	Send Primavera Cloud Activity data to Unifier	Send Activity data from Primavera Cloud to Unifier business flow.
Project	Send Primavera Cloud Project data to Unifier	Send Activity data from Primavera Cloud to Unifier business flow

Unifier Source Business Objects	Associated Field Mapping Template	Used in...
Activity	Send Unifier Activity data to Unifier	Send Activity data from Unifier to Primavera Cloud business flow.

Setting Provider-Specific Parameters

Based on the role of Primavera Cloud and Unifier providers and the data to be transferred in the business flow the following provider-specific parameters will display as either source or destination application parameters in the **Business Flow** wizard.

Users having the role of a Gateway administrator or Gateway developer can access and view all the parameters listed below. Set the behavior of these parameters in the business flow by specifying the **Attribute** for each as any of the following values: **Hidden, Optional, Read-only,** or **Required**.

Notes:

- Data identified by each parameter is processed by a flow step of the business flow. For more information on flow steps, see ***Executing a Business Flow*** (on page 41).
- All values specified in the filter parameters will be used in the **Load** step of the flow for loading data from the providers designated as the source or the destination.

Primavera Cloud Provider Application Parameters

When *Primavera Cloud* is the *source* application, set values and attributes for the following parameters while defining a project data business flow:

- **Primavera Cloud Project Filter**

  Use this setting to identify and select projects in Primavera Cloud using any of the following fields:

  Lookup in Primavera Cloud,

  Project Ids

  Workspace Ids

  Project Code

  Project Code Type Name

  Project Code Value

  Project Status

  Note: *Lookup in Primavera Cloud* option is available only to Gateway users and administrators for synchronizations only.

  Select **Add Row** to enter multiple filter criteria for selecting projects.

  Select **Edit Row** to change the current filter criteria or value for selecting a project.

  Select **Delete Row** to delete the current filter criteria for selecting projects.

When *Primavera Cloud* is the *destination* application, set values and attributes for the following parameters while defining a project data business flow:

- **Workspace Location**

  Use this setting to specify the default workspace and populate it in a synchronization. If the value is set in Primavera Gateway, then Primavera Cloud will check if the **Primavera Cloud Workspace** field value exists and will use it to create the project.

  P6 must send all global data assigned to the project with the project flow. All global data will be assigned to the workspace where the project will be created in Primavera Cloud.

- **Save data to Primavera Cloud if there are errors?**

  Use this setting to determine how data is to be processed when a job fails in Gateway. Select this option if you want to save the data in Primavera Cloud when a synchronization job fails in Gateway. Otherwise, deselect this option to ensure data is not saved in Primavera Cloud for failed jobs.

- **Provide email notification for selected job status**

  This parameter displays only when you have specified an **Email Address** in the **Mail Configuration** tab of the Gateway **Settings** page.

  Use this setting to enter email IDs of individuals who would need to be notified when synchronization jobs are completed with any of the following job statuses on the **Monitoring** page: *Completed, Review, Cancelled, Completed with Errors, Completed with Warnings,* or *Failed*.

  Select the **Attach Data Details for Job** check box to include details of the data transfer in the email.

- **Synchronize one project at a time**

  A synchronization job is usually split into multiple child jobs with each child job transferring data in each project. By default all child jobs are executed simultaneously. Use this setting to determine whether to synchronize data one project at a time.

- **Delete data that no longer exists in the source application?**

  Use this setting to determine whether data that no longer exists in the source application is to be deleted in the destination application. This parameter must be used in conjunction with the **Compare** flag selected in the **Business Flow** wizard.

  > **Note**: When you run a project data flow, it will delete only project level data in a business flow, but not the master data. This will prevent you from deleting master data elements such as resources, roles etc., that may be used in another project. However, if used in a master data flow, it will delete all relevant objects and fields.

- **Only delete data that has been linked previously with the source application?**

  To use this parameter, you must also select the parameter, **Delete data that no longer exists in the source application?** During a synchronization, when the data is compared between the source and the destination application, data that has been added only in the destination application will not be deleted. However, if you deleted source data that was previously synced in the destination application, it will also be deleted from the destination application.

- **Partition data to child jobs for large data transfers?**

  Use this setting if you are integrating large data sets between projects and between applications when P6 EPPM or Oracle Primavera Cloudis the source application. This parameter partitions large data sets logically into multiple child jobs.

- **Child job object limit for partitioned data**

  Use this setting in conjunction with the **Partition Data into Child Jobs?** parameter. Enter a limit on the number of objects that can be included in the child jobs in the range 50 - 5000. Zero (0) is the default value.

- **Include only updated data since last run? (Delta Run)**

Use this setting only when P6 is the source application and you want to transfer only new or changed data that was added after a synchronization was last run. This setting must be used in conjunction with the **Compare** flag selected in the Business Flow wizard.

Unifier Provider Application Parameters

When *Unifier* is the *source* application in a project data flow, set values and attributes for the following parameters:

- **Unifier Project Filter**

  Use this setting to identify and select projects in Unifier by using *Lookup in Unifier, ImportProjectIds* or *ShellAttribute*.

  Note: *Lookup in Unifier* option is available only to Gateway users and administrators for synchronizations only.

  Enter multiple values for the following fields as comma-separated values. Select **Add Row** to enter multiple filter criteria to select Unifier projects. Select **Edit Row** to change the current filter criteria or value for selecting a Unifier project.
- **Unifier BP Filter**

  Use this setting to select BP filters to include when selecting a project in Unifier.

  Enter multiple values for the following fields as comma-separated values. Select **Add Row** to enter multiple filter criteria to select Unifier projects. Select **Edit Row** to change the current filter criteria or value for selecting a Unifier BP filter.
- **Source Business Process Name**

  Use this setting to enter the name of a business process in Unifier.
- **Cost Column Name**

  Use this setting to enter the cost column names in Unifier.

When *Unifier* is the *destination* application in a project data flow, set values and attributes for the following parameters:

- **Unifier Project Location**

  Use this setting to enter the project location in Unifier. This information is used in the Save step of the flow.
- **Unifier Project Template Number**

  Use this setting to enter the template number to be associated with the project created in Unifier.
- **Destination Business Process Name**

  Use this setting to enter the name of the business process to which the data should be associated in Unifier.
- **Business Process Detail Tab Name**

  Use this setting to enter the Detail tab name of the business process to which the data should be associated in Unifier.

- **Line Item Identifier**

  Use this setting only when you need to update line items. Enter the name of the data element (not label) that is to be updated in the **Detail** tab of the business process.

- **Cost Column Name**

  Use this setting to enter the cost column names in Unifier.

- **Provide email notification for selected job status**

  This parameter displays only when you have specified an **Email Address** in the **Mail Configuration** tab of the Gateway **Settings** page.

  Use this setting to enter email IDs of individuals who would need to be notified when synchronization jobs are completed with any of the following job statuses on the **Monitoring** page: *Completed, Review, Cancelled, Completed with Errors, Completed with Warnings,* or *Failed*.

  Select the **Attach Data Details for Job** check box to include details of the data transfer in the email.

- **Synchronize one project at a time**

  A synchronization job is usually split into multiple child jobs with each child job transferring data in each project. By default all child jobs are executed simultaneously. Use this setting to determine whether to synchronize data one project at a time.

- **Delete data that no longer exists in the source application?**

  Use this setting to determine whether data that no longer exists in the source application is to be deleted in the destination application. This parameter must be used in conjunction with the **Compare** flag selected in the **Business Flow** wizard.

  > **Note**: When you run a project data flow, it will delete only project level data in a business flow, but not the master data. This will prevent you from deleting master data elements such as resources, roles etc., that may be used in another project. However, if used in a master data flow, it will delete all relevant objects and fields.

- **Only delete data that has been linked previously with the source application?**

  To use this parameter, you must also select the parameter, **Delete data that no longer exists in the source application?** During a synchronization, when the data is compared between the source and the destination application, data that has been added only in the destination application will not be deleted. However, if you deleted source data that was previously synced in the destination application, it will also be deleted from the destination application.

- **Partition data to child jobs for large data transfers?**

  Use this setting if you are integrating large data sets between projects and between applications when P6 EPPM or Oracle Primavera Cloudis the source application. This parameter partitions large data sets logically into multiple child jobs.

- **Child job object limit for partitioned data**

  Use this setting in conjunction with the **Partition Data into Child Jobs?** parameter. Enter a limit on the number of objects that can be included in the child jobs in the range 50 - 5000. Zero (0) is the default value.

- **Include only updated data since last run? (Delta Run)**

Use this setting only when P6 is the source application and you want to transfer only new or changed data that was added after a synchronization was last run. This setting must be used in conjunction with the **Compare** flag selected in the Business Flow wizard.

Working with Synchronizations

A synchronization in Gateway is a job set up to run on-demand or on schedule to exchange data between the source and destination applications.

The business flows delivered or created in Gateway are used in synchronizations that perform the actual data transfers. For each of the out-of-the-box (OOTB) business flows delivered in Gateway, a corresponding synchronization is also delivered. You can either use the delivered synchronization or create new synchronizations if these don't fit your needs. Both options are outlined in detail.

Gateway users and administrators can set up, run, and monitor synchronizations in Gateway.

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Project Data Synchronizations

The following project data synchronizations are delivered out-of-the-box to support the delivered business flows for a Unifier - Oracle Primavera Cloud integration in Gateway:

- Send Activity data from Primavera Cloud to Unifier

  This flow sends activity data from Primavera Cloud to Unifier Activity Sheet.
- Send Activity data from Unifier to Primavera Cloud

  This flow sends activity data from a Unifier Activity Sheet to Primavera Cloud.

Adding Synchronizations

After adding business flows or editing the out-of-the-box business flows you can add new synchronizations that use these business flows to transfer data between the applications using the **Synchronization** wizard. To transfer data between applications, you need to create and run a synchronization. You have the option to run the synchronization on demand, run based on the occurrence of specific events, or schedule it to run regularly at a time and date of your choosing.

Prerequisites

- Configure application deployment connections for the source and destination applications in the data flow.
- Business flows must be setup for the data transfer.
- If an integration supports master data, then synchronize the master data between applications before you synchronize project data. This will ensure that each deployment has the information necessary to synchronize project data.

Procedure

To transfer data between applications:

1) Sign in to Primavera Gateway as an administrator or a user.
2) In the sidebar, select **Synchronizations**, and then select + **Add...**.
3) Follow the steps in the **Synchronization** wizard to name and configure the synchronization.

> **Note**: If you edit a synchronization and change the business flow, then you must review and update the parameters as needed.

4) Select **Save** in any step of the wizard to save the changes and exit the wizard instantly.
5) Transfer data between applications using any of the following options:
   - To run a synchronization on-demand, highlight the synchronization and select **Run**.
   - To review the data that will be moved from the source application, highlight the synchronization and select the **Actions** ▼ menu and then select **Run with Review**.

> **Note:** If you are a user or administrator with *no* data access privileges, once a synchronization is **Run with Review**, you cannot review the actual data being transfered in each step of a job nor download the job details. When you select the **Review** link, an error message, *Insufficient Permissions*, is displayed.

   - (On-premises only) To schedule an event-based synchronization, highlight the synchronization, select the **Actions** ▼menu and then select **Run on Event**.

> **Note:** (On-premises only) You can set up an event-based synchronization using the delivered P6 event provider only if P6 is the source provider in the defined flow. To set up event-based synchronizations for any other provider you will need to develop an event provider for your provider. For more details, refer to the *Primavera Gateway Provider Development Guide*.

   - To schedule the synchronization to run at a certain date and time, or a specific sequence of synchronizations, select the synchronization, select the**Actions** ▼ menu and then select **Edit Schedule...**.
6) To delete a synchronization:
   a. Highlight the synchronization.
   b. Select the **Actions** ▼menu and then select **Delete**.
   c. Select **Yes** in the **Confirmation** dialog box.

The following videos showcase how to transfer data between applications:

- ***Send Basic Project Information from Primavera Cloud to P6*** (***https://players.brightcove.net/2985902027001/SyXjZnYeeb_default/index.html?videoId=6174408598001***)
- ***Send Basic Project Information from P6 to Primavera Cloud*** (***https://players.brightcove.net/2985902027001/SyXjZnYeeb_default/index.html?videoId=6174409131001***)

- ***Send P6 Schedule Data to Primavera Cloud*** (***https://players.brightcove.net/2985902027001/SyXjZnYeeb_default/index.html?videoId=6174410341001***)
- ***Send Lean Schedule Data from Primavera Cloud to P6*** (***https://players.brightcove.net/2985902027001/SyXjZnYeeb_default/index.html?videoId=6174412205001***)

Copying Synchronizations

You can modify any delivered synchronization or a synchronization that you custom created in Gateway.

> **Note**: Before you modify, it is recommended that you copy the synchronization and then edit the copy as needed.

To copy a synchronization in Gateway:

1) In the sidebar, select **Synchronizations**.
2) Select the synchronization you want to copy, then select the **Actions** ▼menu and select **Copy**.

   The **Synchronization** wizard displays a copy of the current synchronization.
3) In the **Flow and Deployments** step:
   a. In the **Synchronization Name** field, rename the synchronization.

      The default name of the duplicate synchronization is always created with the word, *Copy*. For example, *Send Primavera Cloud Project Data to P6 Copy*.
   b. In the **Business Flow** field, select a business flow that is to be used by the synchronization.

> **Note:** Select **Next** on each screen to advance to the next step.

4) In the **Parameters** step, edit the value of each parameter as needed.
5) In the **Summary** step, review a summary of all the selections made in the previous steps.

   Select any of the following actions:
   - Select **Back** to navigate to a specific step and make changes.
   - Select **Save** to add the synchronization.

   The synchronization is now available for running and monitoring.

Using Synchronizations Delivered in Gateway

To use the out-of-the-box synchronizations delivered in Gateway:

1) In the sidebar, select **Synchronizations**, and then select ✎ **Edit...**.
2) Follow the steps in the **Edit Synchronization** wizard to name and configure the synchronization. Select **Save** when finished.
3) Transfer data between applications using any of the following options:

   To run a synchronization on demand, select the synchronization and select **Run**.

To review the data that will be moved from the source application before the synchronization is executed, select a synchronization, select the **Actions** ▼menu, and then select **Run with Review**.

To schedule an event-based synchronization, select a synchronization, select the **Actions** ▼ menu, and then select **Run on Event**.

> **Note:** (On-premises only) You can set up an event-based synchronization using the delivered P6 event provider only if P6 is the source provider in the defined flow. To set up event-based synchronizations for any other provider you will need to develop an event provider for your provider. For more details, refer to the *Primavera Gateway Provider Development Guide*.

To schedule the synchronization to run at a certain date and time, select a synchronization, select the **Actions** ▼ menu, and then select **Edit Schedule**.

4) Enter information for the synchronization in the **Edit Schedule** dialog box and select **Save** when finished.
5) To delete a synchronization, highlight the synchronization and select **Delete**. Select **Yes** in the **Confirmation** dialog box.

Monitoring Synchronizations

Use the monitoring feature in Gateway track the status of the transfer in each step of a synchronization jobs or troubleshoot failed jobs.

Data can be monitored in two ways:

- Monitor the transfer at each step of the synchronization run or
- Monitor the transfer for each object included in the synchronization run

This chapter describes how to monitor synchronizations in Primavera Gateway.

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Monitoring the Steps of a Data Transfer

To monitor the details in each step of a data transfer:

1) In the sidebar, select **Monitoring**.
2) (Optional) To find a specific synchronization job, use the **Filter** list to display specific jobs or select a column heading to sort information in the column alphabetically.
3) Perform any of the following actions:

   Select ↻ **Refresh** to update the results.

   From the **Actions** ▼ menu:

   - Select **Cancel** to cancel jobs with a status of **In Progress**, **Delegated**, **Pending**, or **Queued**.

     When a parent job is canceled:

     - The steps of the current job in process will complete, but the status of all subsequent steps will be set to *Never Run*.
     - All child jobs will also be canceled.
     - The status of all child jobs completed prior to the cancellation remain unchanged.
     - The status of all child jobs currently in progress is set to *Canceled*.
     - The status of all child jobs that did not start is set to *Pending*.
   - Select **Delete** to delete the selected job.
   - Select **Re-run Job** to repeat the job run using the same parameters that were entered in the Synchronization page. If any fields have been added or removed from the job, then those changes will be included during the job re-run.

- Select **Delete XRef for Job** if you want to delete the current cross-references (tracking information) related to the job. Use this option if you want to recreate cross-references by sending the data again. The data will be considered new when sending to the destination. Only jobs with a status of *Completed*, *Failed*, *Completed with Warning*, *Completed with Error*, or *Canceled* can be deleted. This option is available to Gateway administrators only.
- Select **Delete XRef by Deployment** if you want to only delete all cross-references (tracking information) associated with the data that has been sent in Gateway between specific deployments of the source and destination applications. You will need to create new jobs to create new cross-references to transfer data again between the deployments. This option is available to Gateway administrators only.

> **Note**: You are only deleting the deployment tracking information of the data transferred so far in Gateway. The sent data will continue to be available in the destination application.

4) In the **Job** column, select a job number.
5) In the **Job Details** tab, perform any of the following actions:
   - Expand each flow step to review the work done by the synchronization.
     - If a parent job has child jobs, select each job to review the flow steps for more information.
     - In the **Status** column, select **Review** link to access further information about the flow step on the **Summary** page.
     - Select **Download** to save the job details contained in each flow step as a zip file.

       If the job has a status of *Failed*, *Completed with Errors*, *or Completed with Warnings*, expand the failed step and view the log file containing the warning message or error message. The log files are generated in the format *Warning_job#.log* and *Error_job#.log*.

> **Note:** If you are a user or administrator with *no* data access privileges, you cannot review the actual data being transferred in each step of a job nor download the job details. An error message, *Insufficient Permissions*, is displayed.

   - Select **Details** to troubleshoot and locate errors when a job fails.

     View all the setup details used when a synchronization was run. This includes details on the synchronization, business flows, field-mapping templates, deployments, settings, and the run-time parameters used by the synchronization. Provide this file when you have to report an issue to Oracle Support.

Tips:

- You can configure the number of jobs displayed using the **Maximum number of job logs to display** setting in the **Settings** dialog box.
- If configured when defining a business flow, you can be notified by email when a synchronization job completes.

Monitoring the Objects in a Data Transfer

Use the monitoring feature in Primavera Gateway to track synchronization jobs or troubleshoot failed jobs that returned errors when transferring each object.

To monitor the work done on each object:

1) In the sidebar, select **Monitoring**.
2) (Optional) To find a specific synchronization job, use the **Filter** list to display specific jobs or select a column heading to sort information in the column alphabetically.
3) To update the results, select ↻ **Refresh**.
4) In the **Job** column, select a job number.
5) On the **Job #** page, select the **Data Details** tab.
6) (Optional) Select **File Output...** to download the file data to any file format supported in Gateway (csv, xls, xlsx, and XML).

> **Note**: The button displays only when when File is the destination application and the **File Data Source Type** is set to *File Upload* in the File Provider deployment.

7) In the **Summary** section, select an action count for a business object in any of the following columns:
   - **Create**: The estimated number of create actions that will be performed by the job in the transfer of each object in the destination application.
   - **Update**: The estimated number of update actions that will be performed by the job in the transfer of each object in the destination application.
   - **Delete**: The estimated number of delete actions that will be performed by the job in the transfer of each object in the destination application.
   - **Error**: The estimated number of errors that will be generated by the job in the transfer of each object in the destination application.
   - **Total**: The estimated total number of actions that will be performed by the job in the transfer of each object in the destination application.
8) In the **Business Object Details** section of the selected business object:
   - Review the actual data that was transferred in each **Create, Update,** and **Delete** actions performed on the business object.
   - Review the actual **Response** for each action in the destination application.
   - Review the **Errors** generated for each data that failed to be transferred by the synchronization.

Notes:

- If you have no access to data, you cannot view the details of the data passed in each object. You can only view the errors and warning messages associated with each step.
- When you download the log files, the synchronization setup details are also included in the download.
- The object level reporting details can be downloaded only after a synchronization job reaches the **Update Destination** step in a flow.

Appendix A: Fields Supported in Mapping Templates

The following field mapping templates are delivered as out-of-the-box templates for transferring project data between Primavera Cloud and Unifierapplications.

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Send Primavera Cloud Activity data to Unifier

This project data field mapping template sends activity data from Primavera Cloud to Unifier. The following fields are mapped:

Primavera Cloud	Gateway	Unifier
activityCode	Id	uuu_P6ActivityId
activityName	Name	uuu_P6ActivityName
activityPercentComplete	PercentComplete	uuu_P6PercentComplete
activityStatus	Status	uuu_P6ActivityStatus
activityType	Type	uuu_P6ActivityType
actualDuration	ActualDuration	uuu_P6ActualDuration
actualFinishDate	AcutalFinishDate	uuu_P6ActualFinish
actualStartDate	ActualStartDate	uuu_P6ActualStart
atCompletionDuration	AtCompletionDuration	uuu_P6AtCompletionDuration
finishDate	FinishDate	uuu_P6Finish
plannedDuration	PlannedDuration	uuu_P6PlannedDuration
plannedFinishDate	PlannedFinishDate	uuu_P6PlannedFinish
plannedStartDate	PlannedStartDate	uuu_P6PlannedStart
projectCode	ProjectId	uuu_int_p6_project_id

Primavera Cloud	Gateway	Unifier
projectID	ProjectObjectId	ProjectNumber
remainingDuration	RemainingDuration	uuu_P6RemainingDuration
remainingFinishDate	RemainingEarlyFinishDate	uuu_P6RemainingEarlyFinish
remainingStartDate	RemainingEarlyStartDate	uuu_P6RemainingEarlyStart
startDate	StartDate	uuu_P6Start
wbsCode	WBSCode	uuu_P6WBSCode
wbsID	WBSObjectId	uuu_parent_id
wbsName	WBSName	uuu_P6WBSName
wbsPath	WBSPath	uuu_P6WBSPath

Send Activity data from Unifier to Primavera Cloud

This project data field mapping template sends activity data from Unifier to Primavera Cloud. The following fields are mapped:

Primavera Cloud	Gateway	Unifier
actualFinishDate	ActualFinishDate	uuu_P6ActualFinish
activityStartDate	ActivityStartDate	uuu_P6ActualStart
activityCode	Id	uuu_P6ActivityId

Send Primavera Cloud Project data to Unifier

This project data field mapping template sends project data from Primavera Cloud to Unifier. The following fields are mapped:

Primavera Cloud	Gateway	Unifier
dataDate	DataDate	data_date
plannedStartDate	plannedStartDate	uuu_project_start_date
projectCode	Id	ProjectNumber

Primavera Cloud	Gateway	Unifier
projectName	Name	ProjectName
Status	Status	uuu_shell_status

Appendix B: Supported Codes and UDFs at Object Level

In Primavera Cloud the following codes and UDFs are supported at the object level:

Primavera Cloud Object Name	Code	UDF	Primavera Cloud as Source	Primavera Cloud as Destination
Project	Yes	Yes	Yes	Yes
Activity	Yes	Yes	Yes	Yes
Resource	Yes	Not Supported	Yes	Yes
WBS	Yes	Yes	Yes	Yes
ResourceAssignment	Not Supported	Yes	Yes	Yes

In Unifier, the following codes and UDFs are supported at the object level:

Unifier Object Name	Code	UDF	Unifier as Source	Unifier as Destination
Project	add as field	add as field	Yes	Yes
P6ActivitySheet	add as field	add as field	Yes	Yes
Resource	add as field	add as field	Yes	Yes
WBS	add as field	add as field	Yes	Yes

Glossary

The following is a list of common Gateway terms used in this document.

B

Business Flow

A collection of business objects and their underlying supported fields selected for data transfer.

C

Cross-reference

A means for Gateway to track data being sent from the source application and received in the destination application. A cross-reference determines if the data is to be regarded as new data or an update to existing data in the destination application. If you delete or remove a cross-reference in Gateway, all history of data transfers is deleted within Gateway, although the data that was sent using this cross-reference will continue to exist in the destination application.

D

Deployment

The information required to connect to a specific database or an instance of an application from or to Gateway. For example, you may want to connect to two instances of a P6 EPPM application: *Testing* and *Production* from Gateway.

Destination Application

The application to which the data is being sent to.

F

Field Mapping Template

A template file which contains a list of fields mapped between the source application, Gateway, and the destination application for each business object. Gateway uses this file to determine how to populate data in the destination application. More than one field mapping template can be created for each business object. These template files are used by a business flow to transfer data during a synchronization run.

Flow Step

A business flow is an ordered sequence of flow steps where data is processed within each flow step. The success or failure of each flow step can be viewed from the **Monitoring** page of Primavera Gateway.

J

Job

A job number assigned in Gateway for each synchronization run to uniquely identify and monitor the data transfer.

M

Master Data

Master data is data that influences all subsequent data transfers between the source and destination applications. A destination application must be equipped with this data from the source application before sending or receiving data. For example, roles and resources are considered as master data for managing any project in an application and must be setup before any project data is transferred between applications.

Migration Data

Migration Data refers to a collection of master data and project data elements identified for a project in the source application for migration to a destination application. Gateway provides a **Migration Data** business flow for migrating data between applications. When you use this business flow, you will need to create or add your own migration data business flow and a synchronization to migrate the data.

P

Project Data

Project data refers to data belonging to a project within the source application. Project data is sent to Gateway and then received in the destination application. These data elements influence only a specific project in an application.

S

Source Application

The application from which the data is being sent from.

Synchronization

A synchronization is a job that is executed to transfer data from a source application to a destination application. Gateway transfers data between two applications using synchronizations.

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