Oracle® Construction and Engineering Analytics
Primavera Unifier Application Setup Guide

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Contents

About This Guide

Describes how to set up Primavera Unifier for Construction and Engineering Analytics.

Audience

This guide is intended for Primavera Unifier application administrators.

Documentation Accessibility

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Conventions

The following text conventions are used in this document.

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

1
Overview

To analyze Primavera Unifier data in Construction and Engineering Analytics, you need to run Unifier Publication Services to publish the following data:

- Business Processes (including vendor analysis)
- Cost Sheet
- Cash Flow
- Generic Cost Sheet
- P6 Summary Sheets
- Project history
- Shells
- Space Utilization
- Vendor

To ensure the current data is ready for Construction and Engineering Analytics, you will need to:

1. Manage users to ensure:
   - They are setup with appropriate roles and permissions to access the Analytics node in Unifier.
   - Users and user security are brought into Construction and Engineering Intelligence. For more details, see Managing Users.

2. Configure settings for the above components to ensure that the data is picked up by the publication services. For more details, see Configuring Unifier for Construction and Engineering Analytics.

3. Run Unifier publication services to move the data to the Unifier Staging tables and prepare the data . For more details, see Publishing Unifier Data.

Set Up Process Flow

Complete the following sequence to set up the required applications to display your data in Construction and Engineering Analytics:

1. Configure the Primavera Unifier application to prepare the data as documented in this guide.

2. Use the Administration module to set up Unifier data sources, manage users, and run ETLs to load data into Construction and Engineering Analytics. For more information, see the Administration Guide.

3. Access and use Construction and Engineering Analytics to analyze and discover insights that drive business goals for your organization.

2
Managing Users

This chapter describes how to onboard Primavera Unifier users into Construction and Engineering Analytics.

Roles and permissions of users are carried over from the source applications. Therefore, roles and permissions of users must be managed within Primavera Unifier before bringing the users into Construction and Engineering Analytics.

If you have users who need to see insights on Unifier data but do not work in the Primavera Unifier application (for example, executives), see the Administration Guide for more information on creating users in Construction and Engineering Analytics.

Assigning Unifier Users with Access to Data

Enable the **Analytics** node in the **Company Workspace** to view or modify Unifier data mapping to Construction and Engineering Analytics.

1. Sign in to Primavera Unifier.

2. In the **Company Workspace**, select **Switch to Admin Mode**.

3. In the left navigation pane, select **Access Control**.

   For newer versions, select **User Administration** and then select **Access Control**.

4. In the right pane, select **Administration Mode Access** and then select **Analytics**.

   For newer versions, select **Administration Mode Access**, then **Integrations**, then **Analytics**.

5. On the **Permission Settings** window, click **Add**.

6. In the **Permission / Access Control** window, select a user or group in the upper pane, and then select any of the following permission settings for the user or group:

   - **Modify**: Allows the user to configure and modify the data required for Construction and Engineering Analytics. This enables users to access Analytics Data Mapping to add or amend as needed.

   - **View**: Allows the user to open and view the contents in the Analytics node. Users with View permission cannot make any changes.

7. Click **OK** and then click **Apply**.

Enabling Unifier Users and User Security

To bring Primavera Unifier users and user security into Construction and Engineering Analytics:

1. Sign in to Primavera Unifier.

2. Grant access to Analytics in Unifier:

- For all company-sponsored *shells*, select the following options: **Unifier**, **Company workspace** tab, **Switch to Admin Mode**, **User Administration**, **Access Control**, **User Mode Access**, **Company Workspace**, **Non-Navigational Nodes**, and then select **Analytics**.

- For all company-sponsored projects (standard), select **Unifier**, **Company workspace**, **Switch to Admin Mode**, **Access Control**, **User Mode Access**, **Project/Shells**, **Non-Navigational Node**, and then select **Analytics**.

- For shell-specific permissions, select a **<Shell Name>**, and then select **Switch to Admin Mode**, **Access Control**, **User Mode Access**, **Non-Navigational Nodes**, and then select **Analytics**, as shown above.

3. Click **Add Users / Groups**.

4. From the **Users / Groups** window, select the intended users and/or groups and click **Add**.

   - For individual users or multiple users with same permissions, review the **Permission Settings**, adjust as needed, and click **OK**.

   - For multiple users with different permissions, click **OK** to return to the **Permission Settings** window.

      a. In the upper area, select **Users** or **Groups**.

      b. In the lower area, select **Modify** or **View** access for the selected user or group.

      c. Click **OK**.

      d. Click **Apply** to save changes and keep the window open.
         or

         Click **OK** to save changes and close the window.

5. In the left pane, select **Access Control, Administration Mode Access**, and then expand either **Company Sponsored Projects (Standard)** or **Company Sponsored Shells** as applicable.

6. Open the desired project.

7. Select **Add**, select the desired users, and modify permissions as needed.

> **Note:**
>
> After permissions are setup, the access doesn't get reflected in Construction and Engineering Analytics immediately.

8. To add all users into Construction and Engineering Analytics:

   a. Once all the desired users are added, select **Company Workspace**, **Analytics** and then run the **Schedule** to publish changes to staging tables. For more details, see Setting Up a Publishing Schedule For Unifier Data.

   b. Run the Unifier Publication service followed by an ETL/ingestion run for the permissions to get reflected in the Unifier staging tables.

   c. Once the user is present in the staging tables, rerun the Data Warehouse ETL/ingestion to bring the user permission information into the `W_USER_S` table.

3

Configuring Unifier for Construction and Engineering Analytics

Construction and Engineering Analytics provides an in-depth and comprehensive method for analyzing and evaluating the following types of Primavera Unifier data:

- Business Processes (including Vendor analysis)
- Cash Flow
- Cost Sheet
- Generic Cost Sheet
- P6 Summary Sheets
- Project history
- Shells
- Space Utilization (from Space Manager)
- Vendor

After setting up any of the above components in Unifier, you can then publish the data in preparation for an ETL run in Construction and Engineering Analytics.

Enabling the Analytics Module in Unifier

To enable the Analytics module in Primavera Unifier:

1. Sign in to Primavera Unifier with administration privileges.
2. Access the Analytics Module:
   a. In the navigation pane, select **Data Structure Setup** and then select **System Module**.
   b. The **Loaded** status for the **Analytics** module should be set to **Yes**.

Setting Up Business Processes

You can select the business process data you want to use in Construction and Engineering Analytics.

To select business processes:

1. Sign in to Primavera Unifier with administration privileges.
2. In the navigation pane, select **Analytics**.
3. In the **Name** column, select **Business Processes** and then click **Open**.
4. In the **Business Process Setup** window, click **Add**.
5. In the **Select Business Processes for Analytics** window, select the business processes you want to include for analysis and then click **OK**.

6. In the **Business Processes** tab, deselect **Track History of Data Elements?** option if you decide not to track the history of facts and dimensions for each business process.

7. In the **Custom Fields** tab, set the number of user-defined string, date, and numeric fields for **Main Form Elements** and **Line Item Elements** for Data Mapping.

   Specify values in each field to set the number of user-defined fields for Data Mapping. The default values displayed are based on the existing user-defined fields limit that is currently set in Primavera Unifier. The total number of Main Form custom fields cannot exceed 900. Similarly, the total number of Line Item custom fields cannot exceed 900.

   When entering values in the fields, use numeric values, do not use decimal points, and use numbers greater than the default values.

8. In the **Data Mapping** tab, map the fields or modify the field mapping from the Upper and Detail forms.

   a. In the **Data Source** column of the top section, select a Unifier Data Element (DE) for each predefined Analytics business process field that appears in the Main form or as a line item in the Detail form.

      For example, if there are 10 upper forms from all the business processes, and each upper form has 10 DEs, then the drop-down list displays a consolidated unique list of DEs from all the business processes.

      For example, if there are 20 Detail forms, and each Detail form has 10 DEs, then the drop-down list displays a consolidated unique list of DEs from the detail forms of all the business processes.

      The fields in the drop-down list are those that have a matching Data Definition (DD) as the **Name** field, in the format `<DE Label>(<DE Name>)`. For example, **Department(contract_department)**.

      > **Note:**
      >
      > The workflow data (steps and tasks) related to any Workflow business process is also sent to Analytics. Also, the data element of type Rich Text is not available to be mapped to the UDFs from Analytics.

   b. In the **User Defined Attributes** section, click **Add** to add custom fields in addition to the system-defined fields.

      Specify values for the following properties of the attribute and click **OK**:

      - **Data Type**: Select the data type of the attribute as any one of the following: String (default), Date, Numeric
      - **Source**: Select the data source as **Main Form** or **Details Form**.
      - **Name**: Select the user defined string to be associated with the name. You can add up to 100 names (User Defined String Fields 1 - 100)
      - **Data Source**: Select the data source to be associated with the custom field.
      - **Label**: Defaults to the data element label selected in the **Data Source** list. Modify the label if necessary.
        To modify a user-defined attribute, select the attribute and then click **Modify**.

        To remove a user-defined attribute, select the attribute, and then click **Remove**.

> **Note:**
>
> If the label is absent, Analytics displays the value instead. Also, Analytics displays the label, which has the Value/Label pair, in the case of Data Elements (DEs).

9. Click **Apply**, then **OK**.

Related Topics

*   Unifier General Administration Guide

Setting Up Cash Flow Data

You can select the Cash Flow names that you want to use for analysis, and set up the data for the fields related to Cash Flow in the Cash Flow record.

To set up cash flow data:

1. Sign in to Primavera Unifier with administration privileges.

2. In the navigation pane, select **Analytics**.

3. Select **Business Processes** and click **Open**.

4. In the **Cash Flow Setup** window, select any of the following actions:

    *   Click **Add** to add a cash flows for analysis.

    *   Click **Remove** to remove cash flows from analysis.

5. To add cash flows for analysis, click **Add**.

6. In the **Cash Flow** window, select as many cash flows you want to include for analysis and then click **OK**.

7. In the top section of the **Data Mapping** tab, map the predefined Analytics Cash Flow fields to a corresponding Unifier Cash Flow Curve type for the following fields:

    *   **Initial Baseline**: Select the data source of the initial baseline based on the Baseline Cash Flow curve type, defined under the Cash Flow data sources (Cashflow Datasources window) in the Standard & Libraries.

    *   **Current Baseline**: Select the data source of the current baseline based on the Baseline Cash Flow curve type, defined under the Cash Flow data sources (Cashflow Datasources window) in the Standard & Libraries.

    *   **Actuals (Spends)**: Select the Actuals mapping based on the Spends curve type.

    *   **Forecast**: Select the forecast based on the Forecast curve type.

    *   **User Defined Curve 1 through User Defined Curve 10**: Select a UDF curve based on the Cash Flow curve type and sorted in alphabetical order. It includes UDF curves from all cash flow data sources.

> ✏ **Note:**
>
> – Cash Flow Derive curve is not supported.
>
> – The fields displayed in the **Data Source** drop-down list is a concatenation of the Cash Flow data source name and Cash Flow curve type.
>
> – The **Analytics** field name can be the same as the Data Source name. For example, you can map a User Defined Curve to data source named, "Initial Baseline".

8. Click **Apply**, then **OK**.

Related Topics

• Unifier General Administration Guide

Setting Up Cost Sheet Data

You can select the Cost Sheet column data that you want to use in Construction and Engineering Analytics.

To set up cost sheet data:

1. Sign in to Primavera Unifier with administration privileges.

2. In the navigation pane, select **Analytics**.

3. Select **Cost Sheet** and click **Open**.

4. In the **Data Mapping-Columns** tab of the **Cost Sheet Setup** window, specify the following information:

   a. In the top section, for each Cost Sheet Analytics field listed in the **Name** column, select a corresponding Cost Sheet **Data Source** defined in Unifier. Data sources are classified as *Single Sources* and *Logical Sources*.

   b. In the **User Defined Columns** section,

      i. In the **Data Source** column, select a data source for each **User Defined Column**. The P6 data sources are included under the Single Sources, and the element is included within the parenthesis of the P6 Data Source. For example, Current Baseline (Planned Cost).

      In addition to the predefined list displayed, you can add up to 10 additional mappings for the Cost Sheet data sources.

      You can pick the same data source for multiple fields.

      ii. In the **Label** field, modify the label according to your business need. By default, the label is populated with the data source name.
      A red-color asterisk (*/star symbol) appears for the columns that are mapped to a data source.

5. In the **Data Mapping-Cost Attributes** tab of the **Cost Sheet Setup** window, click **Add**.

   • In the **Add User Defined Attribute** window, enter the following information:

      i. The **Data Type** field displays **String** by default.
      If the **Data Type** field is **String**, then the field is a dimension object in Construction and Engineering Analytics. Otherwise, the field is a fact object.

      ii.   In the **Name** field, select a User Defined String Field 1 through 20.

      iii.   In the **Data Source** field select the Data Elements (DEs) from the Cost Code Attributes Detail Form. Only DEs with the String type Data Definitions (DDs) are displayed in the Data Source field. The String type DDs in the list are:

- Text Box

- Multiple Text Lines

- Pull-Down Menu

- Radio Buttons

- Multi-select Input

      i.   In the **Label** field, modify the label name as per your business needs. By default displays the **Data Source** field value selected in the previous field.

      ii.   Click **OK**.

6.   Click **Apply**, then **OK**.

Related Topics

- [Unifier General Administration Guide]

Setting Up Generic Cost Sheet Data

Construction and Engineering Analytics supports reporting and analyses of data from the various cost attributes in the Generic Cost Sheet of Shells with Generic Cost Codes.

To map the Analytics fields to the corresponding Generic Cost Sheet columns:

1.   Sign in to Primavera Unifier with administration privileges.

2.   In the navigation pane, select **Analytics**.

3.   In the **Name** column, select **Generic Cost Sheet** and click **Open**.

4.   In the **Data Mapping** tab, map the Generic Cost sheet Analytic fields to the corresponding Generic Cost Sheet columns, defined in Unifier:

    a.   In the **Data Source** field, select the data source for each user defined column.

       Data source values are the single sources and logical sources existing in the Generic Cost Sheets of all the Generic type Shells. You can pick the same data source for multiple fields.

    b.   In the **Label** field, modify the display name for the data source based on your business needs. Defaults to the Name column for the data source, as set in the Generic Cost sheet column definition

    c.   Click **OK**.

Related Topics

- [Unifier General Administration Guide]

Setting Up P6 Summary Sheets Data

You can select the P6 data sources that you want to use in Construction and Engineering Analytics.

To add P6 data sources:

1. Sign in to Primavera Unifier with administration privileges.

2. In the navigation pane, select **Analytics**.

3. In the **Name** column, select **P6 Summary Sheets** and then click **Open**.

4. In the **Analytics P6 Summary Sheets Setup** window, click **Add**.

5. In the **Select P6 Data Sources for Analytics** field, select any of the available data sources, and then click **OK**.

   If fields overlap between the CBS Shells and the existing P6 Summary Sheets, then the system-defined fields in the P6 Summary Sheets will be used.

Related Topics

• Unifier General Administration Guide

Setting Up Shell Data

You can select the shells that you want to use for analysis. Shells are called projects in Construction and Engineering Analytics.

To add shell data:

1. Sign in to Primavera Unifier with administration privileges.

2. In the navigation pane, select **Analytics**.

3. In the **Name** column, select **Shells** and click **Open**.

4. In the top section of the **Data Mapping** tab, specify the following information:

   a. In the **Data Source** column, select the Data Element (DE) for each predefined, read-only field listed in the **Name** column.

      The **Name** column, displays which represent the fields used in CIC Analytics.

   b. In the **User Defined Attributes** section of the **Data Mapping** tab, click **Add**.

   c. In the **Add User Defined Attribute** window specify values for the following properties of the attribute:

      • **Data Type**: Select the data type of the attribute as any one of the following: *String* (default), *Date*, *Numeric*

      • **Source**: Select the data source as *Main Form* or *Details Form*.

      • **Name**: Select the user defined string to be associated with the name. You can add up to 100 names (User Defined String Fields 1 - 30)

      • **Data Source**: Select the data source to be associated with the custom field.

      • **Label**: Defaults to the data element label selected in the **Data Source** list. Modify the label if necessary.

      > ✏ **Note:**
      >
      > If the label is absent, Analytics displays the value instead. Also, Analytics displays the label, which has the Value/Label pair, in the case of Data Elements (DEs).

   d. Click **OK**.

Related Topics

• Unifier General Administration Guide

Setting Up Space Manager Data

You can select the Space Manager data that you want to use in Construction and Engineering Analytics.

To add space manager data:

1. Sign in to Primavera Unifier with administration privileges.

2. In the navigation pane, select **Analytics**.

3. In the **Name** column, select **Space Manager** and click **Open**.

4. In the **Space Manager Setup** window:

   • Select the **Space Types** tab and choose any of the following actions:

     • Click **Add** to add a space type for analysis.

     • Click **Modify** to update a space type data for analysis

     • Click **Remove** to remove space type from analysis.

5. To add space types for analysis, click **Add**.

6. In the **Space Types** window select one or more space types and then click **OK**.

   > 💡 **Tip:**
   >
   > Use the CTRL or Shift keys to select multiple space types.

7. Click **Apply**, then **OK**.

8. Select the **Data Mapping -Space Types** tab and click **Add** to add custom fields from various Space Types to use in Analytics.

   a. In the **Add User Defined Attribute** window specify values for the following properties for the attribute.

      • **Data Type**: Select the data type of the attribute as any one of the following: *String* (default), *Date*, *Numeric*

      • **Source**: Select the data source as *Main Form* or *Details Form*.

      • **Name**: Select the user defined string to be associated with the name.

      • **Data Source**: Select the data source to be associated with the custom field.

      • **Label**: Defaults to the data element label selected in the **Data Source** list. Modify the label if necessary.

   b. Click **OK**.

9. Select the **Data Mapping -Level** tab and click **Add** to add custom level/floor fields from various levels to map the Analytics field to the corresponding Levels field.

   a. In the **Add User Defined Attribute** window specify values for the following properties of the attribute.

      • **Data Type**: Select the data type of the attribute as any one of the following: *String* (default), *Date*, *Numeric*

- **Source**: Select the data source as *Main Form* or *Details Form*.
- **Name**: Select the user defined string to be associated with the name.
- **Data Source**: Select the data source to be associated with the custom field.
- **Label**: Defaults to the data element label selected in the **Data Source** list. Modify the label if necessary.

b. Click **OK**.

> ✏️ **Note:**
>
> If the label is absent, Analytics displays the value instead. Also, Analytics displays the label, which has the Value / Label pair, in the case of Data Elements (DEs).

Related Topics

- Unifier General Administration Guide

Setting Up Vendor Data

You can select Unifier's vendor data that you want to use in Construction and Engineering Analytics.

To set up vendor data:

1. Sign in to Primavera Unifier with administration privileges.
2. In the navigation pane, select **Analytics**.
3. In the **Name** column, select **Vendors** and click **Open**.
4. In the **Vendors Setup** window, do one the following:
   - Click **Add** to add vendor data for analysis.
   - Click **Remove** to remove vendor data from analysis.
5. To add vendor data, click **Add**.
6. In the **Vendors** tab, select one or more vendors and then click **OK**.

> 💡 **Tip:**
>
> Use the CTRL or Shift keys to select vendors.

7. Click **Apply** and then click **OK**.
8. In the **Data Mapping** tab, map the predefined Analytic Vendor related fields to a corresponding Unifier Data Element (DE) in the Business Process as follows:
   a. In the **Data Source** list, select the upper form DEs, for the selected Vendor in the **Vendors** tab for the following fields:
      - Vendor ID
      - Name
      - Type
   b. Click **Apply** and then click **OK**.

Related Topics

- Unifier General Administration Guide

4

Publishing Unifier Data

After configuring what Primavera Unifier data is to be sent for analysis, now publish the data to Unifier staging tables or set a schedule for periodic publication of this information for Construction and Engineering Analytics.

You can publish Unifier data for analytics using either of the following methods:

- Publishing Unifier Data On-Demand
- Setting Up a Publishing Schedule For Unifier Data

> **Note:**
>
> You can set the Unifier publishing schedule to a higher frequency, but the data will not appear in Construction and Engineering Analytics until the Analytics data ingestion/ETL process is run successfully.

Publishing Unifier Data On-Demand

To publish data to the Unifier staging tables on-demand:

1. In the navigation pane, select **Analytics**.
2. Click **Run Now**.
3. In the **Confirmation** dialog box, click **Yes**.

If Unifier is already running a publishing job based on the schedule setup, the following message displays:

Unifier data is already being published based on the schedule. You must wait for this to be complete before performing this action.

> **Note:**
>
> You can set the Unifier publishing schedule to a higher frequency, but the data will not appear in Analytics until the Analytics data ingestion/ETL process is run successfully.

Setting Up a Publishing Schedule For Unifier Data

When Unifier is used as a data source, the data needs to be moved to the staging tables of Unifier.

Before running the ingestion process, you must configure and run publication services to allow users to control what data to calculate and store and how often the data is updated. .

To schedule publication services in Primavera Unifier:

1. Sign in to Primavera Unifier with administration privileges.

2. Go to the **Company** workspace.

3. Change the mode from user mode to **admin** mode.

4. In the navigation pane, select **Analytics**.

5. From the toolbar, click the **Schedule** icon.

6. In the **Schedule Setup** pane, set the data update frequency.

   a. In the **Frequency** section, select the regularity with which the data is to be published. Options include:

      - **Every <#> hours**: Select this option to schedule a run every 4, 6, 8, or 12 hours.

      - **Daily**: Select this option to schedule a run everyday.

      - **Weekly end of day <weekday>**: Select this option to schedule a run on a specific day of the week.

      - **None**: Select this option to not schedule any publication runs.

      - **Publish at <#> hour <#> minute**: Select this option to schedule a run at a specif time of the day.

   b. In the **Filters** section, select any of the following options to include or exclude shells from publishing runs.

      - **Include data from all Shells**: Select this option to include all shell data. This is the default option.

      - **Include data from Shells with Statuses**: Select this option to choose Shells with any of the following statuses: *Active*, *Inactive*, *On-Hold*, or *View-Only*

      - **Exclude data from selected Shells**: Select this option to exclude specific Shells from the publishing run. Click **Add** or **Remove** to filter the list of Shells.

   c. If you have made any changes to the data definition or the data mapping fields, select the **Refresh all data** check box.

   d. In the **Send error notification to** field, enter the email ID of the user or group that would receive error notifications about the data exchange between Unifier and Construction and Engineering Analytics.

7. Click **OK**.

> **Note:**
>
> You can set the Unifier publishing schedule to a higher frequency, but the data will not appear in Analytics until the Analytics data ingestion/ETL process is run successfully.

5

Next Step

Schedule ingestion runs and manage user access to Construction and Engineering Analytics using the Administration module. Contact the Construction and Engineering Intelligence administrator in your organization.

For more information, see the *Administration Guide*.