Oracle
Primavera Unifier
BI Publisher Configuration Guide for On-Premises

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Oracle Primavera Unifier BI Publisher Configuration Guide for On-Premises

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Contents

Introduction

This document provides Oracle Primavera Unifier network and database administrators instructions on how to download BI Publisher, configure BI Publisher settings, configure BI Publisher in Unifier create BI Publisher reports, and run BI Publisher reports.

About Configuring BI Publisher for Primavera Unifier

Oracle Business Intelligence Publisher (BI Publisher) integrates with Primavera Unifier to deliver on-demand web-based reporting through Primavera Unifier.

Follow the instructions in this guide to:

1) Download BI Publisher.
2) Configure BI Publisher settings.
3) Configure BI Publisher in Primavera Unifier.
4) Create BI Publisher reports.
5) Run BI Publisher reports.

> **Note**: These instructions contain information only on configuring BI Publisher to work with Primavera Unifier. They do not include information on installing BI Publisher. For BI Publisher installation instructions, refer to the documentation included with BI Publisher.

Getting Started with BI Publisher Reports

Before getting started, familiarize yourself with the way BI Publisher handles reports. Primavera Unifier populates its list of reports from the Report Definitions that load from BI Publisher Web Services. When you need to create or modify a report, you will use BI Publisher. The documentation on BI Publisher will help you understand how it works.

The graphic below will help you understand the basic flow between BI Publisher and Primavera Unifier.
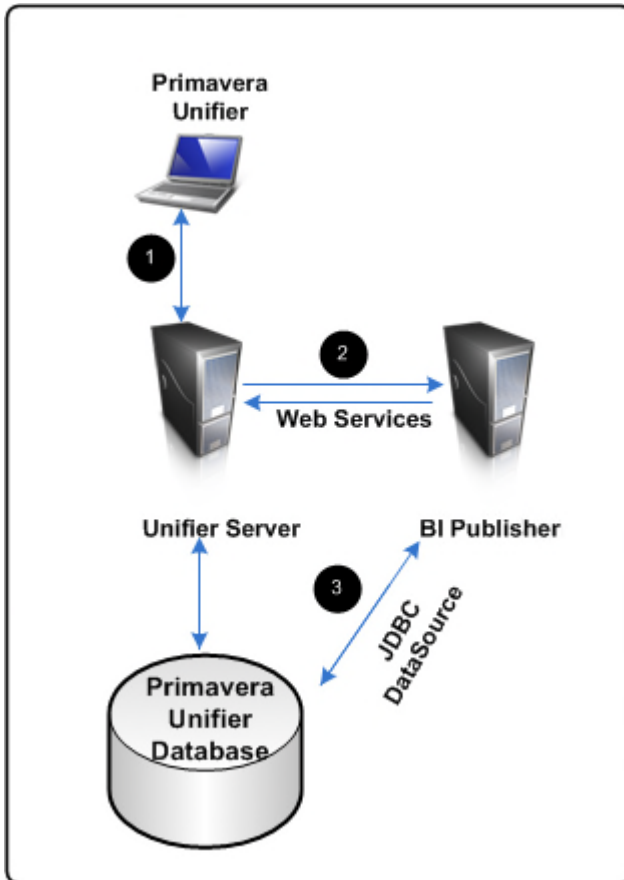
BI Publisher Diagram

Item	Description
❶	Sign in with Unifier User account.
❷	Connect to the BI Publisher server through Web Services to access the catalog.
❸	You can configure the JDBC Data Source for the BI Publisher server to access the Primavera Unifier Database.

Downloading BI Publisher

Primavera Unifier can integrate with the BI Publisher.

> **Note**: For the full list of system requirements, applications, and application version levels refer to the Unifier Tested Configurations in the Unifier Documentation Library.

Any prior version of BI Publisher will fail to connect with Primavera Unifier.

To download BI Publisher:

1) Go to the Oracle Software Delivery Cloud.
2) Search for Oracle Business Intelligence and enter your platform version.
3) Select the Oracle Business Intelligence for your platform and download the applicable files.
4) Use the instructions for BI Publisher to install BI Publisher from the files you downloaded.

Configuring BI Publisher for Primavera Unifier Reporting

To run reports in Primavera Unifier, you must complete these tasks:

1) Download BI Publisher from the Oracle Software Delivery Cloud.

> **Note**: For the full list of system requirements, applications, and application version levels refer to the Unifier Tested Configurations in the Unifier Documentation Library.

2) If not already set up, install and deploy a BI Publisher environment to manage reports. See the documentation included with BI Publisher.
3) Configure sample reports, roles, security, and users in BI Publisher. See *Configuring Enterprise Reporting with BI Publisher* (on page 9).
4) Populate BI Publisher settings in the Primavera Unifier Configurator. See *Configuring BI Publisher in Primavera Unifier* (on page 12).

Configuring Enterprise Reporting with BI Publisher

The following topics describe how to configure reports in BI Publisher to work with Primavera Unifier.

Configuring BI Publisher User in WebLogic

To add an administrative BI Publisher user to WebLogic:

1) Open a web browser and launch Oracle WebLogic for your installation of BI Publisher.
2) Log in to **Oracle WebLogic Administration Console**.
3) In the **Domain Structure** section, click **Security Realm**.
4) Click on the realm name in the table.
5) Click the **Users and Groups** tab.

6) Click the **Users** sub tab.

7) Click **New**.

8) In the **Create a New User** form:

    a. Fill in the required fields for Name, Password, and Confirm Password. Ensure this user has a unique user name.

    b. Click **OK**.

9) Click on the user you created.

10) Click the **Group** tab.

    a. Move the **BI Service Administrators**, **BI Content Author**, and **BI Consumers** groups from the **Available** column to the **Chosen** column.

    b. Click **Save**.

11) Log out of the Oracle WebLogic Administration Console.

Security Model in BI Publisher

The default security in BI Publisher is Fusion Middleware, which is a role-based, declarative model that employs container-managed security where resources are protected by roles that are assigned to users. This security model can be utilized when integrating with Primavera Unifier.

Creating the JDBC Connection String for BI Publisher

To create the JDBC connection string:

1) Login to BI Publisher as an administrative user.

2) In BI Publisher, click the **Administration** link.

3) Under **Data Sources**, click the **JDBC Connection** link.

4) Click **Add Data Source** or choose the data source name you want to use.

5) In the **General** section:

    a. In the **Data Source Name** field, enter the alphanumeric name of the Unifier data source.

    b. In the **Driver Type** field, select your version.

    c. In the **Database Driver Class** field, enter the JDBC driver class for your database.

    d. In the **Connection String** field, enter your JDBC connection string for the Primavera Unifier Database.

    e. Ensure the **Use System User** option is not selected.

    f. In the **Username** field, enter your Unifier Database Schema User (for example, Unifier).

    g. In the **Password** field, enter your Unifier Database Schema User password.

    h. Ensure the **Pre Process Function** and **Post Process Function** fields are left blank.

    i. Clear the **Use Proxy Authentication** option for this data source definition.

    j. Click **Test Connection**.

6) Click **Apply**.

Disabling the Cache for BI Publisher

To disable the cache:

1) Login to BI Publisher as an administrative user.
2) In BI Publisher, click the **Administration** link.
3) Under **System Maintenance**, click the **Server Configuration** link.
4) In the **Cache Expiration (minutes)** field, enter **0** minutes.
5) Click **Apply**.
6) Restart the BI Publisher server.

Creating a Reports Folder In BI Publisher

To create a reports folder for Primavera Unifier:

1) Login to BI Publisher as an administrative user.
2) Select **Catalog**.
3) Under **Folders** highlight **Shared Folders**.
4) Select the **New** icon and select **Folder**.
5) Enter a folder name and select **OK**.

Adding Data Sources to Roles with the Fusion Middleware Security Model

You can assign an existing role to users, but you need to assign the JDBC data source to the roles.

To assign the data source:

1) Click the **Administration** link at the top of your screen.
2) In the **Security Center** section, select the **Roles and Permissions** link.
3) For the **BI Service Administrator** role, select the **Add Data Source** icon.
4) Under **Database Connections** move the data source created for Primavera Unifier from the **Available Data Sources** to **Allowed Data Sources**.
5) Click **Apply**.
6) Repeat steps 1-5 for the **BI Consumer** role and **BI Content Author** role.

Assigning Permissions to the Primavera Unifier Reports Folder

To assign permissions to the Primavera Unifier Reports Folder:

1) Log in to BI Publisher as an Administrator
2) Click **Catalog**.
3) Under **Shared Folders**, highlight the Primavera Unifier **Reports** folder.
4) In the **Tasks** pane, click **Permissions**.
5) Click **+** to add a role.
6) Click **Search** to list all available roles.

7) Highlight the appropriate role for Primavera Unifier and click **Move**.

8) Click **OK** to close the **Add Roles** window.

9) In the **Permissions** window, check all boxes.

10) Click **OK** to save.

Configuring BI Publisher in Primavera Unifier

To configure BI Publisher in WebLogic in Primavera Unifier:

1) Open the Unifier Configurator:

    a. Go to the Unifier home directory and open the WebLogic folder (for example, Unifier_Home/weblogic).

    b. Run **configure.bat** (for Windows) or **configure.sh** (for Linux).

2) Select the **Report** tab.

3) In the **BIP Endpoint URL** field, enter the BI Publisher Web Services endpoint URL.

    For example: *http://host1.name1.com:9704*

4) In the **BIP User Name** field, enter the user name created above for the BI Publisher server.

5) In the **BIP Password** field, enter the password for the BI Publisher user.

6) In the **BIP Data Source** field, enter the JDBC data source name you entered when you created the BI Publisher JDBC Data Source.

7) In the **BIP Report Folder** field, enter the name of the folder created under the **Shared Folders** location in the **BI Publisher Catalog**.

8) In the **BIP External Report Folder** field, enter the name of the external folder created under the **Shared Folders** location in the **BI Publisher Catalog**.

Setting Permissions for Custom Reports

To set permissions for Custom Reports:

1) Go to the **Company Workspace** tab and switch to **Admin** mode.

2) Open the **User Administration** grouping node and click **Access Control** in the left Navigator. In the **Access Control** log window, there are two modules:

    ▸ **Administration Mode Access**

    ▸ **User Mode Access**

If the reports are at the Program level, in the right pane, select **User Mode Access** > **Programs** > **Reports** > **Custom** > `<report name>`.

If the reports are at the Project level, in the right pane, select **User Mode Access** > **Projects/Shells** > **Reports** > **Custom** > `<Report Name>`.

3) Select the access for the appropriate user.

4) Click **OK**.

Notes:

- A user with the configure permission to the **Custom Report** node, can configure custom print templates. There are no separate permissions for performing actions on the custom print templates.
- If you have a **User Mode Navigator**, you must include the **Custom Report** in the navigator and redeploy before the user can assign permission through **Access Control**.

Creating Data Views

You will create data views to operate as data sources for custom reports.

To create a data view:

> **Note**: Refer to the *Unifier Administration Guide* for more information.

1) Sign in to your Unifier environment, as company administrator, or administrator.
2) Click the **Company Workspace** tab.
3) In the left pane:
    a. Switch to **Administration Mode**.
    b. Select **Data Structure Setup** > **Data Views**.
4) In the **User-Defined Data Views** window, click **New**.
5) Enter the information needed for your data view. See **Tips** for more information.
6) Click **Apply** and **OK**.
7) Highlight the new view and select **Status**, **Published**.

Tips

The SQL definition will consist of the SQL query used to populate the report with specific data based on the desired output.

> **Note**: If using the data view as a Main view in a Project level report, you must have a column named **project_id**. If using the data view in a Program level report, you must have a column named **program_id**.

For example, a Project level data view for a company registry "companyReg" can be like this below:

```
SELECT    pu.PID as PROJECT_ID,
          p.PROJECTNUMBER as PROJECTNUMBER,
          c.COMPANYNAME as COMPANY_NAME,
          c.SHORTNAME as COMPANY_SHORT_NAME,
```

```
            c.DESCRIPTION as COMPANY_DESCRIPTION,

            c.CONTACTNAME as COMPANY_CONTACT_NAME,

            u.FULLNAME as USER_FULL_NAME,

            u.USERID as USER_ID,

            u.USERNAME as USER_NAME,

            u.EMAIL as USER_EMAIL
FROM        companyReg_SYS_USER_INFO_VIEW u,

            companyReg_SYS_COMPANY_INFO c,

            companyReg_SYS_PROJECT_INFO p,

            companyReg_SYS_PROJECTUSER pu
WHERE       c.COMPANYID = p.COMPANYID

   AND      p.PID = pu.PID

   AND      u.userid = pu.userid
```

Creating a BI Publisher Report in Unifier

To create a new BI Publisher report:

> **Note**: For creating and updating BI custom reports and BI custom prints, importing reports from BI Server into Unifier (synchronization), refer to the *Unifier Administration Guide*.

1) Sign in to your Unifier environment.
2) Click the **Company Workspace** tab.
3) In the left pane:
   a. Switch to **Administration Mode**.
   b. Expand **Configuration**.
   c. Select **Custom Templates**.
4) In the right pane:
   a. Select the **New** (drop-down arrow).
   b. Choose **Report with Internal Data Model** or **Report with External Data Model**.
      If you choose Report with External Data Model, you will continue using the steps in the section.

> **Notes**:
> - **Internal data model**: Unifier maintains the data model file internally. Any changes in the data views, data links, query parameters, and additional parameters are being applied and saved in the data model

when the BIP report is saved.

- **External data model**: Users need to upload the data model (.xdm) file and maintain it externally. This means that the user may modify the .XDM file manually or by using the BIP data model editor.

5) In the **General** tab of the **Custom Report** dialog box:
   a. In the **Name** field, enter a name for the report.
   b. In the **Description** field, enter a brief description about the report (maximum 250 characters and non-ASCII characters are permitted).
   c. The **Data Model Type** field is a pre-populated and read-only field with values that can be internal or external based on the option selected at the time of creating the custom print.
   d. In the **Report Level** field, select a type for the report.
   e. In the **Main View** field, select a type of view for the report.

   > **Note**: The administrator can create these user-defined views. Refer to the *Unifier Administration Guide* for more information on creating data views.

6) In the **Views** tab, click **Add** or **Remove** to edit the views for the report.
7) Click **Apply**.
8) When the **Sample Data** tab opens, you can download the sample XML data for creating or modifying report layouts:
   - If you are using the Internal Data Model:
   a. Select a project/shell.
   b. Select a number of rows to return.
   c. Click **Generate**.
   d. Click **Download**.
   e. Save the XML file.
   - If you are using the External Data Model:

   > **Note**: You cannot download sample data until after you define and publish the report.

   a. Select a project/shell.
   b. Click **Generate**.
   c. Click **Download**.
   d. Save the XML file.
9) Create a report layout in Microsoft Word to have templates available in Microsoft Word when you publish reports:
   a. Open **Microsoft Word**.
   b. Create an **RTF** file.
   c. In the **BI Publisher** tab:
      1. Select **Sample XML** in the **Load Data** section.
      2. Upload the XML file you created above.

3. Create a table for the layout using the Table Wizard included with the BI Publisher plug-in.

4. Save and close the RTF file.

10) Return to the **Custom Report** dialog box.

11) In the **Template File** tab (consisting of Add, Modify, Remove, and Download options)

    a. Click **Add** to open the template window.

    b. Enter information in the following fields: Template Name, Template Type, and Report Layout File.

        ▪ To localize the Custom Report output for different languages, you can provide XLIFF files for RTF-type templates here.

        ▪ The Template Name field accepts spaces and other characters.

    c. Click **Browse** to select the template file for uploading.

    d. Click **OK** to confirm the upload.

12) Return to the **Company Workspace** tab.

13) In the left pane:

    a. Expand **Configuration**.

    b. Select **Custom Reports**.

14) In the right pane, select the report you want to publish.

15) Click the **Status** drop-down list on the toolbar and select **Published**.

If you haven't already installed the BI Publisher plug-in for Microsoft Word, install it now. You can find it here: http://www.oracle.com/technetwork/middleware/bi-publisher/downloads/index.html. Use one of the following:

> **Note**: For the full list of system requirements, applications, and application version levels refer to the *Primavera Unifier Tested Configurations* in the Primavera Unifier Documentation Library.

‣ Oracle BI Publisher Desktop for 32 bit Office on Windows (245 MB)

‣ Oracle BI Publisher Desktop for 64 bit Office on Windows (245 MB)

Refer to the documentation included with BI Publisher for more information on using this plug-in.

Adding Permissions to Run BI Publisher Reports

These steps apply to sample custom reports and may not apply for every report.

To add permissions to run reports:

1) Go to the **Company Workspace** tab and switch to **Admin** mode.

2) Select the **User Mode Navigator**.

3) Open the **Project / Shell** navigator.

4) Under **Reports**, create a **Custom Reports** node.

5) Change the icon to **u_report_select.gif**.

6) Under the **Custom Reports** node, add the new report.

7) Click **OK**.

8) Highlight the **Project / Shell** navigator.

9) Select **Deploy** to apply changes.

10) Go to the **Company Workspace** tab and switch to **Admin** mode.

11) Navigate to **Company Sponsored Shells**, **All Projects**.

12) Highlight **All Projects** in the right window pane and select **Open**.

13) Select **Access Control**.

14) Navigate to **User Mode Access**, **Reports**, **Custom Reports**.

15) Select the custom report.

16) Add users to allow access to reports.

17) Click **Apply** and **OK**.

Configuring BI Publisher Reports to Use Unifier Images

To add a dynamic Unifier image in BI Publisher report, we need to create a new data set in the Data Model (XDM) file, as explained below.

> **Note**: The following instructions apply to reports that run directly on BI Publisher server. The BI Publisher reports run via Unifier do not need to make these changes.

In the .XDM file:

```
<dataSet name="security_token" type="complex">
        <sql>
            <![CDATA[SELECT token_value sec_token from ( SELECT
token_value,expired,ROW_NUMBER() OVER (ORDER BY expired desc) rn FROM
sys_server_token WHERE token_type = 'img') where rn = 1]]>
        </sql>
</dataSet>
<group name="security_token" label="security_token"
source="security_token">
      <element name="SEC_TOKEN" value="SEC_TOKEN" label="SEC_TOKEN"
dataType="xsd:string" breakOrder="" fieldOrder="1"/>
</group>
```

> **Note**: The purpose is to get the server token from database where "expired" is the maximum from all the rows.

In the report template that requires to have the image to be inserted, change the "Alt text" of the image to point to image retrieval URL.

To retrieve a Unifier image, use the URL: `https://unifier-server-address /bluedoor/rest/image/<image_id>/<server_token>`

The report parameter `uuu_p_urlF` can be created in Data Model (XDM) file with a default value, so at the runtime the server address-part of the URL can be changed appropriately:

```
    <parameter name="uuu_p_urlF"
defaultValue="https://unifier-server-address/bluedoor/rest/image"
dataType="xsd:string" rowPlacement="8">

        <input label="uuu_p_urlF" size="100"/>

    </parameter>
```

The report template uses this URL in the "Alt text" of the image, as in:
`url:{concat($uuu_p_urlF,'/',DATA_IMAGE_ID,'/',//security_token/SEC_TOKEN[1])}`

Where: `uuu_p_urlF` can be the template variable, for example:
`<?variable@begin:uuu_p_urlF;(.//uuu_p_urlF)[1]?>`

The security token, retrieved from DB by the dataset is: `//security_token/SEC_TOKEN[1]`

The runtime data (image ID) is: `DATA_IMAGE_ID`

Running the BI Publisher Report in Primavera Unifier

To run the BI Publisher Report in Unifier:

1) Sign in to your Unifier environment.
2) Select a Project or Shell.
3) Ensure you are in **User** mode.
4) Under the Project/shell navigation tree, select **Reports**, **Custom node**.
5) Select a report and a dialog box will open.
6) In the dialog box, enter the search conditions and click **Report** to run the report.