

## **Oracle® Fusion Middleware**

Developer's Guide for Oracle Business Intelligence Enterprise Edition

12c (12.2.1)

**E57382-01**

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Explains how to incorporate Oracle Business Intelligence Enterprise Edition functionality into applications built using Oracle JDeveloper, Oracle Application Development Framework (ADF), and Oracle WebCenter.

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# Preface

The Oracle Business Intelligence Foundation Suite is a complete, open, and integrated solution for all enterprise business intelligence needs, including reporting, ad hoc queries, OLAP, dashboards, scorecards, and what-if analysis. The Oracle Business Intelligence Foundation Suite includes Oracle Business Intelligence Enterprise Edition.

Oracle Business Intelligence Enterprise Edition (Oracle BI EE) is a comprehensive set of enterprise business intelligence tools and infrastructure, including a scalable and efficient query and analysis server, an ad-hoc query and analysis tool, interactive dashboards, proactive intelligence and alerts, and an enterprise reporting engine.

The components of Oracle BI EE share a common service-oriented architecture, data access services, analytic and calculation infrastructure, metadata management services, semantic business model, security model and user preferences, and administration tools. Oracle BI EE provides scalability and performance with data-source specific optimized request generation, optimized data access, advanced calculation, intelligent caching services, and clustering.

This guide contains information about developing Oracle BI EE-based applications and integrations between Oracle BI EE and other Oracle systems.

## Audience

This document is intended for application developers, data service providers, and middle tier administrators who want to programatically access and use the Oracle BI EE components to create applications or integrations with other components.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

### Access to Oracle Support

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## Related Documentation and Other Resources

See the Oracle Business Intelligence documentation library for a list of related Oracle Business Intelligence documents.

In addition:

- Go to the Oracle Learning Library for Oracle Business Intelligence-related online training resources.
- Go to the Product Information Center support note (Article ID 1267009.1) on My Oracle Support at <https://support.oracle.com>.

## System Requirements and Certification

Refer to the system requirements and certification documentation for information about hardware and software requirements, platforms, databases, and other information. Both of these documents are available on Oracle Technology Network (OTN).

The system requirements document covers information such as hardware and software requirements, minimum disk space and memory requirements, and required system libraries, packages, or patches:

<http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-requirements-100147.html>

The certification document covers supported installation types, platforms, operating systems, databases, JDKs, and third-party products:

<http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html>

## Conventions

The following text conventions are used in this document:

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



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# New Features for Oracle Business Intelligence Developers

This preface describes new features and upgrade considerations in Oracle Business Intelligence Enterprise Edition 12c (12.2.1).

This preface contains the following topics:

- ["New Features for Oracle BI EE 12c \(12.2.1\)"](#)

## New Features for Oracle BI EE 12c (12.2.1)

There are no new features in Oracle BI EE 12c (12.1.1).



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# Embedding Business Intelligence Objects in ADF Applications

This chapter describes how to add Oracle BI EE objects such as analyses, dashboards, and Scorecard components to Oracle ADF applications. It describes how to prepare the ADF project to accept objects, wiring the objects to ADF, and using Impersonate User to secure the application.

This chapter includes the following sections:

- [Overview of Embedding Business Intelligence Objects in Applications](#)
- [Business Intelligence Objects That You Can Add to ADF Pages](#)
- [Embedded Business Intelligence Objects Use Cases](#)
- [Preparing the ADF Project to Accept Business Intelligence Objects](#)
- [Creating an Oracle BI EE Presentation Services Connection](#)
- [Adding Oracle Business Intelligence Objects to ADF Pages](#)
- [Passing Business Intelligence Content with the Oracle BI EE Contextual Event Action](#)
- [Adding or Modifying a Presentation Services Connection After Deployment](#)
- [Credentials for Connecting to the Oracle BI Presentation Catalog](#)
- [Deploying Credentials to a Standalone WebLogic Server](#)

## 1.1 Overview of Embedding Business Intelligence Objects in Applications

Embedding business intelligence objects allows you to access the Oracle BI Presentation Catalog and choose Oracle BI EE objects, such as analyses and dashboards, to include in ADF pages. In most cases, the objects that you add to ADF pages are created to fit the theme of an ADF page and application. When you add an object to an ADF page, that page contains a reference to the object and does not contain a copy of the object. When the object is modified and saved to the Oracle BI Presentation Catalog, any changes display in the ADF application when the user runs the form.

After the business intelligence object is added to the ADF page, you can wire it to other regions on the ADF page. You can also set any filter or prompt parameters for the object. You can also set up security and change the Presentation Services connection after the application is deployed.

Note that the Business Intelligence Logical SQL View Object allows you to access the Oracle Business Intelligence Server to create ADF applications that bind native ADF components to Oracle BI EE data. For more information about this method of adding business intelligence data to ADF pages, see [Chapter 4, "Using the Oracle BI EE Logical SQL View Object"](#).

## 1.2 Business Intelligence Objects That You Can Add to ADF Pages

The business intelligence objects that you can include in ADF applications are stored in the Oracle BI Presentation Catalog's folders. You can include the following types of business intelligence objects in ADF applications:

- Analyses (Note that you can expand and browse the folders to view an analysis' subcomponents. The following view types appear in the catalog: table, pivot table, chart, funnel chart, gauge, narrative, ticker and title.)
- Dashboards (Note that you can browse inside the dashboard folder to find the pages that are associated with the dashboard.)
- Dashboard Pages (Note that you cannot browse within the dashboard pages to see components. Such as, any analyses embedded in the dashboard.)
- Scorecard components (Note that you cannot include an entire Scorecard; only its components. These components are: strategy maps, strategy trees, KPI watchlists, cause and effect maps, and custom views.)

## 1.3 Embedded Business Intelligence Objects Use Cases

Use the following use cases to help you better understand why you would embed business intelligence objects in ADF applications. For specific information about creating the business intelligence objects and adding them to an ADF application, see the procedural topics in this chapter and *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition* and *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

- Supply chain managers want to view the analysis summarizing the status of orders in different sectors and availability of items in the warehouse along with other transactional data.
- A marketing manager for an online shopping site wants to see buyers' trend information, such as age group, geographic distribution, and personal interests, in a dashboard to analyze the user data and use it to determine future marketing strategies.
- A sales manager wants to see the sales analysis for different regions with conditional formatting and take an action if the sales is trending below a minimum threshold. This analysis with an action link can be created in the Oracle BI EE application and embedded into the ADF application.

## 1.4 Preparing the ADF Project to Accept Business Intelligence Objects

To properly prepare the ADF project for the addition of business intelligence objects, you must add the required MDS libraries (MDS Runtime and MDS Runtime Dependencies) to the ADF project and add the BI ADF Components technology scope to the ADF project.

## 1.4.1 How to Prepare the ADF Project

Use the following procedures to prepare the ADF project to accept business intelligence content. Before you can perform the following tasks, you must have created an ADF project to which you add business intelligence content.

When you have completed the procedures in this topic, you can create an Oracle BI Enterprise Edition Presentation Services connection to access the catalog from which to select business intelligence objects to embed in your application. For more information, see "[Creating an Oracle BI EE Presentation Services Connection](#)".

### 1.4.1.1 Checking for Installed JDeveloper Extensions

Oracle JDeveloper offers the following Oracle BI EE extensions:

- Business Intelligence ADF Task Flow
- Business Intelligence ADF View Regions
- Business Intelligence Composer
- Business Intelligence Logical SQL View Objects
- Business Intelligence Soap Connection

Use this procedure if you are not sure whether you have the required Oracle JDeveloper 11g extensions and Oracle BI EE extensions.

1. In JDeveloper, click the **Help** menu and click **About**. The "About Oracle JDeveloper 11g" dialog displays where you can confirm the release number.
2. Click the **Extensions** tab to view a list of the installed extensions. To sort the list, click either the **Name** or **Identifier** column heading.

Note that all Oracle BI EE extensions contain the "bi-" prefix. If no extensions begin with the "bi-" prefix, then you do not have the required extensions.

### 1.4.1.2 Installing the Required JDeveloper Extensions

Use this procedure to install the required extensions.

1. From the JDeveloper **Help** menu, select **Check for Updates**.
2. Follow the steps in the wizard to locate, download, and install the Oracle BI EE extensions. If you create a WebCenter Portal application that integrates with Oracle BI EE, then you need to also install the WebCenter Portal framework.

For a list of the available Oracle BI EE extensions, see "[Checking for Installed JDeveloper Extensions](#)".

### 1.4.1.3 About Oracle BI EE Personalizations in ADF Applications

Personalizations for dashboards, dashboard pages, analyses, and views are saved automatically if the ADF application is configured for personalizations. Personalizations can be stored at the user level or the group level.

Users can personalize the following items when they exist on a dashboard region on an ADF page:

- Values for dashboard prompts
- Values for presentation variables (These variables are usually set by a prompt.)
- Values for column selectors
- Drills, sorts, and pivot/swap on a view

Users cannot personalize the following business intelligence content types:

- Dashboard pages
- Standalone Scorecard components

#### 1.4.1.4 Adding the MDS Libraries and Enabling MDS Customizations

To save the site and user application personalizations such as prompt values, you must add the following libraries to the ADF project and confirm that the MDS customizations have been properly enabled. MDS stores application metadata and also stores and retrieves customizations at various levels within the ADF application.

**To add the MDS libraries to the ADF project:**

1. In JDeveloper, go to the Project Pane, right click the project to which you want to add the MDS libraries, and select **Project Properties**.
2. Select **Libraries and Classpath**.
3. Click the **Add Library** button, highlight **MDS Runtime** and **MDS Runtime Dependencies**, and click **OK**.
4. From the left pane of the Project Properties dialog, select **ADF View**.
5. Confirm that the following options are selected:
  - Enable User Customizations
  - Across Sessions using MDS
  - Enable Seeded Customizations
6. In the Project Properties screen, click **OK**.

#### 1.4.1.5 Adding the ADF Technology Scopes

Perform this procedure to add the proper technology scopes to the ADF project.

Technology scopes are ADF project attributes that are used to identify the different technologies used for the project. Selecting the BI ADF Components technology scope adds the ADF Faces, Java, JSF, and JSP and Servlets technology scopes to the ADF project.

**To add the ADF technology scopes to the ADF project:**

1. In JDeveloper, go to the Projects Pane and right-mouse click on the project to which you want to add the technology scopes and select **Project Properties**.
2. Select **Technology Scope**.
3. In the Available Technologies list, select **BI ADF Components** and click the **Add** button. JDeveloper adds the required BI technologies to the Selected Technologies list.
4. Click **OK**.

## 1.5 Creating an Oracle BI EE Presentation Services Connection

Before you can add business intelligence objects to an ADF application, you must configure SSL, export and import a certificate, and create a data connection to Oracle BI EE Presentation Services.

## 1.5.1 How to Configure SSL and Create an Oracle BI EE Presentation Services Connection

Use the following procedures to configure SSL, export and import the certificate, and create a connection to Oracle BI EE Presentation Services. Before you can perform the following tasks, you must have first created an ADF project and prepared it to accept business intelligence content. For more information about preparing the project, see ["Preparing the ADF Project to Accept Business Intelligence Objects"](#).

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**Note:** If you receive a certificate error when using the application, you may need to import the client certificate into your browser.

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### 1.5.1.1 Configuring SSL

To enable secure communication, you must configure Oracle BI EE Presentation Services to communicate over SSL.

For more information about SSL and how to configure it in Oracle Business Intelligence, see *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

### 1.5.1.2 Exporting and Importing the Client Certificate

After you configure SSL, you must export the web application client certificate from the key store and import it into JDeveloper.

**To export and import the client certificate:**

1. Identify the location of the server key store. This path is usually `ORACLE_HOME/oraclebi/wlserver_10.3/server/lib/DemoIdentity.jks`
2. Using the server key store location, run the following command:
 

```
cd %ORACLE_HOME%/oraclebi/wlserver_10.3/server/lib/

%JAVA_HOME%\bin\keytool -export -alias wlscertgencab -file my.crt
-keystore DemoTrust.jks -storepass DemoTrustKeyStorePassPhrase
```
3. Import the client certificate into JDeveloper. This step prevents SOAP errors from occurring when you create an Oracle Business Intelligence Presentation Services connection.
  1. Copy the certificate into JDeveloper's JRE. The location is `jdev\jdk\jre\lib\security` or `oracle\jdk\jre\lib\security`
  2. Run the following command to import the certificate. Note that the default password for the Java default keystore file `$JAVA_HOME/lib/security/cacerts` is **changeit**.
 

```
keytool -v -import -file my.crt -keystore cacerts
```
4. Import the client certificate into JDeveloper's JRE. This step prevents errors from occurring when sending SOAP requests for `https://server:port/analytics/saw.dll?privateWSDL` in SSL mode.
  1. Open JDeveloper and locate the `-Djavax.net.ssl.trustStore` parameter. For example, `-Djavax.net.ssl.trustStore=C:\ADE\jdevmain3\oracle\wlserver_10.3\server\lib\DemoTrust.jks`.

Note that this parameter contains the client trustStore location and stores the key and certificate that the client uses to verify the server's certificate.

2. Run the following command to import the certificate to this client trustStore:

```
%ORACLE_HOME%\oracle\jdk\bin\keytool -import -alias test -file  
<client_cert_filename> -keystore <keystorefile> -keypass <key_  
password>
```

### 1.5.1.3 Creating a Connection

You can add connections to one or more installations of Presentation Services. Depending upon where you created and saved the connection, the connection name displays either within the Resource Palette's IDE Connections panel or the Application Navigator's Application Resources panel.

When you expand the connection's name, JDeveloper shows the Oracle BI Presentation Catalog's folders and the objects stored in the folders. From the folders, you can drag and drop business intelligence objects from the resource palette to the ADF page.

You must build this connection only one time per catalog; however, after the connection is built, its parameters can be edited at design time within JDeveloper.

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**Note:** A Presentation Services connection can be added or modified during or after the ADF application is deployed. For more information, see "[Adding or Modifying a Presentation Services Connection After Deployment](#)".

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#### To create a connection

1. In JDeveloper, choose where you want the connection to be used. Use the following substeps to create the connection to be available for any JDeveloper application.
  - a. Navigate to the Resource Palette, click the **New** button.
  - b. From the list, select **BI Presentation Services**. The Create BI Presentation Services Connection wizard displays.

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**Note:** JDeveloper allows you to drag and drop a saved connection from the Resource Palette to the Application Resources pane.

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2. Use the following substeps to create the connection to be available for the current application, only:
  - a. Navigate to the Application Navigator tab and then to the Application Resources pane., right click on the **Connections** folder, and select **New Connections** and then select **BI Presentation Services**. The Create BI Presentation Services Connection wizard displays.
  - b. Right click on the **Connections** folder and select **New Connections**.
  - c. Select **BI Presentation Services**. The Create BI Presentation Services Connection wizard displays.
3. Enter a unique, descriptive name that identifies the catalog connection. Note that after you finish creating the connection, the name cannot be changed.
4. Click **Next**.
5. Enter the Oracle Business Intelligence Presentation Services location and make selections for the following items.



- **Protocol**– Choose *http* or *https* from the drop down list.
  - **BI Presentation Services Host**– Type the location of the server where Oracle Business Intelligence is installed, for example, *abc12345.mycompany.com*.
  - **BI Presentation Services Port**– Enter the port number for the host. This number is usually *9704*.
  - **BI Presentation Services Virtual Directory**– Enter *analytics* in lowercase.
  - **WSDL Context**– Enter the context to which you want to deploy the WSDL application. Modify this field only if the System Administrator has changed the default context from "analytics-ws" to something else. For example, *mycompanyname-ws*. The SOAP connection uses the context specified in this field.
  - **Static Resources Mode**– Specify from where to retrieve static resources.

Select **Auto** to direct all requests to Oracle BI Presentation Services rather than to the Oracle BI proxy. Selecting **Auto** results in a significant increase in performance. Note that **Auto** mode provides the best performance if Oracle WebLogic Server resides behind Oracle HTTP Server or Apache HTTP Server and you are bypassing Oracle WebLogic Server for serving static files.

Select **Manual** to direct requests to another location. If you select **Manual**, you must specify a URL in the **Static Resources Location** field.
  - **Static Resources Location**– (Optional) If you selected **Manual** in the **Static Resources Mode** field, then enter the location of the deployed static resources if they are not located within the Oracle BI installation. The URL format must be *http://host:port/analytics*. Examples of static resources are *.css* and *.javascript*. Or, leave this field blank if Oracle BI resides behind a firewall but the ports to the ADF instance are not behind a firewall. For more information about setting up static resources, see "Improving Oracle BI Web Client Performance" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.
6. Click **Next**.
  7. Specify the user name and password for the Presentation Services connection.

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**Note:** If ADF security is enabled for the application, you must change the user name and password to Impersonate User credentials before you deploy the application. For more information, see "[How to Create and Use Impersonate User](#)".

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**Note:** One of the following scenarios must be configured depending on whether you use a shared LDAP or a non-central identity store:

- Shared LDAP identity store (for example OIM).

Must be set up between the JDeveloper WebLogic server (if using JDeveloper's integrated Oracle WebLogic Server) or your application's WebLogic Server, and Oracle BI Server.

- Non-central identity store (for example, a local WebLogic identity store in the BI instance).

Each user who logs in to your application must have a corresponding identical user set up in the BI Presentation Server with appropriate groups.

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8. If ADF security is enabled for your application and you want to use the Impersonate User credentials, leave this field set to **True**.

If ADF security is enabled for your application, and you do not want to use the Impersonate User credentials, set the **Perform impersonation when security is enabled** field to **False** to disable the Impersonate User credentials. If you set this field to **False**, you must also specify the necessary credentials in the **User Name** and **Password** fields on this screen (used instead of the SSO user). For more information about credentials, see "[Credentials for Connecting to the Oracle BI Presentation Catalog](#)". This setting is not recommended.

If ADF security is not enabled for your application, you do not have to modify this field. This field is only applied to applications where ADF security is enabled.

9. Click **Next**

10. Click **Test Connection** to verify that the connection information is correct. If your test connection fails, JDeveloper provides you with error messages that help you troubleshoot the problem.

11. Click **Finish** to create the connection.

## 1.6 Adding Oracle Business Intelligence Objects to ADF Pages

When you drag and drop a business intelligence object that contains filters or parameters to the JSPX page, JDeveloper inserts the `<adfbi:content>` element. This tag references a `biContent` element in the page definition file using the following EL expression:

```
<adfbi:content id="myBIRegion" value="#{bindings.biContent}"/>
```

At runtime, this element returns the markup for the selected business intelligence component and defines the parameters that the region can accept as input. There is one parameter for each prompt in the underlying analysis, or one parameter for the underlying filter or prompt for the underlying dashboard. The `biContent` element contains the default values, and you can edit the values of these parameters and replace them with Expression Language (EL) or literals. This allows you to use JDeveloper's Expression Language to wire the parameters to other components on the page.

The `biContent` element also accepts the `setParameters` ADF contextual event. You can map the payload for this event to the parameters exposed by the dashboard region in the `pagedef` file. For example:

```

<eventMap xmlns="http://xmlns.mycompany.com/adfm/event">
  <event name="setParameters">
    <producer region="doInputs">
      <consumer handler="biExecBinding1">
        <parameters>
          <parameter name="Products.Brand" value="{payload.input1}" />
          <parameter name="Periods.Year" value="{payload.input2}" />
        </parameters>
      </consumer>
    </producer>
  </event>
</eventMap>

```

If the dashboard or dashboard page contains analyses that use presentation variables and there are no visible prompts on the dashboard to set these variables, the dashboard designer must add hidden prompts to set the variables. When the dashboard is included on an ADF page, the hidden prompts are available for context passing.

### 1.6.1 How to Add Business Intelligence Objects to an ADF Page

All business intelligence objects added to the ADF page inherit styles from the current ADF skin.

Before you perform the following tasks, you must have first created an ADF project, prepared it to accept business intelligence content, and created a server connection. For more information about these tasks, see ["Preparing the ADF Project to Accept Business Intelligence Objects"](#) and ["Creating an Oracle BI EE Presentation Services Connection"](#).

#### To add business intelligence objects to an ADF page and specify filter or prompt parameters

1. In JDeveloper, go to the Resource Palette, select the data connection, and browse for the business intelligence content to add to the ADF page.
2. Drag and drop the item onto the page.

---

**Note:** If new or revised business intelligence content was saved to the Oracle BI Presentation Catalog, the JDeveloper catalog connection must be refreshed so that all new and revised business intelligence content is available.

---

3. If the item includes prompts or filters, the Parameters screen appears, listing the analysis or dashboard prompts and filters. To specify an override parameter value, place your cursor in the **Value** field and type the parameter value.
4. To either build an expression or bind the content item to a managed bean, click the **Ellipsis** button. The EL window appears. For more information about building EL expressions or using the EL screen for data binding, see *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.
5. Save the JSPX page.
6. In the Projects area, which is located in the left pane, locate the file name for the page upon which you are working, right-click, and select **Run**.

Note that if any type of security was set for the application, you are prompted for a user name and password.

## 1.7 Passing Business Intelligence Content with the Oracle BI EE Contextual Event Action

The Oracle BI EE ADF Contextual Event action is delivered with Oracle BI EE and uses the Oracle BI EE Action Framework. Before the analysis designer can include this action type, the administrator must enable the ADF Contextual Event action to display in the New Action Link menu within Presentation Services. To enable this action type, the administrator must modify the Oracle BI EE instanceconfig.xml file to include the following parameter:

```
<ActionLinks>
  <EnableADFContextualEvent>True</EnableADFContextualEvent>
</ActionLinks>
```

For information about modifying instanceconfig.xml, see "Making Advanced Configuration Changes for Presentation Services" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

At design time, the analysis designer determines which column should contain the Oracle BI EE ADF Contextual Event action, and from the New Action Link menu, selects **ADF Contextual Event**. At runtime, the Oracle BI EE ADF Contextual Event action passes content from the business intelligence object (analysis) to another region on the ADF page or another ADF contextual event on the ADF page.

The Oracle BI EE ADF Contextual Event action takes no parameters and can be conditionally rendered. When the user accesses the ADF page and clicks a data cell containing the Oracle BI EE ADF Contextual Event action or if the cell is tied to a condition and that condition's threshold has been met, the system generates an Oracle BI EE ADF Contextual Event action that has a qualified data reference (QDR) of the cell as its payload.

Suppose that the ADF designer wants to create a business intelligence region on an ADF page that contains functionality that automatically promotes any employee whose three previous employee reviews were rated as "Outstanding". To accomplish this task, the business intelligence content designer would include the Oracle BI EE ADF Contextual Event action on the analysis' Employee Name column and include a label of "Promote".

### 1.7.1 What Is the Definition of the QDR?

Below is the QDR's definition:

```
/**
 * String representation of QDR with use of internal Ids
 * <pre>
 *   qdr
 *   : '{"_m":' memberGroups (',"_q":' qdrQualifier)? ''
 *   memberGroups
 *   : '[' memberGroup (',' memberGroup)* ''
 *   qdrQualifier
 *   : '{' ('_t':[' scalarMember ']) | ('_p':[' ('true' | 'false') ']) ''
 *   memberGroup
 *   : '"_g":{' dimensionMembers (',"_l":' groupQualifier)? ''
 *   groupQualifier
 *   : '' ('M' | 'G') ''
```

```

* dimensionMembers
* : '' IDENT '' : ('[]' | arrayMembers | hierarchyLevelsMembers)
* hierarchyLevelsMembers
* : '{ hierarchyLevelMembers (, hierarchyLevelMembers)* }'
* hierarchyLevelMembers
* : '' IDENT '' : ('[]' | arrayMembers)
* arrayMembers
* : '[' member (',' member)* ']'
* member
* : scalarMember | arrayMembers | qualifiedMember
* scalarMember
* : string | number | datetime
* datetime
* : string
* qualifiedMember
* : '{"_v":' scalarMember ', "_s":' ('A' | 'E' | 'T' | 'P') '}'
* IDENT
* : ('a' .. 'z' | 'A'..'Z' | '0' .. '9')+
*
* _m: member groups
* _q: QDR qualifier; _t or _p
* _t: target; column identifier
* _p: measure target; true or false
* _g: member group
* _l: member group qualifier; 'M' or 'G'
* _v: member value
* _s: member special value; 'A', 'E', 'T' or 'P'
*
* Group Qualifiers:
* M - Measure Dimension
* G - Selection Group Dimension
* For such dimensions, the dimension identifier is irrelevant; we
  typically make it "_"
* For measure dimension, members are measure columns
* For selection group dimension, members are group Id Strings
*
* Qualified Members: Members that are qualified by a special value
  qualifier such as:
* A - All
* E - Every
* T - Display Total Id
* P - Path to catalog object
*
* Dimension identifier for hierarchical columns is of the form:
  "dimensionId:hierarchyId"
*
* <b>
* Examples:
* </b>
*
* Region (id "c0") West, East
* Year (id "c1") 2000
* {'_m': [{'_g': 'c0': ['West', 'East']}, {'_g': 'c1': [2000]}]}
*
* Region (id "c0") West, East
* Year (id "c1") 2000
* Target Region
* {'_m': [{'_g': 'c0': ['West', 'East']}, {'_g': 'c1': [2000]}], '_q':
  {'_t': 'c0'}}
*

```

```

* Geog dimension (id "d1"), Default hierarchy (id "h1"), State Level
  (id "l1") CA, WA
* {'_m': [{'_g': {'d1:h1': {'l1': ['CA', 'WA']}}]}}
*
* Geog dimension (id "d1"), Default hierarchy (id "h1"), State Level
  (id "l1") and City Level (id "l2") CA, WA, SJC
* {'_m': [{'_g': {'d1:h1': {'l1': ['CA', 'WA'], 'l2': ['SJC']}}]}}
*
* Region (id "c0") West, East
* Measures Sales (id "c3"), Profit (id "c4")
* {'_m': [{'_g': {'c0': ['West', 'East']}}, {'_g': {'_': ['c3', 'c4']}}, {'_l': 'M'}]}
*
* Region (id "c0") West, East
* Year (id "c1") 2007, MyFavYears
* {'_m': [{'_g': {'c0': ['West', 'East']}}, {'_g': {'c1': [2007, {'_v':
  'MyFavYears', '_s': 'P'}]}]}}
*
* Geog dimension (id "d1"), Default hierarchy (id "h1"),
  State Level (id "l1") CA, WA and City Level (id "l2") MyFavCities
* {'_m': [{'_g': {'d1:h1': {'l1': ['CA', 'WA'], 'l2': [{'_v': 'MyFavCities',
  '_s': 'P'}]}]}}
*
* Region (id "c0") West, East
* Measures Sales (id "c3")
* Measure Target
* {'_m': [{'_g': {'c0': ['West', 'East']}}, {'_g': {'_': ['c3']}}, {'_l': 'M'}], '
  _q': {'_p': true}}
* </pre>
*
* @param propIdExprMap          Map of column expressions key'ed by column Id
*/
    
```

## 1.7.2 What Is the Signature of the QDR?

Below is the QDR's signature:

```
public static QDR fromString(String qdrStr) throws BISvsException
```

## 1.7.3 How to Detect the Oracle BI EE ADF Contextual Event

Use the following procedure to add event details to the page definition containing the ADF object that will detect the Oracle BI EE ADF contextual event. For more information about page definition files, see *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

### 1.7.3.1 Detecting the ADF Contextual Event

1. In JDeveloper, locate and open the `<page_name>PageDef.xml` file.
2. Locate the `</pageDefinition>` tag and after it add the following event details, specifying the event name and consumer handler name:

```

<eventMap xmlns="http://xmlns.mycompany.com/adfm/event">
  <event name="Event Name">
    <producer region="*">
      <consumer handler="Handler Name">
        <parameters>
          <parameter name="qdr" value="{payLoad}"/>
        </parameters>
      </consumer>
    </producer>
  </eventMap>
    
```

```

    </event>
</eventMap>

```

3. Locate the `</bindings>` tag and before it add the following method action details:

```

<methodAction id="setOutput" InstanceName="Output.dataProvider"
    DataControl="Output" RequiresUpdateModel="true"
    Action="invokeMethod" MethodName="setOutput"
    IsViewObjectMethod="false"

    ReturnName="Output.methodResults.setOutput_Output_dataProvider.setOutput_
    result">
    <NamedData NDName="output" NDType="java.lang.String"/>
</methodAction>

```

## 1.8 Adding or Modifying a Presentation Services Connection After Deployment

Oracle BI EE provides an ADF MBean that allows you to add a new connection to a deployed BI ADF or to the WebCenter Portal: Spaces application. You can also modify a deployed application's existing connection. MBeans are deployed with the application and can be accessed post-deployment using Fusion Middleware Control.

If you did not configure SSL at design time, you can configure it after deployment. For more information, see ["How to Configure SSL and Create an Oracle BI EE Presentation Services Connection"](#).

### 1.8.1 How to Add or Modify a Presentation Services Connection

Use the following procedures to add or modify a Presentation Services connection used by a deployed application.

#### 1.8.1.1 Adding or Modifying a Presentation Services Connection

Use the following procedure to configure the connection after the application was deployed.

1. Open Fusion Middleware Control and select your WebLogic domain.
2. If your application is deployed in the BI ADF domain, select the **Application Deployments <your domain>** tree node.
 

If your application is deployed in the WebCenter Portal: Spaces domain, select the **Web Center** tree node, and then select the **WebCenter Spaces** tree node, and then the **webcenter (WLS\_Spaces)** tree node.
3. From the list, select **System MBean Browser**. The System MBean Browser pane displays within the Fusion Middleware Control page.
4. In the System MBean Browser pane, navigate to the ADF Connections tree node by following the below path:
  1. Select the **Application Defined MBeans** tree node.
  2. Select the **oracle.adf.share.connections** tree node.
  3. Select the **Server: <my server name>** tree node. For example, Server:DefaultServer or Server:WLS\_Spaces.
  4. Select the **Application:<your application's name>** tree node. For example, Application:Application2 or Application:webcenter.

5. Select the **ADF Connections** tree node.
6. Select the **ADF Connections** tree node. The corresponding MBean information displays in the Application Defined MBean pane.
5. In the Application Defined MBean pane, click the **Operations** tab and then click **createConnection/findOrCreateConnection** to create a Presentation Services connection. The Operation:createConnection dialog displays.
6. Specify the required values for the connection. In the connection type **Value** field, type BISOapConnection. Type a name in the connection name **Value** field. Click **Invoke** to create the connection.
7. In the System MBean Browser pane, click **Refresh** to refresh the tree so that the new connection displays.
8. To modify the connection, locate it in the System MBean Browser pane and click it. The connection's information displays in the Application Defined MBean pane.
9. Click the **Attributes** tab and enter the BISOap connection information. Click the **Apply** button to apply your changes.
10. Click the **Operations** tab and click **save** to save the connection.

## 1.9 Credentials for Connecting to the Oracle BI Presentation Catalog

At design time, you need to specify credentials to connect to the Oracle BI Presentation Catalog. These credentials are used to retrieve the list of business intelligence objects (for example, analyses, dashboards, and scorecard components) from the Oracle BI Presentation Catalog.

This process ensures that the login to the Presentation Server equals the current user of the application and any access checks are performed as the current user, and data is fetched as the current user. If the ADF page contains business intelligence objects to which the user does not have access, the ADF page returns a message stating that the user does not have the proper permissions to access these objects.

### 1.9.1 How to Create and Use Impersonate User

Use the following procedures to create and use the BIImpersonateUser user to secure an application that uses an Oracle BI EE Presentation Services connection and includes Oracle BI EE objects. ADF security must be enabled for your application before you can apply the impersonate user credentials to the Oracle BI EE Presentation Services connection.

The Impersonate User feature secures applications that contain Oracle BI EE objects when Oracle BI EE and ADF are not sharing an Oracle Internet Directory (OID). Before you begin the process of creating and using Impersonate User, you must confirm that this capability is configured in your environment.

#### 1.9.1.1 Create the BIImpersonateUser

Before you perform this procedure, ensure that either you or the Administrator have created users in your Identity Store and assigned the BIConsumer role to each user in this realm.

Use the following procedure to create the BIImpersonateUser user in your Identity Store.

1. Open WebLogic Server for your Oracle BI EE instance.



2. Locate the Domain Structure pane and select **Security Realm**. The Realms pane displays.
3. In the Realms pane, select **<myrealm>**. The Settings dialog displays.
4. In the Settings dialog, select the **Users and Groups** tab.
5. Confirm that the Users tab is displaying and click **New**.
6. Specify **BIImpersonateUser** for the user name and enter a password.
7. Click **OK**.

### 1.9.1.2 Grant Permissions to BIImpersonateUser

User the following procedure to use Fusion Middleware Control to grant permissions to BIImpersonateUser.

1. Open Fusion Middleware Control for your Oracle BI EE instance.
2. Locate and select **bifoundation\_domain**. The **bifoundation\_domain** pane displays.
3. In the **bifoundation\_domain** pane, click the **WebLogic Domain** list, highlight **Security**, and then select **Application Policies**. The Search pane displays.
4. In the Application Stripe list, select **obi**.
5. In the Principal Type list, select **User**.
6. Click **Create**. The Create Application Grant pane displays.
7. Under **Permissions**, click **Add a new permission** and perform the following actions in the Add Permission pane:
  - a. In the Permission Class list, select **oracle.security.jps.ResourcePermission**.
  - b. Select **Resource Types**.
  - c. In the Resource Type list, select **oracle.bi.user**, and click **Continue**.
  - d. In the Resource Name field, depending on whether you want to give permission to impersonate one user or all users, perform an action:
    - For permission to impersonate one user, enter the name of the user.
    - For permission to impersonate all users, enter **\***.
  - e. For Permissions Actions, select **impersonate**, and then click **Select**.
8. Under **Grantee**, click **Add users** and perform the following actions in The Add Principal pane:
  - a. In the Type list, **User**.
  - b. Click **Search Roles**.
  - c. Select **BIImpersonateUser**, and click **OK**.
9. In the **bifoundation\_domain** pane, click **OK**.

### 1.9.1.3 Restart Servers

Use the following procedure if the changes that you made do not display.

1. Stop and restart the following servers:
  - Oracle BI EE Server
  - Oracle BI EE Presentation Server

- WebLogic Server

## 1.10 Deploying Credentials to a Standalone WebLogic Server

For information about manual configuration and packaging recommended for Java EE applications that use OPSS, see Chapter 21 Configuring Java EE Applications to Use OPSS in *Oracle Fusion Middleware Application Security Guide*.

Credentials packaged at the application level are migrated to the domain level credential store as specified in the listener configured in `weblogic-application.xml`. For example:

```
<listener>
  <listener-class>oracle.security.jps.wls.listeners.Jps
    ApplicationLifecycleListener</listener-class>
</listener>
```

By default in development mode, the credential migration parameter is set to `OVERWRITE` in `weblogic-application.xml`. Note that you cannot use `OVERWRITE` in production mode. The following is an example of how the credential migration parameter is set for development mode:

```
<application-param>
  <param-name>jps.credstore.migration</param-name>
  <param-value>OVERWRITE</param-value>
</application-param>
```

### 1.10.1 Migrating Credentials

Use this procedure to automatically migrate credentials from the application level to the domain level.

For more information about the credential migration parameter, see "Credential Parameter Configuration According to Behavior" in *Oracle Fusion Middleware Application Security Guide*.

#### To migrate credentials

Depending upon the mode in which you are working (development mode or production mode), use one of the following options to automatically migrate credentials from the application level to the domain level.

- While in *development mode*, confirm that WebLogic Server was started with the migrate overwriting credentials operation, `jps.app.credential.overwrite` set to `true`. For example:

```
jps.app.credential.overwrite.allowed=true
```

- While in *production mode*, open `weblogic-application.xml` and change the `jps.credstore.migration` parameter to `MERGE`. Save the file, repackage the EAR file, and then deploy the file to the standalone WebLogic Server.

Note that completing this task will migrate the application level credentials to the domain level store only if credentials do not exist in the domain level store. For example, suppose you packaged an application with the following database credentials:

- User name – User1
- Password – Pass1

These credentials (User 1 and Pass1) are migrated because it is the first time credentials are being migrated.

If the password is changed from Pass1 to Pass2, then Pass1 will not be overwritten with Pass2 because `jps.credstore.migration` parameter is set to MERGE.



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# Improving The Performance of ADF Applications That Contain Oracle BI EE Objects

This chapter describes tuning procedures, such as adding and setting timeouts and using static resources, that you can perform to increase the performance of Oracle ADF applications that contain Oracle BI EE objects.

This chapter includes the following sections:

- [Setting an Oracle BI Server Timeout](#)
- [Adding a Session Timeout](#)
- [Using Static Resources](#)

## 2.1 Setting an Oracle BI Server Timeout

You can improve system performance by passing properties to Oracle WebLogic Server that specify how long a SOAP request waits for a response from the Oracle BI Server before timing out.

### 2.1.1 How to Set the Oracle BI Server Timeout

Pass the following properties to Oracle WebLogic Server to tune how long a SOAP request waits for a response from Oracle BI Server before timing out. Note that the initial recommended setting is approximately 60 seconds. The value that you specify should always be less than what is configured for stuck thread detection in WebLogic Server.

For more information about configuring stuck thread detection, see "Tuning the Stuck Thread Detection Behavior" in *Oracle Fusion Middleware Performance and Tuning for Oracle WebLogic Server*.

For more information, see "[Examples of Timeout Settings](#)".

- `-Dsun.net.client.defaultReadTimeout=timeout_in_milliseconds`
- `-Dsun.net.client.defaultConnectTimeout=timeout_in_milliseconds`

### 2.1.2 Examples of Timeout Settings

The following examples show how to set the timeout value to 60 seconds.

**For Windows:**

```
commEnv.cmd
```

```
set CONFIG_JVM_ARGS=-Dsun.net.client.defaultReadTimeout=60000
-Dsun.net.client.defaultConnectTimeout=6000
```

**For Linux:**

```
commEnv.s
setenv CONFIG_JVM_ARGS -Dsun.net.client.defaultReadTimeout=60000
-Dsun.net.client.defaultConnectTimeout=60
```

## 2.2 Adding a Session Timeout

The Oracle BI ADF integration code supports automatically closing sessions when the ADF HTTP session is closed or times out.

### 2.2.1 How to Add a Session Timeout

Use the following procedure to modify the application's weblogic.xml so that the application automatically closes.

1. In JDeveloper, go to the Application Navigator, open the Projects tab, navigate to the project's WEB-INF subdirectory, and open the weblogic.xml document.
2. Add the following to the document:

```
<listener>
  <listener-class>oracle.bi.presentation.listener.BIADFServletSessionListener
</listener-class>
</listener>
```

## 2.3 Using Static Resources

You can configure an Oracle BI Presentation Services connection to use static resources that reside either on the Oracle BI Server or another server. The practise of specifying static resources, such as .javascript and .css, can significantly increase the performance of ADF applications that contain Oracle BI EE objects.

### 2.3.1 How to Set Static Resources Preferences

Use the following procedure to specify static resources preferences for a saved Oracle BI Presentation Services connection.

For information about setting up static resources in Oracle BI EE, see "Improving Oracle BI Web Client Performance" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

For information about creating a new connection and specifying static resources, see "[Creating an Oracle BI EE Presentation Services Connection](#)".

1. In JDeveloper, go to either the Application Resources tab within the Application Navigator or to the Resource Palette and select the Oracle BI Presentation Services connection to modify.
2. Right-mouse click the selected data connection and select **Properties**. The Edit BI Presentation Services Connection wizard displays.
3. In the BI Presentation Services page, specify the static resources settings. Note the following fields:
  - **Static Resources Mode**– Specify from where to retrieve static resources.

Select **Auto** to direct all requests to Oracle BI Presentation Services rather than to the Oracle BI proxy. Selecting **Auto** results in a significant increase in performance. Note that **Auto** mode provides the best performance if Oracle WebLogic Server resides behind Oracle HTTP Server or Apache HTTP Server and you are bypassing Oracle WebLogic Server for serving static files.

Select **Manual** to direct requests to another location. If you select **Manual**, you must specify a URL in the **Static Resources Location** field.

- **Static Resources Location**– (Optional) If you selected **Manual** in the Static Resources Mode field, then enter the location of the deployed static resources if they are not located within the Oracle BI installation. The URL format must be `http://host:port/analytics`. For example, `http://bips:9704/analytics`. Examples of static resources are `.css` and `.javascript`. Or, leave this field blank if Oracle BI resides behind a firewall but the ports to the ADF instance are not behind a firewall.
4. Click **Finish** to save your changes.

### 2.3.2 Testing The Static Resources Location

Use the following procedure to test that your static resources location settings (URL) are valid.

1. Create an application that uses the Oracle BI Presentation Services connection in which you specified static resources settings.
2. From the data connection, browse for an analysis and drag and drop it onto a `.jspx` page.
3. Save the application.
4. Deploy and run the application.
5. Using a tool such as Firebug, validate that requests for `.js` and `.png` files are loaded directly from the static resource URL that you specified in the connection. Note that if you receive 404 (or Not Found) error messages that you have specified an invalid URL in your static resources settings.





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## Adding BI Composer to ADF Applications

This chapter describes how to add the BI Composer component to Oracle ADF applications. It describes how to prepare the ADF project to accept BI Composer by extending the domain and embedding the task flow by adding parameters and events.

This chapter includes the following sections:

- [Overview of Using BI Composer with ADF Application](#)
- [Adding BI Composer to an ADF Application](#)

### 3.1 Overview of Using BI Composer with ADF Application

You can add the BI Composer functionality to an ADF application. BI Composer is a simple-to-use wizard that allows users to quickly and easily create, edit, or view the design of Oracle BI EE analyses from ADF applications.

When configured, the BI Composer interface allows ADF application users to browse the Oracle BI EE catalog and subject areas, select or modify the analysis' columns, add views (for example, table and graphs), sort and filter data, and apply conditional formatting to data appearing in tables. For more information about how to use the BI Composer interface, see "Using BI Composer to Work with Analyses" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

Adding BI Composer to a WebCenter Portal application or to WebCenter Portal: Spaces requires a slightly different configuration. For information about configuring a WebCenter Portal application or WebCenter Portal: Spaces to use BI Composer, see "[Adding BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces](#)".

### 3.2 Adding BI Composer to an ADF Application

To add BI Composer to an ADF application, you must add the BI Composer library reference to the ADF application, apply the domain extension template, and add task flow parameters and events to the ADF application.

#### 3.2.1 Checking for Installed JDeveloper Extensions

Oracle JDeveloper offers the following Oracle BI EE extensions:

- Business Intelligence ADF Task Flow
- Business Intelligence ADF View Regions
- Business Intelligence Composer

- Business Intelligence Logical SQL View Objects
- Business Intelligence Soap Connection

Use this procedure if you are not sure whether you have the required Oracle JDeveloper 11g extensions and Oracle BI EE extensions.

1. In JDeveloper, click the **Help** menu and click **About**. The "About Oracle JDeveloper 11g" dialog displays where you can confirm the release number.
2. Click the **Extensions** tab to view a list of the installed extensions. To sort the list, click either the **Name** or **Identifier** column heading.

Note that all Oracle BI EE extensions contain the "bi-" prefix. If no extensions begin with the "bi-" prefix, then you do not have the required extensions.

### 3.2.2 Installing the Required JDeveloper Extensions

Use this procedure to install the required extensions.

1. From the JDeveloper **Help** menu, select **Check for Updates**.
2. Follow the steps in the wizard to locate, download, and install the Oracle BI EE extensions. If you create a WebCenter Portal application that integrates with Oracle BI EE, then you need to also install the WebCenter Portal framework.

For a list of the available Oracle BI EE extensions, see "[Checking for Installed JDeveloper Extensions](#)".

### 3.2.3 How to Add the BI Composer Library Reference

Use the following procedure to add the required library reference to the application. Before you can perform this procedure, you must have set up the ADF project to accept Oracle BI EE objects. For more information, see "[Preparing the ADF Project to Accept Business Intelligence Objects](#)".

1. Open the application's weblogic.xml.
  2. Add the following library reference:
3. Open the application's weblogicapplication.xml document.
  4. Add the following library reference:

```
<library-ref>
  <library-name>oracle.bi.composer</library-name>
</library-ref>
```

```
<library-ref>
  <library-name>oracle.bi.jbips</library-name>
</library-ref>
```

### 3.2.4 How to Extend the Domain

Perform this procedure to apply the domain extension template to deploy the BI Composer implementation libraries.

1. Go to the Oracle BI EE installation directory.
2. Use the following substeps to copy the required extension template and libraries from Oracle BI EE's *Oracle\_Home/* and paste them to the target application's *Oracle\_Home/*.

- a. Go to the Oracle BI EE installation and copy *Oracle\_Home//common/templates/applications/oracle.bicomposer.slib\_template\_11.1.1.jar*. Go to the target application installation and paste the file to *Oracle\_Home//common/templates/applications*.
  - b. Go to the Oracle BI EE installation and copy *Oracle\_Home//modules/oracle.bi.presentation\_11.1.1/bi-composer-slib.war*. Go to the target application installation and paste the file to *Oracle\_Home//modules/oracle.bi.presentation\_11.1.1*.
  - c. Go to the Oracle BI EE installation and copy *Oracle\_Home//modules/oracle.bi.presentation\_11.1.1/bi-jbips-slib.ear*. Go to the target application install and paste the file to *Oracle\_Home//modules/oracle.bi.presentation\_11.1.1*.
3. Stop the WebLogic server.
  4. Launch the Configuration Wizard.
  5. Select **Extend an existing Weblogic domain**, and then click **Next**.
  6. Select the domain folder (for example, *my\_home/user\_projects/domains/bifoundation\_domain*), and then click **Next**.
  7. Select **Extend using extension template**, and then use **Browse** to select the following template:  
*ORACLE\_HOME//common/templates/applications/oracle.bicomposer.slib\_template\_11.1.1.jar*  
 When prompted to override the installed template, click **Yes**.
  8. Continue clicking **Next** and change any settings if needed.
  9. Click **Extend**, and then click **Done**.
  10. Start the WebLogic server.

### 3.2.5 How to Add the Task Flow Parameters and Events

Use the content in this topic to embed the taskflow in an application page.

This topic contains the following subtopics:

- ["BI Composer Wizard Editor Task Flow"](#)
- ["BI Composer Wizard Edit Events"](#)
- ["BI Composer Wizard Viewer Task Flow Parameters"](#)

#### 3.2.5.1 BI Composer Wizard Editor Task Flow

Use the following information to initialize the taskflow with values for parameters based on other elements in the page. For example, you can use these parameters if you have a list of analyses in the page and the selected analysis must be passed as a parameter to the wizard before the user can edit the selected analysis.

The task flow document location is:

`WEB-INF/oracle/bi/adf/apps/answers/flow/BIReportWizardTF.xml`

The task flow's ID is:

id: BIReportWizardTF

For more information about adding parameters to a task flow, see Chapter 16: Using Parameters in Task Flows in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

**Table 3–1** lists each task flow parameter, its description, type, default value, and if it is required.

**Table 3–1 BI Composer Report Wizard Editor Task Flow Parameters**

Name	Description	Type	Required?	Default Value
biReportPath	The catalog path for the analysis that is being edited.	String	No	null
biReportContainerPath	The catalog parent folder path for the analysis that is being edited.  This parameter is used when selecting an analysis that is a shortcut.	String	No	null
biSubjectArea	The subject area upon which a new analysis is being created.	String	No	null
biConnectionId	The ID of the deployed Oracle BI EE Presentation Services connection.	String	No	bi-default
biCatalogOverwriteAllowed	This flag indicates if the user is allowed to overwrite existing analyses in the catalog.	Boolean	No	false
biReportXML	The analysis' XML to use for editing.	String	No	null
biReportHeight	Dashboard height to be used while rendering a report. For example, for 1024 by 768 pixels resolution, specify biReportHeight as 768px.	String	No	null
biReportWidth	Dashboard width to be used while rendering a report. For example, for 1024 by 768 pixels resolution, specify biReportWidth as 1024px.	String	No	null
biTenantId	Unused	N/A	N/A	N/A
biShowPreviewDefault	This flag indicates if preview is turned on by default.	Boolean	No	false
biShowIncompatibilityMessages	This flag indicates if warning messages should be displayed when opening an analysis that is not compatible with BI Composer.	Boolean	No	true
biReportViewName	Unused	N/A	N/A	N/A
biPromptFilterXML	Unused	N/A	N/A	N/A
biDebugMode	This flag indicates if the icon to generate debug analysis XML is displayed by default.	Boolean	No	false

**Table 3–1 (Cont.) BI Composer Report Wizard Editor Task Flow Parameters**

Name	Description	Type	Required?	Default Value
biReportLinks	This comma separated value indicates report links to be shown for interactive preview.	String	No	null Valid values are: <ul style="list-style-type: none"> <li>▪ r Refresh. Displays the Refresh link.</li> <li>▪ f Print. Displays the Print link.</li> <li>▪ d Download. Displays the Export link.</li> <li>▪ - None. Displays no report links.</li> </ul> For example, use f, r, d to show all supported links. Null is treated as the default for none.
biViewReportLinks	This parameter specifies which links are to be displayed with an analysis.	String	No	None Valid values are: <ul style="list-style-type: none"> <li>▪ r Displays the Refresh link.</li> <li>▪ f Displays the Print link.</li> <li>▪ d Displays the Export link.</li> <li>▪ - None. Displays no report links.</li> </ul>
biInteractivePreview	This flag indicates if render preview is in interactive mode.	Boolean	No	false

### 3.2.5.2 BI Composer Wizard Edit Events

Use the following information to add events that perform specific processing from the BI Composer wizard. For example, you can add a Save event that is initiated by the wizard taskflow after the analysis is edited in the BI Composer wizard. This event refreshes the application's catalog tree.

The task flow document location is:

WEB-INF/oracle/bi/adf/apps/answers/flow/BIReportWizardTF.xml

The task flow's ID is:

BIReportWizardTF

For more information about adding parameters to a task flow, see Chapter 16: Using Parameters in Task Flows in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*

Table 3–2 contains each event, its description, and its payload.

**Table 3–2 BI Composer Report Wizard Editor Task Flow Events**

Event Name	Description	Payload
biAnsReportWizardCancelEvent	Triggered when the user clicks on the wizard's <b>Cancel</b> button.	None
biAnsReportWizardSaveEvent	Triggered when the user saves an analysis to the catalog.	Path to the analysis saved in the Catalog.
biAnsReportWizardRefreshCatalogEvent	Triggered when any action, such as rename or delete, is performed that requires external consumers to refresh their catalog tree.	Path to the analysis in the catalog which was the source of the action that requires a catalog refresh.

### 3.2.5.3 BI Composer Wizard Viewer Task Flow Parameters

Use the following information to initialize the taskflow with values for parameters based on other elements in the page. For example, you can use these parameters if you have a list of analyses in the page and the selected analysis must be passed as a parameter to the viewer so that it can render the analysis.

The task flow document location is:

WEB-INF/oracle/bi/adf/apps/answers/flow/BIReportViewerTF.xml

The task flow's ID is:

id: BIReportViewerTF

For more information about adding parameters to a task flow, see Chapter 16: Using Parameters in Task Flows in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*

Table 3–3 lists each task flow parameter, its description, type, default value, and if it is required.

**Table 3–3 BI Composer Report Wizard Viewer Task Flow Parameters**

Parameter Name	Description	Type	Required?	Default Value
biReportPath	The catalog path for the analysis that is being viewed.	String	No	null
biConnectionId	The ID of the deployed Oracle BI EE Presentation Services connection.	String	No	bi-default

**Table 3–3 (Cont.) BI Composer Report Wizard Viewer Task Flow Parameters**

Parameter Name	Description	Type	Required?	Default Value
biReportXML	The analysis' XML to use for editing.	String	No	null
biTenantId	Unused	N/A	N/A	N/A
biContentType	The type of content being viewed: "biReportContent" for analyses or "biDashboardContent" for dashboards.	String	No	null
biReportViewName	Unused	N/A	N/A	N/A
biReportLinks	This comma separated value indicates report links to be shown for interactive preview.	String	No	null Valid values are: <ul style="list-style-type: none"> <li>▪ r Refresh. Displays the Refresh link.</li> <li>▪ f Print. Displays the Print link.</li> <li>▪ d Download. Displays the Export link.</li> <li>▪ - None. Displays no report links.</li> </ul> For example, use f, r, d to show all supported links. Null is treated as the default for none.
biReportSizing	When set to stretch, this parameter stretches the report or dashboard contents irrespective of biReportHeight and biReportWidth.  When set to size, this parameter stretches the report or dashboard contents based on biReportHeight and biReportWidth.	String	No	Size





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# Using the Oracle BI EE Logical SQL View Object

This chapter describes how to create and add the Oracle Business Intelligence Logical SQL View Object to bind Oracle BI EE data into an ADF application's components. It describes how to create the required BI JDBC data source and JDBC connection, configure the BI JDBC data source for impersonation, and extend the Oracle Business Intelligence SQL view object.

This chapter includes the following sections:

- [Introduction to the Oracle BI EE Logical SQL View Object](#)
- [Oracle Business Intelligence Logical SQL View Object Use Cases](#)
- [Creating an Oracle Business Intelligence Logical SQL View Object](#)
- [Creating a BI JDBC Data Source](#)
- [Extending the Oracle Business Intelligence Logical SQL View Object](#)

## 4.1 Introduction to the Oracle BI EE Logical SQL View Object

The Business Intelligence Logical SQL View Object allows you to access the Oracle Business Intelligence Server to create ADF applications that bind native ADF components to Oracle BI EE data.

The Oracle Business Intelligence view object exposes the items in the select clause as attributes. After the Business Intelligence Logical View Object's setup is complete, you can use the Oracle Business Intelligence Logical SQL View Object wherever the other view objects can be used in an ADF application. For example, you could create a view link, which allows you to join the attributes of the Oracle Business Intelligence view object to attributes of another view object that returns data from the operational schemas. You can easily show the data from the Oracle Business Intelligence view object, or joined data created using view links, in any ADF rich/faces component by using a data control that JDeveloper automatically generates.

Including business intelligence objects such as analyses, dashboards, and Scorecard components in ADF pages allows you to access the Oracle BI Presentation Catalog, browse the catalog, and choose Oracle BI EE objects to include in ADF pages. For more information about this method of adding business intelligence data to ADF pages, see [Chapter 1, "Embedding Business Intelligence Objects in ADF Applications"](#).

## 4.2 Oracle Business Intelligence Logical SQL View Object Use Cases

The following use cases are designed to help you understand how you can use the Oracle Business Intelligence Logical SQL View Object to create robust ADF pages. Each use case consists of a scenario and general instructions.

### 4.2.1 Displaying Data from Logical SQL in an ADF-Rich User Interface Component

This use case describes how to display data returned by a logical SQL statement in an ADF face or rich user interface component. This use case assumes that you are interested in displaying data for Revenue by Region and District in a read-only rich table format.

**Tip:** This use case describes one way of displaying data in a rich table. Normally, it is easier to embed an analysis into an ADF page.

**To display data from logical SQL in an ADF-rich user interface component:**

1. Create a JDBC connection to an Oracle BI EE Server that contains the data you want to display in the ADF page. For more information, see ["Creating a BI JDBC Connection"](#).
2. Create an application module with a standard JDBC connection. For more information, see ["Initializing the ADF Project"](#).
3. Create an Oracle Business Intelligence view object, pointing to the JDBC connection and using the following logical SQL. Note that Region, District, and Dollars are added automatically as the attributes of the view object.  
  

```
"Select Markets.Region, Markets.District, Sales Measures.Dollars from Paint"
```
4. Navigate to the Application Model page of the Create View Object wizard and add an instance of the view object that you created to an application module. In this use case, assume that the application module is named "BIVO\_AppModule."  
  
 JDeveloper automatically creates a BIVO\_AppModuleDataControl. Under this data control your view object is listed as a collection with all its attributes.
5. Drag and drop the view object collection from the data control to the appropriate place on a JSPX page. When the shortcut menu appears, select an appropriate ADF Rich UI component to use for displaying the view object.
6. Select a read-only Rich table for the display.

### 4.2.2 Displaying Data from Logical SQL and Passing in a Runtime Parameter

This use case is an extension of the ["Displaying Data from Logical SQL in an ADF-Rich User Interface Component"](#) use case. In this use case, however, you want to display data for Revenue by Region and District from logical SQL, but only when Revenue is greater than a number inputted by the user. You can accomplish this by passing in a runtime parameter.

**To display data from logical SQL and passing in a runtime parameter:**

1. Create a JDBC connection to an Oracle BI EE Server that contains the data you want to display in the ADF page. For more information, see ["Creating a BI JDBC Connection"](#).
2. Create an application module with a standard JDBC connection. For more information, see ["Initializing the ADF Project"](#).

3. Create an Oracle Business Intelligence view object, pointing to the JDBC connection and using the following logical SQL. Note that Region, District, and Dollars are added automatically as the attributes of the view object.  

```
"Select Markets.Region, Markets.District, Sales Measures.Dollars from Paint"
```
4. Add a bind variable mapped to the Dollars attribute.
5. Navigate to the Application Model page of the Create View Object wizard and add an instance of the view object that you created to an application module. In this use case, assume that the application module is named "BIVO\_AppModule."  
 JDeveloper automatically creates a BIVO\_AppModuleDataControl for you. Your view object is listed as a collection with all its attributes under this data control. The DataControl also lists the "ExecuteWithParam" operation that takes the Dollars parameter.
6. Drag and drop the view object collection from the data control to the appropriate place on a JSPX page. When the shortcut menu appears, select an appropriate ADF Rich UI component to use for displaying the view object.
7. Select a read-only Rich Table for the display.
8. Create an appropriate input component to prompt the user for the threshold Revenue value.
9. Invoke the ExecuteWithParam operation to pass in the threshold revenue value when the user submits the form and refresh the Rich Table that you created earlier.

### 4.2.3 Displaying Data from the Online Transaction Processing Schema and Logical SQL in an ADF-Rich Component

This use case describes how to display an ADF Rich Table that contains the following columns:

- Customer
- Accounts Payable Days Outstanding
- Lifetime Value
- Customer Rank by YTD Revenue

The "Accounts Payable Days Outstanding" value comes from an online transaction processing (OLTP) system and "Lifetime Value" and "Customer Rank" come from the Oracle Business Intelligence Server. "Customer" is common to both systems.

#### To display data from the online transaction processing schema and logical SQL in an ADF-rich component:

1. Create a JDBC connection to an Oracle BI EE Server that contains the data you want to display in the ADF page. For more information, see ["Creating a BI JDBC Connection"](#).
2. Create an application module with a standard JDBC connection. For more information, see ["Initializing the ADF Project"](#).
3. Create a regular view object within the OLTP system and uses the appropriate SQL/Entity Objects to expose the Customer and Accounts Payable Days Outstanding attributes. In this use case, assume that the view object is named OLTP\_VO.

4. Using the JDBC connection to the Oracle BI EE Server that you created in Step 1 of this procedure, create an Oracle Business Intelligence view object, using the following logical SQL:

```
"Select Customer, Lifetime_Value, Rank(YTD Revenue) from  
CustomerSubjectArea"
```

Customer, Lifetime Value and Customer Rank by YTD Revenue is automatically added as the attributes of this view object. In this use case, assume that the view is named BI\_VO.

5. Create a view link with the Customer attribute of the OLTP\_VO as the source attribute, and the Customer attribute of the BI\_VO as the destination attribute.
6. Navigate to the Java step of the OLTP\_VO and generate the Java classes for the view object. Also add attributes to the OLTP\_VO for "Lifetime\_Value" and "RankByRevenue".
7. Edit the Java class for the OLTP\_VO (OLTP\_VOViewImpl). There is an accessor method for the each attribute added in the previous step. Edit the implementation of the accessors to return the corresponding values from the Oracle Business Intelligence view object. The business intelligence view object is available to the OLTP\_VO view object through the getViewObject method. For example, the code for the Lifetime\_Value accessor looks similar to the following:  

```
getViewObject().getCurrentRow().getAttribute("Lifetime_Value")
```
8. Confirm that OLTP\_VO is a part of the ApplicationModule. The OLTP\_VO has a collection of all of the attributes (Customer, Accounts Payable Days Outstanding, Lifetime Value", Customer Rank by YTD Revenue).
9. Drag and drop the view object collection from the data control to the appropriate place on a JSPX page. When the shortcut menu appears, select the ADF Rich UI component to use for displaying the view object.
10. Select a read-only Rich Table for the display.

#### 4.2.4 Creating a Master-Detail Relationship Between an Oracle Business Intelligence View Object and an Online Transaction Processing View Object

In this use case, you create the master-detail relationship in the same way that you create a master-detail relationship between two OLTP view objects. The instructions provided in the following procedure are high-level instructions. You can find complete information about creating a master-detail relationship in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

**To create a master-detail relationship between an Oracle Business Intelligence view object and an online transaction processing view object:**

1. Create an OLTP View Object.
2. Create a Oracle Business Intelligence view object.
3. Create a View Link between the OLTP View object and the Oracle Business Intelligence view object.
4. Create an appropriate ADF view object for the source and the destination data controls corresponding to the source and destination view objects.

## 4.3 Creating an Oracle Business Intelligence Logical SQL View Object

Before you can create the Oracle BI Enterprise Edition Logical SQL View Object, you must perform two preparatory steps: creating a BI JDBC connection and initializing the ADF project with a JDBC connection.

After creating and saving the Oracle BI Enterprise Edition Logical SQL View Object, you can modify the view object behavior so that it interacts in a specific way with the ADF application's other view objects.

### 4.3.1 How to Create an Oracle Business Intelligence Logical SQL View Object

Use the following procedures to prepare for and create an Oracle Business Intelligence Logical SQL View Object that you can use to bind Oracle BI EE data to ADF components.

#### 4.3.1.1 Checking for Installed JDeveloper Extensions

Oracle JDeveloper offers the following Oracle BI EE extensions:

- Business Intelligence ADF Task Flow
- Business Intelligence ADF View Regions
- Business Intelligence Composer
- Business Intelligence Logical SQL View Objects
- Business Intelligence Soap Connection

Use this procedure if you are not sure whether you have the required Oracle JDeveloper 11g extensions and Oracle BI EE extensions.

**To check for installed extensions:**

1. In JDeveloper, click the **Help** menu and click **About**. The About Oracle JDeveloper 11g dialog displays where you can confirm the release number.
2. Click the **Extensions** tab to view a list of the installed extensions. To sort the list, click either the **Name** or **Identifier** column heading.

Note that all Oracle BI EE extensions contain the "bi-" prefix. If no extensions begin with the "bi-" prefix, then you do not have the required extensions.

#### 4.3.1.2 Installing the Required Business Intelligence JDeveloper Extensions

Use JDeveloper's Check for Updates wizard to find and install the required Oracle BI EE extensions.

**To install the Oracle BI EE extensions:**

1. From the JDeveloper help menu, select **Check for Updates**.
2. Follow the steps in the wizard to locate, download, and install the Oracle BI EE extensions.

For a list of the available Oracle BI EE extensions, see ["Checking for Installed JDeveloper Extensions"](#).

#### 4.3.1.3 Creating a BI JDBC Connection

You must create a BI JDBC connection to the Oracle BI Server. It is through this connection that the view object passes the logical SQL statement to the Oracle BI

Server, and through which the Oracle BI Server passes data back to the view object in the ADF application.

You can create the BI JDBC connection to be available for any ADF application, or in the context of a specific ADF application.

For information about how to create a BI JDBC data source, see "[Creating a BI JDBC Data Source](#)".

**To create a BI JDBC connection:**

1. Determine if you want to create the BI JDBC connection for use in all ADF application or for the current ADF application. Use the following steps to create the connection in an ADF application.
  - a. Open an ADF project and navigate to the Application Navigator.
  - b. Go to the Application Resources panel.
  - c. Right-click the Connections node and select **New Connection**.
  - d. Select **Database**. The Create Database Connection dialog is displayed.
  - e. Confirm that Application Resources is selected in the **Create Connection In** field.
2. Use the following steps to create a connection that is available for all ADF applications.
  - a. Go to the Resource Palette and click the **New** icon.
  - b. Select **New Connection**.
  - c. Select **Database**. The Create Database Connection dialog is displayed.
  - d. Confirm that IDE Connections is selected in the **Create Connection In** field.
3. In the **Connection Type** field, select BI (JDBC) and enter the appropriate connection information. For more information, press **F1** or click **Help** from within the Create Database Connection dialog.
4. Click **Test Connection**.
  - If the test succeeds, a "Success!" message displays in the status text area.
  - If the test does not succeed, an error displays. Change the information that you entered in the dialog as needed to correct the error, or check the error content to determine other possible sources of the error.

The new connection name appears under the appropriate node in the Application Navigator or the Resource Palette.

#### 4.3.1.4 Initializing the ADF Project

If the Oracle Business Intelligence view object that you are creating is the first business component added to the ADF application, you must initialize the project with a standard JDBC connection. You cannot initialize the project with a BI JDBC connection. The BI JDBC connection is specified later when you create the Oracle Business Intelligence view object.

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**Note:** You do not need to initialize a Business Components project. Business Components projects are initialized at creation time.

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**To initialize the ADF project:**

1. Open an ADF project, click **File**, and then select **New**. The New Gallery dialog is displayed.
2. Select the All Technologies tab and in the Categories area, select Business Tier and then select Business Intelligence.
3. Confirm that View Object (Business Intelligence Logical SQL View Object) is highlighted in the **Items** area and click **OK**. The Initialize Business Components Project dialog is displayed.
4. Specify the database connection and SQL flavor your components use when creating an initial business components project, or when setting project properties. For more information, press **F1** or click **Help** from within the Create Database Connection dialog.
5. Click **OK**. The Create View Object wizard is displayed.

#### 4.3.1.5 Creating the Business Intelligence View Object

Use the following procedure to create and save the Oracle Business Intelligence Logical SQL view object using the Create View Object wizard. For more information about a specific dialog within the Create View Object wizard, press **F1** or click **Help** from within the dialog upon which you are working.

After you have created and saved the view object, you can then access the saved view object and add the following items to it:

- alternate keys
- client interface specifications
- client row interface specifications
- view accessors
- user interface hints

#### To create the view object:

1. Open an ADF project, click **File**, and then select **New**. The New Gallery dialog is displayed.

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**Note:** If you have not yet initialized the ADF project, JDeveloper requires you to do so before you can create an Oracle Business Intelligence view object. For more information, see "[Initializing the ADF Project](#)".

---

2. Select the All Technologies tab and in the Categories area, select Business Tier and then select Business Intelligence, confirm that view object (Business Intelligence Logical SQL View Object) is highlighted in the **Items** area. Click **OK**.
3. In the Name screen, enter a name for the view object and specify the package into which you want to place the view object. You can use the **Property Set** field to select an existing property set for the view object. Click **Next**. The Connection screen displays.

---

**Note:** After you save the view object, you cannot modify its name.

---

4. Select the BI JDBC connection that runs the logical SQL and retrieve the business intelligence data. The JDBC connection that was initialized for the project defaults

to this connection, but you must choose a BI JDBC connection from the list of available connections or click the **Add** button to create a BI JDBC connection for the project.

5. Click **Next**. The Logical SQL screen displays.
6. Type the logical SQL to execute against the Oracle BI EE Server. You can use most of the logical SQL select statements that are supported by the Oracle BI EE Presentation Server. The items in the select list are automatically available as attributes of the Oracle Business Intelligence view object. For example, if the logical SQL is "Select Markets.Region saw\_0, Measures.Dollars saw\_1 from Paint", the corresponding view object has two attributes called "region" and "dollars."

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**Note:** The Insert, Update, and Delete logical SQL statements are not supported by the Oracle Business Intelligence view object. For more information about and a list of the logical SQL statements that you can use with an Oracle Business Intelligence view object, see the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

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7. Click **Next**. The Bind Variables screen displays.  
The BI Logical SQL View Object supports JDBC-positional bind variables only.
8. Add or create any necessary variables. Any bind variables that you create are available as parameters on the data controls that include this view object. For more information about bind variables, press F1 or click **Help** from within the dialog.
9. Click **Next**. The Java screen displays.
10. Generate any necessary Java files to extend or customize the functionality provided by the Oracle Business Intelligence view object and click **Next**. The Application Model screen appears.  
For more information about generating custom Java classes for the view object, press **F1** or click **Help** from within the dialog.
11. Add an instance of the Oracle Business Intelligence view object to a new or saved Application Module. Note that if you do not add an application module, the data control for the view object is not automatically generated.
12. Click **Next**. The Summary screen displays.
13. Review the summary and confirm your selections. After you have confirmed that the selections are correct, click **Finish** and JDeveloper creates the Oracle Business Intelligence view object.

#### 4.3.1.6 Modifying the Oracle Business Intelligence Logical SQL View Object's Behavior

Use the following procedure to modify the view object's behavior and define any additional behaviors, such as client interface specifications, client row interface specifications, view accessors, and user interface hints. The behaviors that you specify determines how the Oracle Business Intelligence Logical SQL View Object interacts with the application's other ADF view objects.

For more information about a specific dialog within the View Object Editor, press **F1** or click **Help** from within the editor.



**To modify the view object's behavior:**

1. To locate and open the view object, click **File** and then click **Open**. The Open dialog is displayed, where you can browse to and select the view object. The Overview Editor is displayed.
2. Click the Connection node to change the view object's BI JDBC connection information, or add or switch to another BI JDBC connection.
3. Click the Logical SQL node to modify the view object's logical SQL and to add named bind variables to the SQL query.
4. Click the Java node to generate Java files for the view object and its view row set. The generated files allow the client to call methods on the object remotely, generates a service data object that wraps a view row, and allows the view object to be exposed in a web service interface.
5. Click the View Accessors node to define the view accessors to point from a base entity object attribute or view object attribute to a source view row set.
6. Click the List UI Hints node to specify a default list of values (LOV) hint when you want the LOV-enabled attributes of other view objects to inherit the list UI hints from the current view object.

## 4.4 Creating a BI JDBC Data Source

A BI JDBC data source must exist before you can build a connection to it. It is this data source and connection that allow you to access the Oracle BI Server and pass the logical SQL statement to request data for the view object in the ADF application.

For more information about creating a BI JDBC connection, see "[Creating an Oracle Business Intelligence Logical SQL View Object](#)".

### 4.4.1 How to Create a BI JDBC Data Source in Oracle WebLogic

Use this procedure to access the Oracle WebLogic Server Administration Console to create a BI JDBC data source. Before you begin, ensure that Oracle WebLogic is started.

**To create a data source in WebLogic:**

1. Access and log in to the WebLogic Server Administration Console for the WebLogic domain in which Oracle BI EE is deployed.
2. In the Domain Structure tree in the left pane, expand **Services** and choose **Data Sources**.
3. Click **New**. You may need to click **Lock & Edit** first to enable the **New** button. The Create a New JDBC Data Source wizard displays.
4. On the JDBC Data Source Properties page, follow these steps:
  - a. For **Name**, enter the database name of the Oracle Business Intelligence view object in the JDeveloper application. For example, ApplicationOBIS.
  - b. For **JNDI Name**, enter the same value you provided for **Name**. Note the following JNDI name format: `jdbc/name from Name fieldDS`. For example, `jdbc/ApplicationOBISDS`.
  - c. Set the **Database Type** to Other.  
Click **Next**.
  - d. Set the **Database Driver** to Other.

- e. Click **Next**.
5. On the Transaction Options page, select **Supports Global Transactions** and select **One-Phase Commit**. Click **Next**.
6. On the Connection Properties page, follow these steps:
  - a. For **Database Name**, enter any text string. Note that what you specify in this field is not used for Oracle BI EE.
  - b. For **Host Name**, enter the name of the Oracle BI server. For example, sr7619.us.mycompany.com.
  - c. For **Port**, enter 9703.
  - d. For **Database User Name**, enter a valid Oracle BI EE user name that has been assigned the oracle.bi.server.impersonateUser privilege.
  - e. For **Password** and **Confirm Password** enter and then re-enter the password corresponding to the user name that you specified. Click **Next**.
7. On the Test Database Connection page, follow these steps:
  - a. For **Driver Class Name**, enter oracle.bi.jdbc.AnajdbcDriver.
  - b. For **URL**, enter jdbc:oraclebi://Host Name:9703/. For example, jdbc:oraclebi://sr7619.us.mycompany.com:9703/.
  - c. For **Properties**, enter user=*user from Database User Name field* (from above). For example, user=BIImpersonatorUser.
  - d. For **Test Table Name**, enter the following: SQL {call NQSGetSQLCatalogs()}
8. Click **Test Configuration**. If the test fails, go back and check your settings. If the test succeeds, click **Next**.
9. Select the server or cluster where you want to deploy the data source. Note that you *must* perform this step before completing the data source configuration.
10. Click **Finish**.
11. Click **Activate Changes**.

#### 4.4.2 Configuring the BI JDBC Data Source for Impersonation

Use this procedure to add a connection string property to the BI JDBC data source. Performing this step enables impersonation. You can skip this step if you do not want the connection to use the currently logged in user.

**To configure the BI JDBC data source for impersonation:**

1. Access the WebLogic Server Administration Console and locate the BI JDBC data source to configure for impersonation. The Settings page displays.
2. Click the **Connection Pool** tab. Note that you may need to click **Lock & Edit** before you can configure the data source.
3. In the Properties field, create a line and add the following: IMPERSONATE=
4. In the **Initial Capacity** field, enter 1.
5. Click **Save**.

## 4.5 Extending the Oracle Business Intelligence Logical SQL View Object

If you want to run an Oracle Business Intelligence logical SQL view object from a standalone WebLogic Server, then you must deploy the view object to the standalone WebLogic Server.

To extend the Oracle Business Intelligence logical SQL view object, you must set up a WebLogic domain that supports BI JDBC, prepare the view object, and deploy the application.

### 4.5.1 How to Set Up a WebLogic Domain that Supports BI JDBC

Use the following procedure to set up a WebLogic domain that supports BI JDBC.

For information about using the Fusion Middleware Configuration Wizard to create or extend a WebLogic domain, see *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

#### To create a WebLogic domain:

1. Access the configuration wizard by clicking Start, then selecting Programs, then selecting Oracle Fusion Middleware, then selecting WebLogic Server 11gR1, then selecting Tools, and then selecting Configuration Wizard. The Fusion Middleware Configuration Wizard displays.
2. Use the wizard to create a WebLogic domain that supports BI JDBC. [Table 4-1](#) lists the Fusion Middleware Configuration Wizard pages and the corresponding selections you need to make or values you need to specify to correctly set up the WebLogic domain for BI JDBC.

**Table 4-1 WebLogic Domain Settings**

Wizard Page	Required Selection of Value
Select Domain Source	<p><b>Select the following:</b></p> <p>Oracle BI JDBC - &lt;your version number&gt; (oracle_common)</p> <p><b>Select all Oracle JRF options, for example:</b></p> <ul style="list-style-type: none"> <li>■ Oracle JRF WebServices Asynchronous services - 11.1.1.0 [oracle_common]</li> <li>■ Oracle JRF - 11.1.1.0 [oracle_common]</li> </ul>
Select Optional Configuration	Select Deployment and Services and then use <b>Next</b> to confirm that the required applications are selected.
Target Deployments to Clusters or Servers	<p>Confirm that the following applications are selected:</p> <ul style="list-style-type: none"> <li>■ oracle.bi.adf.model.slib</li> <li>■ bijdbc</li> </ul>
Creating Domain	<p>Select <b>Start Admin Server</b>.</p> <p>Or, after you have completed the WebLogic server set up, you can start the server by running <code>StartWebLogic.sh/cmd</code> under <code>user_projects/domains/domain_name/bin</code>.</p>

### 4.5.2 How to Prepare the Oracle Business Intelligence Logical SQL View Object and Deploy the Application

Use this procedure to create a connection to the target application server, create the deployment profile, and deploy the application to a standalone WebLogic server. For more information about a specific page used in the following tasks, click the **Help** button on that page.

#### 4.5.2.1 Creating a connection to the target application server

Use the following task to create a connection to the target application server.

##### To create a connection to the target application server:

1. In JDeveloper, display the Application Server tab by clicking the View menu and selecting Application Server Navigator. The Application Server tab displays.
2. In the Application Server tab, right-click Application Servers and select **New Application Server**. The Create Application Server Connection Wizard - Usage Page displays.
3. On the Usage Page, select **Standalone Server** and click **Next**.
4. Complete the pages on the wizard to set up, test, and save the application server. For information about a specific page, click the page's **Help** button.

The application server displays in the Application Server tab.

#### 4.5.2.2 Creating the deployment profile for the EAR file

Use the following task to create the deployment profile for the EAR file.

##### To create the deployment profile for the EAR file:

1. Access the Create Deployment Profile page by clicking the Application menu and selecting Application Properties. The Application Properties page displays.
2. From the left pane of the Application Properties page, select **Deployment**. The Deployment profiles and options display.
3. Click **New**. The Create Deployment Profile page displays.
4. Accept the Deployment Profile Name and click **OK**. The General page displays.
5. Accept the General page values and click **OK**. The Deployment profiles, including the deployment profile that you just created, and options display.
6. In the Deployment page, define the deployment profiles as follows:
  - Select the **Auto Generate and Synchronize weblogic-jdbc.xml Descriptors During Deployment** option.
  - Deselect the **Application Policies** and **Credentials** options.
  - Select the **Users and Groups** option.
7. From the Deployment Profiles list, select the deployment profile that you created and click **Edit**. The Edit EAR Deployment Profile Properties page displays.
8. From the left pane, select **Application Assembly**. The Application Assembly page displays.
9. In the Java EE Modules area, locate the Model.jpr module and confirm that the items listed within this module are correct. Click **OK**. The Application Properties page displays.
10. Click **OK** to exit the Application Properties page.

#### 4.5.2.3 Deploying the application

Use the following task to deploy the application.

##### To deploy the application:

- Click the Application menu, then highlight Deploy, and then select the application to begin the deployment process.

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# Integrating Oracle Business Intelligence Presentation Services With an Oracle WebCenter Portal Application

This chapter describes how to integrate the Oracle BI Presentation Catalog with a WebCenter Portal application, and how to add the Oracle BI Composer functionality to a WebCenter Portal application or to WebCenter Portal: Spaces.

This chapter includes the following topics:

- [Overview of the Oracle BI Presentation Services and WebCenter Portal Application Integration](#)
- [Creating a WebCenter Portal Application that Integrates with Oracle BI Presentation Services](#)
- [Can I Add BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces?](#)
- [Adding BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces](#)

## 5.1 Overview of the Oracle BI Presentation Services and WebCenter Portal Application Integration

You can use JDeveloper to create WebCenter Portal applications that integrate with Oracle Business Intelligence Presentation Services. At runtime, these applications include the Oracle BI Presentation Catalog in the WebCenter Portal Resource Catalog. Users can then browse for and add business intelligence analyses, dashboard pages, dashboards, or scorecard components (strategy maps, strategy trees, KPI watchlists, cause and effect maps, and custom views) to their WebCenter Portal application pages. Any filters, prompts, and actions links included in the business intelligence objects work within the WebCenter Portal pages.

At runtime, WebCenter Portal users can expand and browse the Oracle BI Presentation Catalog's folders to view an analysis' views. The following view types display in the Oracle BI Presentation Catalog: table, pivot table, chart, funnel chart, gauge, narrative, ticker and title. The following view types do not display in the Oracle BI Presentation Catalog: view selector, column selector, logical SQL, and no-results view.

Users can also browse the dashboard folder for the pages associated with the dashboard; however, users cannot browse within the dashboard pages to see their components (for example, any analyses embedded in the dashboard). Users cannot include entire Scorecards (only a Scorecard's components) in their WebCenter Portal application pages.

For more information, see ["Creating a WebCenter Portal Application that Integrates with Oracle BI Presentation Services"](#).

## 5.2 Creating a WebCenter Portal Application that Integrates with Oracle BI Presentation Services

To properly create a WebCenter Portal application that integrates with Oracle BI Presentation Services, you must configure the application's library settings, update the web.xml and default-catalog.xml files, and have properly configured security.

For information describing how to configure a WebCenter Portal application to integrate with Oracle Business Intelligence Presentation Services, see "Integrating Oracle Business Intelligence Presentation Services" in *Oracle Fusion Middleware Developer's Guide for Oracle WebCenter Portal*.

## 5.3 Can I Add BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces?

BI Composer is a simple-to-use wizard that allows users to quickly and easily edit or view the design of Oracle BI EE analyses from a WebCenter Portal application or to WebCenter Portal: Spaces.

When configured, the BI Composer interface allows WebCenter Portal users to edit the analysis by selecting or modifying the analysis' columns, add views (for example, table and graphs), sort and filter data, and apply conditional formatting to data appearing in tables.

For more information about setting up this integration, see ["Adding BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces"](#).

For information about using the BI Composer interface, see Chapter 14 "Using BI Composer to Work With Analysis" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

## 5.4 Adding BI Composer to a WebCenter Portal Application or to WebCenter Portal: Spaces

To add BI Composer to a WebCenter Portal application or to WebCenter Portal: Spaces, you must extend the WebCenter Portal domain to include the BI Composer implementation libraries, add library references to the WebCenter Portal application, and specify the WebCenter Portal BI Composer's viewer and editor container task flow parameters. For WebCenter Portal: Spaces, you must also add task flow permission security and apply the domain extension template to deploy the BI Composer libraries.

### 5.4.1 Checking for Installed JDeveloper Extensions

Oracle JDeveloper offers the following Oracle BI EE extensions:

- Business Intelligence ADF Task Flow
- Business Intelligence ADF View Regions
- Business Intelligence Composer
- Business Intelligence Logical SQL View Objects
- Business Intelligence Soap Connection

Use this procedure if you are not sure whether you have the required Oracle JDeveloper 11g extensions and Oracle BI EE extensions.

1. In JDeveloper, click the **Help** menu and click **About**. The "About Oracle JDeveloper 11g" dialog displays where you can confirm the release number.
2. Click the **Extensions** tab to view a list of the installed extensions. To sort the list, click either the **Name** or **Identifier** column heading.

Note that all Oracle BI EE extensions contain the "bi-" prefix. If no extensions begin with the "bi-" prefix, then you do not have the required extensions.

## 5.4.2 Installing the Required JDeveloper Extensions

Use this procedure to install the required extensions.

1. From the JDeveloper **Help** menu, select **Check for Updates**.
2. Follow the steps in the wizard to locate, download, and install the Oracle BI EE extensions. If you create a WebCenter Portal application that integrates with Oracle BI EE, then you need to also install the WebCenter Portal framework.

For a list of the available Oracle BI EE extensions, see "[Checking for Installed JDeveloper Extensions](#)".

## 5.4.3 How to extend the WebCenter Portal domain

Perform this procedure to extend the WebCenter Portal domain to include the BI Composer implementation libraries. Perform this procedure for a WebCenter Portal application and for WebCenter Portal: Spaces.

For information about how to perform this procedure, see "[How to Extend the Domain](#)".

## 5.4.4 How to Add the BI Composer Library Reference

Use the following procedure to add the required library reference to the WebCenter Portal application. You do not need to perform this procedure for WebCenter Portal: Spaces.

1. In JDeveloper, go to the Application Navigator, open the Projects tab, navigate to the project's WEB-INF subdirectory, and open the weblogic.xml document.
2. Add the following library reference:

```
<library-ref>
  <library-name>oracle.bi.composer</library-name>
</library-ref>
```

3. Open the application's weblogic-application.xml document. To do this step, go to the Application Navigator, open the Application Resources tab, and navigate to the Descriptors subdirectory where the weblogic-application.xml document is stored.
4. Add the following library reference:

```
<library-ref>
  <library-name>oracle.bi.jbips</library-name>
</library-ref>
```

## 5.4.5 How to Add Task Flow Permission Security

If you are configuring BI Composer with WebCenter Portal: Spaces, use the following procedure to create a permission security entry for the BI Composer task flow. You do not need to perform this procedure for a WebCenter Portal application.

1. In Fusion Middleware Control, expand the WebCenter node.
2. Select WebCenter Spaces, right click, select **Security**, and then select **Application Policies**. The Applications Policies dialog displays.
3. In the Search pane, click the **Select Application Stripe to Search** box.
4. Click the list and select **web center** and click the **Search application security grants** button. The search results display.
5. From the search results, select the principal to which you want to add permissions. Click **Edit**. The Edit Application Grant dialog displays.
6. In the Permissions pane, select **Add**. The Add Permissions dialog displays.
7. In the Customize pane, specify the permission information. Note the following:
  - In the **Permission Class** field, enter `oracle.adf.controller.security.TaskFlowPermission`
  - In the **Resource Name** field, enter `/WEB-INF/oracle/bi/adf/apps/answers/webcenter/flow/BIWebCenterTF.xml#BIWebCenterTF`
  - In the **Permission Actions** field, enter `customize, personalize, view`
8. Click **OK**.

## 5.4.6 How to Specify the BI Composer WebCenter Portal Viewer and Editor Container Task Flow Parameters

Use the following information to initialize the taskflow with values for parameters based on other elements in the page.

The container task flow aggregates the editor and viewer task flows and allows the user to switch between the editor and viewer modes at runtime. Note that if the BI Composer libraries are not available in a WebCenter Portal application or WebCenter Portal: Spaces, then only the BI Composer's viewer is exposed and the edit functionality is disabled. However, if the BI Composer libraries are available, then the container task flow is used to expose the BI Composer's viewer and editor functionalities.

The task flow document location is:

```
WEB-INF/oracle/bi/adf/apps/answers/webcenter/flow/BIWebCenterTF.xml
```

The task flow's ID is:

```
BIWebCenterTF
```

For more information about adding parameters to a task flow, see Chapter 16: Using Parameters in Task Flows in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*

[Table 5–1](#) lists each task flow parameter, its description, type, default value, and if it is required.



**Table 5–1 BI Composer WebCenter Portal Viewer and Editor Task Flow Parameters**

<b>Name</b>	<b>Description</b>	<b>Type</b>	<b>Required?</b>	<b>Default Value</b>
biCatalogPath	The catalog path for the analysis being viewed or edited.	String	No	null
connectionId	The ID of the deployed Oracle BI EE Presentation Services connection.	String	No	null
obipsType	The type of content being viewed or edited. Use "biReportContent" for analysis, "biDashboardContent" for dashboard, and "biScorecardContent" for scorecard.	String	No	null
subItem	The sub item name of the Oracle BI content (for example, analysis view or dashboard page). This parameter applies to the viewer, only.	String	No	null
promptfilterxml	The prompt or filter's XML. This parameter applies to the viewer, only.	String	No	null
width	The Oracle BI object's width. This parameter applies to the viewer, only.	String	No	null
height	The Oracle BI object's content height. This parameter applies to the viewer, only.	String	No	null

**Table 5–1 (Cont.) BI Composer WebCenter Portal Viewer and Editor Task Flow**

Name	Description	Type	Required?	Default Value
viewReportLinks	This comma separated value indicates report links to be shown for the report.	String	No	null Valid values are: <ul style="list-style-type: none"> <li>■ r Refresh. Displays the Refresh link.</li> <li>■ f Print. Displays the Print link.</li> <li>■ d Download. Displays the Export link.</li> <li>■ - None. Displays no report links.</li> </ul> For example, use f, r, d to show all supported links. Null is treated as the default for none.