

## **Oracle® Fusion Middleware**

Integrator's Guide for Oracle Business Intelligence Enterprise  
Edition

11g Release 1 (11.1.1)

**E16364-01**

July 2010

Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition, 11g Release 1 (11.1.1)

E16364-01

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# Preface

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, real-time predictive intelligence, and an enterprise reporting engine. Oracle BI EE is designed to bring greater business visibility and insight to a wide variety of users.

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 is part of the documentation set for Oracle BI EE. 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 programmatically access and use the Oracle BI EE components and use them to create applications or integrations with other components.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

### Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an

otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

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### Access to Oracle Support

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## Related Documents

For more information, see the following documents in the Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1) documentation set:

- *Oracle Fusion Middleware Release Notes for your platform*
- *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence Enterprise Edition for your platform*
- *Oracle Fusion Middleware Developer's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence*
- *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*

## 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 chapter describes changes to integration features for Oracle Business Intelligence 11g Release 1 (11.1.1).

This preface contains the following topics:

- ["New Features"](#)
- ["Upgrade Considerations"](#)
- ["System Requirements and Certification"](#)

## New Features

New features in Oracle Business Intelligence include:

### Web Services

Oracle Business Intelligence includes the following new Web services:

- ConditionalService Service
- JobManagementService Service

New methods and structures were added to the existing Web services.

See for more information, see [Part I, "Using Oracle BI EE Web Services"](#).

### Action Framework

The Action Framework provides functionality for creating, managing, and invoking actions. Actions can be included within analyses, dashboards, agents, KPIs, and Scorecard objectives. Actions provide functionality to navigate to related content and invoke operations, functions, or processes in external systems.

The Action Framework must be configured to enable the Actions functionality in Oracle BI Presentation Services. See [Part II, "Configuring the Action Framework"](#) for more information.

### Oracle Business Intelligence Server XML API

Oracle Business Intelligence now provides utilities to create a generic, XML-based representation of the Oracle Business Intelligence repository metadata. You can use these utilities for programmatic metadata generation and manipulation, metadata migration, metadata patching, and other functions. See [Part IV, "Using the Oracle BI Server XML API"](#) for more information.

## Upgrade Considerations

The following list identifies various items that you need to be aware of if your site has upgraded from Oracle Business Intelligence 10g to Oracle Business Intelligence 11g Release 1 (11.1.1):

- A default ODBC DSN for Presentation Services is now created and configured for you during Oracle Business Intelligence installation. Administration Tool clients on the same host as a Presentation Services instance also use the default DSN to connect to the Oracle BI Server.

The connection parameters for the Cluster Controller in the default DSN are now centrally managed by Fusion Middleware Control. Do not update these parameters. If you attempt to manually update the centrally managed parameters, the values will be overwritten the next time the system is started.

See [Chapter 8, "Integrating Other Clients with Oracle Business Intelligence"](#) for more information.

## 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/technology/software/products/ias/files/fusion\\_requirements.htm](http://www.oracle.com/technology/software/products/ias/files/fusion_requirements.htm)

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

[http://www.oracle.com/technology/software/products/ias/files/fusion\\_certification.html](http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html)

# Part I

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## Using Oracle BI EE Web Services

This part provides overview information for the Oracle BI EE Web Services, and information about the Session-Based Web service's structures and methods. This part contains the following chapters:

- [Chapter 1, "Introduction to Oracle Business Intelligence Web Services"](#)
- [Chapter 2, "Description of Structures in Oracle BI EE Web Services"](#)
- [Chapter 3, "Description of Services and Methods in Oracle BI EE Web Services"](#)



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# Introduction to Oracle Business Intelligence Web Services

This chapter provides an overview of the Oracle Business Intelligence web services and contains the following sections:

- [Section 1.1, "Overview of the Oracle Business Intelligence Web Services"](#)
- [Section 1.2, "What are the Oracle Business Intelligence Session-Based Web Services?"](#)
- [Section 1.3, "What are the Oracle Business Intelligence Web Services for SOA?"](#)
- [Section 1.4, "Configuring and Securing the Oracle Business Intelligence Web Services for SOA"](#)
- [Section 1.5, "Enabling SSL for Web Services Communication"](#)
- [Section 1.6, "Invoking Oracle Business Intelligence Web Services Over HTTPS"](#)

## 1.1 Overview of the Oracle Business Intelligence Web Services

Oracle Business Intelligence provides two types of web services: Oracle Business Intelligence Session-Based Web Services and Oracle Business Intelligence Web Services for SOA.

You can use Oracle Business Intelligence Session-Based Web Service to call Oracle Business Intelligence programmatically to invoke many different business intelligence items. For more detailed information about these types of web services, see ["What are the Oracle Business Intelligence Session-Based Web Services?"](#)

The Oracle Business Intelligence Web Services for SOA provide a web service unique to each analysis, condition, or agent saved to the Oracle BI Presentation Catalog. For more detailed information about this types of web service, see ["What are the Oracle Business Intelligence Web Services for SOA?"](#)

## 1.2 What are the Oracle Business Intelligence Session-Based Web Services?

The Oracle Business Intelligence Session-Based Web Services are an application programming interface (API) that implements SOAP. These web services are designed for programmatic use, where you use one web service for invoking many different business intelligence objects. These web services also provide functionality on a wide range of Presentation Services operations.

The Oracle Business Intelligence Session-Based Web Services allow you to perform three types of functions:

- Extract results from Oracle Business Intelligence Presentation Services and deliver them to external applications and Web application environments.
- Perform Oracle Business Intelligence Presentation Services management functions.
- Execute Oracle BI EE alerts (known as Intelligent Agents).

Oracle Business Intelligence Session-Based Web Services allow external applications such as J2EE and .NET to use Oracle Business Intelligence as an analytical calculation and data integration engine. It provides a set of Presentation Services that allow external applications to communicate with Oracle Business Intelligence Presentation Services.

Oracle Business Intelligence Session-Based Web Services require a valid Oracle Business Intelligence session ID to be passed as a parameter. This means that the calling application first needs to make a call to get the session before calling the web service. A final call is made to log out.

The formal definition of services and methods in Oracle BI EE Web Services can be retrieved in WSDL format. You can use a proxy generation tool to create proxy/stub code to access the services. You can access the WSDL document at the following Oracle BI EE Web Services URL:

`http://host:port/analytics/saw.dll/wsdl/v6`

### 1.3 What are the Oracle Business Intelligence Web Services for SOA?

The Oracle Business Intelligence Web Services for SOA contains three Web services, `ExecuteAgent`, `ExecuteAnalysis`, and `ExecuteCondition`, which are hosted by the middleware J2EE application. These web services enable you to use third-party Web services clients (for example, Oracle SOA Suite) to browse for and include business intelligence objects in service oriented architecture components. These Web services are used to consume specific values or small sets of values to feed into conditional logic or subsequent steps. This approach allows end users to execute analyses, evaluate conditions, and to invoke Agents in their processes, event routing, and business rules. Note that the Oracle Business Intelligence Web Services for SOA will only return XML strings.

The Oracle Business Intelligence Web Services for SOA support calling agents, analyses, and conditions only. Prompted filters and presentation variables included in the business intelligence objects are supported. Oracle BI EE dynamically creates a dedicated Web Services Description Language (WSDL) document with its own name space for each agent, analysis, and condition that content designers save to the catalog.

The Oracle Business Intelligence Web Services for SOA dynamically provide WSIL documents to allow you to browse for and select agents, analyses, and conditions stored in the catalog. The WSIL lists each available business intelligence object as a WSDL document with a unique name. Since each object has a dedicated WSDL document, the WSDL explicitly lists prompted filters for you to complete. If the your SOA development tool does not support WSIL browsing, you can still access the WSIL from a Web browser user interface. You can access the WSIL by accessing the following URL on the Oracle Business Intelligence Presentation Server:

`https://host:port/biservices/inspection?wsil`

The WSIL is not available until it has been properly configured. For more information about this required configuration, see "[Configuring and Securing the Oracle Business](#)

[Intelligence Web Services for SOA](#)". For specific instructions about adding the `wsil.browsing` key to the credential store, see ["Adding and Maintaining Credentials for Use With the Action Framework"](#).

## 1.4 Configuring and Securing the Oracle Business Intelligence Web Services for SOA

During installation, each Web service (`executeAgent`, `executeAnalysis`, and `executeCondition`) is assigned the `"policy:oracle/wss_username_token_service_policy"` security policy. This policy requires the calling SOAP message to include a user name and token (password) in the WS-Security header. The user credentials that are passed to Web services through the incoming SOAP message can be any valid business intelligence user who has the proper access to the target business intelligence object being invoked. This method of security means that Web services can be called in a single step without first retrieving a session ID. Note that if required, you can change the security policy used by the Web services to any security policy available in Oracle WebLogic Server.

Whereas invoking Web services uses the credentials passed in the calling SOAP message to invoke the target functionality, browsing the Web services using the WSIL uses a single user account. It is not currently possible to invoke the browsing mechanism using the credentials of the user performing the browsing using this mechanism.

To enable browsing for Web services, you must go to Oracle Enterprise Manager, access the `oracle.bi.enterprise` map, which is located on the `bifoundation_domain`, and manually add the `"wsil.browsing"` credential to the credential store. This key holds the user ID and password for the valid user defined in the identity store. For example, if you want to browse for target web services as the user `"abell"`, you will add the credentials of `"abell"` to the `wsil.browsing` key in the credential store.

In practice, a special user should be created in the identity store specifically for browsing the catalog for use with this functionality. This user should not have any business intelligence objects in their personal folder (my folders), as other users will not be able to invoke this functionality.

For more information about setting up users and credentials, see *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

## 1.5 Enabling SSL for Web Services Communication

Oracle recommends that you enable HTTPS on the Managed Server that hosts the Analytics and BI middleare J2EE applications. Un-encrypted credentials that are passed to the target web service may be intercepted, and using SSL is a way to mitigate this risk. After you set up SSL, see ["Invoking Oracle Business Intelligence Web Services Over HTTPS"](#) for information about certificates.

## 1.6 Invoking Oracle Business Intelligence Web Services Over HTTPS

To invoke Oracle Business Intelligence Web Services when using HTTPS, the client calling the Web service on the server (for example, Oracle BPEL calling Oracle Business Intelligence Web Services for SOA) needs to trust the server certificate. The server may have an authentic certificate provided by a well-known certificate authority, in which case the client may trust the server certificate without further configuration. However, by default, this is not the case, and the root certificate used by the Weblogic Managed Servers that are hosting the web services should be imported

into the appropriate keystore of the Web services client that is calling these Web services.

Oracle recommends that in a production environment you use a certificate signed by a well-know certificate authority.

Use the following procedure to confirm the location of the root certificate of the Managed Servers that the Web services client needs to trust.

**To confirm the location of the root certificate:**

1. Open the Weblogic console in a browser. By default, the location of the Weblogic console is: `http://host:7001/console`.
2. From the Oracle WebLogic Server Administration Console, select the SSL tab and go to the Identity area. By default, the Certificate location is from the Demo Identity Keystore. If this is the case, navigate to the Keystores tab and review the location of the Demo Identity Keystore.

Note that the Demo Identity Keystore's default location is:

`<middleware_home>/wlserver_10.3_server/lib/DemoIdentity.jks`

3. Use the Oracle Keytool utility to view and export the root certificate.

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## Description of Structures in Oracle BI EE Web Services

This chapter describes the structures used by Oracle BI EE Web Services.

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**Note:** This document uses JavaScript-like syntax to describes structures. The exact syntax and implementation depends on the SOAP code generation tool and the target language used by your application development environment.

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This chapter contains the following sections:

- [Section 2.1, "AccessControlToken Structure"](#)
- [Section 2.2, "Account Structure"](#)
- [Section 2.3, "ACL Structure"](#)
- [Section 2.4, "ArrayofGUIDS Structure"](#)
- [Section 2.5, "AuthResult Structure"](#)
- [Section 2.6, "CatalogItemsFilter Structure"](#)
- [Section 2.7, "CatalogObject Structure"](#)
- [Section 2.8, "ErrorInfo Structure"](#)
- [Section 2.9, "GetSubItemsParams Structure"](#)
- [Section 2.10, "ImportError Structure"](#)
- [Section 2.11, "ItemInfo Structure"](#)
- [Section 2.12, "NameValuePair Structure"](#)
- [Section 2.13, "PathMap Structure"](#)
- [Section 2.14, "Privilege Structure"](#)
- [Section 2.15, "QueryResults Structure"](#)
- [Section 2.16, "ReportHTMLOptions Structure"](#)
- [Section 2.17, "ReportParams Structure"](#)
- [Section 2.18, "ReportRef Structure"](#)
- [Section 2.19, "SAColumn Structure"](#)
- [Section 2.20, "SASubjectArea Structure"](#)

- [Section 2.21, "Satable Structure"](#)
- [Section 2.22, "SAWLocale Structure"](#)
- [Section 2.23, "SAWSessionParameters Structure"](#)
- [Section 2.24, "SegmentationOptions Structure"](#)
- [Section 2.25, "SessionEnvironment Structure"](#)
- [Section 2.26, "StartPageParams Structure"](#)
- [Section 2.27, "TreeNodePath Structure"](#)
- [Section 2.28, "UpdateACLParams Structure"](#)
- [Section 2.29, "UpdateCatalogItemACLParams Structure"](#)
- [Section 2.30, "Variable Structure"](#)
- [Section 2.31, "XMLQueryExecutionOptions Structure"](#)

## 2.1 AccessControlToken Structure

Use this structure to describe permissions granted to a specific account in the access control list. This structure is used in the "[SecurityService Service](#)".

[Table 2-1](#) lists the fields in this structure.

**Table 2-1 AccessControlToken Structure Fields**

Fields	Description
Account account	Specifies a reference to the Account structure.
int permissionMask	Specifies a combination of the following flags: 1 = Permission to read item content 2 = Permission to traverse directory 4 = Permission to change item content 8 = Permission to delete an item 16 = Permission to assign permissions to other accounts 32 = Permission to take ownership of the item 2048 = Permission to run an Oracle BI Publisher report live 4096 = Permission to schedule an Oracle BI Publisher report 8192 = Permission to view output from an Oracle BI Publisher report

## 2.2 Account Structure

Use this structure to hold user names or group names. It has a flag to indicate whether the name is a user or a group. This structure is used in the "[SecurityService Service](#)".

[Table 2-2](#) lists the fields in this structure.

**Table 2-2 Account Structure Fields**

Fields	Description
String accountName	Specifies an account name or group name.

**Table 2–2 (Cont.) Account Structure Fields**

Fields	Description
int accountType	Specifies whether the account is a user or a group or both (0 = user, 1 = catalog group, 2 = app role, 3 = all).  Note the following information for advanced use of this field. If accountType is greater than or equal to 4, the system treats the Name or GUID as a pattern. Namely, accountType may be 4 for fetching users, 5 for fetching cat groups, 6 for fetching app roles, 7 all pattern. Using this field in this way can be expensive, slow, and result in the system returning many records. When receiving an Account, both Name and GUID are set. The accountType will be 0 for user, 1 for catalog group, 4 for application role.
String GUID	Specifies the unique ID which identifies the account.

## 2.3 ACL Structure

Use this structure to hold the access control list (ACL). This structure is used in the "SecurityService Service".

Table 2–3 list the fields in this structure.

**Table 2–3 ACL Structure Fields**

Fields	Description
AccessControlToken[] accessControlTokens	Specifies the full list of permissions.
String dummy	For internal purposes.

## 2.4 ArrayofGUIDS Structure

Use this structure to specify a list of GUIDs representing a saved result set. This structure is used in the "SecurityService Service".

Table 2–4 lists the field in this structure.

**Table 2–4 ArrayofGUIDS Structure Fields**

Fields	Description
String[] guid	Specifies a list of GUIDs representing the saved result set.

## 2.5 AuthResult Structure

Use this structure to specify authorization details during an authentication. This structure is used in the "SecurityService Service" (in the "impersonateex() Method" and "logonex() Method").

Table 2–5 lists the fields in this structure.

**Table 2–5 AuthResult Structure Fields**

Fields	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

**Table 2–5 (Cont.) AuthResult Structure Fields**

Fields	Description
boolean authCompleted	If set to TRUE, then the authorization is complete. If set to FALSE, then the authorization process is in progress and the logonex or impersonatex process should be called again.

## 2.6 CatalogItemsFilter Structure

Use this structure to filter catalog items and changes based on the path and timestamp. This structure is used in the "[ReplicationService Service](#)".

[Table 2–6](#) lists the fields in this structure.

**Table 2–6 CatalogItemsFilter Structure Fields**

Fields	Description
String[] items	Specifies the list of folders and their descendants to include in the filter. If this value is null, then all nodes in the catalog are included.
Calendar from	Specifies the time period on which to filter. Only items and changes with timestamps within that period satisfy the filter. Either or both of those fields could be null, in which case corresponding bound is considered not set.
Calendar to	Specifies the time period on which to filter. Only items and changes with timestamps within that period satisfy the filter (from <= timestamp <= to). Either or both of those fields could be null, in which case the corresponding bound is considered not set.

## 2.7 CatalogObject Structure

Use this structure to retrieve or specify all information for a particular catalog object in a single method. This structure is used in the "[WebCatalogService Service](#)".

[Table 2–7](#) lists the fields in this structure.

**Table 2–7 CatalogObject Structure Fields**

Fields	Description
String catalogObject	Specifies an XML representation of the object.
catalogObjectBytes	Specifies the returned content of the catalog object as string or bytes. What you specify in this field is determined by the readObjects method.
ItemInfo itemInfo	Specifies catalog information about the object, supplied in the ItemInfo common structure.  For information about the ItemInfo structure, see <a href="#">Section 2.11, "ItemInfo Structure"</a> .
ErrorInfo errorInfo	Specifies the level of error information to be supplied as specified by the ErrorDetails argument in the readObjects method.

## 2.8 ErrorInfo Structure

Use this structure to retrieve error information during Presentation Catalog Service method invocations. This structure is used in the "[WebCatalogService Service](#)".

[Table 2–8](#) lists the fields in this structure.

**Table 2–8** *ErrorInfo Structure Fields*

Fields	Description
String code	Specifies the error code to display.
String context	Specifies the service and method in which the error occurred.
String details	Specifies detailed information about the error.
String message	Specifies a human-readable description of the error.

## 2.9 GetSubItemsParams Structure

Use this structure to contain optional parameters used in a `getSubItems` method. This structure is used in the "[WebCatalogService Service](#)".

[Table 2–9](#) lists the fields in this structure.

**Table 2–9** *GetSubItemsParams Structure Fields*

Fields	Descriptions
GetSubItemsFilter filter	For internal use only.
boolean includeACL	If set to TRUE, then ACL information is included in the resulting ItemInfo structures.
int withPermission and int withPermissionMask	Specifies that you want to filter the resulting items collection by access level. The only items included in the result are those for which the following expression is true:  $(itemPermission \& \text{withPermissionMask}) = (\text{withPermission} \& \text{withPermissionMask})$  where <code>itemPermission</code> is a combination of permission flags for the current catalog item.
int withAttributes and int withAttributesMask	Specifies that you want to filter the resulting items collection by attribute flags. The only items included in the result are those for which the following expression is true:  $(itemAttributes \& \text{withAttributesMask}) = (\text{withAttributes} \& \text{withAttributesMask})$  where <code>itemAttributes</code> is a combination of attribute flags for the current catalog item.

## 2.10 ImportError Structure

Use this structure to describe the cause of a failure during an import. This structure is used in the "[ReplicationService Service](#)".

[Table 2–10](#) lists the fields in this structure.

**Table 2–10** *ImportError Structure Fields*

Fields	Description
String item	Specifies the path to the changed item. For example, <code>/users/jchan/analyses/</code> .
String operation	For internal use only.
String catalogError	Specifies an error string, describing the reason for the failure.
String file	Specifies in which file the error occurred.

**Table 2–10 (Cont.) ImportError Structure Fields**

Fields	Description
String line	Specifies the line in which the error occurred.

## 2.11 ItemInfo Structure

Use this structure to contain catalog information about an object. This structure is used in the "[WebCatalogService Service](#)".

[Table 2–11](#) lists the fields in this structure.

**Table 2–11 ItemInfo Structure Fields**

Fields	Description
String path	Specifies the path to the object in the catalog. For example, /users/jchan/analyses/.
ItemInfoType type	Specifies a character string that indicates the type. Valid values are: <ul style="list-style-type: none"> <li>▪ Folder</li> <li>▪ Link</li> <li>▪ Missing</li> <li>▪ NoAccess</li> <li>▪ Object</li> </ul>
String caption	Specifies the localized name of the object in the catalog. For example, in French, 'My Folders' is displayed as 'Mes Dossiers'.
int attributes	Specifies a combination of the following flags: 1 = read only 2 = archive 4 = hidden 8 = system
Calendar lastModified	Specifies the date and time that the object was last modified, in Calendar format.
Calendar created	Specifies the date and time that the object was created (saved) in the catalog, in Calendar format.
Calendar accessed	Specifies the data and time that the object was last accessed by a user, in Calendar format.
String signature	Specifies the signature of the catalog object.
NameValuePair[] itemProperties	Specifies an array of object properties.
ACL aclXX	Specifies the Access Control List for this catalog item.
Account owner	Specifies the owner of the object.
String targetPath	If the ItemInfoType field is set to "Link," this field specifies the target path for the object.

## 2.12 NameValuePair Structure

Use this structure to denote named properties, such as COLOR=RED. This structure is used in the "[WebCatalogService Service](#)".

[Table 2–12](#) lists the fields in this structure.

**Table 2–12 NameValuePair Structure Fields**

Fields	Description
String name	Specifies a character string that contains the name of the property, such as COLOR.
String value	Specifies a character string that contains the value, such as RED.

## 2.13 PathMap Structure

Use this structure to specify the location to which you want to copy the data included in the export method. This structure is used by the ReplicationService Service.

[Table 2–13](#) lists the fields in this structure.

**Table 2–13 PathMap Structure Fields**

Fields	Description
PathMapEntry pathMapEntries	Specifies the location to which you want to copy the data included in the export method.

## 2.14 Privilege Structure

Use this structure to represent global privileges. In Oracle BI EE, you configure these privileges using the Manage Privileges screen. This structure is used in [Section 3.9, "SecurityService Service"](#).

[Table 2–14](#) lists the fields in this structure.

**Table 2–14 Privilege Structure Fields**

Fields	Description
String name	Specifies the name of a privilege.
String description	Specifies the description of a privilege.

## 2.15 QueryResults Structure

Use this structure to specify query details during query execution. This structure is used in the [Section 3.11, "XMLViewService Service"](#) (in the executeXMLQuery method).

[Table 2–15](#) lists the fields in this structure.

**Table 2–15 QueryResults Structure Fields**

Fields	Description
String rowset	Specifies the rowset XML encoded in the string.
String queryID	Specifies the unique ID of the query, which can be used in fetchNext calls.
boolean finished	If set to TRUE, then there are no more rows to return. If set to FALSE, then another fetchNext call is needed to return more rows.

## 2.16 ReportHTMLOptions Structure

Use this structure to define options for displaying results on an HTML page. This structure is used in the [Section 3.2, "HtmlViewService Service"](#).

[Table 2–16](#) lists the field in this structure.

**Table 2–16 ReportHTMLOptions Structure Field**

Field	Description
boolean enableDelayLoading	Internal use only. This field is always set to 1, which means that Oracle Business Intelligence Web Services is never required to provide results immediately, and displays a message indicating that it is waiting for results.
String linkMode	Specifies whether to display drills or links in the current browser window or a new browser window. For more information about valid values, see <a href="#">Section 2.16.1, "ReportHTMMLinksMode Enumeration"</a> .

### 2.16.1 ReportHTMMLinksMode Enumeration

This enumeration specifies a list of valid values for the ReportHTMMLinksMode field in the ["ReportHTMLOptions Structure"](#).

[Table 2–17](#) lists the values in this enumeration.

**Table 2–17 ReportHTMMLinksMode Enumeration Values**

Values	Description
String InPlace	Specifies that drills or links should replace only the content of the current analysis without changing the rest of the page.
String NewPage	Specifies that drills or links should be displayed in a new browser window.
String SamePage	Specifies that drills or links should replace the current browser window.

## 2.17 ReportParams Structure

Use this structure to replace existing filters and variables in an analysis. This structure is common to all services in Oracle BI EE Web Services.

[Table 2–18](#) lists the fields in this structure.

**Table 2–18 ReportParams Structure Fields**

Fields	Description
String[] filterExpressions	Specifies an array of Oracle Business Intelligence Web Services filter expressions in the form Object[] filter_expression, filter_expression ...
Variable[] variables	Specifies an array of variable values to be set before method execution. This structure is used in <a href="#">Section 3.11.4, "executeXMLQuery() Method"</a> and <a href="#">Section 3.7.3, "generateReportSQL() Method"</a> .
NameValuePair[] nameValues	Should be set to NULL. This field is for internal use only.
TemplateInfo[] templateInfos	Should be set to NULL. This field is for internal use only.
String viewName	Specifies which view to use when generating XML data for the analysis.

Table 2–19 shows how filter expressions are applied to an analysis.

**Table 2–19 How Filter Expressions Are Applied to an Analysis in Oracle BI EE Web Services**

Step	Internal Processing
1	Obtains XML representations of the analysis and each filter expression.
2	For each expression element, locates the child node of the type sqlExpression (the type is determined by the value of the xsi:type attribute), and references its inner text.
3	In the analysis XML, locates all nodes that also have a child node of type sqlExpression where the inner text matches that located in the preceding step.
4	Replaces all nodes found in Step 3 with the expression from Step 2.

Table 2–20 shows how variables are applied to an analysis.

**Table 2–20 How Variables Are Applied to an Analysis in Oracle BI EE Web Services**

Step	Internal Processing
1	Obtains XML representations of the analysis.
2	For each variable, locates all nodes in the analysis XML that have a type of variable, attribute scope equal to analysis, and inner text that matches the variable name.
3	Replaces each node located in Step 2 with the new variable value.

## 2.18 ReportRef Structure

Use this structure to reference an analysis in one of the following ways:

- The location of the analysis in the catalog.
- The ReportDef object that defines the analysis. This field should always be null.
- The XML that defines the analysis.

---

**Note:** Only one of the fields in ReportRef should be populated.

The ReportRef structure is common to all services in Oracle BI EE Web Services.

---

Table 2–21 lists the fields in this structure.

**Table 2–21 ReportRef Structure Fields**

Fields	Description
String reportPath	Specifies a string value that provides the path to the analysis in the catalog. For example, /users/jchan/analyses/.
String reportXML	Specifies a string value that contains the XML that defines the analysis.

## 2.19 SAColumn Structure

Use this structure to represent the logical column in the Subject Area. This structure is used in [Section 3.5, "MetadataService Service"](#).

[Table 2–22](#) lists the fields in this structure.

**Table 2–22** *SAColumn Structure Fields*

Fields	Description
String name	Specifies a column name used in SQL statements.
String displayName	Specifies a localized name, used in Oracle Business Intelligence Answers.
String description	Specifies a string to contain the description of the column name.
boolean nullable	If set to TRUE, then the column can be null.
String dataType	Specifies the type of data that a column contains. For more information, see <a href="#">Section 2.19.1, "SADataType Values"</a> .
boolean aggregateable	If set to TRUE, then the column can be aggregated.
String aggrRule	If the column contains aggregated data, this value specifies the type of aggregation used. For more information, see <a href="#">Section 2.19.2, "AggregationRule Values"</a> .

### 2.19.1 SADataType Values

The SADataType indicates the type of data that a column contains. The following list shows the data types available:

- BigInt
- Binary
- Bit
- Char
- Coordinate
- Date
- Decimal
- Double
- Float
- Integer
- Invalid
- LongVarBinary
- LongVarChar
- Numeric
- Real
- SmallInt
- Time
- TimeStamp
- TinyInt
- Unknown
- VarBinary
- VarChar

## 2.19.2 AggregationRule Values

The `SADatatype` specifies the default aggregation rule for the column. The following list shows the aggregation functions available:

- Avg
- BottomN
- Complex
- Count
- CountDistinct
- CountStar
- DimensionAggr
- First
- Last
- Max
- Min
- None
- Percentile
- Rank
- ServerDefault
- SubTotal
- Sum
- TopN

## 2.20 SASubjectArea Structure

Use this structure to represent Subject Area attributes. This structure is used in [Section 3.5, "MetadataService Service"](#).

[Table 2–23](#) lists the fields in this structure.

**Table 2–23 SASubjectArea Structure Fields**

Fields	Description
String name	Specifies the table name that is used in SQL statements.
String displayName	Specifies the localized name, used in Oracle Business Intelligence Answers.
String description	Specifies the description of the subject area.
SATable[] tables	Specifies a collection of tables for this subject area. For information about the SATable structure, see <a href="#">Section 2.21, "SATable Structure"</a> .

## 2.21 SATable Structure

Use this structure to represent the logical table in the Subject Area. This structure is used in the [Section 3.5, "MetadataService Service"](#).

[Table 2–24](#) lists the fields in this structure.

**Table 2–24** *SATable Structure Fields*

Fields	Description
String name	Specifies the table name that is used in SQL statements.
String displayName	Specifies the localized name, used in Oracle Business Intelligence Answers.
String description	Specifies the description of the table name.
SAColumn[] columns	Specifies an array of the table's columns. For information about the SAColumn structure, see <a href="#">Section 2.19, "SAColumn Structure"</a> .

## 2.22 SAWLocale Structure

Use this structure to define the locale for the current session. This structure is used in [Section 3.8, "SAWSessionService Service"](#).

[Table 2–25](#) lists the fields in this structure.

**Table 2–25** *SAWLocale Structure Fields*

Fields	Description
String language	Specifies the language code. Values for language should conform to the ones used in Java, in the java.util.Locale class (ISO-639, ISO-3166).
String country	Specifies the country code. Values for country should conform to the ones used in Java, in the java.util.Locale class (ISO-639, ISO-3166).

## 2.23 SAWSessionParameters Structure

Use this structure to define optional parameters for the current session. This structure is used in [Section 3.8, "SAWSessionService Service"](#).

[Table 2–26](#) lists the fields in this structure.

**Table 2–26** *SAWSessionParameters Structure Fields*

Fields	Description
SAWLocale locale	Specifies the locale to be used, supplied in the SAWLocale structure. For information about the SAWLocale structure, see <a href="#">Section 3.8, "SAWSessionService Service"</a> .
String userAgent	Specifies whether the HTMLView service will be used with current session. It specifies the userAgent string of the browser, where Oracle Business Intelligence Presentation Services HTML content is displayed. Oracle Business Intelligence Presentation Services uses this information to produce browser-specific HTML.
String syndicate	Internal use only.
LogonParameter logonParams	Specifies the parameters used for authentication.
boolean asyncLogon	If set to TRUE, then asynchronous login is enabled. If set to FALSE (default), then asynchronous login is not enabled.
String sessionID	Specifies the unique ID of the session. This field is used in <a href="#">Section 3.8.9, "logonex() Method"</a> and <a href="#">Section 3.8.5, "impersonateex() Method"</a> .

## 2.24 SegmentationOptions Structure

Use this structure to define the segment or segment tree to override the defaults specified in the Oracle Marketing Analytics user interface. This structure is used in the [Section 3.5, "MetadataService Service"](#).

[Table 2–27](#) lists the fields in this structure.

**Table 2–27 SegmentationOptions Structure Fields**

Fields	Description
OverrideType cacheOverride	<p>Specifies how you want to override the Oracle Marketing Analytics' "Cache the block for future update counts requests" user interface option.</p> <p>If set to Default, then the cache override is not specified in the structure or the structure is not specified. The Default value specifies to use what is defined in the user interface option for each criteria block.</p> <p>If set to None, the system overrides the user interface-defined values and sets all criteria blocks to disable the "Cache the block for future update counts requests" user interface option.</p> <p>If set to All, the system overrides the user interface-defined values and sets all criteria blocks to enable the "Cache the block for future update counts requests" user interface option.</p>
OverrideType countOverride	<p>Specifies if the system should use the getCounts method to generate the count numbers.</p> <p>If set to Default, then the count override is not specified in the structure or the structure is not specified.</p> <p>If set to All, the system executes the getCounts method. When set to All, the system calculates count numbers for all criteria blocks.</p>
NameValuePair govRules	<p>Specifies a value to enforce the corresponding contract planning rules for the segment or segment tree.</p>
NameValuePair prompts	<p>Specifies the prompt values to apply to the columns in the segment or segment tree. This process filters data when generating counts.</p> <p>If you do not provide a value in this field, then the system does not apply filter criteria to columns in segments.</p>
Boolean removeCacheHits	<p>Specifies that you want to clear cache entries that contain count information.</p> <p>If set to True, the system queries against the most current data. To do this, the system removes all existing cache entries that contain count information for the target segment or segment tree. The system then repopulates the cache with new count number entries calculated by the getCounts method.</p>
BigDecimal samplingFactor	<p>Specifies the size of the data set for calculating counts. The getCounts method calculates the count number of all criteria blocks against a subset of the data determined by this value.</p> <p>The default value is 100. The default value determines that the count number is calculated against the whole data set.</p>

## 2.25 SessionEnvironment Structure

Use this structure to return environment information for the current session. This structure is used in [Section 3.8, "SAWSessionService Service"](#).

[Table 2–28](#) lists the fields in this structure.

**Table 2–28 SessionEnvironment Structure Fields**

Fields	Description
String userName	Specifies the name of the current user.
ItemInfo homeDirectory	Specifies the full path to the user's home directory in the catalog. For example, /users/<user login ID>.
ItemInfo[] SharedDirectories	Specifies the full paths to shared directories to which the current user has at least read access.  <b>Note:</b> By default, only administrators are allowed to list direct descendents of the "/shared" directory. Retrieving the SessionEnvironment object is the only way to enable users to navigate its shared area.

## 2.26 StartPageParams Structure

Use this structure to define options in startPage method invocations. This structure is used in [Section 3.2, "HtmlViewService Service"](#).

[Table 2–29](#) lists the fields in this structure.

**Table 2–29 StartPageParams Structure Fields**

Fields	Description
String idsPrefix	Specifies a prefix to be used with IDs and names of all HTML elements to avoid name conflicts on an HTML page.
boolean dontUseHttpCookies	If set to TRUE, then Oracle Business Intelligence Presentation Services cannot rely on cookies for passing the sessionID. Instead, the sessionID is included as a parameter in callback URLs.

## 2.27 TreeNodePath Structure

Use this structure to specify a segment tree path and branch Id number for a branch in the segment tree. This structure is used in the [Section 3.4, "JobManagementService Service"](#).

[Table 2–30](#) lists the fields in this structure.

**Table 2–30 TreeNodePath Structure Fields**

Fields	Description
String treeNode	Specifies the segment tree's branch Id number that contains the members to include in the list.
String treePath	Specifies the path to the segment tree.

## 2.28 UpdateACLParams Structure

Use this structure to set options in updateACL method invocations. This structure is used in [Section 3.9, "SecurityService Service"](#).

[Table 2–31](#) lists the fields in this structure.

**Table 2–31 UpdateACLParams Structure Fields**

Fields	Description
UpdateACLMode updateFlag	Specifies how to update the ACL mode. For more information, see <a href="#">Section 2.28.1, "UpdateACLMode Enumeration"</a> .

## 2.28.1 UpdateACLMode Enumeration

This enumeration specifies a list of valid values for the update flag in the [UpdateACLParams Structure](#).

[Table 2–32, "UpdateACLMode Enumeration Values"](#) lists the values in this enumeration.

**Table 2–32 UpdateACLMode Enumeration Values**

Values	Description
String ReplaceACL	Specifies the ACL value to update.
String ReplaceForSpecifiedAccounts	Specifies a list of accounts to update in the ACL.
String DeleteAccountsFromACL	Specifies a list of accounts to remove from the ACL.

## 2.29 UpdateCatalogItemACLParams Structure

Use this structure to provide additional parameters in [Section 3.10.18, "updateCatalogItemACL\(\) Method"](#). This structure is used in [Section 3.10, "WebCatalogService Service"](#).

[Table 2–33](#) lists the fields in this structure.

**Table 2–33 UpdateCatalogItemACLParams Structure Fields**

Fields	Description
UpdateACLMode updateFlag	Specifies how to update the ACL mode. For more information, see <a href="#">Section 2.28.1, "UpdateACLMode Enumeration"</a> .
boolean recursive	If set to TRUE, then the method is applied to the catalog item and all descendents, which are identified by the path. If set to FALSE, then the method is only applied to the catalog item.

## 2.30 Variable Structure

Use this structure to reference a variable in the analysis and replace it with another variable. This structure is common to all services in Oracle BI EE Web Services.

[Table 2–34](#) lists the fields in this structure.

**Table 2–34 Variable Structure Fields**

Fields	Description
String name	Specifies a character string that contains the name of the variable to replace.
Object value	Specifies the value of the variable.

## 2.31 XMLQueryExecutionOptions Structure

Use this structure to specify optional parameters during a query. This structure is used in [Section 3.11, "XMLViewService Service"](#) (in the `executeXMLQuery` method).

[Table 2–35](#) lists the fields in this structure.

**Table 2–35 XMLQueryExecutionOptions Structure Fields**

Fields	Description
boolean <code>async</code>	If set to <code>TRUE</code> , then asynchronous query execution is enabled. If set to <code>FALSE</code> , then asynchronous query execution is disabled.
int <code>maxRowsPerPage</code>	Specifies the maximum number of rows to be returned by a <code>executeXMLQuery</code> or <code>fetchNext</code> method.
boolean <code>refresh</code>	If set to <code>TRUE</code> , then the server re-submits the query to refresh the data. If set to <code>FALSE</code> , then the Oracle Business Intelligence Server uses data in the cache.
boolean <code>presentationInfo</code>	If set to <code>TRUE</code> , then store localized presentation information in the metadata section of the record set XML.  Presentation information consists of the following: <ul style="list-style-type: none"> <li>■ Column heading information (stored in the <code>columnHeading</code> field).</li> <li>■ Table heading information (stored in the <code>tableHeading</code> field).</li> </ul>
String type	Specifies the query ID, which can be used in logs to diagnose errors.

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## Description of Services and Methods in Oracle BI EE Web Services

This chapter describes the services and methods in Oracle BI EE Web Services.

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**Note:** This document uses JavaScript-like syntax to describes structures. The exact syntax and implementation depends on the SOAP code generation tool and the target language used by your application development environment.

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This chapter describes the following services.

- [Section 3.1, "ConditionService Service"](#)
- [Section 3.2, "HtmlViewService Service"](#)
- [Section 3.3, "iBotService Service"](#)
- [Section 3.4, "JobManagementService Service"](#)
- [Section 3.5, "MetadataService Service"](#)
- [Section 3.6, "ReplicationService Service"](#)
- [Section 3.7, "ReportEditingService Service"](#)
- [Section 3.8, "SAWSessionService Service"](#)
- [Section 3.9, "SecurityService Service"](#)
- [Section 3.10, "WebCatalogService Service"](#)
- [Section 3.11, "XMLViewService Service"](#)

### 3.1 ConditionService Service

Use this service to evaluate Oracle BI EE conditions programmatically. This service also allows users to obtain the customizable filters available in a condition.

[Table 3–1](#) shows the supported methods.

**Table 3–1 ConditionService Methods**

Method Name	Description
<a href="#">Section 3.1.1, "evaluateCondition() Method"</a>	Evaluates a condition saved to the catalog.

**Table 3–1 (Cont.) ConditionService Methods**

Method Name	Description
Section 3.1.2, "evaluateInlineCondition() Method"	Evaluate a condition supplied as a parameter.
Section 3.1.3, "getConditionCustomizableR eportElements() Method"	Obtains the customizable filters of a condition saved to the catalog.

### 3.1.1 evaluateCondition() Method

Use this method to evaluate a Condition that is stored in the catalog. This method returns an XML string containing the result of the condition (true or false).

#### 3.1.1.1 Signature

```
boolean evaluateCondition(String path, String[] reportCustomizationParameters,
String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the Condition in the catalog. For example, /users/jchan/Conditions/IsRegionUnderBudget.
String [] reportCustomizationParamet ers	Specifies the customization parameters XML, which is only used if the Condition has customizable filters. This XML is validated against the customization schema available in orahome/bifoundation/web/schemas/analysis_customization.xsd.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.1.2 evaluateInlineCondition() Method

Use this method to evaluate a condition defined outside of Oracle BI EE Presentation Services. The Condition XML is supplied in the conditionXML parameter. This method returns an XML string with the result of the condition evaluation, true or false.

#### 3.1.2.1 Signature

```
boolean evaluateInlineCondition(String conditionXML, String[]
reportCustomizationParameters, String sessionID);
```

Arguments	Description
String conditionXML	Specifies the Condition XML. This XML is validated against the condition schema available in orahome/bifoundation/web/schemas/condition.xsd.
String[] ListreportCustomizationPara meters	Specifies the customization parameters XML, which is only used if the Condition has customizable filters. This XML is validated against the customization schema available in orahome/bifoundation/web/schemas/analysis_customization.xsd.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.1.3 getConditionCustomizableReportElements() Method

Use this method to determine the customizable filters available in a condition that is stored in the catalog. This method returns an XML string containing the definition of the customizable filters available in the condition. The XML is in the format defined in the customization schema available in `orahome/bifoundation/web/schemas/analysis_customization.xsd`.

#### 3.1.3.1 Signature

```
String[] getConditionCustomizableReportElements(String path, String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the condition in the catalog. For example, <code>/users/jchan/Conditions/IsRegionUnderBudget</code> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.2 HtmlViewService Service

Use this service to embed Oracle BI EE HTML results in third-party dynamic Web pages, such as Active Server Pages (ASP) or JavaServer Pages (JSP), and portal frameworks. The embed process merges Oracle BI EE Web Services content with the content of third-party Web pages.

Table 3–2 shows the supported methods.

**Table 3–2** *HtmlViewService Methods*

Method Name	Description
Section 3.2.2, "addReportToPage() Method"	Adds results to an HTML page.
Section 3.2.3, "endPage() Method"	Destroys a server page object and all data associated with it.
Section 3.2.4, "getCommonBodyHTML() Method"	Retrieves HTML to include in the <BODY> section.
Section 3.2.5, "getHeadersHTML() Method"	Retrieves HTML to include in the <HEAD> section.
Section 3.2.6, "getHtmlforPageWithOneReport() Method"	Retrieves HTML for a page that contains only one analysis.
Section 3.2.7, "getHTMLForReport() Method"	Retrieves HTML to display a particular set of results.
Section 3.2.8, "setBridge() Method"	Specifies a bridge URL to receive communications. Can be useful when the Oracle Business Intelligence Web Services server and the Presentation Services that the user is accessing reside on different machines or when you want to modify the results in your application development environment.
Section 3.2.9, "startPage() Method"	Creates a new page object and returns its ID.

The methods in the HtmlViewService service extract fragments of HTML code that can be inserted in third-party Web pages. [Table 3-3](#) describes the HTML code excerpts and desired page locations.

**Table 3-3 HTML Code Fragments and Page Locations for the HtmlViewService Service**

HTML Code Fragment	Desired Page Location
Header	Should be inserted in the <HEAD> section of an HTML page. The code contains links to common JavaScript files and style sheets.
Report Objects	Can be inserted anywhere in the <BODY> section.
Common Body	Should be inserted in the <BODY> tag after all analysis links. The code contains hidden HTML elements that are used to implement drilldown links.

For each returned analysis object, the HTML code fragment contains a callback link that is followed automatically when the Web page is loaded by the browser. The code fragment does not contain the full user interface definition of the analysis. While the analysis is being constructed by Oracle BI EE Presentation Services, the interface displays the Oracle BI EE Web Services "Searching..." image embedded on the third-party Web page.

For smooth analysis transitioning, Oracle BI EE Presentation Services tracks the Oracle Business Intelligence analyses that have been added to third-party Web pages by maintaining information in an internal logical page object during the construction of the third-party Web page. The HtmlViewService service methods explicitly refer to the internal logical page by its ID.

### 3.2.1 About HtmlViewService Bridging and Callback URLs

To embed an analysis with active drilldown links, the HtmlViewService service allows the Web browser to issue callback requests from embedded analyses to the Oracle BI EE Presentation Services server. Although it is possible to route requests directly to the Oracle BI EE Presentation Services server, in many cases it is preferable to route requests through the Oracle BI EE instance that originally serviced the third-party page. Also, in situations where Oracle BI EE Presentation Services and the third-party Web server do not belong to the same Domain Name Service (DNS) domain, users may get JavaScript errors related to browser security constraints for cross-domain scripting.

To avoid these issues, use the `setBridge()` method to modify callback URLs to point to the third-party Web server. Be aware that a Web component executed by the third-party Web server to re-route requests to Oracle BI EE Presentation Services is not provided. This function would need to be fulfilled by the third-party application. For more information about the `setBridge()` method, see [Section 3.2.8, "setBridge\(\) Method"](#).

### 3.2.2 addReportToPage() Method

Use this method to add results to an HTML page.

#### 3.2.2.1 Signature

```
void addReportToPage(String pageID, String reportID, ReportRef report,
String reportViewName, ReportParams reportParams, ReportHTMLOptions options,
String sessionID);
```

Arguments	Description
String pageID	Specifies a character string page ID returned by the startPage() method. For information about the startPage () method, see <a href="#">Section 3.2.9, "startPage() Method"</a> .
String reportID	Specifies a character string that identifies the analysis containing the results to add to the page. It should be used to reference this analysis in subsequent method invocations; for example, corresponding user interface elements generated by the Oracle Business Intelligence Presentation Services server would reference the same ID.
ReportRef report	Specifies the analysis definition, supplied in the ReportRef structure.
String reportViewName	Specifies the view to display. If this parameter is null, the analysis' default view is used. The view name should match the one used to identify the view in the analysis XML definition.
ReportParams reportParams	Optional. Specifies the filters or variables to apply to the analysis before execution, supplied in the ReportParams common structure.  For more information, see <a href="#">Section 3, "Description of Services and Methods in Oracle BI EE Web Services"</a> .
ReportHTMLOptions options	Optional. Specifies the display options to apply to the analysis after execution, supplied in the ReportHTMLOptions structure. For more information, see <a href="#">Section 2.15, "QueryResults Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.3 endPage() Method

Use this method to destroy the Oracle BI EE Presentation Services server page object and all data associated with it.

#### 3.2.3.1 Signature

```
void endpage(String pageID, String sessionID);
```

Arguments	Description
String pageID	Specifies the ID of the page object, which is returned by the startPage() method (for more information, see <a href="#">Section 3.2.9, "startPage() Method"</a> ).
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.4 getCommonBodyHTML() Method

Use this method to retrieve HTML to include in the <BODY> section.

#### 3.2.4.1 Signature

```
String getCommonBodyHTML(String pageID, String sessionID);
```

Arguments	Description
String pageID	Specifies the ID of the page object, which is returned by the startPage() method (for more information, see <a href="#">Section 3.2.9, "startPage() Method"</a> ).
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.4.2 Returns

Returns a string containing the HTML to include in the <BODY> section.

## 3.2.5 getHeadersHTML() Method

Use this method to retrieve HTML to include in the <HEAD> section.

### 3.2.5.1 Signature

String getHeadersHTML(String pageID, String sessionID);

Arguments	Description
String pageID	Specifies the ID of the page object, which is returned by the startPage() method (for more information, see <a href="#">Section 3.2.9, "startPage() Method"</a> ).
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.5.2 Returns

Returns a string containing the HTML to include in the <HEAD> section.

## 3.2.6 getHtmlforPageWithOneReport() Method

Use this method to retrieve the HTML for a page that contains only one analysis. A page that contains only one analysis does not have <BODY> and <HEAD> sections.

### 3.2.6.1 Signature

String getHtmlforPageWithOneReport(String reportID, ReportRef report, String reportViewName, ReportParams reportParams, ReportHTMLOptions reportOptions, StartPageParams pageParams, String sessionID);

Arguments	Description
String pageReportID	Specifies the analysis ID returned by the getHtmlforPageWithOneReport() method. For information about the addReportToPage method, see <a href="#">Section 3.2.2, "addReportToPage() Method"</a> .
ReportRef report	Specifies the analysis definition, supplied in the ReportRef structure.
String reportViewName	Specifies the view to display. If this parameter is null, the analysis' default view is used. The view name should match the one used to identify the view in the analysis XML definition.

Arguments	Description
ReportParams reportParams	Optional. Specifies the filters or variables to apply to the analysis before execution, supplied in the ReportParams common structure.  For more information, see <a href="#">Section 3, "Description of Services and Methods in Oracle BI EE Web Services"</a> .
ReportHTMLOptions reportOptions	Optional. Specifies the display options to apply to the analysis after execution, supplied in the ReportHTMLOptions structure. For more information, see <a href="#">Section 2.15, "QueryResults Structure"</a> .
StartPageParams pageParams	Specifies the options to use when starting the page, supplied in the StartPageParams structure. For information about the StartPageParams structure, see <a href="#">Section 2.26, "StartPageParams Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.7 getHTMLForReport() Method

Use this method to retrieve an HTML excerpt to display the results for a particular analysis. Before invoking this method, use the addReportToPage method to add the results to an HTML page.

#### 3.2.7.1 Signature

String getHTMLForReport(String pageID, String pageReportID, String sessionID);

Arguments	Description
String pageID	Specifies the ID of the page object, which is returned by the startPage() method (for more information, see <a href="#">Section 3.2.9, "startPage() Method"</a> ).
String pageReportID	Specifies the analysis ID returned by the addReportToPage() method.  For information about the addReportToPage method, see <a href="#">Section 3.2.2, "addReportToPage() Method"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.2.7.2 Returns

Returns a string containing the HTML excerpt that displays the specified analysis.

### 3.2.8 setBridge() Method

Use this method to specify a bridge URL to receive communications. Specifying a bridge URL can be useful when the Oracle BI EE Web Services server and the user's Web server reside on different machines, or when you want to modify the results in your application development environment.

After the setBridge() method is called, all requests from the client browser to the Oracle BI EE Presentation Services server are sent to the bridge URL, which then forwards requests to the Oracle BI EE Presentation Services server.

#### 3.2.8.1 Signature

setBridge(String bridge, String sessionID);

Arguments	Description
String bridge	Specifies the bridge URL. For example, <code>http://myserver/myapplication/sawbridge</code> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.8.2 Usage

You must make sure that the client browser provides a handler to the bridge URL in the form of a Java servlet, an Active Server Pages (ASP) page, a Common Gateway Interface (CGI), an Internet Server application programming interface (ISAPI), or an equivalent application.

You must also perform the following tasks:

- Decode the path of the requested Oracle BI EE Web Services resource in the RedirectURL argument of the request character string. For information about the RedirectURL argument, see [Section 3.2.8.3, "How Callback URLs Are Replaced"](#).
- Forward all other request arguments, together with all headers and the request body, to the bridge URL.
- Copy the response from the Oracle BI EE Presentation Services server to the response stream.

### 3.2.8.3 How Callback URLs Are Replaced

The new callback URL is based on the bridge URL, with the addition of a RedirectURL argument. The value of the RedirectURL argument should be the original value of the URL, encoded using standard URL encoding rules.

Internally, Oracle BI EE Web Services usually uses relative URLs for callback links. For example, if the original callback link is `saw.dll?Go` and the bridge URL is `http://myserver/myapplication/sawbridge`, the new callback URL is `http://myserver/myapplication/sawbridge?RedirectURL=saw.dll%3fGo`.

## 3.2.9 startPage() Method

Use this method to create a new page object and returns its ID.

### 3.2.9.1 Signature

String startPage(StartPageParams options, String sessionID);

Arguments	Description
StartPageParams options	Specifies the options to use when starting the page, supplied in the StartPageParams structure. For information about the StartPageParams structure, see <a href="#">Section 2.26, "StartPageParams Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.2.9.2 Returns

Returns a string containing the Oracle Business Intelligence Presentation Services page ID.

## 3.3 iBotService Service

Use this service to save, edit, delete, subscribe, unsubscribe, customize, and execute Oracle BI EE agents. Note that as of the Oracle Business Intelligence 11g (11.1.1) release, "iBots" have been renamed to "agents."

Table 3–4 shows the supported methods.

**Table 3–4 iBotService Methods**

Method Names	Description
<a href="#">Section 3.3.1, "writeIBot() Method"</a>	Writes a new agent into the catalog and registers it with Oracle BI Scheduler.
<a href="#">Section 3.3.2, "deleteIBot() Method"</a>	Deletes an agent from the catalog and deregisters it from the Oracle BI Scheduler.
<a href="#">Section 3.3.3, "executeIBotNow() Method"</a>	Executes an agent saved in the catalog.
<a href="#">Section 3.3.4, "moveIBot() Method"</a>	Moves an agent from one catalog folder to another.
<a href="#">Section 3.3.5, "sendMessage() Method"</a>	Sends a message to an Oracle BI EE user, group, or user and group.
<a href="#">Section 3.3.6, "subscribe() Method"</a>	Subscribes to a published agent. Also customizes your subscription.
<a href="#">Section 3.3.7, "unsubscribe() Method"</a>	Unsubscribes from an agent.

### 3.3.1 writeIBot() Method

Use this method to write a new agent to the catalog and to register it with Oracle BI Scheduler. Note that this method is different from the WebCatalogService service's ["writeObjects\(\) Method"](#), which only writes to the catalog.

#### 3.3.1.1 Signature

```
int writeIBot (CatalogObject obj, String path, boolean resolveLinks, boolean allowOverwrite, String sessionID);
```

Arguments	Description
CatalogObject obj	Specifies the object to be written to the catalog. The object's XML is validated against analysis_ibot.xsd, which is located in orahome/bifoundation/web/schemas directory.
String path	Specifies the full path and name of the agent in the catalog. For example, /users/jchan/iBots/BrandDollars.
boolean resolveLinks	If set to TRUE and the path in the catalog refers to a link, then the object is written to the location pointed to by the link.
boolean allowOverwrite	Specifies whether to overwrite an existing object. Set to TRUE to overwrite any object already present in the location specified by "path."
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.2 deleteIBot() Method

Use this method to delete a saved agent. Deleting an agent not only removes it (the object) from the catalog, but it also deregisters the agent from the Oracle BI Scheduler. Note that this method is different from the ["WebCatalogService Service" "deleteitem"](#)

method because the "deleteitem" method does not deregister the agent from the Oracle BI Scheduler.

### 3.3.2.1 Signature

```
void deleteIBot (String path, String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the agent in the catalog. For example, /users/jchan/iBots/BrandDollars.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.3 executeIBotNow() Method

Use this method to execute an agent that is stored in the catalog. Note that this method does not change the agent's original schedule.

#### 3.3.3.1 Signature

```
void executeIBotNow(String path, String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the agent in the catalog. For example, /users/jchan/iBots/BrandDollars.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.4 moveIBot() Method

Use this method to move an agent from one catalog folder to another. Note that this method is different from the "[WebCatalogService Service](#)" "moveItem" method because the "moveItem" method moves the catalog object **and** informs the Oracle BI Scheduler that the object was moved.

#### 3.3.4.1 Signature

```
void moveIBot(String fromPath, String toPath, boolean resolveLinks, boolean allowOverwrite, String sessionID);
```

Arguments	Description
String fromPath	Specifies the full catalog path of the agent to be moved.
String toPath	Specifies the full catalog path where the agent will be moved to.
boolean resolveLinks	Specifies if you want to move the child objects. If this argument is set to TRUE and the path specified in the "fromPath" argument is a link, then the child object pointed to by that link will be moved.
boolean allowOverwrite	Specifies if you want to overwrite an existing object. If this argument is set to TRUE and another catalog object existed in the path specified by "toPath", it will be overwritten.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.5 sendMessage() Method

Use this method to send a message to a Oracle BI EE user, group, or user and group. The message is delivered according to the corresponding recipient's delivery profile, which was set up in the "My Account dialog" in Oracle BI Presentation Services.

#### 3.3.5.1 Signature

```
String sendMessage(String[] recipient, String[] group, String subject, String body,
String priority, String sessionID);
```

Arguments	Description
String[] recipient	Specifies the GUID of the Oracle BI EE user to whom you want to send the message. You can include more than one user in this argument.
String[] group	Specifies the GUID of the Oracle BI EE group to whom you want to send the message. You can include more than one group in this argument.
String subject	Specifies the subject line of the message.
String body	Specifies the text to be included in the body of the message.
String priority	Specifies the message's priority. You can specify "High," "Normal," or "Low."
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.6 subscribe() Method

Use this method to subscribe to a published agent. If the agent allows customization, then you can also specify the customization XML.

#### 3.3.6.1 Signature

```
void subscribe(String path, String customizationXml, String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the agent in the catalog. For example, /users/jchan/iBots/BrandDollars.
String customizationXml	Specifies the customization XML (only if the agent allows customizations). This XML is validated against the customization schema available in orahome/bifoundation/web/schemas/analysis_customization.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.3.7 unsubscribe() Method

Use this method to unsubscribe from an agent. This method also deletes any user customizations.

#### 3.3.7.1 Signature

```
void unsubscribe(String path, String sessionID);
```

Arguments	Description
String path	Specifies the full path and name of the agent in the catalog. For example, /users/jchan/iBots/BrandDollars.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.4 JobManagementService Service

Use this service to execute marketing segmentation and list generation functionality.

Table 3–5 shows the supported methods.

**Table 3–5 JobManagementService Methods**

Method Name	Description
Section 3.4.1, "cancelJob() Method"	Cancels a running marketing job.
Section 3.4.2, "deleteResultSet() Method"	Deletes a saved result set.
Section 3.4.3, "getCounts() Method"	Generates the count numbers for a segment or segment tree.
Section 3.4.4, "getJobInfo() Method"	Gets status and detailed information about a marketing job.
Section 3.4.5, "getPromptedColumns() Method"	Returns prompted columns for a segment or segment tree.
Section 3.4.6, "prepareCache() Method"	Caches a segment or segment tree for list export.
Section 3.4.7, "purgeCache() Method"	Purges the whole cache, entries for a segment, or entries for the segment tree.
Section 3.4.8, "saveResultSet() Method"	Saves a list of members based on the most recent updated counts.
Section 3.4.9, "writeListFiles() Method"	Generates a list for list export, segment campaign load, or segment tree campaign load.

### 3.4.1 cancelJob() Method

Use this method to cancel a running marketing job.

#### 3.4.1.1 Signature

JobInfo cancelJob(BigInteger jobID, String sessionID);

Arguments	Description
BigInteger jobID	Specifies the marketing job ID.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.2 deleteResultSet() Method

Use this method to delete one or more saved results sets of target-level objects identified by a list of GUID values belonging to the specified segment.

#### 3.4.2.1 Signature

```
JobInfo deleteResultSet(String targetLevel, ArrayOfGUIDs guiDs, String segmentPath, String sessionID);
```

Arguments	Description
String targetLevel	Specifies the target level of the saved results set.
ArrayOfGUIDs guiDs	Specified a list of GUIDs representing the saved result set. For information on the ArrayOfGUIDs structure, see <a href="#">Section 2-4, "ArrayofGUIDS Structure Fields."</a>
String segmentPath	Specifies the path to the segment.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.3 getCounts() Method

Use this method to generate the count numbers for either a segment or a segment tree.

#### 3.4.3.1 Signature

```
JobInfo getCounts(String segmentPath, String treePath, SegmentationOptions segmentationOptions, String sessionID);
```

Arguments	Description
String segmentPath	Specifies the path to the segment. Used when getCounts is performed on a segment.
String treePath	Specifies the path to the segment tree. Used when getCounts is performed on a segment tree.
Segmentation Options	Specifies the segment and segment tree override options supplied in the SegmentationOptions structure. These options are used instead of the segment or segment tree defaults as specified in the Oracle Marketing Analytics user interface. For more information about the SegmentationOptions structure, see <a href="#">Section 2.24, "SegmentationOptions Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.4 getJobInfo() Method

Use this method to get the status and detailed job information about a marketing job.

#### 3.4.4.1 Signature

```
JobInfo getJobInfo(BigInteger jobID, String sessionID);
```

Arguments	Description
BigInteger jobID	Specifies the marketing job ID.

Arguments	Description
String sessionId	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.5 getPromptedColumns() Method

Use this method to return prompted columns for a segment or segment tree.

#### 3.4.5.1 Signature

PromptedColumnInfo getPromptedColumns(String segmentPath, String treePath, String sessionId);

Arguments	Description
String segmentPath	Specifies the path to the segment. Used when getPromptedColumns is performed on a segment.
String treePath	Specifies the path to the segment tree. Used when gePromptedColumns is performed on a segment tree.
String sessionId	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.6 prepareCache() Method

Use this method to cache a segment or segment tree for list export.

#### 3.4.6.1 Signature

JobInfo prepareCache(String segmentPath, String treePath, Boolean refresh, String sessionId);

Arguments	Description
String segmentPath	Specifies the path to the segment. Used when prepareCache is performed on a segment.
String treePath	Specifies the path to the segment tree. Used when prepareCache is performed on a segment tree.
Boolean refresh	If set to TRUE, then the system populates cache entries on cache hits and populates cache entries on cache misses.
String sessionId	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.7 purgeCache() Method

Use this method to purge the whole cache, purge entries for a segment from the cache, or purge entries for the segment tree from the cache.

#### 3.4.7.1 Signature

JobInfo purgeCache(String segmentPath, String treePath, Boolean ignoreCacheRef, String sessionId);

Arguments	Description
String segmentPath	Specifies the path to the segment. Used when purgeCache is performed on a segment.
String treePath	Specifies the path to the segment tree. Used when purgeCache is performed on a segment tree.
Boolean ignoreCacheRef	If set to TRUE, the system purges the cache entries that are currently used and referenced by segments, segment trees, expired cache entries, and non-existent cache-entries.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.8 saveResultSet() Method

Use this method to save a list of members that qualify for the segment or segment tree based on the most recent updated counts. The system extracts and saves the members to the segment path that you specify.

#### 3.4.8.1 Signature

```
JobInfo saveResultSet(String segmentPath, TreeNodePath treeNodePath, String savedSegmentPath, SegmentationOptions segmentationOptions, String srCustomLabel, Boolean appendStaticSegment, String sessionID);
```

Arguments	Description
String segmentPath	Specifies the path to the segment.
TreeNodePath treeNodePath	Specifies the segment tree path and branch ID number.
String savedSegmentPath	Specifies the path and name of the new segment where the system extracts and saves the resulting members.
SegmentationOptions segmentationOptions	Specifies the segment and segment tree override options supplied in the SegmentationOptions structure. These options are used instead of the segment or segment tree defaults as specified in the Oracle Marketing Analytics user interface. For more information about the SegmentationOptions structure, see <a href="#">Section 2.24, "SegmentationOptions Structure"</a> .
String srCustomLabel	Specifies the custom label for creating a static segment.
Boolean appendStaticSegment	Specifies a flag to create a static segment entry under the same saved segment path.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.4.9 writeListFiles() Method

Use this method to generate lists for list export, segment campaign load, or segment tree campaign load.

### 3.4.9.1 Signature

JobInfo writeListFiles(ReportRef report, ReportParams reportParams, String segmentPath, TreeNodePath treeNodePath, SegmentationOptions segmentationOptions, String filesystem, BigInteger timeout, String sessionID);

Arguments	Description
ReportRef report	Specifies the analysis reference definition supplied in the ReportRef structure. For more information about the ReportRef structure, see <a href="#">Section 2.18, "ReportRef Structure"</a> .
ReportParams reportParams	Specifies the filters or variables to apply to the analysis before execution. This information is supplied in the ReportParams common structure. For more information about the ReportParams structure, see <a href="#">Section 2.17, "ReportParams Structure"</a> .
String segmentPath	Specifies the path to the segment.
TreeNodePath treeNodePath	Specifies the segment tree path and branch ID.
SegmentationOptions segmentationOptions	Specifies the segment and segment tree override options supplied in the SegmentationOptions structure. These options are used instead of the segment or segment tree defaults as specified in the Oracle Marketing Analytics user interface. For more information about the SegmentationOptions structure, see <a href="#">Section 2.24, "SegmentationOptions Structure"</a> .
String filesystem	Specifies the path to the shared directory that contains list files.
BigInteger timeout	Specifies the time out value. This is always set to 0.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.5 MetadataService Service

Use this service to retrieve descriptions of Oracle Business Intelligence Presentation Services schema objects, such as columns, tables, and subject areas.

[Table 3–6](#) shows the supported methods.

**Table 3–6 MetadataService Methods**

Method Names	Description
<a href="#">Section 3.5.1, "clearQueryCache() Method"</a>	Clears the query cache.
<a href="#">Section 3.5.2, "describeColumn() Method"</a>	Retrieves column information for a specified column in a specified subject area and table.
<a href="#">Section 3.5.3, "describeSubjectArea() Method"</a>	Retrieves subject area information for a specified subject area.
<a href="#">Section 3.5.4, "describeTable() Method"</a>	Retrieves table information for a specified table in a specified subject area.
<a href="#">Section 3.5.5, "getSubjectAreas() Method"</a>	Retrieves the list of subject areas available.

### 3.5.1 clearQueryCache() Method

Use this method to clear the query cache.

### 3.5.1.1 Signature

```
boolean clearQueryCache(String sessionID);
```

Arguments	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.5.2 describeColumn() Method

Use this method to retrieve column information for a specified column in a specified subject area and table.

### 3.5.2.1 Signature

```
SAColumn describeColumn(String subjectAreaName, String tableName, String columnName, String sessionID);
```

Arguments	Description
String subjectAreaName	Specifies the subject area to be queried.
String tableName	Specifies the table to be queried.
String columnName	Specifies the name of the column to be queried.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.5.2.2 Returns

Returns an SAColumn Object. For information on the SAColumn structure, see [Section 2.19, "SAColumn Structure"](#).

## 3.5.3 describeSubjectArea() Method

Use this method to retrieve subject area information about the specified subject area.

### 3.5.3.1 Signature

```
SASubjectArea describeSubjectArea (String subjectAreaName, SASubjectAreaDetails detailsLevel, String sessionID);
```

Arguments	Description
String subjectAreaName	Specifies the subject area to be queried.
SASubjectAreaDetails detailsLevel	Specifies the information to be retrieved about the subject area. For information on the SASubjectAreaDetails structure, see <a href="#">Section 3.5.3.2, "SASubjectAreaDetails Values"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.5.3.2 SASubjectAreaDetails Values

Use this method to specify what information should be retrieved about the subject area. [Table 3-7](#) lists the available values.

**Table 3–7 SASubjectAreaDetails Values**

Values	Description
IncludeTables	Include table list with minimum information about each table.
IncludeTablesAndColumns	Include full table and column information.
Minimum	Do not include table and column information.

### 3.5.3.3 Returns

Returns an SASubjectArea Object (for more information, see [Section 2.20](#), "SASubjectArea Structure").

### 3.5.3.4 Usage

Depending on the value of the detailsLevel parameter, the returned object contains the information specified in [Table 3–8](#).

**Table 3–8 detailsLevel Values**

Value of detailsLevel	Description
IncludeTables	Specifies that the tables field is not null and contains the collection of tables for this subject area. Each table object has the columns field set to null.
InludeTablesAndColumns	Specifies that the tables field is not null and contains the collection of tables for this subject area. For each table object the columns field contains the corresponding collection of columns.
Minimum	Specifies that the table list is not available. The tables field in the resulting subject area object is null.

## 3.5.4 describeTable() Method

Use this method to retrieve table information for a specified table in a specified subject area.

### 3.5.4.1 Signature

SATable describeTable (String subjectAreaName, String tableName, SATableDetails detailsLevel, String sessionID);

Arguments	Description
String subjectAreaName	Specifies the subject area to be queried.
String tableName	Specifies the table to be queried.
SATableDetails detailsLevel	Specifies the information to retrieve about the table. For information on the SATableDetails structure, see <a href="#">Section 3.5.4.2</a> , "SATablesDetails Values".
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.5.4.2 SATablesDetails Values

Used to specify the information to retrieve about the table. [Table 3–9](#) lists the available values.

**Table 3–9** *SATableDetails Values*

Values	Description
IncludeColumns	Populate the columns field in the SATable Object.
Minimum	Do not include column information. The columns field in the SATable Object is set to null.

### 3.5.4.3 Returns

Returns an SATable Object. For information on the SATable structure, see [Section 2.21, "SATable Structure"](#).

## 3.5.5 getSubjectAreas() Method

Use this method to retrieve the list of subject areas that are available.

### 3.5.5.1 Signature

```
List[]getSubjectAreas(String sessionID);
```

Arguments	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.5.5.2 Returns

Returns an array of SASubjectArea objects. For information on the SASubjectArea structure, see [Section 2.22, "SAWLocale Structure"](#).

### 3.5.5.3 Usage

SASubjectArea objects returned by this method do not have table information available. The tables field is null. The approach to querying at all levels is to use getSubjectAreas() to retrieve the list of subject areas and then use describeSubjectArea() to retrieve the list of tables. Next, use describeTable() to retrieve the list of columns in a specified table, and finally, use describeColumn() to retrieve information on a specified column.

## 3.6 ReplicationService Service

Use this service to provide catalog replication methods.

[Table 3–10](#) shows the supported methods.

**Table 3–10** *ReplicationService Methods*

Method Names	Description
<a href="#">Section 3.6.3, "Import() Method"</a>	Import changes from the log file.
<a href="#">Section 3.6.4, "export() Method"</a>	Exports catalog changes to a specified log file.
<a href="#">Section 3.6.5, "markForReplication() Method"</a>	Change the "replicable" flag on a specified folder and its descendants.
<a href="#">Section 3.6.6, "purgeLog() Method"</a>	Cleans the specified logs.

### 3.6.1 ExportFlags Enumeration

This enumeration specifies the changes to export during export methods. [Table 3–11](#) lists the values in this enumeration.

---

**Note:** Only one of the fields in ExportFlags should be populated.

---

**Table 3–11** *ExportFlags Enumeration Values*

Method Names	Description
String processAllChanges	Specifies that you want to export flags that were changed in a given directory on the LOCAL computer and on REMOTE computers, after first referring to the replication logs to find out what changes were made (combines processLocalChanges and processRemoteChanges).
String processAll_ForMerge	Specifies how you want to manage conflicts in items that already exist.  If the item exists and the export item's last modified time stamp for the export item is <i>greater than</i> the existing item's time stamp, then the existing item is replaced.  If the item exists and the export item's last modified time stamp for the export item is <i>less than</i> the existing item's time stamp, then the existing item is <i>not</i> replaced.
String processAll_ForReplace	Specifies that you want to use the export items regardless of both the export and existing items' timestamps.
String processAll_ForWriteIfNotExists	Specifies that if any items included in the export exist, they will not be replaced.
String processLocalChanges	Specifies that you want to export flags that were changed in a given directory on the LOCAL computer, after first referring to the replication logs to find out what changes were made.
String processRemoteChanges	Specifies that you want to export flags that were changed in a given directory on REMOTE computers, after first referring to the replication logs to find out what changes were made.

### 3.6.2 ImportFlags Enumeration

This enumeration specifies the changes to import during import methods. [Table 3–12](#) lists the values in this enumeration.

**Table 3–12** *ImportFlags Enumeration Values*

Method Names	Description
String processAllChanges	Specifies that you want to import flags that were changed in a given directory on the LOCAL computer and on REMOTE computers, after first referring to the replication logs to find out what changes were made (combines processLocalChanges and processRemoteChanges).

**Table 3–12 (Cont.) ImportFlags Enumeration Values**

Method Names	Description
String processLocalChanges	Specifies that you want to import flags that were changed in a given directory on the LOCAL computer, after first referring to the replication logs to find out what changes were made.
String processRemoteChanges	Specifies that you want to import flags that were changed in a given directory on REMOTE computers, after first referring to the replication logs to find out what changes were made.

### 3.6.3 Import() Method

Use this method to import changes from the log file.

---

**Note:** In a Java environment, you must specify the import method as `_import()`, which avoids conflict with the reserved word 'import'.

---

#### 3.6.3.1 Signature

List[] (String filename, ImportFlags flag, Calendar lastPurgedLog, boolean updateReplicationLog, boolean returnErrors, CatalogItemsFilter filter, PathMap pathMap, String sessionID);

Argument	Description
String filename	Specifies the name of the log file.
ImportFlags flag	Specifies the subset of changes (for example, local or remote) to import. For more information, see " <a href="#">ImportFlags Enumeration</a> ".
Calendar lastPurgedLog	Specifies the date and time that the log was last cleaned up. If the change in the export file was made after that time, then import uses local logs to determine if it should be replayed, otherwise it uses the last access time.
boolean updateReplicationLog	If set to TRUE, then the replication log is updated. If set to FALSE, then the replication log is not updated.
boolean returnErrors	If set to TRUE, then the function returns an array of ImportError objects which describes cases when changes recorded in the import file that satisfy filter conditions were not replayed.
CatalogItemsFilter filter	Specifies that you should filter changes made within a particular time period, and to catalog items in specified folders. Can be null.
PathMap pathMap	Specifies to which directory the imported changes are copied. Use this argument to copy items in one directory to another directory.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.6.3.2 Returns

Returns an ImportError structure containing the list of errors encountered. For more information, see [Section 2.10, "ImportError Structure"](#).

### 3.6.4 export() Method

Use this method to export catalog changes to a specified log file.

#### 3.6.4.1 Signature

void export (String filename, CatalogItemsFilter filter, ExportFlags flag, boolean exportSecurity, String sessionID);

Argument	Description
String filename	Specifies the name of the log file.
CatalogItemsFilter filter	Specifies the subset of changes to be exported. The filter.items field cannot be null.
ExportImportFlags flag	Specifies the changes (for example, local or remote) to export. For more information, see " <a href="#">ExportFlags Enumeration</a> ".
exportSecurity	Specifies the security information for the corresponding object.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.6.5 markForReplication() Method

Use this method to change the "replicable" flag on a specified folder and its descendants.

#### 3.6.5.1 Signature

void markForReplication (String item, boolean replicate, String sessionID);

Argument	Description
String item	Specifies the path of the folder.
boolean replicate	If set to TRUE, then mark the folder as replicable. If set to FALSE, then remove the replicable flag.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.6.6 purgeLog() Method

Cleans the specified logs.

#### 3.6.6.1 Signature

void purgeLog(List[] items, Calendar timestamp, String sessionID);

Argument	Description
List[] items	List of folder paths to clean.
Calendar timestamp	Cleans only those log items where the last modified time is earlier than the timestamp.
String sessionID	A string value that contains the session ID to log off from the SOAP session. The session ID is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.7 ReportEditingService Service

Use this service to merge arguments and Oracle Business Intelligence Presentation Services data to create and return the results.

Table 3–13 shows the supported methods.

**Table 3–13 ReportEditingService Methods**

Method Names	Description
<a href="#">Section 3.7.1, "applyReportDefaults() Method"</a>	Applies analysis default arguments to the analysis and returns the results.
<a href="#">Section 3.7.2, "applyReportParams() Method"</a>	Applies report arguments to the analysis object and returns the results.
<a href="#">Section 3.7.3, "generateReportSQL() Method"</a>	Retrieves the SQL query for a given analysis.

### 3.7.1 applyReportDefaults() Method

Use this method to apply analysis default arguments to the analysis and returns the results.

#### 3.7.1.1 Signature

```
String applyReportDefaults(ReportRef reportRefs, String sessionID);
```

Arguments	Description
ReportRef object	Specifies the path to the analysis definition, supplied in the ReportRef common structure.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.7.1.2 Returns

Returns the result of applying the default analysis arguments to the specified analysis object.

### 3.7.2 applyReportParams() Method

Use this method to apply analysis arguments to the analysis and return the results.

#### 3.7.2.1 Signature

```
Object applyReportParams(ReportRef reportRef, ReportParams reportParams,
boolean encodeInString, String sessionID);
```

Arguments	Description
ReportRef reportRef	Specifies the path to the analysis definition, supplied in the ReportRef common structure.
ReportParams reportParams	Optional. Specifies the filters or variables to apply to the analysis before execution, supplied in the ReportParams common structure. For more information, see <a href="#">Section 3, "Description of Services and Methods in Oracle BI EE Web Services"</a> .

Arguments	Description
boolean encodeInString	If set to TRUE, then the returned analysis object is encoded as a character string.
String sessionId	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.7.2.2 Returns

Returns the result of applying analysis arguments to the specified analysis object. If you set `encodeInString` to true, then the result is encoded as a character string.

## 3.7.3 generateReportSQL() Method

Use this method to retrieve the logical SQL query for a given analysis.

### 3.7.3.1 Signature

```
String generateReportSQL(ReportRef reportRef, ReportParams reportParams,
String sessionId);
```

Arguments	Description
ReportRef reportRef	Specifies the path to the analysis definition supplied in the ReportRef common structure.
ReportParams reportParams	Optional. Specifies the path to the filters or variables to apply to the analysis before execution, supplied in the ReportParams common structure. For more information, see <a href="#">Section 3, "Description of Services and Methods in Oracle BI EE Web Services"</a> .
String sessionId	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.7.3.2 Returns

A string containing the SQL query for the specified analysis.

## 3.8 SAWSessionService Service

Use this service to provide authentication methods such as logon and logoff, and other session-related methods.

[Table 3–14](#) shows the supported methods.

**Table 3–14 SAWSessionService Methods**

Method Name	Description
<a href="#">Section 3.8.1, "getCurUser() Method"</a>	Retrieves the current user ID for the session.
<a href="#">Section 3.8.2, "getSessionEnvironment() Method"</a>	Retrieves the environment object for the current session.
<a href="#">Section 3.8.3, "getSessionVariable() Method"</a>	Retrieves a list of session variables.
<a href="#">Section 3.8.4, "impersonate() Method"</a>	Logs on and then impersonates the user.

**Table 3–14 (Cont.) SAWSessionService Methods**

Method Name	Description
<a href="#">Section 3.8.5, "impersonateex() Method"</a>	Logs on and then impersonates the user. Similar to the impersonate method, but impersonateex can specify optional session parameters.
<a href="#">Section 3.8.6, "keepAlive() Method"</a>	Instructs Oracle Business Intelligence Presentation Services not to end particular sessions due to inactivity.
<a href="#">Section 3.8.7, "logoff() Method"</a>	Logs the user off Oracle Business Intelligence Presentation Services.
<a href="#">Section 3.8.8, "logon() Method"</a>	Authenticates the user.
<a href="#">Section 3.8.9, "logonex() Method"</a>	Authenticates the user. Similar to the logon method, but logonex can specify optional session parameters.

### 3.8.1 getCurUser() Method

Use this method to retrieve the current user name for the session.

#### 3.8.1.1 Signature

```
String getCurUser(String sessionID);
```

Argument	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.8.1.2 Returns

Returns a string indicating the current user name for the session.

### 3.8.2 GetSessionEnvironment() Method

Use this method to retrieve the environment object for the current session.

#### 3.8.2.1 Signature

```
SessionEnvironment getSessionEnvironment (String sessionID);
```

Arguments	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.8.2.2 Returns

This method returns a session environment object (for more information, see [Section 2.25, "SessionEnvironment Structure"](#)).

### 3.8.3 getSessionVariable() Method

Use this method to retrieve a list of session variables.

### 3.8.3.1 Signature

```
List[] getSessionVariables(List[] names, String sessionID);
```

Arguments	Description
List[] names	Specifies the names of the session variables.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.8.3.2 Returns

This method returns values of the Oracle BI EE variables associated with the current session.

## 3.8.4 impersonate() Method

Use this method to log on and impersonate the user during the SAWSessionService service. This method is useful when you need to create sessions for multiple users and have only the administrator's name and password. You do not need to use the (logon) method if you use the impersonate() method.

If user authentication or impersonation fails, an exception is thrown.

### 3.8.4.1 Signature

```
String impersonate(String name, String password, String impersonateID);
```

Arguments	Description
String name	Specifies the user name to log on and authenticate.
String password	Specifies the password for the user. If there is no password for the user, leave this field empty (void).
String impersonateID	Specifies the user name to impersonate the authenticated user.

### 3.8.4.2 Returns

This method returns the session ID and sets an HTTP session cookie. The session ID is used in other methods to identify the Oracle Business Intelligence Web Services session.

## 3.8.5 impersonateex() Method

Use this method to log on and impersonate the user in the SAWSessionService service. Similar to the impersonate method, but impersonateex can specify optional session parameters. This method is useful when you need to create sessions for multiple users and have only the administrator's name and password. You do not need to use the (logon) method if you use the impersonateex() method.

If user authentication or impersonation fails, then an exception is thrown.

### 3.8.5.1 Signature

```
AuthResults impersonateex(String name, String password, String impersonateID, SAWSessionParameters sessionparams);
```

Arguments	Description
String name	Specifies the user name to log on and authenticate.
String password	Specifies the password for the user. If there is no password for the user, leave this field empty (void).
String impersonateID	Specifies the user name to impersonate the authenticated user.
SAWSessionParameters sessionparams	Optional. Specifies the session parameters to use, supplied in the SAWSessionParameters structure. For information about the SAWSessionParameters structure, see <a href="#">Section 2.23</a> , " <a href="#">SAWSessionParameters Structure</a> ".

### 3.8.5.2 Returns

This method returns the AuthResult structure containing the session ID, and also sets an HTTP session cookie. The session ID is used in other methods to identify the Oracle Business Intelligence Presentation Services session. For more information, see [Section 2.5](#), "[AuthResult Structure](#)".

## 3.8.6 keepAlive() Method

Use this method to instruct Oracle BI EE Presentation Services not to end particular Web user sessions due to inactivity. The effect of this method on session lifetime is the same as if those users performed an activity in the browser such as clicking an analysis, or invoking a method.

### 3.8.6.1 Signature

```
void keepAlive(String[] sessionID);
```

Argument	Description
String[] sessionID	Specifies the session IDs to remain logged on.

## 3.8.7 logoff() Method

Use this method to log off the user from Oracle BI EE Presentation Services.

### 3.8.7.1 Signature

```
void logoff(String sessionID);
```

Argument	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.8.8 logon() Method

Use this method to authenticate the user. If authentication fails, an exception is thrown.

### 3.8.8.1 Signature

```
String logon(String name, String password);
```

Arguments	Description
String name	Specifies the user name to authenticate.
String password	Specifies the password for the user. If there is no password, leave this field empty (void).

### 3.8.8.2 Returns

This method returns the session ID and sets an HTTP session cookie. The session ID is used in other methods to identify the Oracle BI EE Presentation Services session.

## 3.8.9 logonex() Method

Use this method to authenticate the user. Logonex() to the logon method, but logonex can specify optional session parameters. If authentication fails, an exception is thrown.

### 3.8.9.1 Signature

```
AuthResult logonex(String name, String password,
SAWSessionParameters sessionparams);
```

Arguments	Description
String name	Specifies the user name to authenticate.
String password	Specifies the password for the user. If there is no password, leave this field empty (void).
SAWSessionParameters sessionparams	Optional. Specifies the sessionparams to use, supplied in the SAWSessionParameters structure. For information about the SAWSessionParameters structure, see <a href="#">Section 2.23</a> , "SAWSessionParameters Structure".

### 3.8.9.2 Returns

This method returns the AuthResult structure containing the session ID, and also sets an HTTP session cookie. The session ID is used in other methods to identify the Oracle Business Intelligence Presentation Services session.

## 3.9 SecurityService Service

Use this service to provide methods for identifying accounts and privileges. [Table 3–15](#) shows the supported methods.

**Table 3–15 SecurityService Methods**

Method Names	Description
<a href="#">Section 3.9.1, "forgetAccounts() Method"</a>	Removes an Oracle BI EE Presentation Services internal ID to account name mapping.
<a href="#">Section 3.9.2, "getAccounts() Method"</a>	Searches for Oracle BI EE user accounts
<a href="#">Section 3.9.3, "getGlobalPrivilegeACL() Method"</a>	Gets the Access Control List for global privileges.
<a href="#">Section 3.9.4, "getGlobalPrivileges() Method"</a>	Gets the list of all global privileges.
<a href="#">Section 3.9.5, "getGroups() Method"</a>	Gets a list of catalog groups that are members of the account (for example, user or group)

**Table 3–15 (Cont.) SecurityService Methods**

Method Names	Description
Section 3.9.6, "getMembers() Method"	Gets direct members of the catalog group.
Section 3.9.7, "getPermissions() Method"	Get the list of permissions for the specified user.
Section 3.9.8, "getPrivilegesStatus() Method"	Lists all privileges and their statuses.
Section 3.9.9, "isMember() Method"	Confirms if a catalog group is a member of the user or group.
Section 3.9.10, "joinGroups() Method"	Adds a user to a catalog group as a member.
Section 3.9.11, "leaveGroups() Method"	Removes a member from a group.
Section 3.9.12, "renameAccounts() Method"	Change the name of an user account.
Section 3.9.13, "updateGlobalPrivilegeACL() Method"	Update the Access Control List for global privileges.

### 3.9.1 forgetAccounts() Method

Use this method to remove an Oracle BI EE Presentation Services internal ID to account name mapping. This action is useful when an account mapping was created by mistake, for example, as a side effect of an updateGlobalSAWPrivilegeACL method with a misspelled account name.

#### 3.9.1.1 Signature

```
void forgetAccounts(List[], int cleanuplevel, String sessionID);
```

Argument	Description
List[]	Specifies the accounts to forget, supplied in the Account structure. For information about the Account structure, see <a href="#">Section 2.3, "ACL Structure"</a> .
int cleanuplevel	Specifies the amount of mapping information to remove. Set to 0 to remove the mapping from an internal account ID and a user or group name. Set to 1 to remove the user directory if accounts refer to a user.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.2 getAccounts() Method

Use this method to search for Oracle BI EE user accounts (for example, LDAP users, catalog groups, or application roles).

#### 3.9.2.1 Signature

```
List[] getAccounts(List[], String sessionID);
```

Argument	Description
List[]	Specifies user names, catalog group names, and application role names. A flag indicates if the name is a user, group, or application role.

Argument	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.3 getGlobalPrivilegeACL() Method

Use this method to retrieve the Access Control List for global privileges.

#### 3.9.3.1 Signature

ACL getGlobalPrivilegeACL(String privilegeName, String sessionID);

Argument	Description
String privilegeName	Specifies the name of the privilege to retrieve.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.4 getGlobalPrivileges() Method

Use this method to retrieve the list of global privileges.

#### 3.9.4.1 Signature

List[] getGlobalPrivileges(String sessionID);

Argument	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.5 getGroups() Method

Use this method to get a list of catalog groups that are members of the account (for example, user or group).

#### 3.9.5.1 Signature

List[] getGroups(List[], Boolean expandGroups, String sessionID);

Argument	Description
List[]	Specifies user or group.
Boolean expandGroups	Specifies to expand the groups to which the members belong.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.6 getMembers() Method

Use this method to get direct members of the catalog group.

### 3.9.6.1 Signature

List[] getMembers(List[] group, Boolean expandGroups, String sessionID);

Argument	Description
List[]	Specifies the catalog group for which you want a list of members.
Boolean expandGroups	Specifies to expand the groups to which the members belong.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.9.7 getPermissions() Method

Use this method to retrieve a list of permissions for the specified user, based on the specified access control list.

---

**Note:** This method also returns any permissions that are inherited by a user's security group, even if the access control list does not specify the group's permissions.

---

### 3.9.7.1 Signature

List[] getPermissions(List[], Account account, String sessionID);

Argument	Description
List[]	Specifies the access control list for the user specified by Account account.
Account account	Specifies the name of the user for whom to find permission for the ACLs. Can be the user's name or a GUID.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.7.2 Returns

Returns permissions information in the permissionMask field in the AccessControlToken structure (for more information, see [Section 2.1, "AccessControlToken Structure"](#)).

## 3.9.8 getPrivilegesStatus() Method

Use this method to list all privileges and their statuses.

### 3.9.8.1 Signature

List[] getPrivilegesStatus(List[] privileges, String sessionID);

Argument	Description
List[] privileges	Specifies a list of privileges.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.9 isMember() Method

Use this method to confirm if a catalog group is a member of the user or group.

#### 3.9.9.1 Signature

```
boolean isMember(List[] group, List[] member, Boolean expandGroups, String
sessionID);
```

Argument	Description
List[] group	Specifies the username, catalog group, or application role name.
List[] member	Specifies the name of the member to verify. Consider the example <code>isMember(BIAdministrator, Administrator, false)</code> . This example asks if the user Administrator is a member of the BIAdministrator application role.
Boolean expandGroups	Specifies ....
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.10 joinGroups() Method

Use this method to join a catalog group as a member.

#### 3.9.10.1 Signature

```
void joinGroups(List[] group, List[] member, String sessionID);
```

Argument	Description
List[] group	Specifies the name of the group to join or become a member. Consider the following example: <code>join(Marketing, UserA)</code> . This example illustrates that UserA will join the Marketing catalog group.
List[] member	Specifies the name of the underlying member. For more information, see the example included in the previous argument.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.11 leaveGroups() Method

Use this method to remove a member from a group.

#### 3.9.11.1 Signature

```
void leaveGroups(List[] group, List[] member, String sessionID);
```

Argument	Description
List[] group	Specifies the group from which to remove a member.
List[] member	Specifies the member that you want to remove from the group.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.9.12 renameAccounts() Method

Use this method to change the name of a user account in the catalog.

#### 3.9.12.1 Signature

```
void renameAccounts(List[] from, List[] to, String sessionID);
```

Argument	Description
List[] from	Specifies the old name of the account.
List[] to	Specifies a new name for the account.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.9.12.2 Returns

Returns an array of accounts. If accountsFilter returns a null value, this method returns all accounts cached by the current Presentation Services instance.

### 3.9.13 updateGlobalPrivilegeACL() Method

Use this method to update the Access Control List for global privileges.

#### 3.9.13.1 Signature

```
void updateGlobalPrivilegeACL(String privilegeName, ACL acl, UpdateACLParams updateACLParams, String sessionID);
```

Arguments	Description
String privilegeName	Specifies the name of privilege to update.
ACL acl	Specifies the Access Control List to update, supplied in the ACL structure. For information about the ACL structure, see <a href="#">Section 2.3, "ACL Structure"</a> .
UpdateACLParams updateACLParams	Specifies the Access Control List parameters to update, supplied in the UpdateACLParams structure. For information about the UpdateACLParams structure, see <a href="#">Section 2.28, "UpdateACLParams Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.10 WebCatalogService Service

Use this service to provide methods for navigating and managing the catalog, and to read and write catalog objects in XML format. [Table 3-16](#) shows the supported methods.

**Table 3-16** WebCatalogService Methods

Method Names	Description
<a href="#">Section 3.10.3, "copyItem() Method"</a>	Copies an object from one location to another in the catalog.

**Table 3–16 (Cont.) WebCatalogService Methods**

Method Names	Description
Section 3.10.4, "copyItem2() Method"	Generates an archive file from the catalog.
Section 3.10.5, "createFolder() Method"	Creates a new folder in the catalog.
Section 3.10.6, "createLink() Method"	Creates a link to the catalog.
Section 3.10.7, "deleteItem() Method"	Deletes an object from the catalog.
Section 3.10.8, "getItemInfo() Method"	Retrieves catalog information for an object.
Section 3.10.9, "getSubItems() Method"	Retrieves the collection of child subitems for an object in the catalog.
Section 3.10.10, "maintenanceMode() Method"	Locks the catalog during maintenance.
Section 3.10.11, "moveItem() Method"	Moves an object in the catalog to a different location in the catalog.
Section 3.10.12, "pasteItem2() Method"	Pastes the copied items.
Section 3.10.13, "readObjects() Method"	Reads an object from the catalog.
Section 3.10.14, "removeFolder() Method"	Deletes a folder from the catalog.
Section 3.10.15, "setItemAttributes() Method"	Sets attribute flags for the specified catalog item.
Section 3.10.16, "setItemProperty() Method"	Sets a property for an object in the catalog.
Section 3.10.17, "setOwnership() Method"	Take ownership of the specified item.
Section 3.10.18, "updateCatalogItemACL() Method"	Update the Access Control List for an item in the Presentation Catalog.
Section 3.10.19, "writeObjects() Method"	Writes a list of objects to the catalog.

### 3.10.1 ErrorDetailsLevel Enumeration

This enumeration specifies a list of valid values for methods in the "WebCatalogService Service". Table 3–17 lists the values in this enumeration.

---

**Note:** Only one of the values in ErrorDetailsLevel should be selected.

---

**Table 3–17 ErrorDetailsLevel Enumeration Values**

Values	Description
String ErrorCode	Specifies that the ErrorInfo.errorCode field is populated.
String ErrorCodeAndText	Specifies that the ErrorInfo.errorCode and ErrorInfo.message fields are populated.
String FullDetails	Specifies that all ErrorInfo fields are populated.

### 3.10.2 ReadObjectsReturnOptions Enumeration

This enumeration specifies a list of valid values for methods in the "WebCatalogService Service". Table 3–18 lists the values in this enumeration.

**Table 3–18 ReadObjectsReturnOptions Enumeration Values**

Values	Description
String NoObject	Specifies that the catalogObject and catalogObjectBytes fields are not populated.
String ObjectAsString	Specifies that the catalogObject field is populated and the catalogObjectBytes fields is not populated.
String ObjectAsBinary	Specifies that the catalogObject field is not populated and the catalogObjectBytes fields is populated.
String ObjectAsBinaryUseMtom	Specifies that the catalogObject field is not populated and the catalogObjectBytes fields is populated and using MTOM to encode the content returned by the SOAP message.

### 3.10.3 copyItem() Method

Use this method to copy an object from one location in the catalog to another location in the catalog.

#### 3.10.3.1 Signature

```
void copyItem(String pathSrc, String pathDest, int flagACL, String sessionID);
```

Arguments	Description
String pathSrc	Specifies the current path to the object in the catalog.
String pathDest	Specifies the location in the catalog where the object should be copied.
int flagACL	Specified whether the item is copied with security. 0 indicates that the item is copied without security. 1 indicates that the item is copied with security.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.4 copyItem2() Method

Use this method to generate an archive file from the catalog.

#### 3.10.4.1 Signature

```
DataHandler copyItem2(List[] path, boolean recursive, boolean permissions, boolean timestamps, boolean useMtom, String sessionID);
```

Arguments	Description
List[] path	Specifies the location in the catalog from which the archive was created.
boolean recursive	Specifies whether the child-level folders were included in the archive.
boolean permissions	Specified whether the items are copied with security.
boolean timestamps	Specifies whether to preserve the items' time stamps were preserved.
boolean useMtom	Specifies whether MTOM was used to encode the content returned by the SOAP message.

Arguments	Description
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.5 createFolder() Method

Use this method to create a new folder in the catalog.

#### 3.10.5.1 Signature

```
void createFolder(String path, boolean createIfNotExists, boolean
createIntermediateDirs, String sessionID);
```

Arguments	Description
String path	Specifies the location in the catalog where the folder should be created, including the name of the new folder.
boolean createIfNotExists	If set to TRUE, then the folder object is created in the catalog if it does not already exist. If set to FALSE, then the folder object is not recreated if it already exists.
boolean createIntermediateDirs	If set to TRUE, then an intermediate directory is created. If set to FALSE, the an intermediate directory is not created.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.6 createLink() Method

Use this method to create a link to the catalog.

#### 3.10.6.1 Signature

```
void createLink(String path, String pathTarget, boolean overwriteIfExists, String
sessionID);
```

Arguments	Description
String Path	Specifies the path to the parent object in the catalog.
String TargetPath	Specifies the location in the catalog to which the link being created should refer.
boolean overwriteIfExists	If set to TRUE, then the link is overwritten if it already exists in the catalog. If set to FALSE, then the link is not overwritten if it already exists in the catalog.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.7 deleteItem() Method

Use this method to delete an object from the catalog. To delete a folder, read [Section 3.10.14, "removeFolder\(\) Method"](#).

#### 3.10.7.1 Signature

```
void deleteItem(String path, String sessionID);
```

Arguments	Description
String path	Specifies the path to the object in the catalog.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.8 getItemInfo() Method

Use this method to retrieve catalog information for an object.

#### 3.10.8.1 Signature

ItemInfo getItemInfo(String path, boolean resolveLinks, String sessionID);

Arguments	Description
String path	Specifies the path to the object in the catalog.
boolean resolveLinks	If set to TRUE and the path in the catalog refers to a link, then Oracle Business Intelligence retrieves information for the object pointed to by the link.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.10.8.2 Returns

Returns catalog information for an object in an ItemInfo structure. For more information, see [Section 2.11, "ItemInfo Structure"](#).

### 3.10.9 getSubItems() Method

Use this method to retrieve the collection of child sub-items for an object in the catalog.

#### 3.10.9.1 Signature

List[] getSubItems(String path, String mask, boolean resolveLinks, GetSubItemsParams options, String sessionID);

Arguments	Description
String path	Specifies the path to the parent object in the catalog.
String mask	Specifies a mask that indicates the child subitems to retrieve. The mask character is an asterisk (*). To retrieve all child subitems, use a single asterisk.
boolean resolveLinks	If set to TRUE and the path in the catalog refers to a link, then information is retrieved for the child subitems of the object pointed to by the link.
GetSubItemsParams options	Optional. Specifies parameters to supply to the GetSubItemsParams structure. For information about the GetSubItemsParams structure, see <a href="#">Section 2.9, "GetSubItemsParams Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.9.2 Returns

Returns a collection of child subitems in an ItemInfo structure. For more information, see [Section 2.11, "ItemInfo Structure"](#).

## 3.10.10 maintenanceMode() Method

Use this method to lock the catalog during maintenance.

### 3.10.10.1 Signature

```
void maintenanceMode(boolean flag, String sessionID);
```

Arguments	Description
boolean flag	Set to TRUE if the catalog is locked.
String sessionID)	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.10.11 moveItem() Method

Use this method to move an object in the catalog to a different location in the catalog.

### 3.10.11.1 Signature

```
void moveItem(String pathSrc, String pathDest, int flagACL, String sessionID);
```

Arguments	Description
String pathSrc	Specifies the current path to the object in the catalog.
String pathDest	Specifies the location in the catalog where the object should be moved.
int flagACL	Specified whether the item is moved with security. 0 indicates that the item is moved without security. 1 indicates that the item is moved with security.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

## 3.10.12 pastelItem2() Method

Use this method to paste the copied items.

### 3.10.12.1 Signature

```
void pastelItem2(Binary stream DataHandler archive, String replacePath, int flagACL, int flagOverwrite, String sessionID);
```

Arguments	Description
Binary stream DataHandler archive	Specifies the returned content of the item as string or bytes. What you specify in this field is determined by the readObjects method.
String replacePath	Specifies the location to paste the copied item.

Arguments	Description
int flagACL	Specifies whether the item is pasted with security. 0 indicates that the item is pasted without security. 1 indicates that the item is pasted without security.
int flagOverwrite	Specifies whether the pasted item overwrites existing item. 0 indicates replace all, 1 indicates replace old, 2 indicates replace none, and 3 indicates force replace.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.13 readObjects() Method

Use this method to read an object from the catalog and return a CatalogObject structure.

#### 3.10.13.1 Signature

List[] readObjects(List[] paths, boolean resolveLinks, ErrorDetailsLevel errorMode, ReadObjectsReturnOptions returnOptions, String sessionID);

Arguments	Description
List[] paths	Specifies the location of the object in the catalog.
boolean resolveLinks	If set to TRUE and the path in the catalog refers to a link, then the object is written to the location pointed to by the link.
ErrorDetailsLevel errorMode	Specifies the amount of error information in the errorInfo field in the CatalogObjects structure. For more information, see <a href="#">Section 2.7, "CatalogObject Structure"</a> .
ReadObjectsReturnOptions returnOptions	Specifies a list of valid values. For more information, see <a href="#">"ReadObjectsReturnOptions Enumeration"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

#### 3.10.13.2 Returns

Returns an array of CatalogObjects.

---

**Note:** If a read operation fails for a catalog object (for example, due to an invalid path or insufficient privileges), the errorInfo field for that object contains a description of the error.

---

### 3.10.14 removeFolder() Method

Use this method to delete a folder and its contents from the catalog. To delete an object other than a folder and its contents, see [Section 3.10.7, "deleteItem\(\) Method"](#).

#### 3.10.14.1 Signature

void removeFolder(String path, boolean recursive, String sessionID);

Arguments	Description
String path	Specifies the path to the folder in the catalog.
boolean recursive	If set to TRUE, then remove the specified folder and its contents. If set to FALSE, then only remove the specified folder if it is empty, otherwise display an exception message.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.15 setItemAttributes() Method

Use this method to set attribute flags for a specified catalog item.

#### 3.10.15.1 Signature

```
void setItemAttributes (List[] path, int value, int valueOff, boolean recursive, String sessionID);
```

Arguments	Description
List[] path	Specifies the path to the folder in the catalog.
int attributes	Specifies a combination of the following flags: 1 = read only 2 = archive 4 = hidden 8 = system
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.16 setItemProperty() Method

Use this method to set a property for an object in the catalog.

#### 3.10.16.1 Signature

```
void setItemProperty(List[] path, List[] name, List[] value, boolean recursive, String sessionID);
```

Arguments	Description
List[] path	Specifies the path to the object in the catalog.
List[] name	Specifies the name of the property to set.
List[] value	Specifies the new setting for the property.
boolean recursive	Specifies whether to set the properties of items in sub-directories.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.17 setOwnership() Method

Use this method to take ownership of the specified item.

#### 3.10.17.1 Signature

```
void setOwnership(List[]path, Account owner, boolean recursive, String sessionID);
```

Arguments	Description
List[] path	Specifies the location in the catalog of the object to take ownership.
Account owner	Specifies the account to assign as owner.
boolean recursive	If set to TRUE, then apply this action to the specified folder and its contents. If set to FALSE, then only apply this action to the specified folder if it is empty, otherwise display an exception message.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.18 updateCatalogItemACL() Method

Use this method to update the Access Control List for an item in the catalog.

#### 3.10.18.1 Signature

```
void updateCatalogItemACL(List[] path, ACL acl, UpdateCatalogItemACLParams options, String sessionID);
```

Fields	Description
List[] path	Specifies the path to the object in the catalog.
ACL acl	Specifies the Access Control List. For more information, see <a href="#">Section 2.3, "ACL Structure"</a> .
UpdateCatalogItemACLParams options	Specifies additional parameters. For more information, see <a href="#">Section 2.29, "UpdateCatalogItemACLParams Structure"</a> .
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.19 writeObjects() Method

Use this method to write an array of objects to the catalog.

#### 3.10.19.1 Signature

```
List[] writeObjects(List[] catalogObjects, boolean allowOverwrite, boolean createIntermediateDirs, ErrorDetailsLevel errorMode, String sessionID);
```

Argument	Description
List [] catalogObjects	Specifies the objects to write to the catalog, supplied in the CatalogObject structure. For information about the CatalogObject structure, see <a href="#">Section 2.7, "CatalogObject Structure"</a> .  All fields of object.itemInfo are ignored, except for the array of item properties, which are applied to the object. The signature of the resulting document is always COXmlDocument1.
boolean allowOverwrite	If set to TRUE, then if the object already exists in the catalog, it is overwritten. If set to FALSE, then if the object already exists in the catalog, it is not overwritten.

Argument	Description
boolean createIntermediateDirs	If set to TRUE and the path in the catalog refers to a link, then the object is written to the location pointed to by the link.
ErrorDetailsLevel errorMode	Specifies the amount of error information in the errorInfo field in the CatalogObjects structure.
String sessionID	Specifies the session ID, which is usually returned by the logon method. If the SOAP client engine can handle HTTP cookies, you can omit the session ID or set it to null.

### 3.10.19.2 Returns

An array of ErrorInfo objects.

## 3.11 XMLViewService Service

Use this service to retrieve results from Oracle BI EE Presentation Services in XML format. [Table 3–19](#) shows the supported methods.

**Table 3–19 XMLView Service Methods**

Method Name	Description
<a href="#">Section 3.11.2, "cancelQuery() Method"</a>	Cancels the current query.
<a href="#">Section 3.11.3, "executeSQLQuery() Method"</a>	Runs a SQL query.
<a href="#">Section 3.11.4, "executeXMLQuery() Method"</a>	Runs an XML query.
<a href="#">Section 3.11.5, "fetchNext() Method"</a>	Returns the next page of data rows.
<a href="#">Section 3.11.6, "getPromptedFilters() Method"</a>	Returns a filter XML structure containing only the analysis' columns with a prompted filter.
<a href="#">Section 3.11.7, "upgradeXML() Method"</a>	Returns an upgraded version of the requested object.

### 3.11.1 XMLQueryOutputFormat Enumeration

This enumeration specifies a list of valid values for the [executeSQLQuery\(\) Method](#) and [executeXMLQuery\(\) Method](#). For example, you might want to return data rows and metadata, or data rows only. [Table 3–20](#) lists the values in this enumeration.

---

**Note:** Only one of the values in XMLQueryOutputFormat can be selected.

---

**Table 3–20 XMLQueryOutputFormat Enumeration Values**

Values	Description
String SAWRowsetData	Specifies that the query returns only data rows.
String SAWRowsetSchema	Specifies that the query returns only metadata.
String SAWRowsetSchemaAndData	Specifies that the query returns both metadata and data rows.

### 3.11.2 cancelQuery() Method

Use this method to cancel a query and clean up resources associated with the query. This method should only be used if the query row set is not scrolled to the last row in the data set returned.

---

**Note:** If you use this method when the query row set is scrolled to the last row in the data set returned, query data is cleaned up during the last fetchNext method invocation.

---

#### 3.11.2.1 Signature

```
void cancelQuery(String queryID, String sessionID);
```

Argument	Description
String queryID	Specifies the unique ID of the query.
String sessionID	Specifies the unique ID of the session.

### 3.11.3 executeSQLQuery() Method

Use this method to execute a SQL query and return the results of the query.

---

**Note:** If the results returned exceed one page, you need to use the [fetchNext\(\) Method](#) to return the next page of rows.

---

#### 3.11.3.1 Signature

```
QueryResults executeSQLQuery(String sql, XMLQueryOutputFormat outputFormat, XMLQueryExecutionOptions executionOptions, String sessionID);
```

Argument	Description
String sql	Specifies the string of SQL code to execute.
XMLQueryOutputFormat outputFormat	Specifies the output format (for more information, see <a href="#">Section 2.31, "XMLQueryExecutionOptions Structure"</a> ).
XMLQueryExecutionOptions executionOptions	Specifies the query execution options (for more information, see <a href="#">Section 2.31, "XMLQueryExecutionOptions Structure"</a> ).
String sessionID	Specifies the unique ID of the session.

#### 3.11.3.2 Returns

Returns the results of the query as one or more rows of data in a QueryResults structure (for more information, see [Section 2.15, "QueryResults Structure"](#)).

### 3.11.4 executeXMLQuery() Method

Use this method to execute an XML query and return the results of the query.

---

**Note:** If the results returned exceed one page, you need to use the [fetchNext\(\) Method](#) to return the next page of rows.

---

### 3.11.4.1 Signature

QueryResults executeXMLQuery(ReportRef report, XMLQueryOutputFormat outputFormat, XMLQueryExecutionOptions executionOptions, ReportParams reportParams, String sessionID);

Argument	Description
ReportRef reportRef	Specifies the analysis definition, supplied in the ReportRef common structure.
XMLQueryOutputFormat outputFormat	Specifies the output format (for more information, see <a href="#">Section 2.31, "XMLQueryExecutionOptions Structure"</a> ).
XMLQueryExecutionOptions executionOptions	Specifies the query execution options (for more information, see <a href="#">Section 2.31, "XMLQueryExecutionOptions Structure"</a> ).
ReportParams reportParams	Optional. Specifies the filters or variables to apply to the analysis before execution, supplied in the ReportParams common structure. For information about the ReportParams structure, see <a href="#">Section 2.17, "ReportParams Structure"</a> .
String sessionID	Specifies the unique ID of the session.

### 3.11.4.2 Returns

Returns the results of the query as one or more rows of data in a QueryResults structure (for more information, see [Section 2.15, "QueryResults Structure"](#)).

## 3.11.5 fetchNext() Method

Use this method to return the next page of rows retrieved by a query.

---

**Note:** The page returned might contain zero rows. If the finished flag is not set, the remaining rows might not be available immediately.

---

### 3.11.5.1 Signature

QueryResults fetchNext(String queryID, String sessionID);

Argument	Description
String queryID	Specifies the unique ID of the query, which is returned in the QueryResults object.
String sessionID	Specifies the unique ID of the session.

### 3.11.5.2 Returns

Returns the next page of query results as one or more rows of data in a QueryResults structure (for more information, see [Section 2.15, "QueryResults Structure"](#)).

## 3.11.6 getPromptedFilters() Method

Use this method to retrieve a saved analysis' prompted columns or the prompted columns from an analysis' xml definition. Note that to create an analysis with a prompted column, you must assign the isPrompted operator to it.

### 3.11.6.1 Signature

List[] getPromptedFilters(ReportRef report, String sessionID);

Argument	Description
ReportRef report	Specifies the analysis' reportPath or a reportXml (report definition).
String sessionID	Specifies the unique ID of the session.

### 3.11.7 upgradeXML() Method

Use this method to upgrade Oracle BI EE objects that reside outside of the catalog. This method upgrades object from Oracle BI EE 10g to Oracle BI EE 11g. Use this method primarily for Oracle BI Add-in for Microsoft Office to upgrade the analyses that were saved within Oracle BI Office and not to the catalog. You should only use this method if you want to upgrade the objects in your Oracle BI Office catalog.

Note that if you use methods like executeXmlQuery and use the ReportRef argument to pass an Oracle BI EE 10g report definition, that report will be upgraded before the query is run.

#### 3.11.7.1 Signature

String upgradeXML(String xml, String sessionID);

Argument	Description
String xml	Specifies the catalog object's xml.
String sessionID	Specifies the unique ID of the session.



# Part II

---

## Configuring the Action Framework

This part explains how to set up the Action Framework. It contains the following chapters.

- [Chapter 4, "Using Actions to Integrate Oracle BI EE with External Systems"](#)
- [Chapter 5, "Integrating with Oracle E-Business Suite Security"](#)



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# Using Actions to Integrate Oracle BI EE with External Systems

This chapter describes the Oracle BI EE Action Framework and explains the configuration required to add actions to Oracle BI EE content. This chapter contains the following topics:

- [Section 4.1, "What is the Action Framework?"](#)
- [Section 4.2, "Overview of the Action Framework Configuration"](#)
- [Section 4.3, "Configuring the Action Framework"](#)
- [Section 4.4, "Overview of Action Security"](#)
- [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#)
- [Section 4.6, "Target Functionality for Actions"](#)

## 4.1 What is the Action Framework?

The Action Framework is a component of the Oracle BI EE architecture. It consists of the following items:

- Actions Web Services for creating and invoking actions that are deployed in the application server.
- Components that reside within the Presentation Server and Scheduler Services.
- Actions-specific JavaScript in the presentation tier for creating actions and invoking certain action types directly from the browser.

To prepare the Action Framework for use in Oracle BI Presentation Services, you must perform the following tasks:

- Configure the Action Framework. For more information, see [Section 4.2, "Overview of the Action Framework Configuration"](#) and [Section 4.3, "Configuring the Action Framework"](#).
- Secure Actions. For more information, see [Section 4.4, "Overview of Action Security"](#) and [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#).
- Set up action targets. For more information, see [Section 4.6, "Target Functionality for Actions"](#).

### 4.1.1 What Functionality is Provided by the Action Framework?

The Action Framework provides functionality for creating, managing, and invoking actions. Actions provide functionality to:

- Navigate to related content.
- Invoke operations, functions, or processes in external systems.

Actions are created and managed in the Oracle BI Presentation Services user interface. Actions can be included within analyses, dashboards, agents, KPIs, and Scorecard objectives. There are several different types of actions, for example, Navigate to a Web Page, Invoke a Web Service, and Invoke a Browser Script.

For a list of action types, their descriptions, and information about creating and using actions, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

### 4.1.2 Action Types and Action Execution

The actions that are available in Oracle BI EE are categorized into two groups: those actions that navigate to related content; and those actions that invoke operations, functions, or processes in external systems. Actions are further categorized into action types based on the technology they invoke (for example, URL or Web service).

For a description of each action types and information about adding Action links to business intelligence content, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

[Table 4–1, "System Components that Execute Actions"](#) shows each action type and the system components that execute them. For more information about how a specific action type is executed and the other system components that are used in the process, see [Section 4.6, "Target Functionality for Actions"](#).

**Table 4–1 System Components that Execute Actions**

Action Type	Executed by...
Navigate to BI Content	Browser
Navigate to a Web Page	Browser
Navigate to EPM Content	Browser
Navigate to E-Business Suite	Browser
Invoke a Web Service	AES
Invoke a Java Method (EJB)	AES
Invoke a Browser Script	Browser
Invoke an HTTP Request	AES
Invoke Server Script	Scheduler
Invoke Agent	Scheduler
Java Jobs	Javahost

## 4.2 Overview of the Action Framework Configuration

Some action types are automatically available when Oracle BI EE is installed, while others require specific configuration to make them available. For action types requiring additional configuration, you must provide information about the external

systems hosting functionality to be invoked by the actions, including the location of the target functionality and access details.

Where security policies are applied to action targets (for example, a target Web service that is secured using a SAML-based policy), you must create security policy files in the same location.

A keystore is also required for security policies that include encryption or signing. For information about policy files and keystores, see [Section 4.4, "Overview of Action Security"](#).

Certain actions require credentials to be entered into the credential store. These credentials are used for either browsing for action targets when creating an action or when invoking the target action. For information about additional credentials for actions, see [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#).

## 4.2.1 Configuration Checklist by Action Type

This section summarizes the configuration you must perform to use each action type. [Table 4–2, "Configuration Requirements by Action Type"](#) lists each action type and its required confirmation. Note the following column descriptions:

- Column 1 contains the name of each action type displayed by the Oracle BI EE user interface.
- Column 2 indicates whether an entry in the configuration file is required so that the Oracle BI EE Presentation Services action menus displays the action type.
- Column 3 indicates whether a registry entry can be added to the configuration file to enable a browsable list of action targets in the Web front-end.
- Column 4 indicates whether additional credentials are required in the credential store.
- Column 5 indicates the action types that can implement various security policies and therefore require policy files and, where necessary, additional keystore information.

**Table 4–2 Configuration Requirements by Action Type**

Action Type	Requires Configuration Entry?	Supports Registries?	Additional Credentials Required?	Policy Enabled?
Navigate to BI Content	No	No (Browse for navigation targets enabled by default.)	No	No
Navigate to Web Page	No	No	No	No
Navigate to EPM Content	Yes (Registry)	Yes (Mandatory)	Yes	No
Navigate to E-Business Suite	Yes	No	No (Requires Oracle E-Business Suite security integration.)	No
Invoke a Web Service	No	Yes (Optional)	No (Optional)	Yes
Invoke a Java Method (EJB)	Yes (Registry)	Yes (Mandatory)	Yes	No

**Table 4–2 (Cont.) Configuration Requirements by Action Type**

Action Type	Requires Configuration Entry?	Supports Registries?	Additional Credentials Required?	Policy Enabled?
Invoke a Browser Script	No	No (Browse for navigation targets enabled by default.)	No	No
Invoke an HTTP Request	No	No	No	No
Invoke Server Script	No	No	No	No
Invoke Agent	No	No	No	No
Java Job	No	No	No	No

## 4.2.2 Overview of Targets

All actions require a target. A target is something to navigate to or an operation, function, or process to invoke. Before you create an action, you should confirm that the target for the action is in place. For example, a target URL should be available for a Navigate to a Web Page action, and a target Web service should be in place for an Invoke Web Service Action.

Some action types have targets within the Oracle Business Intelligence system (for example, Navigate to BI Content), while other action types are primarily for invoking functionality or navigating to content in external systems (for example, Invoke a Java Method). In all cases, the process of creating an action assumes that a suitable target already exists for the action to consume.

For example, suppose that a content designer is building a dashboard that requires an action that the user clicks to book a meeting room. To accomplish this task, you might use Oracle JDeveloper to create and deploy a Web service named Room Booking Service with an operation named bookRoom. This is the target Web service operation to be invoked by the action. After you create and deploy the Web service, the content designer is able to create an "Invoke a Web Service" action.

## 4.3 Configuring the Action Framework

The Oracle BI EE installation contains a configuration file named `ActionFrameworkConfig.xml`. You manually edit this configuration file to specify how you want the Action Framework to behave. This configuration file is located by default in the following location:

```
<Oracle Middleware Home>\user_projects\domains\bifoundation_
domain\config\fmwconfig\biinstances\coreapplication
```

The configuration file contains several elements. [Table 4–3, " Action Framework Configuration Elements"](#) describes each element.

**Table 4–3 Action Framework Configuration Elements**

Element Name	Description
location-alias	Use to enable actions to refer to a location alias rather than a fixed URL. Setting up aliases can make migrating between test and production systems easier. For more information about this element, see <a href="#">Section 4.3.1, "Aliases"</a> .
registry	Use to provide information about the pre-configured registries for Web Services, EJBs, and so on. that provide predefined sets of targets for actions. For more information about this element, see <a href="#">Section 4.3.2, "Registries"</a> .
content-type	Use to provide information about the types of content for which a registry returns information. For more information about this element, see <a href="#">Section 4.3.3, "Content Types"</a> .
account	Use to provide information about gateway accounts. Use for authenticating to action targets. For more information about this element, see <a href="#">Section 4.3.4, "Accounts"</a> .
policy	Use to provide information about the location of Oracle Web Services Manager (OWSM). For more information about this element, see <a href="#">Table 4.3.5, "Policies"</a> .
proxy	Use to provide information about proxy settings for accessing Web Services or URLs. For more information about this element, see <a href="#">Table 4.3.6, "Proxy"</a> .
ebusinesssuiteconfig	Use to specify whether the custom action "Navigate to E-Business Suite" displays in the Oracle BI Presentation Services user interface. For more information about this element, see <a href="#">Table 4.3.7, "ebusinesssuiteconfig"</a> .

A sample action configuration file is available for download from the Oracle Web site. You can use the samples contained in this file along with this document to understand the various ways to configure actions. The sample files are located at the following Oracle Web site:

<http://www.oracle.com/technology/products/bi/enterprise-edition.html>

After you modify the configuration file, you need to restart the Managed Server in Weblogic that is hosting your Oracle BI EE environment. For general information about how to restart the Managed Server in Weblogic, see "Confirming Whether the Managed Server is Running, and Starting it if Necessary" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 4.3.1 Aliases

This topic describes the location alias element. Location aliases provide a substitution mechanism so that actions refer to an alias rather than a fixed URL. Aliases are useful if you want to switch between test and production systems. The aliases element can contain zero or more location-alias elements. Note the following example:

```
<location-alias>
  <alias>webservicehost</alias>
  <actual>myserver.oracle.com:7001</actual>
</location-alias>
```

Based on the webservicehost alias in this example, an Oracle BI EE user is able to create an action to invoke a target Web service through the following WSDL:

```
http://msyserver.oracle.com:7001/MyWebService/mysevice.wsdl
```

The action saved to the catalog stores the reference to the WSDL as:

```
http://@[webservicehost]/MyWebService/mysevice.wsdl
```

When this action is invoked, the Action Framework substitutes the alias for the actual value before invoking the service.

The Administrator can later change the "actual" element value within the `location-alias` element so that the saved action points to a different URL without requiring an update the action.

An alias can refer to the server and the application path. Therefore, the following example is also valid. Note that the alias should not include the full path to the target WSDL.

```
<location-alias>
  <alias>webservicehost</alias>
  <actual>myserver.oracle.com:7001/MyWebService/</actual>
</location-alias>
```

## 4.3.2 Registries

This topic describes the registry element. A registry defines how the Action Framework should access a browsable library of action targets. For more information about action types and their configuration requirements, see [Section 4.2, "Overview of the Action Framework Configuration"](#).

You can create registry definitions to support the following action types:

- Navigate to Oracle's Hyperion Enterprise Performance Management (EPM) content
- Invoke a Web Service
- Invoke a Java Method (EJB)

### 4.3.2.1 Navigate to EPM Content Action Type Registry Example

The Hyperion registry contains no additional elements beyond the standard registry elements. The `location` element should be used to define the Hyperion URL to interrogate. You will need to specify an account with access to the Hyperion targets. The following example is an entry for an EPM content action type. See [Table 4-4, "Registry Entry Elements and Descriptions"](#) for a description of each element.

```
<registry>
  <id>HDPreg</id>
  <name>Hyperion Directory Provider</name>
  <content-type>epm</content-type>
  <provider-class>oracle.bi.action.registry.epm.HDPRegistry
</provider-class>
  <description>Hyperion Financial Reports Registry</description>
  <location>
    <path>http://epms.oracle.com:1901/workspace/browse/listXML</path>
  </location>
  <service-access>
    <account>EPM</account>
  </service-access>
</registry>
```

### 4.3.2.2 Invoke a Java Method Action Type Registry Example

The following example is an entry for an EJB registry of Java methods. The `ejb-targets` element, which is embedded within the `custom-config` element, tells the EJB registry specifically about the application server hosting the EJBs and the EJBs that should be exposed as registries from that server.

See [Table 4–4, "Registry Entry Elements and Descriptions"](#) for a description of each element.

```
<registry>
  <id>reg03</id>
  <name>Sample EJBs</name>
  <content-type>java</content-type>
  <provider-class>oracle.bi.action.registry.java.EJBRegistry</provider-class>
  <description>Custom Java classes which can be invoked as action
    targets</description>
  <location>
    <path/>
  </location>
  <custom-config>
    <ejb-targets>
      <appserver>
        <context-factory>weblogic.jndi.WLInitialContextFactory
        </context-factory>
        <jndi-url>t3://localhost:9704</jndi-url>
        <server-name>localhost</server-name>
        <account>WLSJNDI</account>
        <ejb-exclude>mgmt</ejb-exclude>
        <ejb-exclude>PopulationServiceBean</ejb-exclude>
      </appserver>
      <ejb-app>
        <server>localhost</server>
        <app-context>ActionSamplesEJB</app-context>
      </ejb-app>
    </ejb-targets>
  </custom-config>
</registry>
```

### 4.3.2.3 Invoke a Web Service Action Type Registry Example

The following example is an entry for a WSIL registry of Web Services. See [Table 4–4, "Registry Entry Elements and Descriptions"](#) for a description of each element.

```
<registry>
  <id>reg1</id>
  <name>Sample Web Services</name>
  <content-type>webservices</content-type>
  <provider-class>oracle.bi.action.registry.wsil.WSILRegistry</provider-class>
  <description></description>
  <location>
    <path>http://localhost:9704/ActionSamples/inspection.wsil</path>
  </location>
  <service-access>
    <path>/Sample Web Services/Rating Service</path>
    <policy>SAMLPolicy</policy>
    <propagateIdentity>true</propagateIdentity>
  </service-access>
  <service-access>
    <path>/Sample Web Services/Customer Rating Service</path>
    <account>PayrollUser</account>
    <policy>userNamePolicy</policy>
    <propagateIdentity>>false</propagateIdentity>
  </service-access>
</registry>
```

### 4.3.2.4 Registry Elements Descriptions

Table 4–4, "Registry Entry Elements and Descriptions" contains each registry element and its description.

**Table 4–4 Registry Entry Elements and Descriptions**

Element	Description
registry	This element is the outer-most element that contains the registry definition.
id	This element holds an internal identifier that must be unique for each registry.
name	This element is the display name that is used by the ActionRegistryService when displaying the list of registries. The name that you specify in this element is also used as the root path for any targets within this registry.
content-type	You can use Oracle supplied values only. This element points to a content-type, which is another element defined in the Action Framework configuration file. For more information, see <a href="#">Section 4.3.3, "Content Types"</a> .
provider-class	You can use Oracle-supplied values, only. <a href="#">Table 4–5, "Provider-Class Element Values"</a> contains the valid values for this element.
description	This element is reserved for future use.
location	This element specifies the path to the registry that may contain aliased elements. For example, a WSIL file.
service-access	<p>This element is optional. You can define zero or more service-access elements in a registry definition.</p> <p>The service-access element specifies the authentication required to access the registry and, where specified, sub-paths within that registry. Note the following:</p> <ul style="list-style-type: none"> <li>■ If a registry element does not have any service-access elements, no authentication is used when accessing services from that registry.</li> <li>■ The service-access elements that specify a path element apply the account element only to services found under the specified path within the registry.</li> <li>■ If a registry element contains a service-access element with just an account element that points to an account defined in the accounts element, then that account is used to access all services within that registry that are not specified by specific path-based service-access elements.</li> </ul>
path	This element is optional. This element is located within the service-access element and specifies a path to a subset of the services in the registry. The path is not a physical location. The path hierarchy starts with the registry name and can be found in the user interface by expanding the nodes that lead to a particular action target when creating a new action.
account	<p>This element is optional. This element is located within the service-access element and points to an instance of an account element defined elsewhere in the configuration file.</p> <p>If a registry element contains a service-access element with just an account element, then that account is used to access all services within that registry that are not specified by specific path-based service-access elements.</p> <p>For webservices registries, the credentials held against the account referenced are used by the Action Framework to invoke target actions if the propagateIdentity element has a value of false.</p> <p>For epm registries, the credentials held against the account are used by the Action Framework to browse for EPM content.</p>

**Table 4–4 (Cont.) Registry Entry Elements and Descriptions**

Element	Description
policy	<p>This element is optional. Use this element for webservices registries only. This element is located within the service-access element and points to a policy defined in the policies section elsewhere in the configuration file. This element is required for accessing target Web Services that define a WS-Security policy.</p> <p>Note that when invoking secured Web Services in this way, you need to correctly configure OWSM to work with Actions. For more information, see <a href="#">Section 4.5.3, "Configuring OWSM"</a>.</p>
propagateIdentity	<p>Use this element for webservices registries only. This element must be set if the policy element is set. This element is located within the service-access element and can be set to true or false.</p> <p>A value of true is valid when used in conjunction with policies that assert identity (for example, SAML-based policies) to enable propagating the identity of the user who initially invoked the action. If the propagateIdentity element is set to true, the account element becomes redundant and instead the identity of the user who invoked the action (for example, in Oracle BI Presentation Services or run as in scheduler) is used to invoke the target Web service.</p> <p>Setting this element to true in conjunction with a username/password token policy is not supported.</p>
custom-config	<p>Use this element for java registries only. This element is used to specify how to access the EJBs on the target application server.</p>
ejb-targets	<p>Use this element for java registries only. This element defines the application server where EJBs are deployed in the appserver element, and one or more J2EE applications containing EJBs on the specified appserver that is exposed in the ejb-app elements.</p>
appserver	<p>Use this element for java registries only. This element is located within the ejb-target element and defines the connection and authentication information to connect to the application server where EJBs are deployed. This element contains the following elements:</p> <ul style="list-style-type: none"> <li>■ context-factory – This element contains name of the class used to do JNDI lookups for the application server on which the Action Framework Web Services are deployed. You must set this element to <code>weblogic.jndi.WLInitialContextFactory</code>.</li> <li>■ jndi-url – This element contains the URL used in JNDI lookups to query the JNDI directory on the application server hosting the target EJBs.</li> <li>■ server-name – This element contains the name used internally to refer back to this appserver element, which is located in the server element of subsequent ejb-app elements.</li> <li>■ account – This element contains the name of an account defined elsewhere in the configuration file. This element must point to credentials that have sufficient permissions to query the JNDI directory on the application server that is hosting target EJBs.</li> <li>■ ejb-exclude – This element is used to exclude EJBs or applications from a given application or application server. When the EJB registry finds a match for this value in the JNDI hierarchy, it stops searching for EJBs down that branch of the JNDI tree.</li> </ul>
ejb-app	<p>Use this element for java registries only. This element points to one or more J2EE applications containing EJBs. This element contains the following elements:</p> <ul style="list-style-type: none"> <li>■ server - This element's value needs to match the server-name element located in the appserver element.</li> <li>■ app-context - This element contains the application context where the target EJBs were deployed.</li> </ul>

### 4.3.2.5 Valid Values for the Provider-Class Element

Table 4–5, " Provider-Class Element Values" contains the valid values for the provider-class element. For more information about the provider-class element, see Table 4–4, " Registry Entry Elements and Descriptions".

**Table 4–5 Provider-Class Element Values**

Related Action Type	Content Type	SPI Class
Navigate to EPM Content	EPM	oracle.bi.action.registry.epm.HDPRegistry
Invoke a Java Method (EJB)	Java	oracle.bi.action.registry.java.EJBRegistry
Invoke a Web Service	Web Services	oracle.bi.action.registry.wsil.WSILRegistry

## 4.3.3 Content Types

This topic describes the content-type element. Each content-type element provides meta-information about the types of services to which the registries are connecting. The content types provided during installation should not be modified. You can use only the content types shown in the following example:

```
<content-types>
  <content-type>
    <typename>webservices</typename>
    <displayname>Web Services and BPEL Processes</displayname>
    <actionType>WebServiceActionType</actionType>
  </content-type>
  <content-type>
    <typename>epm</typename>
    <displayname>Hyperion Applications</displayname>
    <actionType>URLActionType</actionType>
  </content-type>
  <content-type>
    <typename>misc</typename>
    <displayname>Mixed Services</displayname>
    <actionType>URLActionType</actionType>
  </content-type>
  <content-type>
    <typename>java</typename>
    <displayname>Java Actions</displayname>
    <actionType>JavaActionType</actionType>
  </content-type>
</content-types>
```

## 4.3.4 Accounts

This topic describes the account element. The account element defines gateway accounts, which are used for authentication to action targets. The registry element's service-access element then references the accounts that you have specified. For more information about the registry section, see [Section 4.3.2, "Registries"](#).

The following example is an account entry. [Table 4–6, " Account Elements and Descriptions"](#) describes each element.

```
<account>
  <name>SAMLTest</name>
  <description>Test SAML Account</description>
  <adminonly>>false</adminonly>
  <credentialkey>SAMLTest</credentialkey>
  <credentialmap>oracle.bi.actions</credentialmap>
```

```
</account>
```

#### 4.3.4.1 Account Elements Descriptions

Table 4–6, "Account Elements and Descriptions" contains each account element and its description. For information about storing credentials, see Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework".

**Table 4–6 Account Elements and Descriptions**

Element	Description
name	This element specifies the name referenced in registry service-access elements, or the appserver element for Java registries. Each account must have a unique name within the Action Framework configuration.
description	This element is reserved for future use.
adminonly	This element is reserved for future use. You must set this element to false.
credentialkey	This element is used for looking up credentials in Oracle's Credential Store Framework (CSF). A set of credentials with the specified key must exist in the domain credential store.
credentialmap	This element specifies the map in which to look for the credentialkey in CSF.

### 4.3.5 Policies

The policy element is used to describe the location of OWSM client policy files used in accessing secured Web Services as action targets. Each policy element provides a name to reference the policy that may then be used by service-access elements as a shorthand to specify that the AES should apply the policy file referred to when invoking an action target covered by that service-access element.

---



---

**Note:** To invoke a secured Web service as described above, you must configure OWSM to work with Actions. For more information, see Section 4.5.3, "Configuring OWSM".

---



---

The following example is a policy entry. Table 4–7, "Policy Elements and Descriptions" describes each element.

```
<policy>
  <name>SAMLPolicy</name>
  <policyfile>ActionsSAMLPolicy.xml</policyfile>
</policy>
```

#### 4.3.5.1 Policy Elements Descriptions

Table 4–7, "Policy Elements and Descriptions" contains each policy element and its description.

**Table 4-7 Policy Elements and Descriptions**

Element	Description
name	This element specifies the name referenced in service-access elements. Each policy must have a unique name within the Action Framework configuration. For more information about the service-access element, see <a href="#">Section 4.3.2.4, "Registry Elements Descriptions"</a> .
policyfile	Use this element to enable actions to invoke Web Services that have WS policies applied to them. This element specifies the name of a file stored in the same directory as the ActionFrameworkConfig.xml file. This file contains an OWSM policy that OWSM applies at runtime when a Web service action that was created from a registry path using this policy is executed. For more information about the service-access element, see <a href="#">Section 4.3.2.4, "Registry Elements Descriptions"</a>

### 4.3.5.2 Policy Files

You need to manually create a separate Action Framework policy file for each distinct client security policy being used to secure target Web services. An Action Framework policy file contains a reference to a Web services client policy defined in OWSM, which provides a standard WS-Policy PolicyReference element used to invoke a target Web service.

To manually create or copy these files, access the sample files, which are located here:

<http://www.oracle.com/technology/products/bi/enterprise-edition.html>

After you create or copy the files, save them in the same folder as the main ActionFrameworkConfig.xml.

See the following example of an Action Framework Policy file's contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<oracle-webservice-clients>
  <webservice-client>
    <port-info>
      <policy-references>
        <policy-reference uri="oracle/log_policy" category="management"/>
        <policy-reference uri="oracle/wss11_saml_token_with_message_protection_client_policy" category="security"/>
      </policy-references>
    </port-info>
  </webservice-client>
</oracle-webservice-clients>
```

The Action Framework policy file needs to point to the appropriate client policy in order to invoke a Web service secured by a service policy.

For example, if a target Web service is secured by the policy "oracle/wss11\_saml\_token\_with\_message\_protection\_service\_policy," then the Web service client (that is, in this case the Action Framework) needs to use the counterpart client policy to invoke this Web service. The appropriate client policy in this example is "oracle/wss11\_saml\_token\_with\_message\_protection\_client\_policy."

You should enter the name of the appropriate client policy into the Action Framework policy file against the "policy-reference uri" element with a category of "security."

The service and client Web services policies available through OWSM can be viewed through Enterprise Manager's Fusion Middleware Control by selecting **Web Services**

and then **Policies** from the Weblogic domain. For more information about the predefined policies available through OWSM, see "Predefined Policies" in *Oracle Fusion Middleware Security and Administrator's Guide for Web Services*.

## 4.3.6 Proxy

The proxy element specifies proxy settings. The proxy settings are used for accessing items such as Web Services and URLs that would ordinarily be inaccessible from the network containing the Weblogic server where the Action Framework Web Services are deployed.

The following example is a proxy entry. [Table 4–8, " Proxy Elements and Descriptions"](#) describes each element.

```
<proxy>
  host>proxysvr.oracle.com</host>
  <port>80</port>
  <userid>jsmith</userid>
  <password>johsmi</password>
  <nonProxyHosts>localhost|*.oracle.com|10.1.10.78
  </nonProxyHosts>
</proxy>
```

### 4.3.6.1 Proxy Elements Descriptions

[Table 4–8, " Proxy Elements and Descriptions"](#) contains each proxy element and its description.

**Table 4–8 Proxy Elements and Descriptions**

Element	Description
host	This element specifies the host name of the server where the proxy server is located.
port	This element specifies the proxy server's port number.
userid password	These element specifies the userid and password for the proxy server. Use these elements for a proxy that requires authentication. Leave these elements blank for a non-authenticating proxy.
nonProxyHosts	This element allows for a pipe character ( ) separated list of the server, domain names, and patterns to exclude from the proxy. Use this element so the system does not attempt to use the proxy to access internal resources.

## 4.3.7 ebusinesssuiteconfig

The ebusinesssuiteconfig element specifies that an Oracle E-Business Suite system is available. If this element is present in the configuration file, Oracle BI Presentation Services displays the menu option that allows users to create a Navigate to E-Business Suite action. Users must have the proper privileges to access E-Business Suite from Oracle BI Presentation Services.

The following example is an ebusinesssuiteconfig entry.

```
<ebusinesssuiteconfig>
  <visible>true</visible>
</ebusinesssuiteconfig>
```

## 4.4 Overview of Action Security

Action Framework and actions security is determined by credentials, privileges, and permissions.

### 4.4.1 Oracle BI EE Credentials

Credentials are security-related attributes used to authenticate or authorize users and systems requesting access to Oracle BI EE resources such as actions. If you have configured one or more registries in the Action Framework to use credentials in the credential store for either browsing for actions targets or invoking actions (namely, if you have specified account elements in the `ActionFrameworkConfig.xml`) you need to enter a credential into the credential store to match each account element in the `ActionFrameworkConfig.xml` file.

For example, if you have the following account defined in the configuration file, you need to enter a credential for JNDIUser into a map called `oracle.bi.actions`.

```
<account>
  <name>WLSJNDI</name>
  <description>Account used to access WLS JNDI.</description>
  <adminonly>>false</adminonly>
  <credentialkey>JNDIUser</credentialkey>
  <credentialmap>oracle.bi.actions</credentialmap>
</account>
```

For more information about how enter a credential into the credential store, see [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#).

### 4.4.2 Oracle BI EE Privileges

Actions privileges control the rights that users have to access the actions features and functionality in Oracle BI Presentation Services. The Oracle BI EE Administrator grants or denies privileges to specific application roles, individual users, and Catalog groups. The actions privileges are:

- Create Navigate Actions
- Create Invoke Actions
- Save Actions containing embedded HTML

For more information about the action privileges, see "Access to Oracle BI Enterprise Edition Actions" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

### 4.4.3 Oracle BI Presentation Services Catalog Permissions

Action permissions are authorizations that the action's owner grants to users or roles. Permissions determine what tasks a user can perform on an action (for example, execute the action). The Oracle BI EE Administrator must give an action's owner the necessary privileges before the owner can assign permissions to action catalog objects. The action permissions are:

- Delete
- Execute
- Read

- Write

For more information about assigning permissions to action object stored in the catalog, see "Permission Definitions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

## 4.5 Adding and Maintaining Credentials for Use With the Action Framework

This section contains the following procedures:

- [Section 4.5.1, "Adding a Credential Map and Credential Key to the Credential Store"](#)
- [Section 4.5.3, "Configuring OWSM"](#)
- [Section 4.5.2, "Creating a Default Keystore"](#)

Use these procedures to enter a credential into the credential store to match each account element in the ActionFrameworkConfig.xml file. For more information about setting up credentials with Action Framework, see [Section 4.4.1, "Oracle BI EE Credentials"](#).

### 4.5.1 Adding a Credential Map and Credential Key to the Credential Store

Use the following procedure to add a credential map and credential key to the credential store.

1. Log into Oracle Enterprise Manager 11g Fusion Middleware Control. The default location is `http://<your host name>:7001/em`.
2. Expand the tree menu to view your domain, and then right-click on the domain name. An options list displays.
3. Highlight the **Security** option and from the list, select **Credentials**. The "Credentials" dialog displays.
4. Click **Create Map** and add a new map.
5. Click **Create Key** and add a key against the credential map you created.
6. Save the key and map.

#### 4.5.1.1 Example of Creating Credential Map and Credential Key

Note the following account element.

```
<account>
  <name>SecureTest</name>
  <description>Test Secure Account</description>
  <adminonly>false</adminonly>
  <credentialkey>SecureTest</credentialkey>
  <credentialmap>oracle.bi.actions</credentialmap>
</account>
```

If you have this account element in your ActionFrameworkConfig.xml and the following conditions are true:

- this account element is referenced by a registry to invoke a Web service secured using a username and password policy
- the propagateIdentity element is set to false,

then you must enter a username and password that is valid for invoking the target Web service. This should be added to a credential map called *oracle.bi.actions* against a credentialkey of *SecureTest*.

## 4.5.2 Creating a Default Keystore

Use the following procedure to create a default self-signed keystore. Note that creating a default keystore is suitable for demonstration or development use, but is not suitable for production use. In production, a keystore that was created by importing a valid, correctly signed certificate should be used as described in the keytool documentation. For security policies that involve signing or encryption, you must also add a certificate to the *bifoundation\_domain* keystore.

For more information about keytool and Solaris/Linux, go to

<http://java.sun.com/javase/6/docs/technotes/tools/solaris/keytool.html>.

For information about keytool and Windows, go to

<http://java.sun.com/javase/6/docs/technotes/tools/windows/keytool.html>.

1. Confirm that your installer installed the JDK bin directory and that it displays in your path. For example, `<MIDDLEWARE_HOME>/jdk160_11/bin/`.
2. Open a command prompt at `<MIDDLEWARE_HOME>/user_projects/domains/bifoundation_domain/config/fmwconfig`.
3. Run the following command to create a default keystore.

```
keytool -genkeypair -keyalg RSA -alias orakey -keypass orakey_passphrase  
-keystore default-keystore.jks -storepass store_passphrase -validity 3600
```

The command creates a keystore with the name `default-keystore.jks` (if it does not already exist) and adds a new private key entry with alias "orakey" and password as "orakey." You can change the alias, password, and storepass in the command, but they must match the OWSM credentials added to the credential store in the [Section 4.5.3, "Configuring OWSM"](#) procedure.

4. When prompted, answer the questions. Enter responses relevant to your organization. See the example. Note that in the example, the user "weblogic" refers to the System Administrator user created during the install. If you chose a user other than "weblogic," enter that username instead.

```
What is your first and last name?  
[Unknown]: weblogic  
What is the name of your organizational unit?  
[Unknown]: J2EE Test Encryption Purposes Only  
What is the name of your organization?  
[Unknown]: Oracle  
What is the name of your City or Locality?  
[Unknown]: US  
What is the name of your State or Province?  
[Unknown]: US  
What is the two-letter country code for this unit?  
[Unknown]: US  
Is CN=weblogic, OU=J2EE Test Encryption Purposes Only, O=Oracle, L=US, ST=US,  
C=US correct?  
[no]: yes
```

5. Confirm that the keystore was generated correctly by using the following command to list its contents.

```
keytool -list -v -keystore default-keystore.jks -storepass welcome1
```

Running this command produces a response similar to the following example.

```
Keystore type: JKS
Keystore provider: SUN

Your keystore contains 1 entry

Alias name: orakey
Creation date: 16-Sep-2009
Entry type: PrivateKeyEntry
Certificate chain length: 1
Certificate[1]:
Owner: CN=weblogic, OU=J2EE Test Encryption purposes Only, O=Oracle, L=US,
ST=US
, C=US
Issuer: CN=weblogic, OU=J2EE Test Encryption purposes Only, O=Oracle, L=US,
ST=U
S, C=US
Serial number: 4ab0ee4e
Valid from: Wed Sep 16 14:55:26 BST 2009 until: Fri Jul 26 14:55:26 BST 2019
Certificate fingerprints:
    MD5: 84:0E:F4:F4:F3:30:0B:FF:4C:D4:E5:E6:BE:AE:64:DF
    SHA1: E4:73:80:4D:96:A6:9F:DE:06:0E:82:3B:D3:18:86:57:FE:CD:C6:37
Signature algorithm name: SHA1withRSA
Version: 3

*****
*****
```

6. Check if the default-keystore.jks file exists at the path. If it does not exist, copy it there.

```
<MIDDLEWARE_HOME>/user_projects/domains/bifoundation_domain/config/fmwconfig
```

### 4.5.3 Configuring OWSM

Use the following procedure to configure OWSM to work with actions. Perform this procedure so that you can create an action that invokes a Web service where the target Web service has a WS security policy applied to it.

For security policies that involve signing or encryption, you must also add a certificate to a keystore. Note that the enc-csf-key, keystore-csf-key, and sign-csf-key credentials should match the corresponding passphrases given in the keypass and storepass arguments when running keytool.

1. In Enterprise Manager, add a credential map named oracle.wsm.security. For instructions on how to add a credential map, see [Section 4.5.1, "Adding a Credential Map and Credential Key to the Credential Store"](#).
2. Add the following keys to the oracle.wsm.security map.

**Table 4–9 oracle.wsm.security Map Keys**

Keyname	Type	User Name	Password
basic.credentials	Password	weblogic*	welcome1
enc-csf-key	Password	orakey	welcome1

**Table 4–9 (Cont.) oracle.wsm.security Map Keys**

Keyname	Type	User Name	Password
keystore-csf-key	Password	owsm	welcome1
sign-csf-key	Password	orakey	welcome1

\* This username refers to the System Administrator user created during the installation. If you chose a username other than "weblogic," enter that user name instead. Similarly, you should use the password for that account during install.

3. Save the map.

## 4.6 Target Functionality for Actions

This section contains further information about setting up target functionality in external systems. The action links added to business intelligence content invokes these target functionalities. The action types explained in this section are:

- [Section 4.6.1, "Navigate to EPM Content"](#)
- [Section 4.6.2, "Navigate to E-Business Suite"](#)
- [Section 4.6.3, "Invoke a Web Service"](#)
- [Section 4.6.5, "Invoke a Java Method \(EJB\)"](#)
- [Section 4.6.6, "Invoke a Browser Script"](#)
- [Section 4.6.7, "Invoke a Server Script"](#)
- [Section 4.6.8, "Invoke Agent"](#)
- [Section 4.6.9, "Java Job"](#)

### 4.6.1 Navigate to EPM Content

This action type allows users to browse for target content in the EPM repository and then create an action to navigate to the selected content. Only navigation to Oracle Hyperion Financial Reporting content is currently supported.

For more information about creating this action type in Presentation Services, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

#### 4.6.1.1 Prerequisites for This Action Type

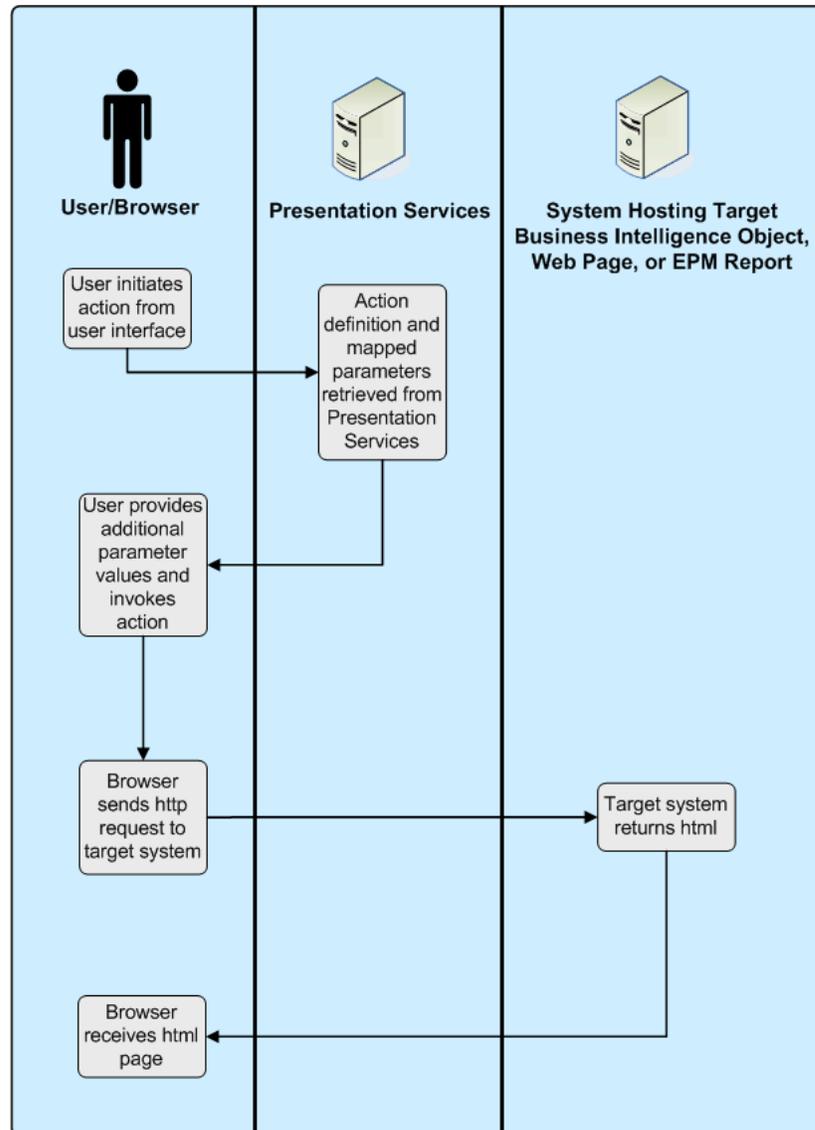
In order for the Action Framework to provide this action type, you must have performed the following tasks:

- Modified the configuration file's registry element. For information about this required configuration, see [Section 4.3.2.1, "Navigate to EPM Content Action Type Registry Example"](#).
- Added a credential to the credential store to enable the browse for EPM content functionality. For more information, see [Section 4.4.1, "Oracle BI EE Credentials"](#) and [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#).

### 4.6.1.2 What Happens When This Action Type is Invoked?

Figure 4-1, "Navigate to EPM Content Process Flow" illustrates the Navigate to EPM Content action type's process flow.

**Figure 4-1** *Navigate to EPM Content Process Flow*



### 4.6.2 Navigate to E-Business Suite

This action type allows users to navigate from Oracle BI EE to Oracle E-Business Suite. The Oracle BI EE session holds the context of the user's Oracle E-Business Suite session, including the current Oracle E-Business Suite responsibility in the Oracle BI EE session variables.

A Navigate to Oracle E-Business Suite action takes two parameters:

- **Connection Pool** - This parameter contains the name of the BI connection pool that connects to the target Oracle E-Business Suite environment as defined in the repository.

- Function - This parameter contains the name of the target Oracle E-Business Suite function to which to navigate. The Oracle E-Business Suite administrator needs to provide the target function ID.

Note that before users can invoke a Navigate to E-Business Suite action, they must have privileges to execute direct database requests against the Oracle E-Business Suite connection pool.

Note that for a user to successfully invoke a Navigate to E-Business Suite action, the target Oracle E-Business function must be accessible from the user's current Oracle E-Business Suite.

For information about this action type's required security integration configuration, see [Chapter 5, "Integrating with Oracle E-Business Suite Security"](#).

#### 4.6.2.1 Overview of Passing Context to Oracle E-Business Suite Java Forms

You can use Oracle Forms Builder to customize a target form and add one or more new, custom parameters to be populated from Oracle BI EE. For information about completing this task, see the Oracle Forms Developer and the Oracle E-Business Suite documentation.

You can use Oracle E-Business Suite's Forms Personalization to map the value or values from these new custom parameters into the form fields used by Oracle E-Business Suite for searching for transactions. For information about completing this task, see the Oracle E-Business Suite documentation.

When you create an action to navigate to the target Oracle E-Business Suite function, you must manually add new parameters with the same names as the custom parameters that you added to the Oracle E-Business Suite form. Note that the new parameters that you add are in addition to the two default parameters (Connection Pool and Function).

After you add the parameters and you invoke the action, Oracle BI EE passes the parameters to the target Oracle E-Business Suite form. Finally, the Form Personalizations take the passed parameter values and uses them to retrieve the required target transaction.

### 4.6.3 Invoke a Web Service

This action type allows users to browse for target Web Services operations and then create an action to invoke the selected content. For information about how Action Framework supports calls to Web Services, see [Section 4.6.4, "Supported Functionality for Calling Web Services"](#).

For more information about creating this action type in Presentation Services, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

#### 4.6.3.1 Prerequisites for This Action Type

In order for the Action Framework to provide this action type and before a user can create an Invoke a Web Services action, you must have performed the following tasks:

- Confirmed that a target Web service with a URL to the WSDL for that Web service exists.
- If you want to allow users to browse for Web Services, you must have added a WSIL document that points to one or more WSDL documents. The WSIL document must be accessible via a URL. For more information, see [Section 4.6.3.2, "Example of a WSIL Document"](#).

- If you want to browse to Web Services operations or apply security policies, you must have modified the configuration file's registry element so that it references the target WSIL document. For information about this required configuration, see [Section 4.3.2.3, "Invoke a Web Service Action Type Registry Example"](#).
- Confirmed whether you need to add credentials to the credential store to invoke Web Services. If the target Web service is secured, appropriate configuration needs to be added to pass credentials to the Web service operation when it is invoked. A suitable keystore might also be required. For more information, see [Section 4.4.1, "Oracle BI EE Credentials"](#), [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#), and [Section 4.5.2, "Creating a Default Keystore"](#).

#### 4.6.3.2 Example of a WSIL Document

WSIL defines an XML format for referencing Web service descriptions. These references are contained in a WSIL document and refer to Web service descriptions (for example, WSDL files) and to other aggregations of Web Services (for example, another WSIL document or a UDDI registry). Note the following WSIL example:

```
<?xml version="1.0" encoding="UTF-8"?>
<inspection xmlns="http://schemas.xmlsoap.org/ws/2001/10/inspection/">
  <service>
    <abstract>Web Service: Order Services</abstract>
    <name>Order Service</name>
    <description referencedNamespace="http://schemas.xmlsoap.org/
      wsdl/" location="http://localhost:9704/ActionSamples/
      OrderProcessPort?wsdl"/>
  </service>
</inspection>
```

#### 4.6.3.3 Troubleshooting Actions to Invoke a Web Service

Use the following list to troubleshoot actions to Invoke a Web Service.

1. Confirm that you can invoke the target Web service from a test client such as the HTTP Analyzer in JDeveloper.
2. If the target Web service has a security policy, check the ActionFrameworkConfig.xml file to make sure that the Action Execution Service (AES) is using the appropriate client policy.
3. Go to Oracle Enterprise Manager to check the logs and diagnostics for Action Services. To access the log files, go to the Enterprise Manager, access the **Business Intelligence** navigation tree, and select **coreapplications** to display information about the Oracle BI instance. Select the **Diagnostics** tab and select the **Log Messages** sub tab. In the View/Search Log Files area, click **Action Services** log.

You can enable verbose logging for Weblogic by adding the following entries to the JAVA\_OPTIONS variable in the startWebLogic.cmd/\*.sh file. After you have modified the JAVA\_OPTIONS variable, you must restart Weblogic.

```
-Dweblogic.wsee.verbose=*
-Dweblogic.log.RedirectStdoutToServerLogEnabled=true -
Dweblogic.webservice.client.verbose=true"
```

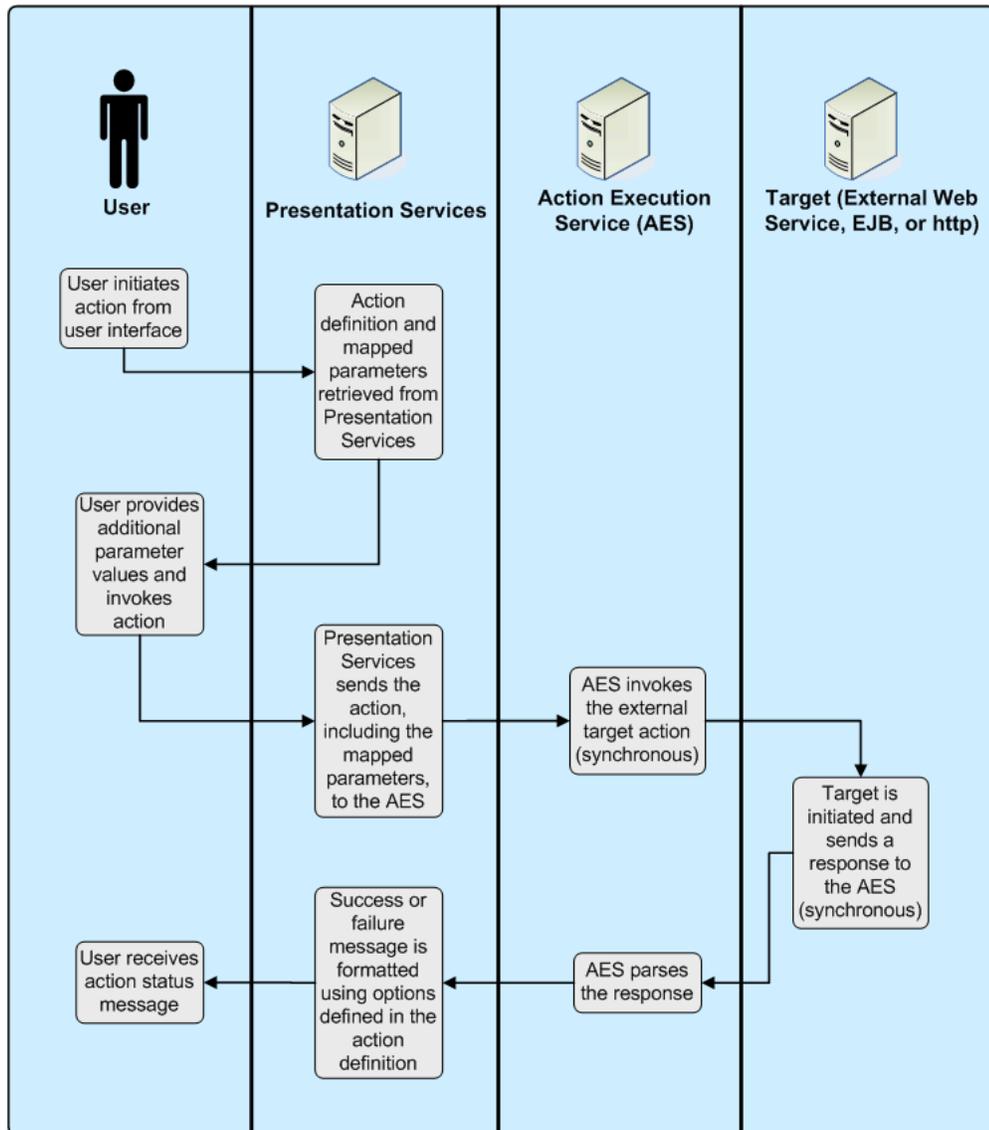
4. Check the ActionFrameworkConfig.xml file for mistakes or omissions.
5. Thoroughly check any associated policy files and make sure they are in the correct location.

- If the target Web service applies a security policy that includes either message protection or encryption, thoroughly check the additional OWSM credentials in the Credential Store.

#### 4.6.3.4 What Happens When This Action Type is Invoked?

Figure 4–2, "Invoking a Web Service Process Flow" illustrates the Web Service action type's process flow.

Figure 4–2 Invoking a Web Service Process Flow



### 4.6.4 Supported Functionality for Calling Web Services

This section describes the supported technologies and limitations used by the Action Framework when it invokes Web Services.

#### 4.6.4.1 Transport

Note the following items:

- The Action Framework supports HTTP for both WDSL browsing and calling Web Services through Actions.
- The Action Framework supports HTTPS for WSDL browsing of Web Services.
- The Action Framework supports HTTPS for sending messages over a secure channel between AES and the target Web service. However, Action Framework does not currently support the use of digital certificates for authenticating between AESService and the target Web service.

#### 4.6.4.2 Messaging

Note the following items:

- A Web Service called from the Action Framework needs to be SOAP-based.
- The Action Framework supports synchronous, request/response messages.
- The Action Framework does not support WS-Addressing.

#### 4.6.4.3 SOAP

The Action Framework supports the following data types in outgoing and incoming SOAP 1.1 and 1.2 messages. Note that support for arrays is currently limited. The action framework allows you to enter a single value into any array (for example, `String[]`) in an out-going SOAP message.

- `xsd:any`
- `xsd:base64Binary`
- `xsd:string`
- `xsd:date`
- `xsd:time`
- `xsd:dateTime`
- `xsd:double`
- `xsd:decimal`
- `xsd:int`
- `xsd:short`
- `xsd:long`
- `xsd:byte`
- `xsd:Boolean`
- `xsd:float`

#### 4.6.4.4 Response Document

The SOAP response document is made available to the user interface and can be formatted using XPATH and html. The document can retrieve multiple occurrences of the same parameter, but you must map each occurrence to a specific XPATH parameter.

#### 4.6.4.5 Service Description

Note the following items:

- The Action Framework supports WSDL.

- The Action Framework supports synchronous, request/response messages.

#### 4.6.4.6 Discovery Services

Note the following items:

- The Action Framework supports WSIL.
- The Action Framework does not currently support UDDI.

#### 4.6.4.7 Security

The Action Framework supports WS-Security based on the policies available to the OWSM.

#### 4.6.4.8 Reliable Messaging and Transactions

The Action Framework does not currently support any mechanism for guaranteeing message delivery or maintaining the integrity of transactions.

### 4.6.5 Invoke a Java Method (EJB)

This action type allows users to browse for target Java methods deployed in Enterprise Java Beans (EJBs) and then create an action to invoke the selected method.

For more information about creating this action type in Presentation Services, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

#### 4.6.5.1 Prerequisites for This Action Type

In order for the Action Framework to provide this action type and before a user can create an Invoke a Java Method (EJB) action, you must have performed the following tasks:

- Added a target EJB with a URL to the JNDI location for that EJB. Note that the Action Framework expects EJBs to be deployed to the default location of `/ejb`.
- Modified the configuration file's registry element so that it references the target EJB. For information about this required configuration, see [Section 4.3.2.2, "Invoke a Java Method Action Type Registry Example"](#).
- Added a credential to the credential store to invoke the EJB method. The appropriate configuration needs to be added to pass credentials to the EJB method when it is invoked. For more information, see [Section 4.4.1, "Oracle BI EE Credentials"](#) and [Section 4.5, "Adding and Maintaining Credentials for Use With the Action Framework"](#).

#### 4.6.5.2 Parameters for the EJB

The Action Framework finds the Java methods exposed through the remote interface of the EJB. The parameters of exposed methods become the parameters for an action.

When deploying an EJB method, you may import, but not modify, the `oracle.bi.action.annotation.OBIActionParameter` class found in `Actionframework-common.jar`. This class, which was deployed with the installation of Oracle Business Intelligence, allows you to annotate parameters for use by the Action Framework when creating actions.

The following example shows code to define a remote interface exposing a method called `ArchiveReport`. Note that the import statement for `oracle.bi.action.annotation.OBIActionParameter` and the annotation

**@OBIActionParameter.** This annotation allows you to specify a parameter name and a prompt value to display when creating an action.

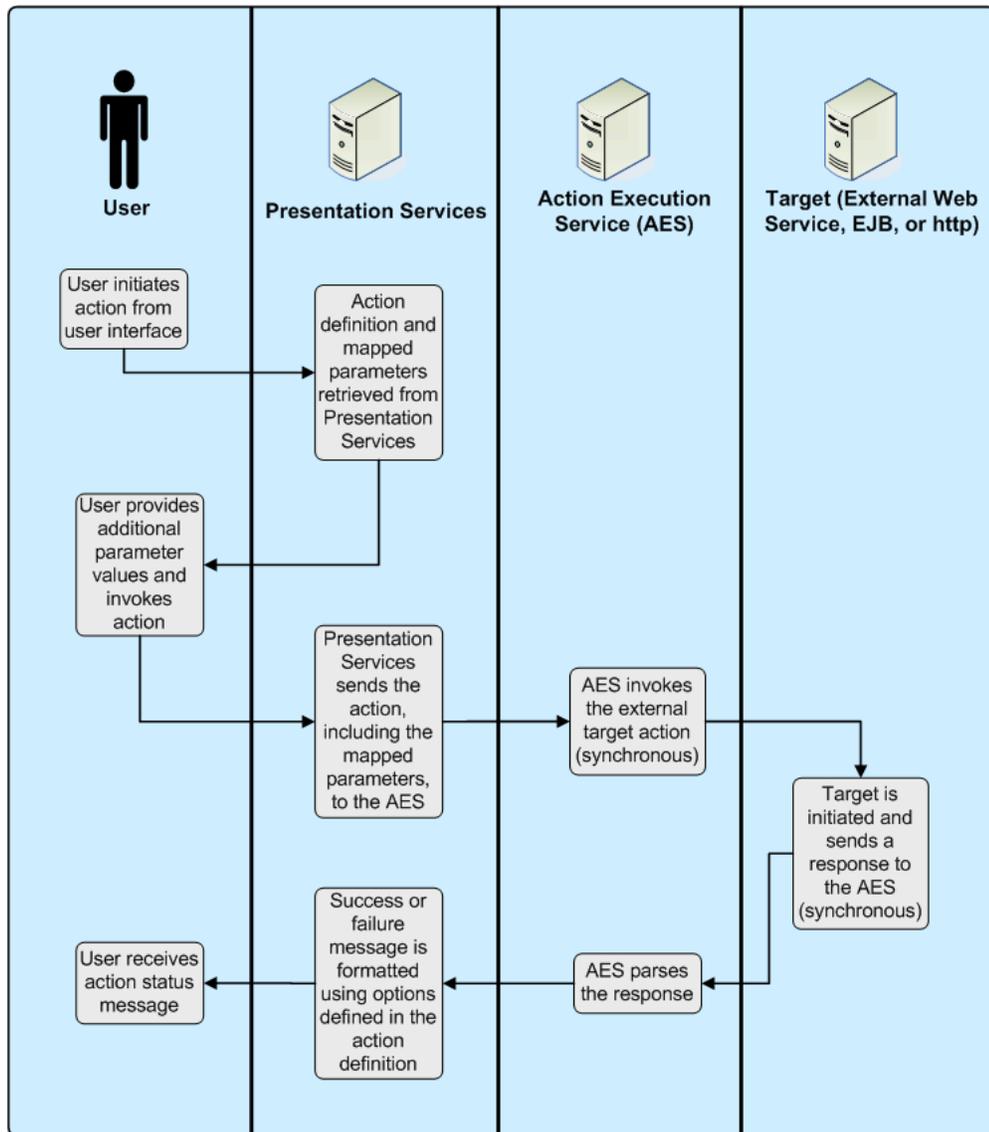
```
package project1;
import java.io.FileNotFoundException;
import java.io.IOException;
import javax.activation.DataHandler;
import javax.ejb.Remote;
import oracle.bi.action.annotation.OBIActionParameter;

@Remote
public interface ArchiveReport {
String ArchiveReport( @OBIActionParameter (name = "Filename", prompt = "Enter
filename location:") String filename, @OBIActionParameter (name = "Analysis",
prompt = "Report to Archive:") DataHandler document) throws FileNotFoundException,
IOException;
}
```

You can send documents from the catalog to a Java method in an EJB. The binary data for the document is sent using a specific Java data type. Therefore, if you want to create a Java method that accepts an analysis as a parameter, your Java method should include a specific Java data type (`javax.activation.DataHandler`) as a parameter. The Action Framework recognizes this data type as capable of receiving a document in one of the supported export formats (for example, PDF or HTML).

#### 4.6.5.3 What Happens When This Action Type is Invoked?

[Figure 4–3, "Invoke Java Method \(EJB\) Process Flow"](#) illustrates the Invoke a Java Method (EJB) action type's process flow.

**Figure 4–3 Invoke Java Method (EJB) Process Flow**

## 4.6.6 Invoke a Browser Script

This action type allows users to browse target JavaScript functions and then create an action to invoke the selected function.

For more information about creating this action type in Presentation Services, see "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

### 4.6.6.1 JavaScript Functions

Use the following information to help you create JavaScript functions.

- The target JavaScript functions that Actions to Invoke a Browser Script call are hosted in the UserScripts.js file are found in the following location:

```
<middleware home>/user_projects/domains/bifoundation_domain/servers/bi_server1/tmp/_WL_user/analytics_11.1.1.2.0/<installation dependent folder>/war/res/b_mozilla/actions/UserScripts.js
```

- A sample UserScript.js file can be downloaded as part of the samples for Oracle Business Intelligence 11g from the Oracle Web site. The sample files are located at the following URL:  
<http://www.oracle.com/technology/products/bi/enterprise-edition.html>
- You can edit the UserScripts.js file and add any user-defined JavaScript functions to invoke from a client-side script action.
- Custom functions should use the namespace USERSCRIPT so that no function name conflicts occur with the product code, and so that the Action Framework can identify functions when creating an action.

#### 4.6.6.2 UserScript.js

Custom functions in the UserScripts.js file consist of a function to contain the actual code to be called when the action is invoked, and, optionally, an associated "publish" object used by the Action Framework to browse for the function when creating the action and for mapping values to the function parameters.

**4.6.6.2.1 JavaScript Example 1** The example shows a JavaScript function of USERSCRIPT.example\_displayParameters that can be called by an action. Target functions receive a single parameter and a named array of values, indexed by the parameter name.

```
/** This is an example function to display all parameters that are received
 * @params {Array} aParams an array of values indexed by the parameter name
 */
USERSCRIPT.example_displayParameters = function(aParams)
{
    var sArgs = "";
    for( args in aParams )
    {
        var argName = args;
        var argValue = aParams[argName];

        sArgs += "Parameter name: " + argName + " Value: " + argValue;
        sArgs += "\n";
    }

    alert( sArgs.length == 0 ? "No Parameters" : sArgs );
};
```

**4.6.6.2.2 JavaScript Example 2** The USERSCRIPT.parameter object is defined at the beginning of the UserScripts.js file. This object is used by the Action Framework to define parameters in custom JavaScript functions for use when creating an action to Invoke a Browser Script. Each parameter object includes a name, a prompt value holding the text to be displayed against the parameter when creating an action, and a default value.

```
/** This is the parameter object you can create to supply default parameters on
creation of Script action.
 * See the 'displayParameters' example below for usage.
 * @param {String} sName is the unique name of parameter.
 * @param {String} sPrompt is the display text used to prompt for the parameter
value.
 * @param {String} sValue (Optional) is the default value for the parameter.
 */
USERSCRIPT.parameter = function(sName, sPrompt, sValue)
{
    this.name = sName;
```

```
    this.prompt = sPrompt;
    this.value = sValue;
};
```

The example shows the definition of a "publish" object that defines parameters for the Action Framework. All functions within the USERSCRIPT namespace that include a "publish" object can be browsed for selection when creating an action. The publish object defines the array of parameters to be passed by an action to the target JavaScript function. Note that functions that do not have an associated "publish" object may still be invoked by an action, but the Action Framework is not able to browse to these private functions, and therefore parameters need to be added to the action definition manually.

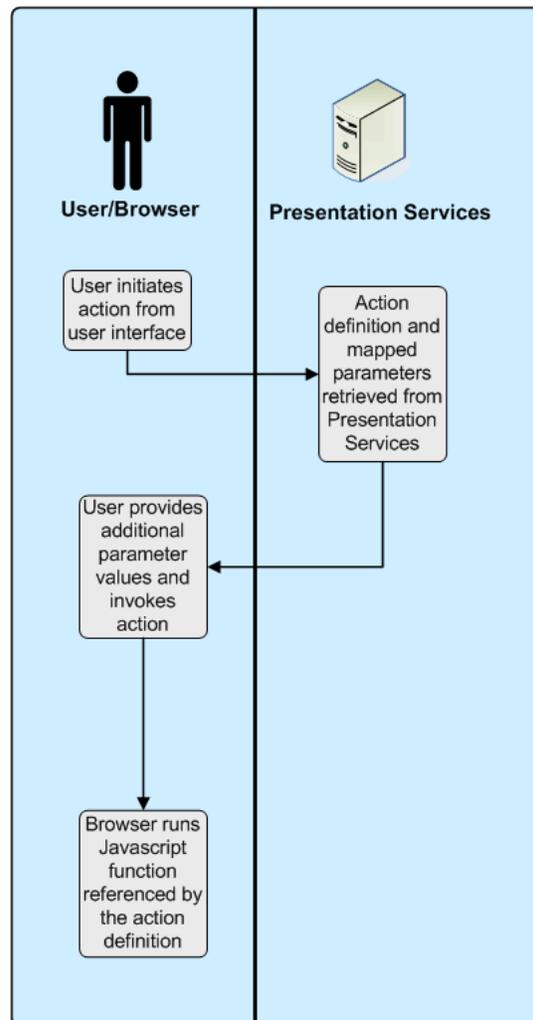
```
USERSCRIPT.example_displayParameters.publish =
{
    // The existence of this 'publish' object causes the 'USERSCRIPT.example_
displayParameters' function to be
    // shown when browsing the available user script functions (during creation of
a Script action).

    // If you wish the Script function to have parameters automatically created on
selection of the function,
    // create a 'parameters' object as shown below.
    // You can have any number of parameters, with each parameter requiring a
unique name, prompt and an
    // optional value.
    parameters :
    [
        new USERSCRIPT.parameter( 'p1', 'Enter value for Param 1', 'p1 default
value' ),
        new USERSCRIPT.parameter( 'p2', 'Enter value for Param 2', 'p2 default
value' ),
        new USERSCRIPT.parameter( 'p3', 'Enter value for Param 3' )
    ]

    // If no generated parameters are required, either create an empty array
    // parameters : []
    // or don't declare the 'parameters' object at all.
};
```

#### 4.6.6.3 What Happens When This Action Type is Invoked?

Figure 4–4, "Invoke a Browser Script Process Flow" illustrates the Invoke a Browser Script action type's process flow.

**Figure 4-4 Invoke a Browser Script Process Flow**

### 4.6.7 Invoke a Server Script

This action type allows users to specify the filename of a custom script to execute (on Microsoft Windows) when the current agent completes. The custom script type can be either JavaScript or VBScript. For more information about configuring this capability, see "Configuring and Managing Agents" and "Introducing Oracle BI Scheduler" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

When setting up this action type, you can select options for whether results are passed to the script, as well as desired formats. You can also manually add additional parameters. Depending upon the type of content to be passed (from either the conditional request or the delivery content), results may be passed in some of the following formats:

- PDF
- MHTML (MIME HTML used in email)
- Plain Text
- XML

- CSV
- Excel
- Powerpoint

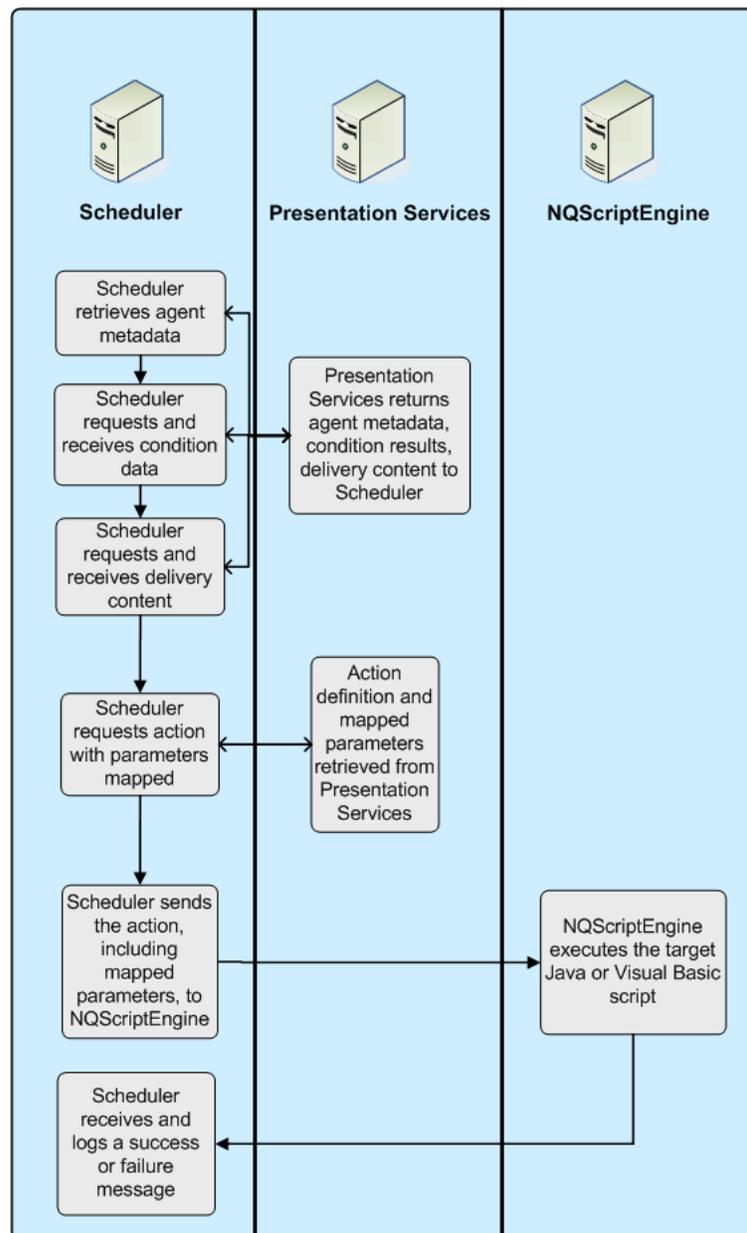
#### **4.6.7.1 Prerequisites for This Action Type**

In order for the user to create an Invoke Server Script action, you must confirm that the custom script file resides on the same server as the Oracle BI Delivers server (the Scheduler).

#### **4.6.7.2 What Happens When This Action Type is Invoked?**

[Figure 4-5, "Invoke a Server Script Process Flow"](#) illustrates the Invoke a Server Script action type's process flow.

Figure 4-5 Invoke a Server Script Process Flow



## 4.6.8 Invoke Agent

Agents can execute actions depending on whether a data condition is met. For detailed conceptual information about agents and procedures for creating agents and adding actions to them, see "Delivering Content" and "Working with Actions" in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

### 4.6.8.1 How Filters Work in Invoke Agent Actions

If you add an Invoke Agent action to an agent and the following conditions exist, then the child agent will be invoked once with filter values generated by the results of the parent agent.

- The parent agent to which you are adding the Invoke Agent action uses a condition to determine whether the parent agent delivers its content and runs its associated actions.
- The Invoke Agent action invokes a child agent that also uses a condition to determine whether the child agent delivers its content and runs its associated actions, *and* that condition is based on an analysis that filters its data by a column prompt.

For example, suppose you have the following:

- A parent agent that uses a condition based on an analysis that uses the Region, District, City, and Sum (Sales) columns
- A child agent that uses a condition based on an analysis that uses the Region, District, City, and Sum (Sales) columns and filters on Region and City.

And suppose when the parent agent runs, the following results are generated:

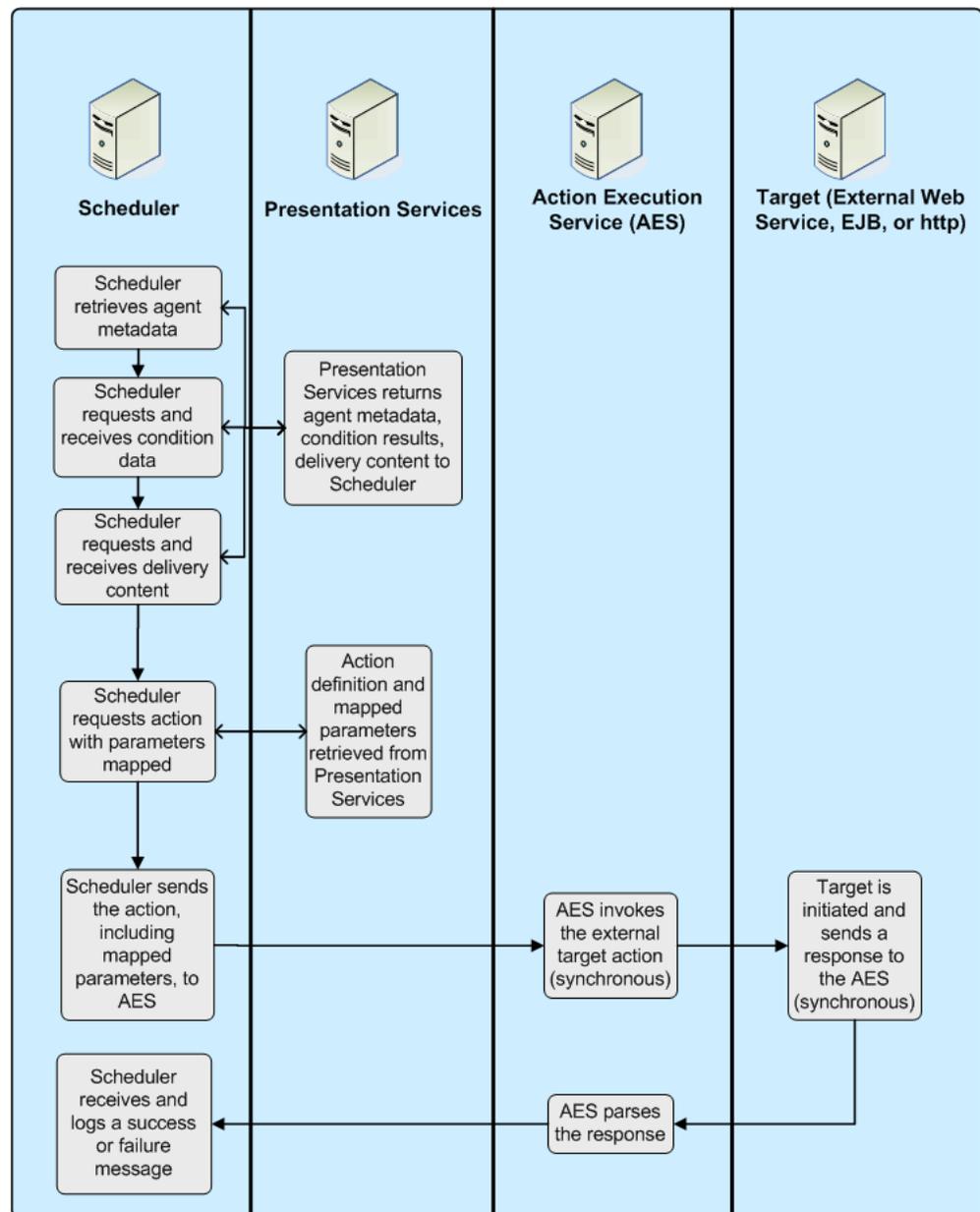
<b>Region</b>	<b>District</b>	<b>City</b>	<b>Sum (Sales)</b>
Central	A	C1	100
Western	B	C2	200

The child agent will run once using the filter values generated by the results of the parent agent, that is, Region = Central and City = C1, or Region = Western and City = C2.

#### **4.6.8.2 What Happens When This Action Type is Invoked?**

[Figure 4–6](#) illustrates the Invoke Agent action type’s process flow.

Figure 4-6 Invoke Agent Process Flow



### 4.6.9 Java Job

In Oracle BI EE 10g, you could specify a custom Java program to execute on Windows and UNIX when an iBot completed. When migrating to the current Oracle BI EE release, these actions are upgraded to read-only Java Job actions.

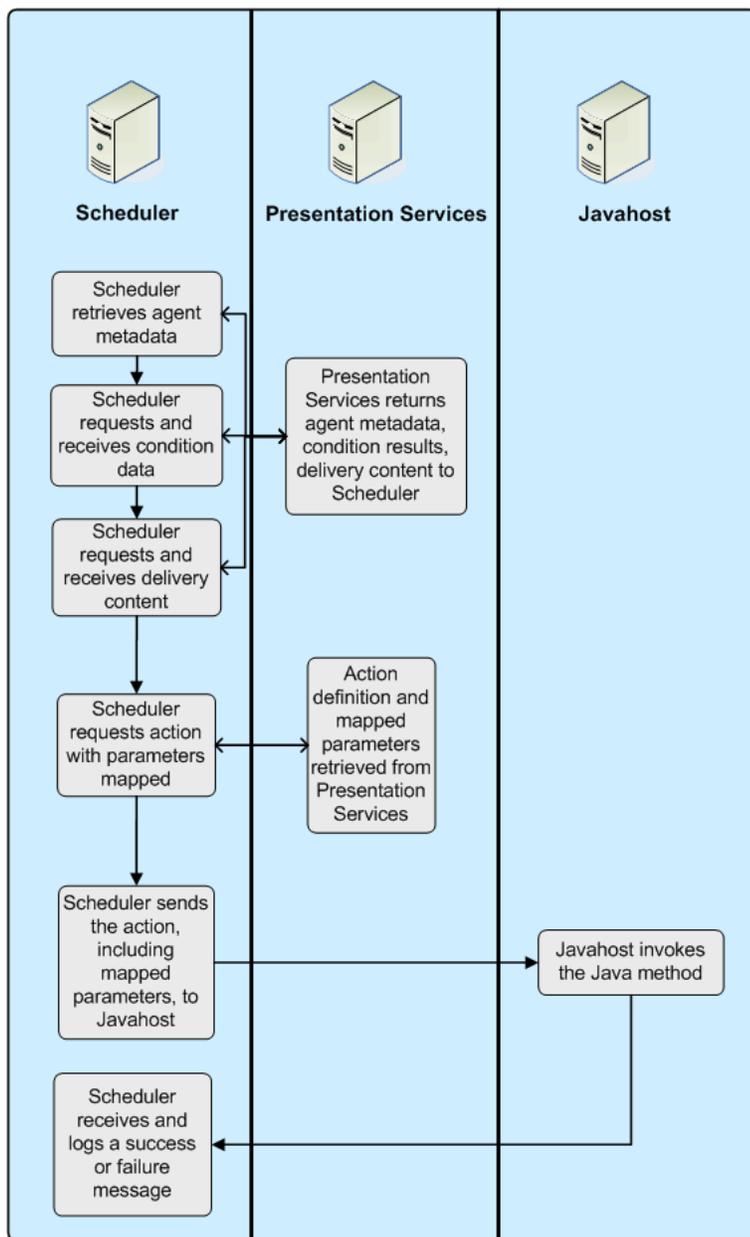
If you are creating new actions to run Java methods, you should use the Invoke a Java Method (EJB) action type. In order to use Java Job actions that have upgraded from 10g, you need to copy the jar file that includes the target java class into the default user Jar file path, as specified for the Oracle BI Javahost. Where the target java class imports Oracle BI EE classes, you should re-compile your target java class referencing the 11g Oracle BI EE classes in the classpath and make sure these classes are available to the target class when it is invoked. For more information, see "Introducing Oracle BI

Scheduler" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*

### 4.6.9.1 What Happens When This Action Type is Invoked?

Figure 4–7, "Java Job Process Flow" illustrates the Java Job action type's process flow.

**Figure 4–7 Java Job Process Flow**



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# Integrating with Oracle E-Business Suite Security

This chapter explains how to set up Oracle Business Intelligence to use Oracle E-Business Suite security to authenticate users. You must perform the steps in this chapter before you can use actions to navigate to Oracle E-Business Suite.

Follow the configuration steps in this chapter to:

- Create a database object and connection pool for the Oracle E-Business Suite database in the Oracle BI repository
- Enable the ability to first log in to Oracle E-Business Suite, and have that authentication passed through to Oracle Business Intelligence
- Embed links to Oracle Business Intelligence dashboards and other objects in Oracle E-Business Suite pages

After you complete the integration steps in this chapter, you can then perform the following tasks:

- Enabling the ability to create Navigate to E-Business Suite actions in Oracle Business Intelligence
- Creating Navigate to E-Business Suite actions within reports and dashboards that take you back into Oracle E-Business Suite in context

See [Chapter 4, "Using Actions to Integrate Oracle BI EE with External Systems"](#) for information about how to perform both of these tasks.

This chapter contains the following topics:

- [Section 5.1, "Creating a Database Object and Connection Pool for the Oracle E-Business Suite Database"](#)
- [Section 5.2, "Setting Up Authentication"](#)
- [Section 5.3, "Embedding Links to Oracle Business Intelligence in Oracle E-Business Suite"](#)

## 5.1 Creating a Database Object and Connection Pool for the Oracle E-Business Suite Database

To enable integration with Oracle E-Business Suite, you must create a database object and connection pool for the Oracle E-Business Suite database in the Oracle BI repository.

**To create a database object and connection pool for the Oracle E-Business Suite database:**

1. In the Administration Tool, open the repository that you want to integrate with Oracle E-Business Suite.
2. Right-click in the Physical layer and select **New Database**.
3. Enter a name for the new database (for example, Oracle E-Business Suite 12).
4. For **Database**, select the appropriate Oracle Database type for your Oracle E-Business Suite database (for example, Oracle 10g R2 or Oracle 11g).
5. Click **OK**.
6. Right-click the new database object you just created and select **New Object**, then select **Connection Pool**.
7. Enter a name for the connection pool (for example, Oracle E-Business Suite 12).  
You must provide a unique name for this connection pool. Because of this requirement, do not name the object 'Connection Pool.'
8. For **Call interface**, select OCI 10g/11g.
9. For **Data source name**, enter the TNS name of the Oracle E-Business Suite database.
10. For **User name** and **Password**, enter the user name and password of the Oracle E-Business Suite super user.
11. Select the Connection Scripts tab.
12. Click **New** for **Execute on connect**.
13. Enter the following physical SQL, and then click **OK**:  

```
call APP_SESSION.validate_icx_session('valueof(NQ_SESSION.ICX_SESSION_COOKIE)')
```
14. Click **OK** in the Connection Pool dialog.
15. Save the repository.

## 5.2 Setting Up Authentication

This section explains how to set up shared authentication between Oracle Business Intelligence and Oracle E-Business Suite.

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**Note:** If you set up shared authentication using the EBS ICX authentication cookie as described in this section, you cannot use single sign-on to seamlessly navigate from Oracle Business Intelligence to Oracle BI Publisher.

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This section contains the following topics:

- [Section 5.2.1, "Setting Up Session Variables for Authentication"](#)
- [Section 5.2.2, "Updating authenticationschemas.xml"](#)
- [Section 5.2.3, "Updating instanceconfig.xml"](#)

### 5.2.1 Setting Up Session Variables for Authentication

To set up proper authentication for your integrated environment, you must set up eight session variables and an initialization block in the Oracle BI repository.

**To set up session variables for authentication in the Administration Tool:**

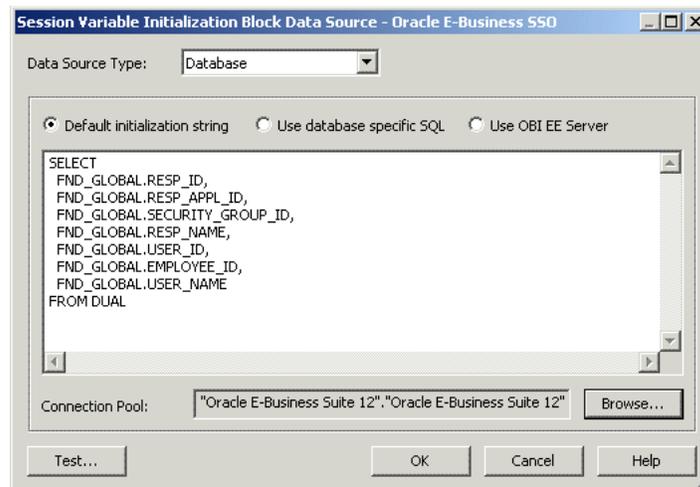
1. In the Administration Tool, open the repository that you want to integrate with Oracle E-Business Suite.
2. Select **Manage**, then select **Variables**.
3. From the **Action** menu, select **New**, then **Session**, then **Initialization Block**.
4. Enter a name for the initialization block (for example, Oracle E-Business SSO).
5. Click **Edit Data Source**.
6. For **Default initialization string**, enter the following:

```
SELECT
  FND_GLOBAL.RESP_ID,
  FND_GLOBAL.RESP_APPL_ID,
  FND_GLOBAL.SECURITY_GROUP_ID,
  FND_GLOBAL.RESP_NAME,
  FND_GLOBAL.USER_ID,
  FND_GLOBAL.EMPLOYEE_ID,
  FND_GLOBAL.USER_NAME
FROM DUAL
```

7. For **Connection Pool**, click **Browse**, select the connection pool you created for the Oracle E-Business Suite database (for example, Oracle E-Business Suite 12), and click **Select**.

Figure 5–1 shows the Session Variable Initialization Block Data Source dialog, with example values for **Default initialization string** and **Connection Pool**.

**Figure 5–1 Session Variable Initialization Block Data Source Dialog**



8. Click **OK**.
9. Click **Edit Data Target**.
10. Create the following session variables:

```
EBS_RESP_ID
EBS_RESP_APPL_ID
EBS_SEC_GROUP_ID
EBS_RESP_NAME
EBS_USER_ID
EBS_EMPLOYEE_ID
```

USER

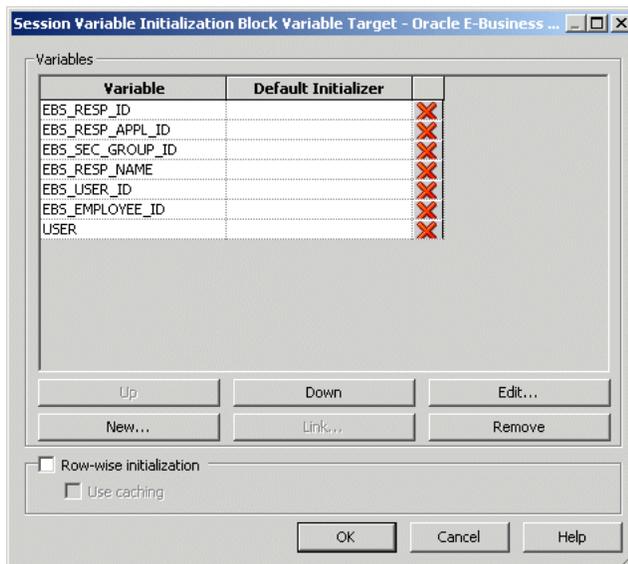
To do this, click **New**, enter the variable name, and then click **OK**. Click **Yes** when you receive a warning about the special purpose of the `USER` variable.

Optionally, you can select **Security Sensitive** before clicking **OK** for each variable. See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for more information about this option.

You must ensure that the variables are listed in the given order. If necessary, select a variable and click **Up** or **Down** to reorder the list.

Figure 5–2 shows the Session Variable Initialization Block Variable Target dialog, with the required variables displayed in the required order.

**Figure 5–2 Session Variable Initialization Block Variable Target Dialog**



11. Click **OK** in the Session Variable Initialization Block Variable Target dialog.
12. In the Session Variable Initialization Block dialog, select **Required for authentication**.
13. Click **OK**.
14. Save the repository.

## 5.2.2 Updating authenticationschemas.xml

You must update the `authenticationschemas.xml` file to add the name of the EBS ICX authentication cookie.

**To update authenticationschemas.xml:**

1. Open the file `authenticationschemas.xml` for editing. You can find this file at:

`ORACLE_HOME/bifoundation/web/display`

2. Find the following element:

```
<AuthenticationSchema name="EBS-ICX"
```

3. Locate the sub-element RequestVariable source="cookie" and change the value of the nameInSource attribute from ICX\_SESSION to the name of the EBS ICX authentication cookie prefix. For example:

```
<RequestVariable source="cookie" type="auth" nameInSource="VIS" biVariableName="NQ_SESSION.ICX_SESSION_COOKIE" />
```

Do not update the RequestVariable source="url" sub-element.

---

**Note:** Ask your Oracle E-Business Suite administrator for the name of the EBS ICX authentication cookie if you do not know it. Alternatively, follow these steps to find the cookie name:

1. Log in to Oracle E-Business Suite.
2. Enter the following text in the address bar of your browser:
3. The cookie is displayed. For example:

```
javascript:document.writeLn(document.cookie);
ORA_BIPS_LBINFO=1262d6a5f9a; ORA_MOS_LOCALE=en%7CUS; ORA_UCM_
INFO=3~00027147766664614052270216870092~Taylor~Michael~mike.tay
lor@oracle.com~USA~en~1; ORA_UCM_VER=%2FMP%2F8kgic%2Cr_
wjmp%3Emp_ajc%2CamkMP%2F8iega*p%5Duhkn%3Ckn%5D_ha*_
kiMP%2F8%2F26%2C65%2C7%2C22MP%2F8-04*43*5*00; ORA_UCM_
SRVC=3*OTN~1~0~//~null~*OPN~1~0~//~SE1%3ASE1%3ASE1%3ASE1%
3ASE1%3ASE1%3ASE1%3A~*EMP~1~0~/34/~null~*GMO~1~0~//~null; ORA_
TAHITI_PREFS=-0-----; VIS=ZcEJeOLNVqcHGIGYvCpzTx3N:S;
ADMINCONSOLESESSION=0yQmLP2D67vJKgtXLxsN1534QTw1ThYkyvXfR0fjFK0
LPsD3Hh83!1322564050
```

The value you need to provide in authenticationschemas.xml is the prefix of the EBS ICX authentication cookie. In the previous example, the EBS ICX authentication cookie is VIS=ZcEJeOLNVqcHGIGYvCpzTx3N:S;, and the prefix is VIS.

---

4. In the same entry (RequestVariable source="cookie"), ensure that the value of the biVariableName attribute is the same as the value you entered as part of the connection script when you created the connection pool for the Oracle E-Business Suite database. See Step 13 of [Section 5.1, "Creating a Database Object and Connection Pool for the Oracle E-Business Suite Database"](#) for more information.

5. Find the following element:

```
<SchemaKeyVariable source="cookie"
```

6. Change the value of the nameInSource attribute from ICX\_SESSION to the name of the EBS ICX authentication cookie prefix (often VIS). For example:

```
<SchemaKeyVariable source="cookie" nameInSource="VIS" forceValue="EBS-ICX"/>
```

7. Save and close the file.

### 5.2.3 Updating instanceconfig.xml

You must update the instanceconfig.xml file to add EBS-ICS as one of the enabled schemas, and set it as the default.

**To update instanceconfig.xml:**

1. Open the file instanceconfig.xml for editing. You can find this file at:

```
ORACLE_INSTANCE/config/OracleBIPresentationServicesComponent/coreapplication_
obipsn
```

2. Locate the Authentication element.
3. Include EBS-ICX in the list of enabled schemas. For example:

```
<EnabledSchemas>UidPwd, Impersonate, UidPwd-soap, Impersonate-soap, EBS-ICX</EnabledSchemas>
```

Ignore the comment in instanceconfig.xml that says this setting is centrally managed. EBS-ICX must be manually added to the EnabledSchemas element.

4. Save and close the file.
5. Restart Oracle Business Intelligence.

## 5.3 Embedding Links to Oracle Business Intelligence in Oracle E-Business Suite

To embed a link in Oracle E-Business Suite that opens Oracle Business Intelligence dashboards, you need to create a form function and then assign menus and responsibilities.

Before you begin, log in to Oracle E-Business Suite as the system administrator (for example, sysadmin). Then, select the **System Administrator** responsibility from the responsibility navigator pane on the left. The available menus appear on the right.

Follow the steps in this section to create the following objects, in sequence:

- Function
- Menu
- Responsibility
- User
- Profile

This section contains the following topics:

- [Section 5.3.1, "Creating a Form Function"](#)
- [Section 5.3.2, "Creating a Menu That Invokes the Form Function"](#)
- [Section 5.3.3, "Assigning the Menu to a Responsibility"](#)
- [Section 5.3.4, "Assigning the Responsibility to a User"](#)
- [Section 5.3.5, "Setting Up a Profile"](#)

### 5.3.1 Creating a Form Function

This section explains how to create a form function in Oracle E-Business Suite.

**To create a form function:**

1. From the **Application** menu, select **Function**. The Form Functions dialog appears. [Figure 5–3](#) shows the Form Functions dialog.

**Figure 5-3 Form Functions Dialog**

Function	User Function Name	Description
OBIEE	OBIEE	Link to Oracle BI

2. Enter the name of the function in the **Function** field (for example, OBIEE).
3. Enter the user function name (for example, OBIEE).
4. Enter a description (for example, Link to Oracle BI).
5. Save your changes using the **Save** button on the toolbar.
6. Select the Properties tab.
7. For **Type**, enter SSWA jsp function.
8. Select the Web HTML tab.
9. For **HTML Call**, enter one of the following options:
  - To link to Answers, enter:  
OracleOasis.jsp?mode=OBIEE&function=Answers
  - To link to Dashboards, enter:  
OracleOasis.jsp?mode=OBIEE&function=Dashboard
10. Save your changes using the **Save** button on the toolbar, and then close the Form Functions dialog.

### 5.3.2 Creating a Menu That Invokes the Form Function

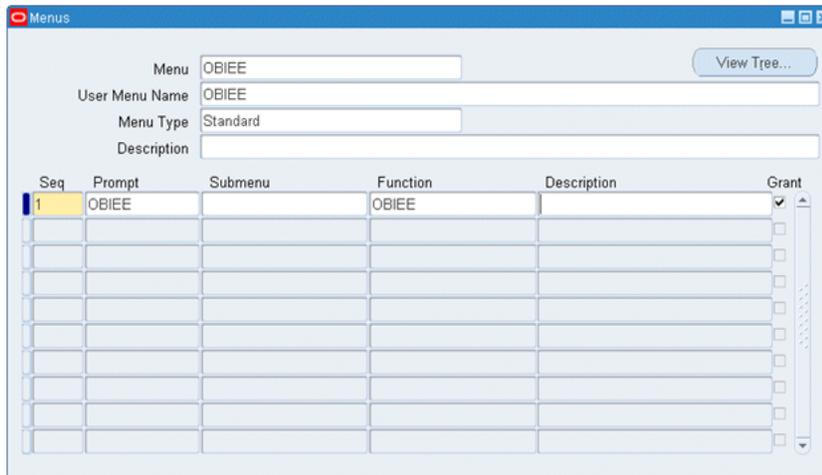
This section explains how to create a menu that invokes the form function in Oracle E-Business Suite. Note that menus are compiled whenever they are updated.

**To create a menu that invokes the form function:**

1. From the **Application** menu, select **Menu**. The Menus dialog appears.  
**Tip:** If you are already in Forms, you can select Menu from the Top Ten list.

Figure 5-4 shows the Menus dialog.

**Figure 5–4 Menu Dialog**



2. Enter the name of the menu in the **Menu** field (for example, OBIEE).
3. Enter a **User Menu Name** (for example, OBIEE).
4. For **Menu Type**, enter Standard.
5. For **Function**, enter the name of the function you created in [Section 5.3.1, "Creating a Form Function."](#)
6. Save your changes using the **Save** button on the toolbar, and then close the Menus dialog.

Note that if a menu has only one function, then that function is selected by default for the user. If this is the case, intermediate steps like displaying the function may be skipped.

### 5.3.3 Assigning the Menu to a Responsibility

The menu that you created in [Section 5.3.2, "Creating a Menu That Invokes the Form Function"](#) must be associated with a responsibility. You can reuse an existing responsibility, or create a new responsibility, as shown in the following procedure.

**To assign the menu to a new responsibility:**

1. Select **Responsibilities** from the Top Ten List.

[Figure 5–5](#) shows the Responsibilities dialog.

**Figure 5–5 Responsibilities Dialog**

The screenshot shows the 'Responsibilities' dialog box with the following fields and sections:

- Responsibility Name:** OBIEE
- Application:** Human Resources
- Responsibility Key:** OBIEE
- Description:** OBIEE
- Effective Dates:** From: 01-JAN-2010
- Available From:**
  - Oracle Applications
  - Oracle Self Service Web Applications
  - Oracle Mobile Applications
- Data Group:**
  - Name:** Standard
  - Application:** Human Resources
- Menu:** OBIEE
- Web Host Name:** (empty)
- Web Agent Name:** (empty)
- Request Group:**
  - Name:** (empty)
  - Application:** (empty)
- Menu Exclusions:** (Active tab, showing a table with columns: Type, Name, Description)
- Excluded Items:** (Inactive tab)
- Securing Attributes:** (Inactive tab)

2. Enter a name for the responsibility (for example, OBIEE).
3. For **Application**, enter the application for which you created the menu.
4. For **Responsibility Key**, define any unique value. To ensure that this value is unique, the Responsibility Key is not translated.
5. For **Available From**, select **Oracle Self Service Web Applications**.
6. For **Data Group**, enter Standard for **Name** and re-enter the application name for **Application**.
7. For **Menu**, enter the name of the menu you created in [Section 5.3.2, "Creating a Menu That Invokes the Form Function."](#)
8. Save your changes using the **Save** button on the toolbar, and then close the Responsibilities dialog.

### 5.3.4 Assigning the Responsibility to a User

You must assign the responsibility that is associated with the menu to a user. You can create a new user, or assign the responsibility to an existing user, as shown in the following procedure.

#### To assign the responsibility to an existing user:

1. Select **Users** from the Top Ten List.

[Figure 5–6](#) shows the Users dialog.

**Figure 5–6 Users Dialog**

The screenshot shows the 'Users' dialog box with the following fields and sections:

- User Information:** Logon Name (CMOORE), Password, Description (Charlie Moore), Person (Moore, Charlie), Customer (Charlie Moore), Supplier, E-Mail (charlie.moore@progress.co.uk), and Fax.
- Password Expiration:** Radio buttons for Days, Accesses, and None (selected).
- Effective Dates:** From (01-JAN-1950) and To.
- Responsibilities Tab:** Contains a table with columns: Responsibility, Application, Description, Security Group, and Effective Dates (From, To).

Responsibility	Application	Description	Security Group	Effective Dates
				From To
General Ledger, UK Health S	General Ledger		Standard	01-JAN-1950
General Ledger, Progress Uk	General Ledger		Standard	05-DEC-2005
ITV_Administrator	General Ledger		Standard	15-APR-2009
Report eXchange Designer	Assets		Standard	01-JAN-1950
<b>OBIEE</b>	Human Resources		Standard	<b>21-APR-2010</b>

2. For the user you want to edit, enter the responsibility details in the Direct Responsibilities tab. Enter the responsibility name, application, security group (Standard), and effective dates.
3. Save your changes using the **Save** button on the toolbar, and then close the Users dialog.

### 5.3.5 Setting Up a Profile

You need to enter the URL of the Oracle BI Server as part of a profile. You can set a profile for a responsibility, a user, or a site. The following procedure shows how to set profile options for a responsibility.

**To set profile options for a responsibility:**

1. From the **Application** menu, select **Profile**.

Figure 5–7 shows the Find System Profile Values dialog.

**Figure 5–7 Find System Profile Values Dialog**

2. Select **Responsibility**, and then enter the name of the responsibility to which you assigned the menu in [Section 5.3.3, "Assigning the Menu to a Responsibility."](#)
3. Enter %Business Intelligence% in the **Profile** field.
4. Click **Find**.
5. On the resulting screen, under Responsibility, enter the Oracle Business Intelligence URL. For example:  

```
http://my_server.domain.com:port
```

 For port, enter the Web server port where Oracle Business Intelligence is running (for example, 9704).
6. Save your changes using the **Save** button on the toolbar.



# Part III

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## Integrating Oracle BI EE With Other Systems

This part explains how to make Oracle BI EE data and components available to other systems. It contains the following chapters:

- [Chapter 6, "Integrating Oracle BI Presentation Services into Corporate Environments Using HTTP and JavaScript"](#)
- [Chapter 7, "Oracle Business Intelligence Systems Management API"](#)
- [Chapter 8, "Integrating Other Clients with Oracle Business Intelligence"](#)
- [Chapter 9, "Using Discoverer Data in Applications"](#)



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# Integrating Oracle BI Presentation Services into Corporate Environments Using HTTP and JavaScript

This chapter explains the HTTP methods that you can use to integrate Oracle BI Presentation Services into your corporate environment. Oracle BI Presentation Services provides entry points for most functionality exposed in the system. Calls can be made through HTTP using a simple URL syntax or JavaScript commands. This chapter contains the following topics:

- [Section 6.1, "Incorporating Oracle Business Intelligence Results into External Portals or Applications"](#)
- [Section 6.2, "Referencing Dashboard Content in External Portals or Applications"](#)
- [Section 6.3, "Using the Oracle BI Presentation Services Go URL to Issue SQL and Pass Filters"](#)
- [Section 6.4, "Example of an Oracle Business Intelligence Third-Party SQL Tool Integration"](#)

## 6.1 Incorporating Oracle Business Intelligence Results into External Portals or Applications

This section describes how to use the Oracle BI Presentation Services Go URL to incorporate results into external portals or applications. It contains the following topics:

- [Section 6.1.1, "About the Oracle BI Presentation Services GO URL"](#)
- [Section 6.2.2, "Structure of the Basic Oracle BI Presentation Services Dashboard URL"](#)
- [Section 6.1.3, "Optional Parameters for the Oracle BI Presentation Services Go URL"](#)

### 6.1.1 About the Oracle BI Presentation Services GO URL

The Oracle BI Presentation Services Go URL command is for use in incorporating specific Oracle Business Intelligence results into external portals or applications. The Go URL is used when you add a result to your favorites, or add a link to a request to your dashboard or an external Web site. It has a number of forms and optional arguments that can be used to control its behavior.

You can post the Go URL as a Form or issue it as a URL. If you are issuing parameters as part of a URL, they need to be escaped properly. You need to replace spaces with plus ( + ) signs, and so on. For example, to pass East Region as a value, type East+Region.

When called from within an Oracle BI Presentation Services screen, such as a dashboard or an HTML result view, the URL should begin with the following characters:

```
saw.dll?Go
```

When called from another screen on the same Web server, the URL should begin with the following characters:

```
/analytics/saw.dll?Go
```

When referenced from a screen on a different server (or sent through email, and so on), the URL should begin with the fully qualified server name or IP address:

```
http://server_name_or_ip_address/analytics/saw.dll?Go
```

To test these commands, you can enter the fully qualified version into the Address field of the browser.

## 6.1.2 Structure of the Basic Oracle BI Presentation Services Go URL

The basic Go URL command needs the full catalog path to the request to execute. It returns the default result view, which is defined in the request.

For example, the following go URL command returns the default result view as defined in the request, where SB2 is the name of the request to execute.

```
saw.dll?Go&Path=%2Fshared%2FTest%2FSB2
```

## 6.1.3 Optional Parameters for the Oracle BI Presentation Services Go URL

You can modify the behavior of the Go URL command by adding one or more of the following parameters. If an invalid URL is specified (for example, you type a parameter incorrectly), the browser displays a "The page cannot be found" error with the detailed text of "HTTP 400 - Bad Request."

---



---

**Note:** In parameter descriptions, SB2 is the name of the request to execute.

---



---

- **User ID and Password.** The user is prompted for user ID and password if this information has been omitted from the request.

This is the format, where uuu is the user ID and ppp is the password:

```
&NQUser=uuu&NQPassword=ppp
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&NQUser=user1&NQPassword=rock
```

This logs on as user1 with a password of rock, and executes the request.

- **Link Options.** The results will include links.

This is the format:

&Options=x

The x can be one or more of the following letters:

- m = Modify Request
- f = Printer Friendly
- d = Download to Excel
- r = Refresh Results

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&Options=md
```

This displays results with the links Modify Request and Download.

- **Printer Friendly.** Results are in a printer-friendly format, without the paging controls, hot links, and so on.

This is the format:

```
&Action=print
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Print
```

- **Application Friendly.** Results are displayed in an application-friendly format, such as for Microsoft Excel, without the paging control, hot links, and so on.

This is the format:

```
&Action=Extract
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Extract
```

The Extract action also acts as a Navigate action (read [Section 6.3.2, "Passing Filters to the Oracle BI Presentation Services Go URL Through a URL \(Navigation\)"](#)) so you can filter the results that are returned by the call.

- **Specific View.** This shows an individual result view rather than the default compound view.

This is the format, where xx is the name of the view:

```
saw.dll?Go&Path=/Shared/Test/SB2&ViewName=xx
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&ViewName=Chart
```

Assuming that the request contains a Chart view named Chart, this displays just the Chart view.

- **Specific Style.** This shows the results using a specified style. If the style does not exist, the default is used.

This is the format, where xx is the name of the style:

```
saw.dll?Go&Path=/Shared/Test/SB2&Style=xx
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&Style=Lime
```

This uses the style named Lime to show the results.

- **Result Format.** This controls the format of the results.

This is the format, where xx is XML or HTML:

```
saw.dll?Go&Path=/Shared/Test/SB2&Format=xx
```

Example:

```
saw.dll?Go&Path=/Shared/Test/SB2&Format=XML
```

This shows results in XML.

### 6.1.3.1 Displaying All Records in a Table

There are two ways to display all the records in the table:

- Set the Rows per Page property on the Table view to 10,000, and then use the basic Go. This is the easier of the two methods.
- Issue the following URL:

```
saw.dll?Go&Path=/users/Administrator/a&Action=Scroll&P5=-1&ViewID=o:go~r:report  
~v:compoundView!1~v:tableView!1
```

## 6.2 Referencing Dashboard Content in External Portals or Applications

This section describes how to use the Oracle BI Presentation Services Dashboard URL. It contains the following topics:

- [Section 6.2.1, "About the Oracle BI Presentation Services Dashboard URL"](#)
- [Section 6.2.2, "Structure of the Basic Oracle BI Presentation Services Dashboard URL"](#)
- [Section 6.2.3, "Optional Parameter for the Oracle BI Presentation Services Dashboard URL"](#)

### 6.2.1 About the Oracle BI Presentation Services Dashboard URL

The Oracle BI Presentation Services Dashboard URL is for use in incorporating or referencing the content of a specific dashboard in external portals or applications. It has a number of forms and optional arguments that can be used to control its behavior.

You can post the Dashboard URL command as a Form or issue it as a URL. If you are issuing parameters as part of a URL, they need to be escaped properly. You need to replace spaces with plus ( + ) signs, and so on. For example, to pass East Region as a value, type East+Region.

When called from within an Oracle BI Presentation Services screen, such as a dashboard or an HTML result view, the URL should begin with this:

```
saw.dll?Dashboard
```

When called from another screen on the same Web server, the URL should begin with this:

```
/analytics/saw.dll?Dashboard
```

When referenced from a screen on a different server (or sent through email, and so on), the URL should begin with the fully qualified server name or IP address:

```
http://server_name_or_ip_address/analytics/saw.dll?Dashboard
```

To test these commands, you can enter the fully qualified version into the Address field in the browser.

## 6.2.2 Structure of the Basic Oracle BI Presentation Services Dashboard URL

The basic Dashboard URL command needs no parameters. It displays the user's default portal after authenticating the user.

This is the format:

```
http://server_name_or_ip_address/analytics/saw.dll?Dashboard&PortalPath="path of the dashboard"
```

Example:

```
http://localhost:9704/analytics/saw.dll?Dashboard&PortalPath=/shared/Paint Demo/_portal/Paint Dashboard
```

## 6.2.3 Optional Parameter for the Oracle BI Presentation Services Dashboard URL

You can modify the behavior of the Dashboard URL command by adding the user ID and password parameters. If the parameters are omitted, then the user is prompted for user ID and password information, unless the user chose the option to have logon information remembered when last logged on. If using a Session ID or Ticket, pass it as the NQUser parameter. In the parameter description, SB2 is the name of the request to execute.

This is the format, where uuu is the user ID, and ppp is the password:

```
&NQUser=uuu&NQPassword=ppp
```

Example:

```
http://localhost:9704/analytics/saw.dll?Dashboard&PortalPath=/shared/Paint Demo/_portal/Paint Dashboard&NQUser=user1&NQPassword=rock
```

This logs on as user1 with a password of rock, and displays the dashboard.

If an invalid URL is specified (for example, you type a parameter incorrectly), the browser returns the "The page cannot be found" error with detailed text of "HTTP 400 - Bad Request."

## 6.3 Using the Oracle BI Presentation Services Go URL to Issue SQL and Pass Filters

This section explains how to use the Go URL command to issue SQL, and how to pass filters to be used for navigation. It contains the following topics:

- [Section 6.3.1, "Issuing SQL Commands and Passing Filters"](#)
- [Section 6.3.2, "Passing Filters to the Oracle BI Presentation Services Go URL Through a URL \(Navigation\)"](#)

### 6.3.1 Issuing SQL Commands and Passing Filters

The Go URL command can be used to issue Oracle Business Intelligence SQL. These forms of the Go URL return tabular results. The basic options from `&Style=` and `&Options=` can be used here as well.

To issue Oracle Business Intelligence's simplified SQL, include the escaped SQL as a parameter to the Go URL. For example:

```
saw.dll?Go&SQL=select+Region,Dollars+from+SupplierSales
```

where the FROM clause is the name of the Subject Area to query.

Alternatively, the command `IssueRawSQL` can be used to bypass the Web processing and issue SQL directly against the BI Server.

### 6.3.2 Passing Filters to the Oracle BI Presentation Services Go URL Through a URL (Navigation)

The Go URL can also be used to pass context such as filters to a destination request. This is done by adding additional parameters to the call. You need to make sure that any columns you are passing are set up in the destination with Is Prompted filters, or specific default filters.

#### 6.3.2.1 Navigation Parameters

The basic syntax of the navigation command is the same as presented in the section [Section 6.2.2, "Structure of the Basic Oracle BI Presentation Services Dashboard URL"](#), but with the addition of the `Action=Navigate` parameter, and then population of the P1 - Pn parameters, as necessary.

By default, you can add up to 100 parameters to the URL. However, you can adjust the number of parameters by modifying the `Prompts/MaxPromptedURLParams` setting in `instanceconfig.xml`. For more information see "Using a Text Editor to Manually Update Oracle Business Intelligence Configuration Settings" in the *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

```
&Action=Navigate
```

```
&P0=n   where n is the number of columns you wish to filter, currently 1 - 6.
```

```
&P1=op  where op is one of the following operators.
```

Operator	Meaning
eq	Equal to or in.
neq	Not equal to or not in.
lt	Less than.
gt	Greater than.
ge	Greater than or equal to.
le	Less than or equal to.
bwith	Begins with.
ewith	Ends with.
cany	Contains any (of the values in &P3).

Operator	Meaning
call	Contains all (of the values in &P3).
like	You need to type %25 in place of the usual % wildcard. See the examples that follow.
top	&P3 contains 1+n, where n is the number of top items to display.
bottom	&P3 contains 1+n, where n is the number of bottom items to display.
bet	Between (&P3 must have two values).
null	Is null (&P3 must be 0 or omitted).
nnul	Is not null (&P3 must be 0 or omitted).
&P2=ttt.ccc	In this parameter, ttt is the table name and ccc is the column name. If the table or column contains spaces, it must be quoted with double-quotes. Spaces should be escaped as %20, for example, Measures."Dollar%20Sales".
&P3=n+xxx+yy y+...+zzz	In this parameter, n is the number of values, and xxx, yyy, and zzz are the actual values.  <b>Note:</b> If the value of P3 begins with a numeric character, the entire value must be enclosed in quotes. For example:  saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=top&P2=Customers.Region&P3="7West"

---

**Note:** The settings for &P1,&P2, and &P3 are repeated for &P4-P6, &P7-P9, &P10-P12, &P13-P15, and &P16-P18 as necessary, depending on the value of &P0.

---

### 6.3.2.2 Navigation Examples

This returns records for the East and Central regions:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=eq&P2=Customers.Region&P3=2+Central+East
```

This returns records for like Regions E...t:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=like&P2=Customers.Region&P3=1+E%25t
```

This returns the top two regions by dollars sold:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=top&P2="Sales%20Facts".Dollars&P3=1+2
```

This is an example where the number of arguments is not included in the syntax:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=top&P2=Customers.Region&P3=Central
```

---

**Note:** You can omit the number of arguments only if just one argument value is included.

---

This returns records with between 2,000,000 and 2,500,000 in sales:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=1&P1=top&P2="Sales%20Facts".Dollars
```

```
llars&P3=2+2000000+2500000
```

This returns records for Regions beginning with the letter E:

```
saw.dll?Go&Path=vate&P0=1&P1=bwith&P2=Customers.Region&P3=1+E
```

This returns records for Regions containing the letter E and having more than 20 million in sales:

```
saw.dll?Go&Path=/Shared/Test/SB2&Action=Navigate&P0=2&P1=cany&P2=Customers.Region&P3=1+e&P4=gt&P5="Sales%20Facts".Dollars&P6=1+20000000
```

Oracle BI Presentation Services navigation is currently supported from charts, table and pivot table views, HTML views, and external applications and Web pages. The destination search should have filters defined on columns for which it wants to receive context. These can be specific filters or, usually, the Is Prompted filter. In addition to the Table.Column value specifically referenced in the navigation call, all filters from the source request that have corresponding table.columns in the destination, are applied to the destination. Therefore, the appropriate context from a source can be passed to the destination.

### 6.3.2.3 Navigation Using JavaScript

Navigation can currently be accomplished using the custom text/date formatter for a column. The central concept is that you add a column you want to navigate from to your search. You then choose Custom Text Format from the properties for the column, and enter HTML that calls one of the two provided JavaScript functions. This technique can be used to perform many actions, including sorting columns, calling custom JavaScript functions, and so on.

Oracle BI Presentation Services includes two JavaScript functions that enable navigation from Table and Pivot views: GoNav and PortalNav. (These functions are located in ORACLE\_HOME/bifoundation/web/app/res/b\_mozilla/viewhelper.js.) The former handles navigation to a specific search. The latter handles navigation to a specific dashboard. A description of their syntax follows, along with example Custom Text formats that you can use to implement navigation.

---



---

**Note:** To control the look of the navigable text using the style sheet, Oracle BI Presentation Services is standardized on the class=Nav.

---



---

#### GoNav function

```
function GoNav(event, sPath, sTbl, sCol, sVal, sTarget)
```

where:

event = event indicator.

sPath = the catalog path of the destination search.

sTbl = the logical table name to filter.

sCol = the logical column name to filter.

sVal = the value to filter by.

sTarget (optional) = "\_blank" to open a new browser window with the results.

#### Sample Custom Text Format for GoNav Call

The GoNav and PortalNav calls can be wrapped in an HTML statement (include the quotes):

```
[html]"<font class=nav onclick=\"JavaScript:GoNav(event,
'/shared/topaz/performance/transaction
details','Transaction','Quality','"@')\">"@</font>
```

Table 6–1 explains the elements of this example.

**Table 6–1** *Elemental Analysis of a GoNav Call*

Element	Description
[html]	Tells Oracle BI Presentation Services to interpret the following text as HTML. Note that every "less than" character (<) must be preceded by a double quote (") if the intent is to use it in an HTML tag.
"<font	An HTML tag that a JavaScript call can be attached to. You could potentially use <div>, <span>, <a>, and so on.
class=nav	The CSS style class used for formatting of the HTML tag.
onclick=\"JavaScript:GoNav(event, '/shared/topaz/performance/transaction details','Transaction','Quality','"@');\"	The method to call a JavaScript function. When the user clicks on the contents of this HTML tag, then the JavaScript function is called.
>	The end of the font tag.
"@"	Instructs Oracle BI Presentation Services to replace the at sign (@) with the actual column value. When [html] is used, the @ symbol must be enclosed with double quotation marks (").
</font>	The closing tag to match the <font> tag.

This example of GoNav places this HTML on the dashboard:

```
<a href="javascript:GoNav(event, '/shared/topaz/performance/transaction
details','Transaction','Quality','Some value');">Click here to navigate to
Transaction Details with 'Some value'</a>
```

### PortalNav Function

```
function PortalNav(event, sPortal,sTbl,sCol,sVal)
```

event = event indicator.

sPortal = the catalog path of the destination portal.

sTbl = the logical table name to filter.

sCol = the logical column name to filter.

sVal = the value to filter by.

### Sample Custom Text Format for PortalNav Call

Make sure to include the quotes exactly as shown.

```
"<font class=nav onclick=\"JavaScript:PortalNav(event, '/shared/topaz/_
portal/transaction analysis','Transaction','Type','"@')\">"@</font>"
```

### 6.3.2.4 Navigation from HTML Results

This is the same as described in [Section 6.3.2.3, "Navigation Using JavaScript"](#), but rather than using a custom formatter, type in the HTML syntax with static values in place of the @ signs.

## 6.4 Example of an Oracle Business Intelligence Third-Party SQL Tool Integration

This section illustrates the requirements for integrating a third-party SQL tool with Oracle Business Intelligence by describing an example integration, using Microsoft Access. Because Oracle Business Intelligence is designed as a middleware platform for enterprise data access and integration, common report writers and business intelligence tools can communicate natively with the BI Server.

Most third-party SQL tools require the user to include join conditions within queries to avoid cross-joins. A cross-join occurs when a request does not have a WHERE clause, which, in turn creates a Cartesian product of the tables involved in the join. The size of a Cartesian product is the number of rows in the first table multiplied by the number of rows in the second table.

To integrate Microsoft Access with the BI Server, the BI Server Administrator must expose the keys within the Presentation layer of the Oracle BI Administration Tool.

### 6.4.1 Example of integrating a third-party SQL tool

1. Drag and drop the keys from the Business Model and Mapping layer to the Presentation layer and save the repository.
2. Open Microsoft Access, select the option **Blank Access Database**, type the name oracle-analytics.mdb when prompted, and click **Create**.
3. After creating the new Microsoft Access database, right-click in the white section of the screen and select **Link Tables**.
4. From the Files of Type drop-down list box, select **ODBC Databases**.  
The Select a Source Dialog appears, and prompts you for a Data Source Name.
5. Click the **Machine Data Source** tab, locate the Analytics\_Web DNS, and click **OK**.  
The Oracle BI Server requires a login.
6. Type your user ID and password.  
The Import Objects dialog box appears.
7. Click the **Select All** button, or highlight the desired logical tables from Oracle Business Intelligence.  
The import may take a while to complete.
8. When the import completes, right-click in the white section of the screen and select **Relationships**:
  - a. Add the desired tables and drag and drop the keys from the dimension tables (Period, Market, Product) to the fact table (Sales Measures).
  - b. Drag and drop Period Key over the perkey column, and repeat for each corresponding key to create the joins.Now, you can test and run a request.
9. Select **Create query in Design view** from the **Queries** button:

- a. Select Markets, Products and Sales Facts.
- b. Add Region, Brand, Units and Dollars, respectively, and then click Run.

## 6.5 Retrieving Links to Dashboard Pages Using Scripts

You can retrieve links (both bookmark links and prompted links) to dashboard pages by using the JavaScript functions described in [Table 6–2](#) in your custom scripts on your dashboard pages.

---

**Note:** For these JavaScript functions to work, the HardenXSS element must be set to false. For more information, see "Making General Configuration Changes to Oracle BI Presentation Services" in the *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*

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For more information about bookmark links and prompted links, see "About Creating Links to Dashboard Pages" in the *Oracle Business Intelligence Suite Enterprise Edition User's Guide*.

**Table 6–2 JavaScript Functions for Retrieving Links to Dashboard Pages**

JavaScript Function	Description
LinkToPage(bInlineDrill, bGetBookmarkOnly)	<p>Sets the value of the variable <code>saw.bookmarkURL</code> to the bookmark link.</p> <p>Set the arguments as follows:</p> <ul style="list-style-type: none"> <li>▪ <code>bInlineDrill</code> — Set to true if the <b>Page Options</b> button is displayed on the page; otherwise set to false.</li> <li>▪ <code>bGetBookmarkOnly</code> — Set to true to prevent the bookmark URL from being refreshed in the Address Bar of the browser. Set to false (or omit) to allow the bookmark URL to be refreshed in the Address Bar of the browser.</li> </ul>
GetPURL()	Returns the prompted link as a string.



---

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## Oracle Business Intelligence Systems Management API

The Oracle Business Intelligence Systems Management API is a programming interface which provides access to Business Intelligence JMX Admin MBeans, enabling a developer to programmatically carry out system administration tasks for Oracle Business Intelligence. The system administration tasks that can be carried out using the BI Systems Management API, are also available using Fusion Middleware Control.

For more information, see "Introducing the BI Systems Management API" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.



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# Integrating Other Clients with Oracle Business Intelligence

You can connect to the Oracle BI Server with a wide variety of ODBC-compliant query and reporting tools, as well as other clients such as remote Administration Tool clients. To connect with a remote client, you configure an ODBC DSN for the Oracle BI Server on the remote client computer, and then use that DSN to connect to a repository from the query tool.

Oracle BI Presentation Services clients also connect to the Oracle BI Server using an ODBC DSN. A default ODBC DSN for Presentation Services is created and configured for you during Oracle Business Intelligence installation.

Administration Tool clients on the same host as a Presentation Services instance can also use the default DSN to connect to the Oracle BI Server. Or, you can create a separate DSN for the Administration Tool to use.

The connection parameters for the Cluster Controller in the default DSN are centrally managed by Fusion Middleware Control. Do not update these parameters. If you attempt to manually update the centrally managed parameters, the values will be overwritten the next time the system is started.

In addition, do not change the name of the centrally managed default DSN. The default DSN has a name similar to "coreapplication\_OHid\_number," where *id\_number* is a number specific to an installed Oracle home.

This chapter explains how you can integrate with the Oracle BI Server as a data source using ODBC on both Windows and UNIX platforms.

This chapter includes the following topics:

- ["About Integrating with the Oracle BI Server as a Data Source"](#)
- ["ODBC Conformance Level"](#)
- ["Configuring an ODBC DSN for the Oracle BI Server on Windows"](#)
- ["Configuring an ODBC DSN for the Oracle BI Server on Linux or UNIX"](#)

## 8.1 About Integrating with the Oracle BI Server as a Data Source

Open Database Connectivity (ODBC) is an industry standard interface for connecting to databases. A Data Source Name (DSN) is used to store the information about connecting to a given database as a given database user over ODBC.

You use the Oracle BI Server ODBC driver to configure a DSN to connect to a set of clustered Oracle BI Servers through the Cluster Controllers, or to an individual Oracle

BI Server. The DSN you configure can be used with any ODBC-compliant query and reporting tool.

The Presentation layer lets you configure the presentation of a business model to be consistent with the rules and conventions of your tools to take advantage of the analytical engine and data abstraction of the Oracle BI Server. This makes it much easier to include columns involving complex aggregation and calculation rules in queries and reports. Also, if your organization is currently using query and reporting tools, using the Oracle BI Server as a data source makes these tools more valuable and simplifies the work entailed when using them.

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**Note:** In a non-English environment, you can use a direct ODBC connection from a remote client to the Oracle BI Server. However, the translation and localization option that is provided with Oracle BI Presentation Services is not available. Instead, the translation and localization included in the Oracle BI Server metadata (the Oracle BI repository) is available. For example, if Presentation layer metadata objects are defined in French, they are displayed in French through a third-party application.

---

---

### 8.1.1 About Routing Requests to the Physical Layer

Oracle BI Server clients can create a dedicated physical connection to the Oracle BI Server over which all `SELECT` queries are treated as `SELECT_PHYSICAL` queries. `SELECT_PHYSICAL` queries directly query objects in the Physical layer of the metadata repository, bypassing the Presentation layer and the Business Model and Mapping layer. To enable this direct connection for your ODBC client, select **Route Requests To Physical Layer** in the DSN configuration.

Note that you cannot have a single ODBC connection that sends queries to both the Presentation layer, and the Physical layer. Instead, you can create one regular connection that sends requests to the Presentation layer, and one connection that sends requests to the Physical layer.

See "Syntax and Usage Notes for `SELECT_PHYSICAL`" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information about `SELECT_PHYSICAL` queries.

### 8.1.2 About Integrating with the Oracle BI Server Using JDBC

In addition to using ODBC, you can also integrate with the Oracle BI Server using JDBC. For full information, see the `README.TXT` file contained in the `bijdbc.jar` file. You can find the `bijdbc.jar` file in the following directory:

`ORACLE_HOME/bifoundation/jdbc`

## 8.2 ODBC Conformance Level

The Oracle BI Server supports the following ODBC calls from client applications:

- `SQLAllocConnect`
- `SQLAllocEnv`
- `SQLAllocStmt`
- `SQLBindCol`
- `SQLCancel`

- SQLColumns
- SQLConnect
- SQLDescribeCol
- SQLDisconnect
- SQLDriverConnect
- SQLError
- SQLExecDirect
- SQLExecute
- SQLExtendedFetch
- SQLFetch
- SQLFreeConnect
- SQLFreeEnv
- SQLFreeStmt
- SQLGetConnectOption
- SQLGetCursorName
- SQLGetData
- SQLGetFunctions
- SQLGetInfo
- SQLGetStmtOption
- SQLGetTypeInfo
- SQLColAttributes
- SQLNumResultCols
- SQLPrepare
- SQLRowCount
- SQLSetConnectOption
- SQLSetStmtOption
- SQL Tables

Oracle Business Intelligence ODBC supports full scrollable cursors with static, dynamic, forward only, and key set driven cursors. Oracle Business Intelligence ODBC also supports asynchronous and synchronous processing and cancellation.

### 8.3 Configuring an ODBC DSN for the Oracle BI Server on Windows

This section explains how to create an ODBC DSN for the Oracle BI Server on Windows to enable remote client access. You use the Oracle BI Server DSN Configuration Wizard to set up an ODBC DSN that you can use to connect to a repository through the Oracle BI Server.

The Oracle BI Server ODBC driver is a 32-bit application. Use the 32-bit version of ODBC Data Source Administrator located at `C:\Windows\SysWOW64\odbcad32.exe`.

The 64-bit version of the ODBC Data Source Administrator (located at C:\Windows\system32\odbcad32.exe) does not show the Oracle BI ODBC driver.

**To create a DSN for the Oracle BI Server on Windows:**

1. Open the Windows Control Panel by selecting **Start > Settings > Control Panel**, double-click **Administrative Tools**, and then double-click **Data Sources (ODBC)**.
2. In the ODBC Data Source Administrator dialog, click the System DSN tab, and then click **Add**.
3. In the Create New Data Source dialog, select the driver **Oracle BI Server 11g\_OHid\_number** (where *id\_number* is a number specific to an installed Oracle home), and then click **Finish**. The first page of the Oracle BI DSN Configuration wizard is displayed.

4. Type a name for the data source in the **Name** field.

**Note:** Do not change the name of the centrally managed default DSN for Presentation Services and the Administration Tool.

5. Optionally, enter a description in the **Description** field.
6. To connect to a single Oracle BI Server that is not part of a cluster, in the **Server** field, select the computer on which the Oracle BI Server is running.

If the server name does not appear in the list, then type the computer name in the **Server** field.

**Note:** This field is not used for the default DSN created for Presentation Services, because the Oracle Business Intelligence system is clustered by default.

7. To connect to a set of clustered Oracle BI Servers through the Cluster Controllers, do the following:
  - a. Select **Clustered DSN**.
  - b. Enter information for the primary and secondary Cluster Controllers, as follows:
    - In the **Primary Controller** field, enter the name of the computer that is specified as the primary Cluster Controller. Then, enter the port number for the Primary Controller in the appropriate **Port** field.
    - If a secondary Cluster Controller has been set up, then type the name of the host where the Secondary Controller is running in the **Secondary Controller** field. Then, enter the port number for the Secondary Controller in the appropriate **Port** field.

You can find information about the Primary and Secondary Controller hosts and ports on the Availability tab of the Capacity Management page in Fusion Middleware Control.

- c. To test the connection to the Cluster Controllers, click **Test Cluster Connect**.

If the test is not successful, then correct any errors identified in the message and test the connection again.

**Note:** Do not change the Primary Controller, Secondary Controller, and Port parameters of the centrally managed default DSN for Presentation Services.

8. Select **Route Requests To Physical Layer** to create a dedicated physical connection to the Oracle BI Server for clients using this DSN. All **SELECT** queries over this connection will be treated as `SELECT_PHYSICAL` queries.

`SELECT_PHYSICAL` queries directly query objects in the Physical layer of the metadata repository, bypassing the Presentation layer and the Business Model and Mapping layer.

9. Select **Use Forward Only Cursor** to change the ODBC cursor from its default scrollable mode to forward only.
10. To configure this DSN to communicate over SSL, select **Use SSL**.  
To configure advanced settings for SSL, see "[Configuring the ODBC DSN for Advanced SSL Settings](#)" for additional instructions.
11. Click **Next**. The second page of the Oracle BI DSN Configuration wizard is displayed.
12. Optionally, for **Login ID** and **Password**, enter a user name and corresponding password for the Oracle BI Server.
13. To save the user name in the Windows registry for this client, select **Save login ID**. If you select this option, you will not have to enter your user name each time you connect. You will still have to enter a password.
14. Enter a port number for the Oracle BI Server in the **Port** field. This option is enabled when **Clustered DSN** has not been selected on the first page of the wizard.

You can find information about the Oracle BI Server port on the Availability tab of the Capacity Management page in Fusion Middleware Control.

15. If you want to connect to a repository other than the default repository, then select **Change the default repository to**, and then type the logical name of the repository to which you want to connect.

You can only use this setting if you have configured the Oracle BI Server to host multiple repositories. Note that hosting multiple repositories on a single Oracle BI Server is not recommended for production deployments.

---

**Note:** For Presentation Services clients, each Presentation Services instance can only access a single repository. To configure multiple Presentation Services instances to access multiple repositories, follow these steps:

1. Install Presentation Services on one computer for each repository instance. For example, if you have three repositories running on your Oracle BI Server, install three Presentation Services instances on three separate computers.
2. Adjust the setting **Change the default repository to** in the DSN for each Presentation Services instance.
3. As a Web client end user, you can choose which repository to access from your client browser by substituting the appropriate Web server computer name or IP address in the URL for the Presentation Services instance that points to the repository you want to work with:

`http://host_name_or_IP_address/analytics/saw.dll?`

---

16. Optionally, select **Connect** to obtain default settings for the additional configuration options.

If you select this option, the wizard will attempt to connect to the server to obtain default values for the configuration settings on the next screen. If you do not select

this option, then you can still configure the DSN by manually entering the information in the next screen.

If you select this option, you must provide values for **Login ID** and **Password**.

17. Click **Next**. The third page of the Oracle BI DSN Configuration wizard is displayed.
18. To change the name of the default subject area, select **Change the default subject area to** and then enter the name of the subject area. If you selected the **Connect** option in the previous screen, you can choose a name from the list.

Do not select this option for the DSN used by Oracle BI Presentation Services.

If you do not select this option, the default subject area is the one defined in the internal call query metadata. You can use the `DATABASE SQL` function to determine the default subject area; see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.

19. To change the default error message language, select **Change the default error message language to** and then select the language you want to use for error messages. See *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition* for more information about choosing the error message language.
20. If needed, select **Use Regional Settings when outputting dates and times**. When this option is enabled, data in Date, Time, or DateTime format is displayed using Windows regional settings, rather than the default format for the Oracle BI Server. To see the Windows regional settings, open the Control Panel and double-click Regional and Language Options.
21. If the repository has been set up for database-specific login IDs and passwords, you can enter the user names and passwords for the underlying databases. The database-specific credentials allow privileged users to connect to the underlying databases at the level of authority granted to those users in the databases. To enter user names and passwords for the underlying databases, follow these steps:
  - a. Select the database for which you want to enter a user name and password and click **Edit**.
  - b. Enter the login ID and password corresponding to the database you selected and click **OK**.
  - c. Repeat these steps for other databases if necessary.
22. Click **Finish** to save the DSN configuration.

### 8.3.1 Configuring the ODBC DSN for Advanced SSL Settings

Follow the steps in this section to configure additional advanced settings for SSL.

**To configure the Oracle BI Server DSN for advanced SSL settings:**

1. On the first page of the Oracle BI DSN Configuration wizard, after selecting **Use SSL**, click the **Configure SSL** button. The Secure Socket Layer Configuration dialog appears.
2. For **Certificate File**, enter the path and file name of the Client Certificate file, or click **Select** to browse for the file. For example:

```
ORACLE_HOME\ssl\client-cert.pem
```

3. For **Certificate Private Key File**, enter the path and file name of the Client Private Key file, or click **Select** to browse for the file. For example:

```
ORACLE_HOME\ssl\client-key.pem
```

4. For **File Containing Passphrase**, enter the path and file name of the passphrase file for the Client Key, or click **Select** to browse for the file. For example:

```
ORACLE_HOME\ssl\clientpwd.txt
```

5. Select **Verify Peer**.

6. If you are using the hashed version of the CA certificate, enter the directory where the hashed file is located in the **CA Certificate Directory** field. For example:

```
ORACLE_HOME\ssl
```

7. If you are using the CA certificate, provide the path and file name of the CA Certificate file in the **CA Certificate File** field. For example:

```
ORACLE_HOME\ssl\cacert.pem
```

8. For **Cipher List**, enter the list of ciphers to be used. For example:

```
EXP-DES-56-SHA
```

9. For **Certificate Verification Depth**, specify 1.

10. For **Trusted Peer Distinguished Names**, enter DNs of servers that will allowed to connect. For example:

```
C=US/ST=CA/L=Redwood Shores/O=Oracle/ OU=BI/CN=servercertificate
```

11. Click **OK**.

12. Complete the additional steps to configure the DSN, starting from Step 11 of the procedure in the previous section.

After you complete these steps, copy the client certificate, client private key, and passphrase files (for example, client-cert.pem, client-key.pem, and clientpwd.txt) to the directory specified in the parameters. If you have set the CA Certificate File parameter, you must also copy the CA certificate file (for example cacert.pem) to the directory specified. If you have set the CA Certificate Directory parameter, copy the hash version of the CA certificate to the directory specified.

## 8.4 Configuring an ODBC DSN for the Oracle BI Server on Linux or UNIX

This section explains how to create an ODBC DSN for the Oracle BI Server on Linux or UNIX to enable remote client access.

On Linux and UNIX systems, the file `odbc.ini` contains the standard or clustered Oracle BI ODBC connection details that are used by Oracle BI Presentation Services and `nqcmd` processes.

Do not change the DSN logical name, or the Primary and Secondary Cluster Controller and Port parameters for the centrally managed default DSN.

**To create an ODBC DSN for the Oracle BI Server on Linux or UNIX:**

1. Log on as a separate telnet session.
2. Open the `odbc.ini` file for editing. You can find this file at:

```
ORACLE_INSTANCE/bifoundation/OracleBIApplication/coreapplication/setup/odbc.ini
```

3. In the section [ODBC Data Sources], add the new data source name you want to create and define it as an Oracle BI Server data source. For example:

```
[ODBC Data Sources]
my_new_dsn = Oracle BI Server
```

4. Add a section for the new DSN and provide parameters as follows:

```
[my_new_dsn]
Driver = ORACLE_HOME/bifoundation/server/bin/call_interface.library_suffix
ServerMachine = local
Port = bi_server_port_number
ForwardOnlyCursor = No
SelectPhysical = No
Regional = Yes
```

Note the following:

- For *call\_interface*, enter *nqsodbc* for ODBC35 (the default), or *nqsodbc20* for ODBC20.
- For *library\_suffix*, use the library suffix appropriate for your operating system. For example, use *.so* for Linux, Solaris, or AIX, or use *.sl* for HP-UX.
- For *Port*, enter the Oracle BI Server port number. Do not provide this option if you want this data source to connect to clustered Oracle BI Servers.

You can find information about the Oracle BI Server port number on the Availability tab of the Capacity Management page in Fusion Middleware Control.

- Set *ForwardOnlyCursor* to *Yes* to change the ODBC cursor from its default scrollable mode to forward only.
  - Set *SelectPhysical* to *Yes* to enable integrating clients to create a dedicated physical connection to the Oracle BI Server over which all *SELECT* queries are treated as *SELECT\_PHYSICAL* queries.
  - Set *Regional* to *Yes* to display data in Date, Time, or DateTime format using the regional settings for your operating system, rather than the default format for the Oracle BI Server.
5. If you want this data source to connect to clustered Oracle BI Servers, supply the following additional parameters. Note that the primary CCS and secondary CCS should not be on the same computer.

```
IsClusteredDSN=Yes
PrimaryCCS=primary_cluster_controller_name
PrimaryCCSPort=primary_cluster_controller_port_number
SecondaryCCS=secondary_cluster_controller_name
SecondaryCCSPort=secondary_cluster_controller_port_number
```

Note the following:

- If you want this data source to connect to a single Oracle BI Server, set *IsClusteredDSN* to *No*.
  - You can find information about the Primary and Secondary Controller hosts and ports on the Availability tab of the Capacity Management page in Fusion Middleware Control.
6. To configure SSL for this data source, supply the following additional parameters as appropriate for your SSL deployment:

```
SSL = Yes
SSLCertificateFile = path_to_client_certificate_file
SSLPrivateKeyFile = path_to_client_private_key_file
SSLPassphraseFile = path_to_passphrase_file_for_client_key
SSLCipherList = list_of_ciphers
SSLVerifyPeer = Yes
SSLCACertificateDir = path_to_hashed_version_of_ca_certificate_file
SSLCACertificateFile = path_to_ca_certificate_file
SSLTrustedPeerDNs = list_of_server_DNs_allowed_to_connect
SSLCertVerificationDepth = 1
```

7. Save and close the file.
8. If you are updating the DSN used by Presentation Services, you must restart Presentation Services.



---

## Using Discoverer Data in Applications

You can use Discoverer worksheets and data in Oracle BI EE and in other applications as follows:

- [Section 9.1, "Exposing Discoverer Worksheets in Applications"](#)
- [Section 9.2, "Converting Discoverer Metadata to Use in Oracle BI EE"](#)

### 9.1 Exposing Discoverer Worksheets in Applications

You can expose Discoverer worksheets for use in third-party client applications, using Oracle Business Intelligence Discoverer Web Services API (Application Programming Interface). A third-party client application can use the Discoverer Web Services API to programmatically obtain Discoverer connections, workbooks, and worksheets; to execute worksheet queries; and to display worksheet content.

For information, see *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Discoverer Web Services API*.

### 9.2 Converting Discoverer Metadata to Use in Oracle BI EE

You can convert Discoverer metadata into a format that can be used in Oracle BI EE by running the metadata conversion assistant tool. The metadata conversion assistant tool is a command line utility that accelerates the migration of Discoverer metadata from the End User Layer (EUL) to Oracle BI EE. The command line utility takes a Discoverer EEX export file, and generates an RPD file that can be used in Oracle BI EE.

**Note:** This utility migrates only Discoverer metadata and only for relational data sources.

For more information about how to migrate Discoverer EUL metadata to Oracle BI EE (including documentation resources and downloads), see Oracle Technology Network at:

<http://www.oracle.com/technology/products/bi/discoverer-migration/index.html>



# Part IV

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## Using the Oracle BI Server XML API

This part provides information about the Oracle BI Server XML API. You can use command-line tools to generate XML from an existing repository file, execute XML scripts to create or modify a repository file, and execute XML scripts against a running Oracle BI Server.

Part V contains the following chapters:

- [Chapter 10, "About the Oracle BI Server XML API"](#)
- [Chapter 11, "Logical Elements"](#)
- [Chapter 12, "Physical Elements"](#)
- [Chapter 13, "Presentation Elements"](#)
- [Chapter 14, "Marketing, Security, and Other Elements"](#)



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## About the Oracle BI Server XML API

Oracle Business Intelligence provides utilities to create a generic, XML-based representation of the Oracle BI repository metadata, using the Oracle BI Server XML API. This XML file version of the repository can be used to programmatically modify the metadata. The Oracle BI Server XML API can be used for metadata migration, programmatic metadata generation and manipulation, metadata patching, and other functions.

Note that Oracle BI Server XML API objects correspond to metadata repository objects in an RPD file. These objects are not the same as Oracle BI Presentation Catalog XML objects.

This chapter contains the following topics:

- [Section 10.1, "About the Oracle BI Server XML API"](#)
- [Section 10.2, "Generating and Executing XML"](#)
- [Section 10.3, "Using the Oracle BI Server XML API"](#)
- [Section 10.4, "Generic XML Elements and Attributes"](#)

### 10.1 About the Oracle BI Server XML API

The Oracle BI Server XML schema document (xudml1.xsd) contains the grammar for the structure of XML repository files. You can find this file at:

`ORACLE_HOME/bifoundation/server/bin`

You can view this file to see relationships between XML metadata objects, but you must *not* modify this file. Doing so can lead to errors and crashes in the `biserverxmlexec` utility.

The structure of the repository is primarily a flat list of objects, in the format:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<Repository xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <DECLARE>
    <ObjectType {attributes}>
      Contents...
    </ObjectType>
    <ObjectType {attributes}>
      Contents...
    </ObjectType>
    ...
  </DECLARE>
</Repository>
```

Most of the modeling relationships, including the hierarchical ones, are formed using name references between objects, not by the hierarchical structure of the XML.

Note that the metadata objects in the XML file must appear in a particular order. You can view the set order in the XML schema document under the `objectList_t` element.

### 10.1.1 About Using the Oracle BI Server XML API to Merge and Append Objects

Do not use the Oracle BI Server XML API to attempt a full repository merge. The merge feature in the Administration Tool handles an extremely complex set of object comparisons and decisions, and it is not possible to account for and resolve these conflicts using the XML utilities. Because of this, using the XML API to perform a full merge is not supported. Attempting to do so might result in a corrupted repository.

However, you can use the XML API to append objects from one repository to another repository, using the `-B` option with `biserverxmlexec` to specify a base repository path name. This approach works when you have two completely separate repositories with no shared objects between the two, including no shared variables or application roles. For example, if you have separate repositories for the Credit and Manufacturing departments, you can take objects from the Credit XML metadata and append them to the Manufacturing XML metadata, and then convert to a single RPD that contains both working models. Using this method, you are essentially adding one repository to another.

Before attempting to perform an append operation, you should create a script to ensure that there are no common objects. Even when your repositories are separate, they might contain the same names for common objects, such as a `current_date` variable.

It is also a good idea to equalize the upgrade IDs to ensure that there are no accidental clashes. Equalizing objects causes objects in two repositories that have the same name but different upgrade ids to be treated as the same object. See "Equalizing Objects" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information.

## 10.2 Generating and Executing XML

Oracle Business Intelligence provides the following command-line tools to generate and execute XML:

- **biserverxmlgen** generates XML from an existing RPD
- **biserverxmlexec** lets you execute the XML in offline mode to create or modify a repository file
- **biserverxmlcli** executes the XML against the Oracle BI Server

Before running the XML utilities, you must first run `bi-init.cmd` (or `bi-init.sh` on UNIX) to launch a command prompt or shell window that is initialized to your Oracle instance. You can find this utility in:

```
ORACLE_INSTANCE/bifoundation/OracleBIApplication/coreapplication/setup
```

Then, run `biserverxmlgen`, `biserverxmlexec`, or `biserverxmlcli` from the resulting shell window with the desired options.

Note that when you execute XML to update an existing repository with new content, objects are replaced in their entirety. For example, to change the name attribute of a

PresentationTable object from name="Facts Revenue" to name="Facts Financial," you must submit the entire PresentationTable object to biserverxmlxec or biserverxmlcli.

In addition, make sure that the qualified name, UID, and ID are correct when replacing existing objects. The Oracle BI Server assumes that a different ID is a different object.

This section contains the following topics:

- [Section 10.2.1, "Generating XML from an Existing RPD"](#)
- [Section 10.2.2, "Executing XML in Offline Mode"](#)
- [Section 10.2.3, "Executing XML Against the Oracle BI Server"](#)

## 10.2.1 Generating XML from an Existing RPD

Use biserverxmlgen to generate an XML file from an existing repository file (RPD). To use this utility, execute the following at the command prompt:

```
biserverxmlgen -R repository_pathname [-P password] -O output_file_pathname [-8]
```

Where:

*repository\_pathname* is the name and location of the repository file from which you want to generate XML

*password* is the repository password.

The password argument is optional. If you do not provide a password argument, you are prompted to enter a password when you run the command. To minimize the risk of security breaches, Oracle recommends that you do not provide a password argument either on the command line or in scripts. Note that the password argument is supported for backward compatibility only, and will be removed in a future release.

*output\_file\_pathname* is the name and location of the XML output file you want to generate. It is recommended that you provide an output filename with an .xml extension.

Specify `-8` to use UTF-8 encoding in the generated XML file. If you do not specify `-8`, the generated XML file uses ANSI ISO-8859-1 encoding by default.

## 10.2.2 Executing XML in Offline Mode

Use biserverxmlxec to execute XML in offline mode. This utility can generate an entire repository file (RPD) from an XML repository file, or it can modify an existing repository file by applying the changes specified in the XML file. The input XML is validated against the Oracle BI Server XML schema. Any objects that exist in both the RPD and the XML file are overwritten by the corresponding object definitions in the XML file. Note that the same object cannot be defined twice in the XML file.

A qualified name (qualifiedName) or upgrade id (uid) must be specified for each object. When the utility resolves and identifies objects, uids have the highest priority, followed by qualifiedNames. See [Section 10.4, "Generic XML Elements and Attributes"](#) for more information about identifier attributes.

To use this utility, execute the following at the command prompt:

```
biserverxmlxec -I input_file_pathname [-B base_repository_pathname] [-P password]
-O output_repository_pathname
```

Where:

*input\_file\_pathname* is the name and location of the XML input file you want to execute

*base\_repository\_pathname* is the existing repository file you want to modify using the XML input file (optional). Do not specify this argument if you want to generate a new repository file from the XML input file.

*password* is the repository password. If you specified a base repository, enter the repository password for the base repository. If you did not specify a base repository, enter the password you want to use for the new repository.

The password argument is optional. If you do not provide a password argument, you are prompted to enter a password when you run the command. To minimize the risk of security breaches, Oracle recommends that you do not provide a password argument either on the command line or in scripts. Note that the password argument is supported for backward compatibility only, and will be removed in a future release.

*output\_repository\_pathname* is the name and location of the RPD output file you want to generate

### Examples

The following example creates a new repository called rp1:

```
biserverxmlcli -I testxudml.txt -O rp1.rpd  
Give password: my_rpd_password
```

The following example modifies rp1 and writes to rp2:

```
biserverxmlcli -I testxudml.txt -B rp1.rpd -O rp2.rpd  
Give password: my_rpd_password
```

## 10.2.3 Executing XML Against the Oracle BI Server

Use `biserverxmlcli` to execute XML against the Oracle BI Server. This utility is very similar to `biserverxmlcli`, but is instead used to modify an online repository. An online repository is a running Oracle BI Server instance that has loaded an existing repository into its navigation space.

To use this utility, execute the following at the command prompt:

```
biserverxmlcli -U user_name [-P user_password] [-R repository_password]  
-D data_source_name [-w ssl_pass_phrase [-y]] -I XML_file_pathname
```

Where:

*user\_name* is a valid user name. This user must have the manage repository permission (`oracle.bi.server.manageRepositories`).

*user\_password* is the corresponding user password.

The user password argument is optional. If you do not provide a user password argument, you are prompted to enter a user password when you run the command. To minimize the risk of security breaches, Oracle recommends that you do not provide password arguments either on the command line or in scripts. Note that the user password argument is supported for backward compatibility only, and will be removed in a future release.

*repository\_password* is the repository password for the online repository.

The repository password argument is optional. If you do not provide a repository password argument, you are prompted to enter a repository password when you run the command. To minimize the risk of security breaches, Oracle recommends that you

do not provide password arguments either on the command line or in scripts. Note that the repository password argument is supported for backward compatibility only, and will be removed in a future release.

*data\_source\_name* is the Oracle BI Server ODBC data source name (DSN) to which you want to connect

*ssl\_pass\_phrase* is the SSL passphrase for the Oracle BI Server, if the ODBC connection has been configured to use SSL

-y is the SSL passphrase to the private key file

*xml\_file\_pathname* is the name and location of the XML input file you want to execute

## 10.3 Using the Oracle BI Server XML API

This section provides information about different use cases for the Oracle BI Server XML API feature. This section contains the following topics:

- [Section 10.3.1, "Maintaining Versions of the Metadata"](#)
- [Section 10.3.2, "Migrating Metadata from Another System"](#)
- [Section 10.3.3, "Applying a Metadata Patch Against a Running Oracle BI Server"](#)
- [Section 10.3.4, "Manipulating Metadata Programmatically"](#)
- [Section 10.3.5, "Moving from Test to Production Environments"](#)

### 10.3.1 Maintaining Versions of the Metadata

The Oracle BI Server XML API provides an efficient way of keeping versions of an RPD. Rather than storing entire RPD files for each version, you can generate XML patch files using the Create Patch feature in the Compare dialog in the Administration Tool. The patch file contains only the delta of the changes between the current and original versions. Using patch files to store changes eliminates the need to store redundant data in entire repository files and saves disk space. Note that you always need to retain a copy of the original repository file to maintain versions using this method.

You can apply a patch to the original file using the patch merge feature in the Administration Tool, using the patchrpd utility, or by running biserverxmlxec with the -B option.

For example, if you have repository versions A0, A1, and A2, and you have an XML patch file called A2-0delta.xml that contains the changes between the latest and original versions, you can run the following command:

```
biserverxmlxec -I A2-0delta.xml -B A0.rpd -O A2reproduced.rpd
Give password: my_password
```

Alternatively, if you stored changes between A0 and A1, and then A1 and A2, you can run two commands to apply the latest changes on the original file:

```
biserverxmlxec -I A1-0delta.xml -B A0.rpd -O A1reproduced.rpd
Give password: my_password
```

```
biserverxmlxec -I A2-1delta.xml -B A1reproduced.rpd -O A2reproduced.rpd
Give password: my_password
```

Make sure to specify different names for the `-B` and `-O` arguments to avoid overwriting the original repository file.

See *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for more information about patch merges.

### 10.3.2 Migrating Metadata from Another System

If you have another business intelligence or reporting system and want to migrate the metadata to Oracle Business Intelligence, you can write an adapter to transform the third-party metadata to the Oracle Business Intelligence generic XML format. The XML schema file (`xudml1.xsd`) provides a way to understand the structure of the Oracle Business Intelligence metadata. After you have a compatible XML metadata file, you can use the `biserverxmlexec` utility to create a corresponding RPD file.

### 10.3.3 Applying a Metadata Patch Against a Running Oracle BI Server

If you use the Administration Tool to make changes to your repository in offline mode, you can use the XML patch feature to apply the changes to an online repository, without needing to restart the server or apply the changes manually.

To do this, open the new version of the repository in the Administration Tool, compare it with the running version, and create an XML patch file using the Create Patch feature. You can then apply the patch against the running Oracle BI Server to load the changes, using the `biserverxmlcli` utility. For example:

```
biserverxmlcli -U my_user -D my_server_dsn -I my_xml_file_pathname
Give user password: my_password
Give repository password: my_repos_password
```

### 10.3.4 Manipulating Metadata Programmatically

You can use the Oracle BI Server XML API to develop custom applications to modify Oracle BI repository metadata. To do this, you can generate XML from your RPD file using the `biserverxmlgen` utility, and then parse the XML using a generic XML parser. Because the Oracle BI XML utilities are command-line utilities, they can be invoked from batch files, scripts, or as processes from within the code. You can modify the XML programmatically, and then use the `biserverxmlexec` utility to generate a new RPD that includes the changes.

For example, the Cloning Application Framework (CAF) uses the Oracle BI Server XML API to replicate content developed for one application so that it can be used by another application. The goal of the CAF application is to reuse content across applications so that it does not need to be developed twice.

CAF users can map Presentation layer objects and logical dimension hierarchies from one RPD to the corresponding names in the other RPD. The CAF application generates XML for the first RPD using the `biserverxmlgen` utility, then scans the XML to determine the Presentation layer object dependencies in the Business Model and Mapping layer and Physical layer. It then creates the necessary Presentation and Business Model and Mapping layer objects (such as columns, subject areas, and expressions), identical to objects in the first RPD but with the appropriate mapped names. When the corresponding XML is ready, it generates the cloned RPD using the `biserverxmlexec` utility.

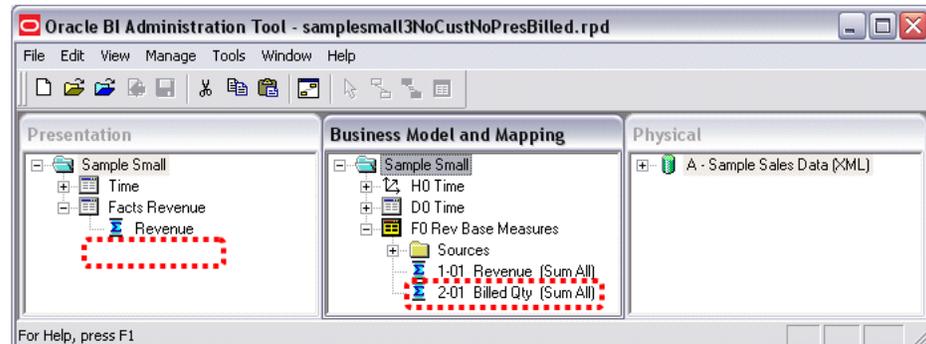
#### 10.3.4.1 Example of Programmatically Creating a Repository Object Using XML

This example shows how to add a presentation column called "Billed Qty" to the "Facts Revenue" presentation table of the "Sample Small" subject area. The logical column in

the business model on which it is based already exists, and has the name "Sample Small"."FO Rev Base Measures"."2-01 Billed Qty (Sum All)".

Figure 10–1 illustrates the goal of the example.

**Figure 10–1 Logical Column Exists in Repository with No Corresponding Presentation Column**

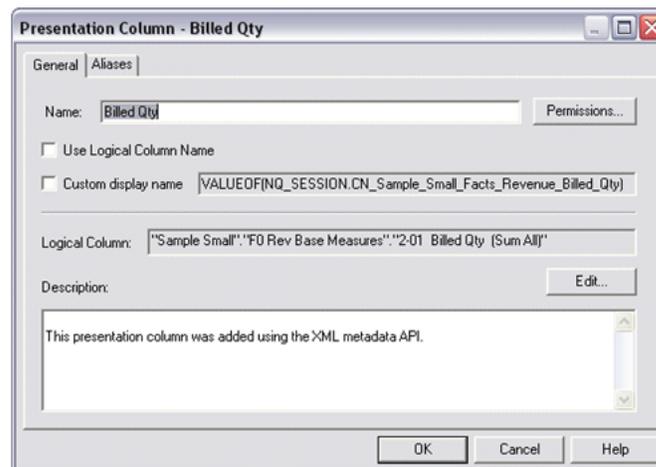


To add the presentation column programmatically, two metadata changes are needed:

1. A <PresentationColumn> object must be created for the new "Billed Qty" presentation column. It must reference the "2-01 Bill Qty (Sum All)" logical column to which it maps, and the Facts Revenue presentation table to which it belongs.
2. The <PresentationTable name="Facts Revenue"> object must be updated to reference the new "Billed Qty" presentation column object.

Figure 10–2 shows a view of what the new presentation column looks like in the Administration Tool after it is created.

**Figure 10–2 Administration Tool Equivalent for New Presentation Column**



To update the metadata, first create an XML file called Change.rpdx. This file will contain the metadata changes needed, in XML format. Add the following code:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<Repository xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <DECLARE>
    <PresentationColumn name="Billed Qty" parentName="&quot;Sample Small&quot;;..
      &quot;Facts Revenue&quot;" parentId="4008:2143" parentUId="73625"
      hasDispName="false"
```

```

overrideLogicalName="true">
  <Description>
    <![CDATA[This presentation column was added using the XML metadata API.]]>
  </Description>
  <RefLogicalColumn uid="946" id="2006:106" qualifiedName="&quot;Sample
  Small&quot;.&quot;F0 Rev Base Measures&quot;.&quot;2-01 Billed Qty (Sum
  All)&quot;"/>
</PresentationColumn>
</DECLARE>
</Repository>

```

This code adds a presentation column that references both the parent presentation table to which it belongs ("Facts Revenue"), and the logical column to which it maps ("2-01 Billed Qty (Sum All)"). Note that although the new presentation column has a qualified name, the id and uid are not specified, because they will be automatically created by the Oracle BI Server when it loads the modified RPD file.

In addition to adding the presentation column object, you must also add a reference to the new object from the existing presentation table object. To do this, generate an XML version of the current repository using biserverxmlgen and search the XML for the name of the presentation table (Facts Revenue). Copy the code for the presentation table object to the clipboard, as follows:

```

<PresentationTable name="Facts Revenue" parentName="&quot;Sample Small&quot;.&
&quot;&quot;" parentId="4004:2137" parentUid="73609" id="4008:2143"
uid="73625"
hasDispName="false">
  <Description>
    <![CDATA[This folder contains several types of aggregation metrics
    leveraging single revenue fact column. It also contains aggregations
    metrics based on Forecast physical table]]>
  </Description>
  <Aliases>
  <Alias name="F1 Revenue"/>
  </Aliases>
  <Columns>
    <RefPresentationColumn uid="72927" id="4010:1707" qualifiedName=
    "&quot;Sample Small&quot;.&quot;Facts Revenue&quot;.&
    &quot;Revenue&quot;"/>
  </Columns>
</PresentationTable>

```

Paste the code for the Facts Revenue presentation table into the Change.rpd file, and add the appropriate presentation column reference to it. The final Change.rpd file appears as follows, with the key metadata changes shown in bold:

```

<?xml version="1.0" encoding="iso-8859-1"?>
<Repository xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <DECLARE>
    <PresentationTable name="Facts Revenue" parentName="&quot;Sample Small&quot;.&
    &quot;&quot;"
    parentId="4004:2137" parentUid="73609" id="4008:2143" uid="73625"
    hasDispName="false">
      <Description>
        <![CDATA[This folder contains several types of aggregation metrics
        leveraging single revenue fact column. It also contains aggregations
        metrics based on Forecast physical table]]>
      </Description>
      <Aliases>
      <Alias name="F1 Revenue"/>
    </PresentationTable>
  </DECLARE>

```

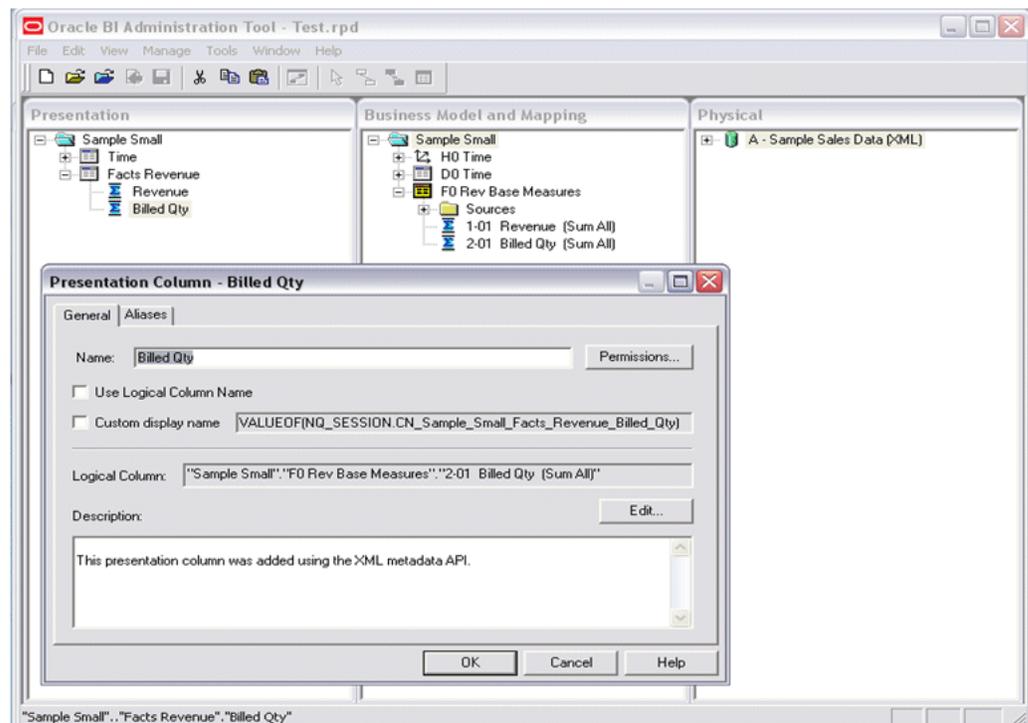
```

</Aliases>
<Columns>
  <RefPresentationColumn uid="72927" id="4010:1707" qualifiedName=
    "&quot;Sample Small&quot;..&quot;Facts Revenue&quot;."
    &quot;Revenue&quot;"/>
  <RefPresentationColumn qualifiedName="&quot;Sample Small&quot;."
    .&quot;Facts Revenue&quot;.&quot;Billed Qty&quot;"/>
</Columns>
</PresentationTable>
<PresentationColumn name="Billed Qty" parentName="&quot;Sample Small&quot;."
.&quot;Facts Revenue&quot;" parentId="4008:2143" parentUid="73625"
hasDispName="false" overrideLogicalName="true">
  <Description>
    <![CDATA[This presentation column was added using the XML metadata API.]]>
  </Description>
  <RefLogicalColumn uid="946" id="2006:106" qualifiedName="&quot;Sample
Small&quot;..&quot;F0 Rev Base Measures&quot;.&quot;2-01 Billed Qty (Sum
All)&quot;"/>
</PresentationColumn>
</DECLARE>
</Repository>

```

Finally, run the biserverxmlexec utility to execute Change.rpd.xml to update the original RPD file. [Figure 10–3](#) shows what the updated repository looks like in the Administration Tool.

**Figure 10–3 Updated Repository with New Presentation Column in the Administration Tool**



### 10.3.5 Moving from Test to Production Environments

When you move from test to production environments, you typically need to update connection pool settings for your data sources. You can use the Oracle BI Server XML API to programmatically update these settings in the repository.

To accomplish this task, you first need to open your test repository in the Administration Tool, manually update the connection pool settings for your data sources, and then save the repository under a different name. Next, you can compare the new repository with the original repository using the Administration Tool and then create an XML patch file that contains the changes. Finally, you can use `biserverxmlexec` or `biserverxmlcli` to execute the changes against a test repository.

[Example 10–1](#) provides step-by-step information about how to perform these tasks using an example scenario.

See "Moving Oracle Business Intelligence Components to a Production System" in *Oracle Fusion Middleware Administrator's Guide* for more information about moving from test to production environments in Oracle Business Intelligence.

#### **Example 10–1 Updating Connection Pool Test Values to Production Values**

This example shows how to programmatically update test values for two example connection pools to production values.

The following table shows example values for the two example data sources, in both test and production environments.

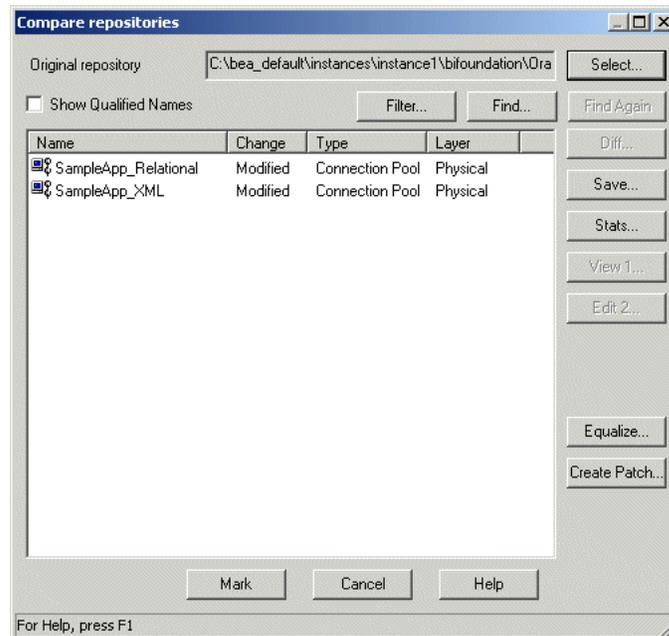
Environment	Data Source Type	Data Source Name	User Name	Password
Test	Relational	orcl_test	user_test	password_test
	XML	VALUEOF(ORACLE_HOME)/XML_data/Forecast	n/a	n/a
Production	Relational	orcl_prod	user_prod	password_prod
	XML	VALUEOF(ORACLE_HOME)/fcast_data/Forecast	n/a	n/a

**To programmatically update connection pool test values to production values:**

1. Open the test repository (for example, `SampleApp_test.rpd`) in the Administration Tool.
2. In the Physical layer, open the connection pool for the relational source that needs to be changed.
3. Update the values for **Data Source Name**, **User Name**, and **Password** to the production values. Then, click **OK**.
4. Open the connection pool for the XML source that needs to be changed.
5. Update the value for **Data Source Name** to the production value. Then, click **OK**.
6. Select **File**, then select **Save As**. Then, save the repository under a new name (for example, `SampleApp_prod.rpd`).
7. Select **File**, then select **Compare**.
8. Select the original repository file (`SampleApp_test.rpd`) to compare to the currently open repository file (`SampleApp_prod.rpd`).

Note that the Compare repositories dialog lists the two connection pools you modified, as shown in [Figure 10-4](#).

**Figure 10-4 Compare Repositories Dialog**



9. Click **Create Patch**, enter the name of the patch file you want to create (for example, `SampleApp_diff.xml`), and click **Save**.

The resulting XML patch file might appear as follows:

```
<?xml version="1.0" encoding="UTF-8" ?>
<Repository xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<DECLARE>
<ConnectionPool name="SampleApp_XML" parentName="&quot;1 - Sample App Xml
Data&quot;" parentId="3023:84" parentUid="2160747198" id="3029:1158"
uid="2160747199"
password="D7EDED84BC624A917F5B462A4DCA05CDCE256EEEEEDC97D5AC4D07C3A079829F"
timeout="300" maxConnDiff="10" maxConn="10"
dataSource="VALUEOF(BI_EE_HOME)/fcast_data/Forecast" type="Default"
reqQualifiedTableName="false" isSharedLogin="false"
isConcurrentQueriesInConnection="false" isCloseAfterEveryRequest="true"
xmlRefreshInterval="4294967295" outputType="xml" bulkInsertBufferSize="0"
transactionBoundary="0" xmlaUseSession="false" multiThreaded="false"
supportParams="false" isSiebelJDBSecured="false">
<Description></Description>
</ConnectionPool>
<ConnectionPool name="SampleApp_Relational" parentName="&quot;1 - Sample App
Data&quot;" parentId="3023:85" parentUid="2160747204" id="3029:1159"
uid="2160747205" user="user_prod"
password="D7EDED84BC624A917F5B462A4DCA05CDCE256EEEEEDC97D5A1
50C61FBEB9092AF80FAEC9819DD51771A41425D03FB466B55BB9F03BCF6439"
timeout="4294967295" maxConnDiff="10" maxConn="10" dataSource="orcl_prod"
type="OCI10G" reqQualifiedTableName="false" isSharedLogin="true"
isConcurrentQueriesInConnection="false" isCloseAfterEveryRequest="false"
outputType="xml" bulkInsertBufferSize="131072" tempTablePrefix="TT"
transactionBoundary="1000" xmlaUseSession="false" isSiebelJDBSecured="false">
<Description></Description>
```

```

</ConnectionPool>
</DECLARE>
</Repository>

```

10. After you create the patch, your test repository might continue to change, including name changes that could affect the parentNames or other attributes in your patch code. If this occurs, regenerate the patch using the steps in this section.
11. You can use biserverxmlexec to execute the generated XML patch file against the test version of the repository to programmatically update the connection pool settings. For example:

```

biserverxmlexec -I SampleApp_diff.xml -B SampleApp_test.rpd
-O SampleApp_prod.rpd
Give password: my_rpd_password

```

To execute the XML patch file against a repository loaded into the Oracle BI Server, use biserverxmlcli.

### 10.3.6 Using XSL to Transform XML Files

You can use XSL to perform transformations on the XML files you generate. For example, you might want to use XSL to remove object IDs or UIDs to avoid conflicts.

[Example 10–2](#) shows a sample XSL script that you can use as a model for your own transformations. The example script disables all logical table sources in the repository.

#### **Example 10–2 Sample XSL Script**

```

<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0"
xmlns:xalan="http://xml.apache.org/xslt"
xmlns:fn="http://www.w3.org/2003/11/xpath-functions">
<xsl:output method="xml" version="1.0" encoding="UTF-8" indent="yes"
CDATA-section-elements="Description Expr Value" xalan:indent-amount="4"/>
<xsl:strip-space elements="*" />

<xsl:template match="/Repository/DECLARE">
  <xsl:element name="Repository">
    <xsl:element name="DECLARE">
      <xsl:for-each select=".*">
        <xsl:call-template name="objectmatch" />
      </xsl:for-each>
    </xsl:element>
  </xsl:element>
</xsl:template>

<!-- The 'objectmatch' template is matched for every metadata object -->
<xsl:template name="objectmatch">
  <xsl:choose>
    <!-- We copy every object except for Logical Table Sources. We call the
'ltsmatch' template for LTSS -->
    <xsl:when test="name() = 'LogicalTableSource' ">
      <xsl:call-template name="ltsmatch" />
    </xsl:when>
    <xsl:otherwise>
      <xsl:copy-of select=".">
        <xsl:apply-templates />
      </xsl:copy-of>
    </xsl:otherwise>
  </xsl:choose>

```

```

    </xsl:choose>
</xsl:template>

<!-- The 'ltsmatch' template gets matched for every logical table source. -->
<xsl:template name="ltsmatch">
  <xsl:element name="LogicalTableSource">
    <xsl:for-each select="./@*">
      <!-- We call the 'ltspropmatch' template to process specific attributes on
      the LTS -->
      <xsl:call-template name="ltspropmatch"/>
    </xsl:for-each>
    <xsl:for-each select="./*">
      <xsl:call-template name="objectmatch"/>
    </xsl:for-each>
  </xsl:element>
</xsl:template>

<xsl:template name="ltspropmatch">
  <xsl:choose>
    <!-- When we encounter the 'isActive' property, we set it to false. -->
    <xsl:when test="name() = 'isActive'">
      <xsl:attribute name="isActive">
        <xsl:text>>false</xsl:text>
      </xsl:attribute>
    </xsl:when>
    <xsl:otherwise>
      <xsl:copy-of select=".">
        <xsl:apply-templates/>
      </xsl:copy-of>
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>

</xsl:stylesheet>

```

## 10.4 Generic XML Elements and Attributes

This section describes generic elements and attributes that are common, like Description, name, and id. In the Oracle BI Server XML schema (.xsd file), these elements and attributes are defined under the `object_t` and `ref_t` elements.

The only common element is the Description element. This element can hold a text string describing a particular object. For example:

```

<Description>
  <![CDATA[ Generated by Time Series Wizard ]]>
</Description>

```

There are eleven common attributes defined under the `object_t` element. [Table 10-1](#) lists these attributes.

**Table 10-1 Common XML Attributes in `object_t`**

Attribute Name	Description
name	The name of the object.
parentName	The qualified name of the parent of the object, in the format <code>parent1.parent2.parent3</code> , and so on.
parentId	The global unique identifier of the parent of the object, in the format <code>type_id:parent_object_id</code> .

**Table 10–1 (Cont.) Common XML Attributes in `object_t`**

Attribute Name	Description
parentUid	The internal identifier of the parent of the object. Referring to objects using this attribute instead of qualified names can provide faster access.
id	The global unique identifier of the object, in the format <code>type_id:object_id</code> .
uid	The internal identifier of the object. Referring to objects using this attribute instead of qualified names can provide faster access.
iconIndex	The index number for the icon of the object in the Administration Tool.
isDefaultReadable	If set to <code>true</code> , indicates that this object is readable by default.
isDefaultReadWriteable	If set to <code>true</code> , indicates that this object is both readable and writable by default.
isDefaultDeletable	If set to <code>true</code> , indicates that this object is deletable by default.
isDefaultGrantable	If set to <code>true</code> , indicates that this object is grantable by default.
isDefaultAll	If set to <code>true</code> , indicates that this object is readable, writable, deletable, and grantable by default.

In addition to the common attributes defined in `object_t`, additional common attributes are defined in `ref_t`. These attributes are used when one object references another object or set of objects. For example, business model objects reference the logical tables contained in that business model, using the sub-element `RefLogicalTable`. All referenced sub-elements have the same common attributes shown in [Table 10–2](#).

**Table 10–2 Common XML Attributes in `ref_t`**

Attribute Name	Description
id	The global unique identifier of the object, in the format <code>type_id:object_id</code> .
uid	The internal identifier of the object. Referring to objects using this attribute instead of qualified names can provide faster access.
qualifiedName	The fully qualified name of the object. For example, the <code>qualifiedName</code> attribute for a logical column might appear as follows:  <code>qualifiedName="&amp;quot;Sample Sales&amp;quot;.&amp;quot;F3 Rolling Measures&amp;quot;.&amp;quot;1-22L Revenue (All Hist Sum)&amp;quot;;"</code>

### 10.4.1 About Object Identifiers

Oracle BI Server XML metadata objects can have three different types of object identifiers, any of which can be used to reference the object. Object identifiers include:

- Fully qualified name (`qualifiedName`).** This identifier is the only reference you need to include in your XML when creating a new object, because the other identifiers (`uid` and `id`) are automatically generated by the Oracle BI Server when it opens the RPD file. The fully qualified name must be unique within the file, but the name (the text after the last dot) only needs to be unique within the scope of its parent.

The fully qualified name is the best identifier to use when searching an XML repository file to find a particular object, because the name of each object is visible in the Administration Tool. For example:

```
qualifiedName="&quot;Sample Sales&quot;.&quot;H0 Time&quot;.&quot;Month&quot;";
```

Note that qualified names for Presentation objects use .. between the subject area and the presentation table name. This syntax is used because there is no such thing as a presentation schema, which would normally go between a catalog and a table. For example:

```
qualifiedName="&quot;Sample Small&quot;..&quot;Facts Revenue&quot;.&quot;Billed Qty&quot;";
```

A similar convention is used for Physical layer objects, when the database does not have a physical catalog or physical schema.

- **uid.** This identifier, also called the UpgradeID, is a 32-bit number that is unique across the entire repository. The uid is created by the Oracle BI Server for the lifetime of the object. You can leave it blank when creating new objects in XML, because the server generates it automatically when it loads the RPD file. When you alter an object, make sure not to change the uid.

The uid is used for compare and merge algorithms. It can also be useful for tracing relationships when analyzing or reverse-engineering XML metadata.

For example: uid="73185"

- **id.** This identifier, also called the VoidID, is created by the Oracle BI Server for the lifetime of the object. It is used in situations where the object type can be used to achieve better performance than the uid.

Like the uid, you can leave the id blank when creating new objects in XML, because the server generates it automatically when it loads the RPD file. When you alter an object, make sure not to change the id.

The id is a structure that contains two pieces of information: the type and a unique number within that type (for example, 2000:123456). Each object type, such as a logical column, has a particular number associated with it (for example, 2000). So, two objects of the same type both have the same number in the first part of the id.

The unique number in the second part of the id is a randomly assigned number within that type. It must be unique within the type, but does not need to be unique across different object types. For example, a repository might have the valid ids 2000:123456 and 2001:123456.

Although the id is typically created by the Oracle BI Server, you can create your own if needed, as long as you ensure that it is unique.

For example: id="4010:1720"



---



---

## Logical Elements

Logical elements are typically those elements that are exposed in the Business Model and Mapping layer, or in other words, the elements that appear in the center pane of the Administration Tool.

This chapter contains the following topics:

- [Section 11.1, "Logical Column"](#)
- [Section 11.2, "Business Model"](#)
- [Section 11.3, "Logical Complex Join"](#)
- [Section 11.4, "Logical Level"](#)
- [Section 11.5, "Dimension"](#)
- [Section 11.6, "Logical Table"](#)
- [Section 11.7, "Logical Foreign Key"](#)
- [Section 11.8, "Logical Key"](#)
- [Section 11.9, "Logical Table Source"](#)
- [Section 11.10, "Logical Source Folder"](#)
- [Section 11.11, "Measure Definition"](#)
- [Section 11.12, "Aggregation Rule"](#)
- [Section 11.13, "Override Aggregation Rule"](#)
- [Section 11.14, "Logical Display Folder"](#)

### 11.1 Logical Column

The logical column element corresponds to the logical column object in the Business Model and Mapping layer.

The logical column tag includes the following attributes:

**Table 11-1 Logical Column Tag Attributes**

Attribute Name	Description
isDerived	When set to true, indicates that the logical column is based on a user-defined expression (for example, another logical column, a constant value, or a variable).

**Table 11–1 (Cont.) Logical Column Tag Attributes**

Attribute Name	Description
IsWriteable	When set to true, indicates that write back has been enabled for this column. This feature is typically used with ADF Business Component data sources. This option is called <b>Writeable</b> in the Administration Tool.

The logical column tag includes the following child elements:

**Table 11–2 Logical Column Child Elements**

Element Name	Description
Expr	Contains the expression from which the logical column should be derived. This element is only used when the <code>isDerived</code> attribute is set to true.
CustomSortOrder	If the sort order for this logical column is based on a different logical column, this element references that logical column. The logical column upon which the sort order is based is contained in a sub-element called <code>RefLogicalColumn</code> .
DescriptorID	When multilingual columns are based on a lookup function, it is common to specify the non-translated lookup key column as the descriptor ID column of the translated column. This element references the descriptor ID column. The descriptor ID logical column is contained in a sub-element called <code>RefLogicalColumn</code> .
Levels	For dimension columns, shows the level to which this column has been assigned. For level-based measures, shows the level at which the column has been explicitly fixed. The level is contained in a sub-element called <code>RefLogicalLevel</code> .

### Syntax

```
<LogicalColumn ...
  isDerived=""
  isWriteable="">
  <Description />
  <Expr>...</Expr>
  <CustomSortOrder>
    <RefLogicalColumn .../>
  </CustomSortOrder>
  <DescriptorID>
    <RefLogicalColumn .../>
  </DescriptorID>
  <Levels>
    <RefLogicalLevel .../>
  </Levels>
</LogicalColumn>
```

### Example

```
<LogicalColumn name="C1 Cust Name"
  parentName="&quot;Sample Sales&quot;.&quot;D1 Customer&quot;";
  parentId="2035:22"
  parentUid="742"
  id="2006:24"
  uid="782"
```

```

        isWriteable="false">
<Description>
<![CDATA[ Help : Customer Name stores the first name followed by the last name.
]]>
</Description>
<Levels>
  <RefLogicalLevel uid="1636" id="2025:552" qualifiedName="&quot;
    Sample Sales&quot;;.&quot;H1 Customer&quot;;.&quot;Detail Customer&quot;" />
</Levels>
</LogicalColumn>

```

## 11.2 Business Model

The business model element corresponds to the business model object in the Business Model and Mapping layer.

The business model tag includes the following attributes:

**Table 11-3 Subject Area Tag Attributes**

Attribute Name	Description
isClassicStar	If set to true, indicates that the business model follows a star schema. Star schemas have one-to-many relationships between the logical dimension tables and the logical fact table.
isAvailable	If set to true, indicates that the corresponding subject area is available for queries.

The business model tag includes the following child elements:

**Table 11-4 Subject Area Child Elements**

Element Name	Description
Tables	References the logical tables that belong to this business model. Each logical table is contained in a sub-element called <code>RefLogicalTable</code> .
DisplayFolders	References the display folders that belong to this business model. Each display folder is contained in a sub-element called <code>RefLogicalDisplayFolder</code> .

### Syntax

```

<BusinessModel ...
  isClassicStar=""
  isAvailable="">
<Description />
<Tables>
  <RefLogicalTable .../>
  <RefLogicalTable .../>
</Tables>
</BusinessModel>

```

### Example

```

<BusinessModel name="Paint" id="2000:17" uid="18"
  isClassicStar="false"
  isAvailable="true">
<Description />

```

```

<Tables>
  <RefLogicalTable id="2035:21" qualifiedName="&quot;Paint&quot;.
  &quot;Sales Facts&quot;" />
  <RefLogicalTable id="2035:68" qualifiedName="&quot;Paint&quot;.
  &quot;Markets&quot;" />
  <RefLogicalTable id="2035:77" qualifiedName="&quot;Paint&quot;.
  &quot;Periods&quot;" />
  <RefLogicalTable id="2035:89" qualifiedName="&quot;Paint&quot;.
  &quot;Products&quot;" />
</Tables>
</BusinessModel>

```

### 11.3 Logical Complex Join

The logical complex join element corresponds to the logical join object in the Business Model and Mapping Layer.

The logical complex join tag includes the following attributes:

**Table 11-5 Logical Complex Join Tag Attributes**

Attribute Name	Description
type	The type of join. Valid values are Inner, LeftOuter, RightOuter, FullOuter, and FullOuterStitch.

The logical complex join tag includes the following child elements:

**Table 11-6 Logical Complex Join Child Elements**

Element Name	Description
Roles	<p>Roles define how a logical table or a logical level contributes to the join.</p> <p>Each role is contained in a sub-element called <code>Role</code>. The role sub-element has two attributes:</p> <ul style="list-style-type: none"> <li>▪ <code>multiplicity</code> indicates the multiplicity of the table or level in the join. Valid values are <code>([0-9])* TO ([0-9])*</code>, <code>ZERO TO ONE</code>, <code>ZERO TO MANY</code>, <code>ONE TO ONE</code>, <code>ONE TO MANY</code>, and <code>UNKNOWN</code>.</li> <li>▪ <code>isAggregate</code> indicates whether the table or level is an aggregate.</li> </ul> <p>Each <code>Role</code> sub-element can contain two additional sub-elements: <code>RefLogicalTable</code>, which references the logical tables in the join, and <code>RefLogicalLevel</code>, which references the logical levels in the join.</p> <p>See the syntax for the logical complex join element to see the complete hierarchy for the roles child element.</p>
DrivingTable	<p>If a driving table has been specified for the key, this element references that logical table.</p> <p>The driving table is contained in a sub-element called <code>RefLogicalTable</code>.</p>

**Syntax**

```

<LogicalComplexJoin ...
  type=" "
  <Description />
  <Roles>

```

```

    <Role multiplicity="" isAggregate="">
      <RefLogicalTable .../>
      <RefLogicalLevel .../>
    </Role>
  </Roles>
<DrivingTable>
  <RefLogicalTable .../>
</DrivingTable>
</LogicalComplexJoin>

```

### Example

```

<LogicalComplexJoin name="Relationship_2004:19781201298630" id="2004:1990"
  uid="3667"
  type="Inner">
  <Description />
  <Roles>
    <Role multiplicity="ZERO TO MANY" isAggregate="false">
      <RefLogicalTable id="2035:1851" qualifiedName="&quot;GLOBAL&quot;.
        &quot;Units Cube&quot;"/>
    </Role>
    <Role multiplicity="ZERO TO ONE" isAggregate="false">
      <RefLogicalTable id="2035:1547" qualifiedName="&quot;GLOBAL&quot;.
        &quot;Time&quot;"/>
    </Role>
  </Roles>
</LogicalComplexJoin>

```

## 11.4 Logical Level

The logical level element corresponds to the logical level object contained in the dimensions in the Business Model and Mapping layer.

The logical level tag includes the following attributes:

**Table 11–7 Logical Level Tag Attributes**

Attribute Name	Description
isUniqueSourceKey	If set to true, indicates that this level is associated with the logical column or columns that comprise the logical key of the dimension table (or in other words, that this level is the lowest level of the dimension).
isGTA	If set to true, indicates that this level is the Grand Total level, which is a special level representing the grand total for a dimension. Each dimension can have just one Grand Total level. A grand total level does not contain dimensional attributes and does not have a level key. <b>Note:</b> GTA stands for Grand Total Alias.
isFDUC	If set to true, indicates that the logical level rolls up to its parent. This option is called <b>Supports rollup to higher level of aggregation</b> in the Administration Tool. <b>Note:</b> FDUC stands for FullDrillUpCoverage.
levelConst	The star schema level constant.
memberCount	The number of elements that exist at this logical level.

The logical level tag includes the following child elements:

**Table 11–8 Logical Level Child Elements**

Element Name	Description
ChildLevels	References the child levels that have been defined for this logical level.  Each child level is contained in a sub-element called <code>RefLogicalLevel</code> .
PreferredDrillDown	If a drill path has been defined that is outside the normal drill path defined by the dimension level hierarchy, this element references the level to which users should drill.  The preferred drill level is contained in a sub-element called <code>RefLogicalLevel</code> .
ParentKey	References the parent key for this level (for dimensions with parent-child hierarchies only).  The parent key is contained in a sub-element called <code>RefLogicalKey</code> .

**Syntax**

```
<LogicalLevel ...
  isUniqueSourceKey=""
  isGTA=""
  isFDUC=""
  levelConst=""
  memberCount="">
  <Description />
  <ChildLevels>
    <RefLogicalLevel .../>
    <RefLogicalLevel .../>
  </ChildLevels>
  <PreferredDrillDown>
    <RefLogicalLevel .../>
  </PreferredDrillDown>
  <ParentKey>
    <RefLogicalLevel .../>
  </ParentKey>
</LogicalLevel>
```

**Example**

```
<LogicalLevel name="Year"
  parentName="&quot;Sample Sales&quot;.&quot;H0 Time&quot;."
  parentId="2019:15"
  parentUid="1631"
  id="2025:538"
  uid="1638"
  isGTA="false"
  isFDUC="true"
  memberCount="3"
  levelConst="'Year'">
  <Description />
  <ChildLevels>
    <RefLogicalLevel uid="1639" id="2025:539" qualifiedName="&quot;Sample
      Sales&quot;.&quot;H0 Time&quot;.&quot;Half&quot;." />
  </ChildLevels>
</LogicalLevel>
```

## 11.5 Dimension

The dimension element corresponds to the dimension object in the Business Model and Mapping layer.

The dimension tag includes the following attributes:

**Table 11–9 Dimension Tag Attributes**

Attribute Name	Description
isTimeDim	If set to true, indicates that this dimension is a time dimension.
isRagged	If set to true, indicates that this dimension hierarchy is unbalanced. An unbalanced hierarchy is one that contains levels that are not at the same depth.
isSkipped	If set to true, indicates that this dimension hierarchy is a skip-level hierarchy. A skip-level hierarchy is one in which there are members that do not have a value for a particular parent level.
isValueBased	If set to true, indicates that this object is a dimension with parent-child hierarchies. A parent-child hierarchy is a hierarchy of members that all have the same type. In a parent-child hierarchy, the inter-member relationships are parent-child relationships between dimension members.

The dimension tag includes the following child elements:

**Table 11–10 Dimension Child Elements**

Element Name	Description
RootLevels	References the root level or levels of this dimension. Root levels are levels in the hierarchy that do not have any levels above them. In the Administration Tool, root levels appear directly below the dimension icon.  Each level is contained in a sub-element called <code>RefLogicalLevel</code> .
DefaultRootLevel	References the default root level of this dimension. When there are many root levels in a dimension, the default root level is the one that is used for drilldown.  The default root level is contained in a sub-element called <code>RefLogicalLevel</code> .

### Syntax

```
<Dimension ...
  isTimeDim=" "
  isRagged=" "
  isSkipped=" "
  isValueBased=" ">
  <Description />
  <RootLevels>
    <RefLogicalLevel .../>
    <RefLogicalLevel .../>
  </RootLevels>
  <DefaultRootLevel>
    <RefLogicalLevel .../>
  </DefaultRootLevel>
</Dimension>
```

**Example**

```
<Dimension name="H6 Dim Fact Attributes" parentName="&quot;Sample Sales&quot;"
  parentId="2000:14"
  parentUid="519"
  id="2019:21"
  uid="63137"
  isValueBased="false"
  isRagged="false"
  isSkipped="false">
  <Description />
  <RootLevels>
    <RefLogicalLevel uid="63145" id="2025:569" qualifiedName="&quot;
      Sample Sales&quot;.&quot;H6 Dim Fact Attributes&quot;.&quot;Total&quot;" />
  </RootLevels>
  <DefaultRootLevel>
    <RefLogicalLevel uid="63145" id="2025:569" qualifiedName="&quot;
      Sample Sales&quot;.&quot;H6 Dim Fact Attributes&quot;.&quot;Total&quot;" />
  </DefaultRootLevel>
</Dimension>
```

## 11.6 Logical Table

The logical table element corresponds to the logical table object in the Business Model and Mapping layer.

The logical table tag includes the following attributes:

**Table 11–11 Logical Table Tag Attributes**

Attribute Name	Description
isBridgeTable	In previous releases, this attribute was used to indicate whether the logical table is a bridge table. This attribute exists only for backward compatibility with previous releases.
isLookupTable	If set to true, indicates that this logical table is a lookup table. Lookup tables are typically used to store fields that contain translations in several languages. Queries that require multilingual data join the base table and lookup table to obtain the translated values for each row in the base table.
x	The <i>x</i> coordinate of the table when it is shown in the business model diagrams.
y	The <i>y</i> coordinate of the table when it is shown in the business model diagrams.

The logical table tag includes the following child elements:

**Table 11–12 Logical Table Child Elements**

Element Name	Description
LevelColumn	References the column that is used in the level that corresponds to this logical table.
Columns	References the logical columns that belong to this logical table. Each logical column is contained in a sub-element called <code>RefLogicalColumn</code> .

**Table 11–12 (Cont.) Logical Table Child Elements**

Element Name	Description
TableSources	References the logical table sources for this logical table. Each logical table source is contained in a sub-element called RefLogicalTableSource.

**Syntax**

```

<LogicalTable ...
  isBridgeTable=""
  isLookupTable=""
  x=""
  y="">
<Description />
<LevelColumn>
  <RefLogicalColumn .../>
</LevelColumn>
<Columns>
  <RefLogicalColumn .../>
  <RefLogicalColumn .../>
</Columns>
<TableSources>
  <RefLogicalTableSource .../>
  <RefLogicalTableSource .../>
</TableSources>
</LogicalTable>

```

**Example**

```

<LogicalTable name="D1 Customer" parentName="&quot;Sample Sales&quot;"
  parentId="2000:14"
  parentUid="519"
  id="2035:22"
  uid="742"
  x="353"
  y="139">
<Description>
  <![CDATA[ This logical table maps to the physical Customer Dimension table
    with various attributes like Customer Name, Status, Type and so on. ]]>
</Description>
<Columns>
  <RefLogicalColumn uid="776" id="2006:23" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C0 Cust Key&quot;" />
  <RefLogicalColumn uid="782" id="2006:24" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C1 Cust Name&quot;" />
  <RefLogicalColumn uid="788" id="2006:25" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C2 Cust Status&quot;" />
  <RefLogicalColumn uid="790" id="2006:26" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C3 Cust Type&quot;" />
  <RefLogicalColumn uid="784" id="2006:27" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C4 Customer Segment ID&quot;" />
  <RefLogicalColumn uid="63678" id="2006:28" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C5 Segment&quot;" />
  <RefLogicalColumn uid="786" id="2006:29" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C6 Cust Industry&quot;" />
  <RefLogicalColumn uid="774" id="2006:30" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C7 Credit Rate&quot;" />
  <RefLogicalColumn uid="778" id="2006:31" qualifiedName="&quot;Sample
    Sales&quot;.&quot;D1 Customer&quot;.&quot;C8 First Contact Date&quot;" />

```

```

        <RefLogicalColumn uid="780" id="2006:32" qualifiedName="&quot;Sample
        Sales&quot;.&quot;D1 Customer&quot;.&quot;C9 Last Order Date&quot;" />
    </Columns>
    <TableSources>
        <RefLogicalTableSource uid="1168" id="2037:1661" qualifiedName="&quot;Sample
        Sales&quot;.&quot;D1 Customer&quot;.&quot;.&quot;01 Customer&quot;" />
    </TableSources>
</LogicalTable>

```

## 11.7 Logical Foreign Key

The logical foreign key element corresponds to the logical foreign key object in the Business Model and Mapping layer.

The logical foreign key tag includes the following attributes:

**Table 11–13 Logical Foreign Key Tag Attributes**

Attribute Name	Description
type	The type of join. Valid values are Inner, LeftOuter, RightOuter, FullOuter, and FullOuterStitch.

The logical foreign key tag includes the following child elements:

**Table 11–14 Logical Foreign Key Child Elements**

Element Name	Description
Columns	References the logical columns in the table that the foreign key references. Each logical column is contained in a sub-element called RefLogicalColumn.
CounterPartKey	References the foreign key columns for this foreign key. Each logical column is contained in a sub-element called RefLogicalColumn.
DrivingTable	If a driving table has been specified for this logical foreign key, this element references that logical table. The driving table is contained in a sub-element called RefLogicalTable.

### Syntax

```

<LogicalForeignKey ...
  type=" "
  <Description />
  <Columns>
    <RefLogicalColumn .../>
    <RefLogicalColumn .../>
  </Columns>
  <CounterPartKey>
    <RefLogicalKey .../>
  </CounterPartKey>
  <DrivingTable>
    <RefLogicalTable .../>
  </DrivingTable>
</LogicalForeignKey>

```

**Example**

```

<LogicalForeignKey name="Sales Facts_FKey"
  parentName="&quot;Paint&quot;.&quot;Sales Facts&quot;"
  parentId="2035:21"
  id="2033:202"
  uid="158"
  type="Inner">
<Description />
<Columns>
  <RefLogicalColumn id="2006:22" qualifiedName="&quot;Paint&quot;.&quot;Sales
    Facts&quot;.&quot;MktKey&quot;" />
</Columns>
<CounterPartKey>
  <RefLogicalKey id="2008:199" qualifiedName="&quot;Paint&quot;.&quot;
    &quot;Markets&quot;.&quot;Market_Key&quot;" />
</CounterPartKey>
</LogicalForeignKey>

```

## 11.8 Logical Key

The logical key element corresponds to the logical key object in the Business Model and Mapping layer.

The logical key tag includes the following attributes:

**Table 11–15 Logical Key Tag Attributes**

Attribute Name	Description
isPrimary	If set to true, indicates that this key is the logical primary key for the table.
isForDrillDown	If set to true, indicates that this key is the key that is displayed when a user clicks to drill down.
isChronKey	If set to true, indicates that this key is a chronological key for a time dimension.

The logical key tag includes the following child elements:

**Table 11–16 Logical Key Child Elements**

Element Name	Description
Columns	References the logical column that defines the key of the logical table.  The logical column is contained in a sub-element called <code>RefLogicalColumn</code> .

**Syntax**

```

<LogicalKey ...
  isPrimary=" "
  isForDrillDown=" "
  isChronKey=" ">
<Description />
<Columns>
  <RefLogicalColumn .../>
</Columns>
</LogicalKey>

```

**Example**

```
<LogicalKey name="RegKey"
  parentName="&quot;Paint&quot;.&quot;MarketDim&quot;.&quot;Region&quot;"
  parentId="2025:121"
  id="2008:183"
  uid="139"
  isPrimary="true"
  isForDrillDown="true">
  <Description />
  <Columns>
    <RefLogicalColumn id="2006:75" qualifiedName="&quot;Paint&quot;.&quot;
      &quot;Markets&quot;.&quot;Region&quot;" />
  </Columns>
</LogicalKey>
```

## 11.9 Logical Table Source

The logical table source element corresponds to the logical table source object in the Business Model and Mapping layer. See also the column mapping element, described in [Section 11.9.1, "Column Mapping."](#)

The logical table source tag includes the following attributes:

**Table 11–17 Logical Table Source Attributes**

Attribute Name	Description
isDistinct	This attribute is used if the values for the logical table source are unique. In the Administration Tool, this option is called <b>Select distinct values</b> in the Content tab of the Logical Table Source dialog.
isDimOnly	If set to true, indicates that this source is the preferred logical table source for dimension-only queries. Dimension-only queries retrieve results from the dimension table without joining with the fact table, unlike normal queries, which always have at least one fact column in the query.  In the Administration Tool, this option is called <b>Dimension Browse</b> in the General tab of the Logical Table Source dialog.
isSysGen	If set to true, indicates that an internal utility such as the Aggregate Persistence Wizard has generated this logical table source.
canCombine	If set to true, indicates that this logical table source can be combined with other logical table sources to provide a full set of results. In the Administration Tool, this option is called <b>This source should be combined with other sources at this level</b> in the Content tab of the Logical Table Source dialog.
isActive	If set to true, indicates that this logical table source is active. In the Administration Tool, this attribute corresponds with the <b>Disabled</b> option in the General tab of the Logical Table Source dialog.
priorityGroup	Indicates the priority group number of this logical table source. Logical table source priority group numbers are assigned to indicate which logical table source should be used for queries for which there is more than one logical table source that can satisfy the requested set of columns.

The logical table source tag includes the following child elements:

**Table 11–18 Logical Table Source Child Elements**

Element Name	Description
Link	<p>References the set of physical tables to which the logical table source is mapped. These links are references to the physical joins that already exist. In the Administration Tool, this element corresponds with the <b>Map to these tables</b> section in the General tab of the Logical Table Source dialog.</p> <p>Each link child element contains two sub-elements, <code>StartNode</code> and <code>Joins</code>:</p> <ul style="list-style-type: none"> <li>■ The <code>StartNode</code> sub-element references the physical table identified by this link. It can contain the <code>RefCubeTable</code>, <code>RefPhysicalTable</code>, <code>RefAWDimension</code>, or <code>RefAWCube</code> sub-element, depending on your data source type.</li> <li>■ The <code>Joins</code> sub-element defines the joins for this link. It contains different sub-elements, depending on the type of join. For example: <ul style="list-style-type: none"> <li><code>RefCubeTable</code>, <code>RefPhysicalTable</code>, <code>RefAWCube</code>, or <code>RefAWDimension</code></li> <li><code>RefPhysicalForeignKey</code> or <code>RefComplexJoin</code></li> <li><code>DrivingTable</code>, which contains a sub-element <code>RefPhysicalTable</code></li> </ul> </li> </ul> <p>The <code>Joins</code> sub-element has two attributes: <code>type</code> (<code>Inner</code>, <code>LeftOuter</code>, <code>RightOuter</code>, <code>FullOuter</code>, or <code>FullOuterStitch</code>) and <code>cardinality</code> (<code>ONE TO ONE</code>, <code>ZERO OR ONE TO ONE</code>, <code>ONE TO ZERO OR ONE</code>, <code>ZERO OR ONE TO ZERO OR ONE</code>, <code>ONE TO MANY</code>, <code>ZERO OR ONE TO MANY</code>, <code>ZERO OR ONE TO MANY</code>, <code>MANY TO ONE</code>, <code>MANY TO ZERO OR ONE</code>, or <code>MANY TO MANY</code>).</p> <p>See the syntax for the logical table source element to see the complete hierarchy for the link child element.</p>
WhereClause	<p>If a <code>WHERE</code> clause filter has been defined, contains the <code>WHERE</code> clause expression that limits the number of rows the source uses in the resultant table. The expression is contained in a sub-element called <code>Expr</code>.</p> <p>In the Administration Tool, this option is called <b>Use this "WHERE clause" filter to limit rows returned (exclude the "WHERE")</b> in the Content tab of the Logical Table Source dialog.</p>
GroupBy	<p>Contains the expression that defines whether the aggregation is grouped by logical level or by column. The expression is contained in a sub-element called <code>Expr</code>.</p> <p>In the Administration Tool, this option is called <b>Aggregation content, group by</b> in the Content tab of the Logical Table Source dialog.</p>
FragmentContent	<p>Contains the expression that defines how the source is fragmented. The expression is contained in a sub-element called <code>Expr</code>.</p> <p>This child element is used in conjunction with the <code>canCombine</code> attribute. In the Administration Tool, this option is called <b>Fragmentation content</b> in the Content tab of the Logical Table Source dialog.</p>
ClosureTable	<p>References the parent-child table, if any.</p> <p>The parent-child table is contained in a sub-element called <code>RefPhysicalTable</code>.</p>

**Syntax**

```

<LogicalTableSource ...
  isDistinct=""
  isDimOnly=""
  isSysGen=""
  canCombine=""
  isActive=""
  priorityGroup="">
<Description />
<Link>
  <StartNode>
    <RefPhysicalTable .../>
  </StartNode>
  <Joins>
    <Join type="" cardinality="">
      <RefPhysicalTable .../>
      <RefPhysicalTable .../>
      <RefPhysicalForeignKey .../>
    </Join>
  </Joins>
</Link>
<WhereClause>
  <Expr>...</Expr>
</WhereClause>
<GroupBy>
  <Expr />
</GroupBy>
<FragmentContent>
  <Expr />
</FragmentContent>
<ClosureTable>
  <RefTable .../>
</ClosureTable>
</LogicalTableSource>

```

**Example**

```

<LogicalTableSource name="WEEK, UPC, CITY"
  parentName="&quot;Paint&quot;.&quot;Sales Facts&quot;"
  parentId="2035:21"
  id="2037:368"
  uid="324"
  isActive="true">
<Description />
<Link>
  <StartNode>
    <RefPhysicalTable id="3001:550" qualifiedName="&quot;Paint&quot;...&quot;
      Fact&quot;" />
  </StartNode>
  <Joins>
    <Join type="Inner" cardinality="MANY TO ONE">
      <RefPhysicalTable id="3001:550" qualifiedName="&quot;Paint&quot;...
        &quot;Fact&quot;" />
      <RefPhysicalTable id="3001:560" qualifiedName="&quot;Paint&quot;.&quot;...
        &quot;Market&quot;" />
      <RefPhysicalForeignKey id="3006:621" qualifiedName="&quot;Paint&quot;...
        &quot;Fact&quot;.&quot;fact_FKey#1&quot;" />
    </Join>
    <Join type="Inner" cardinality="MANY TO ONE">
      <RefPhysicalTable id="3001:550" qualifiedName="&quot;Paint&quot;...

```

```

        &quot;Fact&quot;;" />
        <RefPhysicalTable id="3001:587" qualifiedName="&quot;Paint&quot;;...
        &quot;Period&quot;;" />
        <RefPhysicalForeignKey id="3006:625" qualifiedName="&quot;Paint&quot;;...
        &quot;Fact&quot;;.&quot;;fact_FKey#2&quot;;" />
    </Join>
</Joins>
<Join type="Inner" cardinality="MANY TO ONE">
    <RefPhysicalTable id="3001:550" qualifiedName="&quot;Paint&quot;;...
    &quot;Fact&quot;;" />
    <RefPhysicalTable id="3001:601" qualifiedName="&quot;Paint&quot;;...
    &quot;Product&quot;;" />
    <RefPhysicalForeignKey id="3006:626" qualifiedName="&quot;Paint&quot;;...
    &quot;Fact&quot;;.&quot;;fact_FKey#3&quot;;" />
</Join>
</Joins>
</Link>
<Link>
    <StartNode>
        <RefPhysicalTable id="3001:601" qualifiedName="&quot;Paint&quot;;...
        &quot;Product&quot;;" />
    </StartNode>
    <Joins>
        <Join type="Inner" cardinality="ONE TO MANY">
            <RefPhysicalTable id="3001:601" qualifiedName="&quot;Paint&quot;;...
            &quot;Product&quot;;" />
            <RefPhysicalTable id="3001:550" qualifiedName="&quot;Paint&quot;;...
            &quot;Fact&quot;;" />
            <RefPhysicalForeignKey id="3006:626" qualifiedName="&quot;Paint&quot;;...
            &quot;Fact&quot;;.&quot;;fact_FKey#3&quot;;" />
        </Join>
    </Joins>
</Link>
<WhereClause>
    <Expr>
        <![CDATA[ "Paint"."."."Market"."LevelX" = 'MARKET' AND "Paint".
        ""."Product"."LevelX" = 'UPC' AND "Paint"."."."Period"."LevelX" =
        'WEEK' ] ]>
    </Expr>
</WhereClause>
<GroupBy>
    <Expr />
</GroupBy>
<FragmentContent>
    <Expr />
</FragmentContent>
</LogicalTableSource>

```

## 11.9.1 Column Mapping

The column mapping element does not correspond to any metadata repository object. It is only used in conjunction with the logical table source element. The column mapping element appears on its own in the XML schema (.xsd file), rather than as part of the logical table source element, so that the column mapping details are easier to read and update.

The column mapping tag includes the following child elements:

**Table 11–19 Column Mapping Child Elements**

Element Name	Description
RefLogicalTableSource	References the logical table source to which this column mapping belongs. Each column mapping must specify one and only one logical table source.
LogicalColumn	Contains the expression that identifies the logical column for this column mapping. The expression is contained in a sub-element called Expr.
Expr	Contains the expression that identifies the physical column for this column mapping. Note that this Expr child element is different from the Expr sub-element that appears inside the LogicalColumn child element.

The column mapping tag does not include any attributes.

### Syntax

```
<ColumnMapping>
  <RefLogicalTableSource .../>
  <LogicalColumn>
    <Expr>...</Expr>
  </LogicalColumn>
  <Expr>...</Expr>
</ColumnMapping>
```

### Example

```
<ColumnMapping>
  <RefLogicalTableSource id="2037:368"
    qualifiedName="&quot;Paint&quot;.&quot;Sales Facts&quot;.&quot;
    WEEK, UPC, CITY&quot;" />
  <LogicalColumn>
    <Expr>
      <![CDATA[ "Paint"."Sales Facts"."ProdKey" ]]>
    </Expr>
  </LogicalColumn>
  <Expr>
    <![CDATA[ "Paint".""."Fact"."ProdKey" ]]>
  </Expr>
</ColumnMapping>
```

## 11.10 Logical Source Folder

The logical source folder element corresponds to the logical source folder object in the Business Model and Mapping layer. Logical source folders contain logical table sources.

The logical source folder element does not include any attributes or child elements, other than the default attributes and elements.

### Syntax

```
<LogicalSourceFolder ...>
  <Description />
</LogicalSourceFolder>
```

### Example

```
<LogicalSourceFolder name="Sources"
```

```

    parentName="&quot;Paint&quot;.&quot;Sales Facts&quot;";
    parentId="2035:21"
    id="2046:100"
    uid="101">
  <Description />
</LogicalSourceFolder>

```

## 11.11 Measure Definition

The measure definition element stores the measure definition for a measure column. A measure column is usually in a fact table, can change for each record, and can be added up or aggregated in some way.

The measure definition tag includes the following attributes:

**Table 11–20 Measure Definition Tag Attributes**

Attribute Name	Description
isCommutative	If set to true, indicates that the aggregation rule lets the server switch the order if it can increase the performance. For example, the following aggregation function is commutative:  $A (B (x)) = B (A (x))$

The measure definition tag does not include any child elements.

### Syntax

```

<MeasureDefn ...
  isCommutative=" ">
  <Description />
</MeasureDefn>

```

### Example

```

<MeasureDefn name="Measure"
  parentName="&quot;Paint&quot;.&quot;Sales Facts&quot;.&quot;Dollars&quot;";
  parentId="2006:26"
  id="2048:105"
  uid="106"
  isCommutative="false">
  <Description />
</MeasureDefn>

```

## 11.12 Aggregation Rule

The aggregation rule element corresponds to the aggregation rule object in the Business Model and Mapping layer.

The aggregation rule tag includes the following attributes:

**Table 11–21 Aggregation Rule Tag Attributes**

Attribute Name	Description
isDefault	If set to true, indicates that this is the default rule for aggregate calculations. This option only applies when there is more than one aggregation rule.

The aggregation rule tag includes the following child elements:

**Table 11–22 Aggregation Rule Child Elements**

Element Name	Description
Expr	Contains the expression on which this aggregation rule is based.
BasedOnDimension	If this aggregation rule is specific to a particular dimension, references the dimension for which this aggregation rule applies.  The dimension is contained in a sub-element called RefDimension.

**Syntax**

```
<AggrRule ...
  isDefault=" "
  BasedOnDimension>
  <Description />
  <Expr>
    <![CDATA[...]]>
  </Expr>
</AggrRule>
```

**Example**

```
<AggrRule name="AggrRule_2050:1121162340028"
  parentName="&quot;Paint&quot;.&quot;Sales Facts&quot;.&quot;Units&quot;.&quot;Measure&quot;"
  parentId="2048:104"
  id="2050:112"
  uid="113"
  isDefault="true">
  <Description />
  <Expr>
    <![CDATA[ SUM("Paint"."Sales Facts"."Units")]]>
  </Expr>
</AggrRule>
```

## 11.13 Override Aggregation Rule

The override aggregation rule element corresponds to the override aggregation expression for a logical table source in the Business Model and Mapping Layer.

When you select Count Distinct as the default aggregation rule, you can specify an override aggregation expression for specific logical table sources. This option is useful when you have more than one logical table source mapped to a logical column and you want to apply a different aggregation rule to each source.

The override aggregation rule tag includes the following child elements:

**Table 11–23 Override Aggregation Rule Child Elements**

Element Name	Description
RefLogicalTableSource	References the logical table source to which this override aggregation rule applies.
Expr	Contains the expression on which this aggregation rule is based.

The override aggregation rule tag does not include any attributes.

**Syntax**

```
<OverrideAggrRule ...>
  <Description />
  <RefALogicalTableSource .../>
  <Expr>...</Expr>
</OverrideAggrRule>
```

**Example**

```
<OverrideAggrRule name="OvAggrRule_2054:19221204534743"
  parentName="&quot;SnowflakeSales&quot;.&quot;SalesFacts&quot;.&quot;# Orders&quot;.&quot;Measure&quot;"
  parentId="2048:1752"
  id="2054:1922"
  uid="2147535332">
  <Description />
  <RefLogicalTableSource id="2037:7318" qualifiedName=
    "&quot;SnowflakeSales&quot;.&quot;SalesFacts&quot;.&quot;Order Header&quot;" />
  <Expr>
    <![CDATA[ COUNT("SnowflakeSales"."SalesFacts"."# Orders")]]>
  </Expr>
</OverrideAggrRule>
```

## 11.14 Logical Display Folder

The logical display folder element corresponds to the logical display folder object in the Business Model and Mapping layer.

The logical display folder tag includes the following child elements:

**Table 11–24 Logical Display Folder Child Elements**

Element Name	Description
Dimensions	References the dimensions that belong to this logical display folder. Each dimension is contained in a sub-element called <code>RefDimension</code> .
Tables	References the logical tables that belong to this logical display folder. Each table is contained in a sub-element called <code>RefLogicalTable</code> .

The logical display folder element does not include any attributes.

**Syntax**

```
<LogicalDisplayFolder ...>
  <Description />
  <Dimensions>
    <RefDimension .../>
    <RefDimension .../>
  </Dimensions>
  <Tables>
    <RefLogicalTable .../>
    <RefLogicalTable.../>
  </Tables>
</LogicalDisplayFolder>
```

**Example**

```
<LogicalDisplayFolder name="Fact Tables" parentName="&quot;SS- Time Series&quot;"
  parentId="2000:197"
  id="2052:3034"
  uid="2147609068"
  iconIndex="69">
  <Description />
  <Dimensions>
    <RefDimension id="2019:242" qualifiedName="&quot;SS- Time Series&quot;,.
      &quot;Customer&quot;" />
  </Dimensions>
  <Tables>
    <RefLogicalTable id="2035:1289" qualifiedName="&quot;SS- Time Series&quot;,.
      &quot;SalesFacts&quot;" />
    <RefLogicalTable id="2035:1511" qualifiedName="&quot;SS- Time Series&quot;,.
      &quot;SalesPlan&quot;" />
  </Tables>
</LogicalDisplayFolder>
```

---

---

## Physical Elements

Physical elements are typically those elements that are exposed in the Physical layer, or in other words, the elements that appear in the right-hand pane of the Administration Tool.

This chapter contains the following topics:

- [Section 12.1, "Database"](#)
- [Section 12.2, "Physical Catalog"](#)
- [Section 12.3, "Physical Schema"](#)
- [Section 12.4, "Physical Display Folder"](#)
- [Section 12.5, "Physical Table"](#)
- [Section 12.6, "Physical Column"](#)
- [Section 12.7, "Connection Pool"](#)
- [Section 12.8, "Physical Key"](#)
- [Section 12.9, "Physical Foreign Key"](#)
- [Section 12.10, "Complex Join"](#)
- [Section 12.11, "Cube Table"](#)
- [Section 12.12, "Physical Dimension"](#)
- [Section 12.13, "Physical Hierarchy"](#)
- [Section 12.14, "Physical Level"](#)
- [Section 12.15, "Cube Column"](#)
- [Section 12.16, "Analytic Workspace"](#)
- [Section 12.17, "AW Cube"](#)
- [Section 12.18, "AW Dimension"](#)
- [Section 12.19, "AW Hierarchy"](#)
- [Section 12.20, "AW Level"](#)
- [Section 12.21, "AW Column"](#)

### 12.1 Database

The database element corresponds to the database object in the Physical layer.

The database tag includes the following attributes:

**Table 12–1 Database Tag Attributes**

Attribute Name	Description
type	The type of data source, such as XMLDirect or ODBC20.
dbFlag	Stores the value of the following options: <ul style="list-style-type: none"> <li>■ <b>CRM metadata tables:</b> For legacy Siebel Systems sources only. When selected, the Administration Tool import utility looks for the table definition in Oracle's Siebel CRM-specific tables.</li> <li>■ <b>Virtual Private Database:</b> Identifies the physical database source as a virtual private database (VPD). When a VPD is used, returned data results are contingent on the user's authorization credentials. This option is used with the Security Sensitive option for session variables.</li> <li>■ <b>Allow populate queries by default:</b> When selected, allows all users to execute <code>POPULATE SQL</code>. If you want most, but not all, users to be able to execute <code>POPULATE SQL</code>, select this option and then limit queries for specific users or groups.</li> <li>■ <b>Allow direct database requests by default:</b> When selected, allows all users to execute physical queries. The Oracle BI Server will send unprocessed, user-entered, physical SQL directly to an underlying database. If you want most, but not all, users to be able to execute physical queries, select this option and then limit queries for specific users or groups.</li> </ul>

The database tag includes the following child elements:

**Table 12–2 Database Child Elements**

Element Name	Description
Features	Lists the SQL features for this database. Each feature is contained in a sub-element called <code>Feature</code> . This sub-element has two attributes: <ul style="list-style-type: none"> <li>■ <code>name</code> indicates the name of the feature, such as <code>LEFT_OUTER_JOIN_SUPPORTED</code>.</li> <li>■ <code>value</code> indicates whether this feature is supported by the database, or provides the actual value of the feature (such as "0" for <code>MAX_COLUMNS_IN_SELECT</code>).</li> </ul>
PersistConnPool	References the connection pool that is used as the persist connection pool, if one has been assigned. A persist connection pool is a database property that is used for specific types of queries (typically used to support Marketing queries). The persist connection pool is contained in a sub-element called <code>RefConnectionPool</code> .
DisplayFolders	References any physical display folders that contain objects in this database. Physical display folders can be used to organize tables in a database. For example, all alias tables can be stored in a display folder called <code>Alias</code> , in addition to being present in the database. Each display folder is contained in a sub-element called <code>RefPhysicalDisplayFolder</code> .

**Syntax**

<Database ...

```

    type=""
    dbFlag="">
<Description />
<Features>
  <Feature name="" value=""/>
  <Feature name="" value=""/>
  ...
</Features>
<PersistConnPool>
  <RefConnectionPool .../>
</PersistConnPool>
<DisplayFolders>
  <RefPhysicalDisplayFolder .../>
  <RefPhysicalDisplayFolder .../>
</DisplayFolders>
</Database>

```

### Example

```

<Database name="Paint" id="3023:205" uid="161"
  type="XMLDirect">
  <Description />
  <Features>
    <Feature name="LEFT_OUTER_JOIN_SUPPORTED" value="false" />
    <Feature name="RIGHT_OUTER_JOIN_SUPPORTED" value="false" />
    <Feature name="FULL_OUTER_JOIN_SUPPORTED" value="false" />
    <Feature name="NESTED_OUTER_JOIN_SUPPORTED" value="false" />
    <Feature name="UNION_SUPPORTED" value="false" />
    <Feature name="UNION_ALL_SUPPORTED" value="false" />
    <Feature name="COUNT_SUPPORTED" value="false" />
    <Feature name="COUNT_DISTINCT_SUPPORTED" value="false" />
    ...
    <Feature name="SORT_ORDER_LOCALE" value="english-usa" />
    <Feature name="COMMENT_START" />
    <Feature name="COMMENT_END" />
  </Features>
</Database>

```

## 12.2 Physical Catalog

The physical catalog element corresponds to the physical catalog object in the Physical layer.

The physical catalog tag includes the following child elements:

**Table 12–3 Physical Catalog Child Elements**

Element Name	Description
DynamicName	If a session variable is being used to specify the name of this physical catalog, this element references that session variable. The session variable is contained in a sub-element called RefVariable.

The physical catalog element does not include any attributes.

### Syntax

```

<PhysicalCatalog ...>
  <DynamicName>
  <RefVariable .../>

```

```

    </DynamicName>
</PhysicalCatalog>

```

**Example**

```

<PhysicalCatalog name="my_catalog" parentName="&quot;SQLDB&quot;"
  parentId="3023:3035" id="3025:3063" uid="2147485024">
  <Description></Description>
</PhysicalCatalog>

```

## 12.3 Physical Schema

The physical schema element corresponds to the physical schema object in the Physical layer.

The physical schema tag includes the following child elements:

**Table 12–4 Physical Schema Child Elements**

Element Name	Description
DynamicName	If a session variable is being used to specify the name of this physical schema, this element references that session variable.  The session variable is contained in a sub-element called RefVariable.

The physical schema element does not include any attributes.

**Syntax**

```

<Schema ...>
  <DynamicName>
    <RefVariable .../>
  </DynamicName>
</Schema>

```

**Example**

```

<Schema name="dbo" parentName="&quot;SQLDB&quot;.&quot;my_catalog&quot;"
  parentId="3025:3063"
  id="3027:3068" uid="2147485027">
  <Description></Description>
</Schema>

```

## 12.4 Physical Display Folder

The physical display folder element corresponds to the physical display folder object in the Physical layer.

The physical display folder tag includes the following child elements:

**Table 12–5 Physical Display Folder Child Elements**

Element Name	Description
DynamicName	If a session variable is being used to specify the name of this physical display folder, this element references that session variable.  The session variable is contained in a sub-element called RefVariable.

**Table 12-5 (Cont.) Physical Display Folder Child Elements**

Element Name	Description
Tables	References the physical tables that belong to this physical display folder.  Each physical table is contained in a sub-element called <code>RefPhysicalTable</code> .

The physical display folder element does not include any attributes.

### Syntax

```
<PhysicalDispFolder ...>
  <DynamicName>
    <RefVariable .../>
  </DynamicName>
</Schema>
```

### Example

```
<PhysicalDisplayFolder name="Aliases" parentName="&quot;SQLDB&quot;"
  parentId="3023:3035" id="3037:6088" uid="2147535305">
  <Description></Description>
  <Tables>
    <RefPhysicalTable id="3001:3190" qualifiedName="&quot;SQLDB&quot;.&quot;my_
      catalog&quot;.&quot;dbo&quot;.&quot;Cross Sell Categories&quot;" />
    <RefPhysicalTable id="3001:3194" qualifiedName="&quot;SQLDB&quot;.&quot;my_
      catalog&quot;.&quot;dbo&quot;.&quot;Cross Sell OrderDetails&quot;" />
    <RefPhysicalTable id="3001:3200" qualifiedName="&quot;SQLDB&quot;.&quot;my_
      catalog&quot;.&quot;dbo&quot;.&quot;Cross Sell Orders&quot;" />
    <RefPhysicalTable id="3001:3216" qualifiedName="&quot;SQLDB&quot;.&quot;my_
      catalog&quot;.&quot;dbo&quot;.&quot;Cross Sell Products&quot;" />
  </Tables>
</PhysicalDisplayFolder>
```

## 12.5 Physical Table

The physical table element corresponds to the physical table object in the Physical layer.

The physical table tag includes the following attributes:

**Table 12-6 Physical Table Tag Attributes**

Attribute Name	Description
type	The type of physical table. Options are as follows: <ul style="list-style-type: none"> <li>▪ <code>select</code> indicates that this physical table object is a <code>SELECT</code> statement.</li> <li>▪ <code>sp</code> indicates that this physical table is a stored procedure.</li> <li>▪ <code>alias</code> indicates that this physical table is an alias table. An alias table (alias) is a physical table that references a different physical table as its source.</li> <li>▪ <code>none</code> indicates that this physical table is a regular physical table.</li> </ul>
isCacheable	If set to true, indicates that this table is included in the Oracle BI Server query cache.

**Table 12–6 (Cont.) Physical Table Tag Attributes**

Attribute Name	Description
CacheExpiry	How long table entries should persist in the query cache. A value of 0 indicates that cache entries do not expire.
isCacheEventTable	If set to true, indicates that this table has been registered as an Oracle BI Server event polling table.
isOverrideCacheProp	For alias tables only. If set to true, indicates that the alias table has its own cache properties that override the cache properties of the source table.
pollFreq	The polling frequency, in seconds. Only applies if this table is an Oracle BI Server event polling table. The default value is 3600 seconds.
x	The <i>x</i> coordinate of the table when it is shown in the physical diagram.
y	The <i>y</i> coordinate of the table when it is shown in the physical diagram.
rowCount	The latest number of rows retrieved for this physical table.
lastUpdated	The time at which row counts were last updated for this physical table.
uri	For XML data sources only. The resource identifier for the XML data source.
xslPath	For XML data sources only. An XSLT file contains formatting rules written according to the XSLT standard. It defines how an XML file may be transformed.
maxConn	For XML data sources only. The maximum number of connections allowed to the same URL from different users.
xmlRefreshInterval	For XML data sources only. The time interval after which the XML data source is queried again directly, rather than using results in cache.
scriptPath	For XML data sources only. The extended gateway script path.
hints	For Oracle Databases only. Lists any database hints, such as index hints or leading hints, that were specified for this physical table.
isExtGatewayInProcess	For XML data sources only. Indicates that this physical table is the extended gateway part of the process.
extGatewayDelimiter	For XML data sources only. The row delimiter used in the metadata import process, typically the second level element in the XML document.
isSysGen	If set to true, indicates that an internal utility has generated this physical table.
isDDLAggr	Indicates whether this physical table is an aggregate table.
isDeployedView	For relational databases only. If set to true, indicates that this physical table is a deployed (opaque) view. An opaque view is a Physical layer table that consists of a <code>SELECT</code> statement.

The physical table tag includes the following child elements:

**Table 12-7 Physical Table Child Elements**

Element Name	Description
SourceTable	For alias tables only. References the physical table that is being used as the source for this alias table.  The physical table is contained in a sub-element called <code>RefPhysicalTable</code> .
DBMap	Stores the value of database-specific strings. The <code>&lt;DBMap&gt;</code> element contains an <code>&lt;Item&gt;</code> tag, which in turn contains a <code>&lt;Value&gt;</code> tag, as follows:  <pre>&lt;Item name=""&gt;   &lt;Value /&gt; &lt;/Item&gt;</pre>
AggrConnPool	If this physical table is an aggregate table, this element references the connection pool used for the aggregate.  The connection pool is contained in a sub-element called <code>RefConnectionPool</code> .
RefVariable	If a session variable is being used to specify the name of this physical table, this element references that session variable.

**Syntax**

```
<PhysicalTable ...
  type=" "
  isCacheable=" "
  cacheExpiry=" "
  isCacheEventTable=" "
  isOverrideCacheProp=" "
  pollFreq=" "
  x=" "
  y=" "
  rowCount=" "
  lastUpdated=" "
  uri=" "
  xslPath=" "
  maxConn=" "
  xmlRefreshInterval=" "
  scriptPath=" "
  hints=" "
  isExtGatewayInProcess=" "
  extGatewayDelimiter=" "
  isSysGen=" "
  isDDLAggr=" "
  isDeployedView=" ">
  <SourceTable>
    <RefPhysicalTable .../>
  </SourceTable>
  <DBMap>
    <Item name="">
      <Value .../>
    </Item>
  </DBMap>
  <AggrConnPool>
    <RefConnectionPool .../>
  </AggrConnPool>
  <RefVariable .../>
</PhysicalTable>
```

**Example**

```

<PhysicalTable name="Product" parentName="&quot;Paint&quot;..&quot;&quot;"
  parentId="3023:205"
  id="3001:601"
  uid="656"
  type="none"
  x="191"
  y="436"
  rowCount="91.0"
  lastUpdated="2000-08-14 09:12:14"
  uri="VALUEOF(BI_EE_HOME)/server/Sample/paint/Product.xml"
  maxConn="0"
  extName="Product">
  <Description />
</PhysicalTable>

```

## 12.6 Physical Column

The physical column element corresponds to the physical column object in the Physical layer.

The physical column tag includes the following attributes:

**Table 12–8 Physical Column Tag Attributes**

Attribute Name	Description
extName	The external name for the physical column. This attribute is required if the same name (such as STATE) is used in multiple hierarchies.  This attribute is optional for XML documents. For XML, the extName attribute stores the fully qualified name of a column.
dataType	The data type of the physical column, such as VARCHAR. This option is called <b>Type</b> in the Physical Column dialog in the Administration Tool.
nullable	If set to true, indicates that null values are allowed for the column. This allows null values to be returned to the user, which is expected with certain functions and with outer joins.
precision	The precision of the data type of the column.
scale	The scale of the data type of the column.
rowCount	The latest number of rows retrieved for this physical column.
lastUpdated	The time at which row counts were last updated for this physical column.
valueType	Applies to Siebel OM data sources only. Indicates the cardinality of the value of the column. Valid values include: <ul style="list-style-type: none"> <li>■ One to One (Default/Unknown/Single-valued)</li> <li>■ Many to One (Picklist)</li> <li>■ One to Many (Multi-valued)</li> <li>■ Many to Many (Multi-valued)</li> </ul>
mappedColumn	Applies to Siebel OM data sources only. The name of the mapped column. Corresponds to the field of the same name for the multi-valued group (MVG) business component.
MVLinkName	Applies to Siebel OM data sources only. The name of the link used in the Siebel business component.

**Table 12–8 (Cont.) Physical Column Tag Attributes**

Attribute Name	Description
specialType	Valid values are LUD or None. LUD stands for "Last Update Date."  This attribute is currently used only for ADF data sources. It is used to indicate that the column should be checked when performing ETL operations.

The physical column tag includes the following child elements:

**Table 12–9 Physical Column Child Elements**

Element Name	Description
DynamicName	If a session variable is being used to specify the name of this physical column, this element references that session variable.  The session variable is contained in a sub-element called RefVariable.
SourceColumn	For physical columns in an alias table only. References the physical column that is being used as the source for this column.  The physical column is contained in a sub-element called RefPhysicalColumn.
PicklistColumns	A list of physical columns to which the picklist is mapped.  Each physical column is contained in a sub-element called RefPhysicalColumn.

### Syntax

```
<PhysicalColumn ...
  extName=" "
  dataType=" "
  length=" "
  nullable=" "
  precision=" "
  scale=" "
  rowCount=" "
  lastUpdated=" "
  valueType=" "
  mappedColumn=" "
  MVLinkName=" "
  specialType=" ">
  <DynamicName>
    <RefVariable .../>
  </DynamicName>
  <SourceColumn>
    <RefPhysicalColumn .../>
  </SourceColumn>
  <PicklistColumns>
    <RefPhysicalColumn .../>
  </PicklistColumns>
</PhysicalColumn>
```

### Example

```
<PhysicalColumn name="DOLLARS"
  parentName="&quot;Forecast&quot;...&quot;Forecast&quot;"
  parentId="3001:681"
```

```

        id="3003:685"
        uid="765"
        dataType="DOUBLE"
        scale="0"
        precision="0"
        nullable="true"
        extName="//Table/FORECAST/DOLLARS"
        lastUpdated="2001-01-01 00:00:00">
    <Description />
</PhysicalColumn>

```

## 12.7 Connection Pool

The connection pool element corresponds to the connection pool object in the Physical layer.

The connection pool tag includes the following attributes:

**Table 12–10 Connection Pool Tag Attributes**

Attribute Name	Description
bulkInsertBufferSize	Used for limiting the number of bytes each time data is inserted in a database table. The value is given in kilobytes (KB).
transactionBoundary	Controls the batch size for an insert in a database table.
unicodeDB	This attribute is typically set to <code>true</code> when working with columns of an explicit Unicode data type, such as <code>NCHAR</code> , in an Unicode database.
tempTablePrefix	The first two characters in a temporary table name. The default value is <code>TT</code> .
tempTableOwner	Table owner name used to qualify a temporary table name in a SQL statement, for example to create the table <code>owner.tablename</code> .
tempTableDatabase	Database where the temporary table will be created. This property applies only to IBM OS/390, because IBM OS/390 requires the database name qualifier to be part of the <code>CREATE TABLE</code> statement.
tempTableSpace	Tablespace where the temporary table will be created. This property applies only to IBM OS/390, because IBM OS/390 requires the tablespace name qualifier to be part of the <code>CREATE TABLE</code> statement.
user	The user name for the data source.
password	The password for the data source. Note that passwords are encrypted.
timeout	The amount of time that a connection to the data source will remain open after a request completes. During this time, new requests use this connection rather than open a new one (up to the number specified for the maximum connections). The time is reset after each completed connection request.  If you set the timeout to 0 (the default), connection pooling is disabled. In other words, each connection to the data source terminates immediately when the request completes. Any new connections either use another connection pool or open a new connection.
maxConnDiff	The maximum number of total connections allowed to this connection pool across all users.

**Table 12–10 (Cont.) Connection Pool Tag Attributes**

Attribute Name	Description
dataSource	The data source name that is configured to access the database to which you want to connect. The data source name must contain valid logon information for the data source.
shareStatus	This attribute is not used.
reqQualifiedTableName	If set to true, indicates that this database requires fully qualified table names. The fully qualified names are based on the physical object names in the repository.
isSharedLogin	If set to true, all users whose queries use the connection pool will access the underlying database using the same user name and password.
isConcurrentQueriesInConnection	An option that enables a single database connection to remain open for the specified time for use by future query requests. If you do not select this option, each query sent to the database opens a new connection.  In the Administration Tool, this option corresponds to a value of "selected" for <b>Enable connection pooling</b> in the General tab of the Connection Pool dialog.
isCloseAfterEveryRequest	If set to true, indicates that the connection pool gets closed after every query.  In the Administration Tool, this option corresponds to a value of "not selected" for <b>Enable connection pooling</b> in the General tab of the Connection Pool dialog.
isAsyncExecution	An option that indicates that the data source supports asynchronous queries.
executeOnCmd	A command that is to be executed by the Oracle BI Server each time a connection is made to the database. The command may be any command accepted by the database.
xslPath	For XML data sources only. An XSLT file contains formatting rules written according to the XSLT standard. It defines how an XML file may be transformed. Specifying the XSLT file in the connection pool applies it to all the XML physical tables in the connection pool. Used when <code>outputType</code> is set to XML.
maxConn	The maximum number of total connections allowed to this connection pool for a given user.
xmlRefreshInterval	For XML data sources only. The time interval after which the XML data source is queried again directly, rather than using results in cache.
scriptPath	The connection method Search script. This option is used for XML Server data sources.
outputType	For XML data sources only. The query output format ( <code>delimited</code> , <code>xml</code> , or <code>fixed</code> ).  In the Administration Tool, this option is called <b>Query output format</b> in the XML tab of the Connection Pool dialog.  If this option is not set, the query output format is assumed to be a custom format, and the value for <code>convertScriptPath</code> is used.
gwDelim	The delimiting characters for the query output format. Used when <code>outputType</code> is set to <code>delimited</code> .
xpath	An XPath expression is a simple XSLT transformation rule that fits into one line. Used when <code>outputType</code> is set to <code>xml</code> .

**Table 12–10 (Cont.) Connection Pool Tag Attributes**

Attribute Name	Description
convertScriptPath	Used when <code>outputType</code> is not set. The path to the .exe file to be used to convert the query output to a custom output format (such as HTML).
ignoreFirstLine	If set to true, indicates that the first line of the output file is ignored.
xmlHeaderPath	The path to the header file, if any, used as a query input supplement. Used for XML Server data sources.
trailerPath	The path to the trailer file, if any, used as a query input supplement. Used for XML Server data sources.
supportParams	Indicates whether the data source supports parameters. If set to false, and the database features table supports parameters, special code executes that enables the Oracle BI Server to push filters (or calculations) with parameters to the database.
isolationLevel	For ODBC and DB2 gateways. Sets the transaction isolation level on each connection to the back-end database. The isolation level setting controls the default transaction locking behavior for all statements issued by a connection. Options are as follows: <ul style="list-style-type: none"> <li>■ <code>default</code> uses the default transaction locking behavior of the data source.</li> <li>■ <code>readCommitted</code> specifies that shared locks are held while the data is read to avoid dirty reads.</li> <li>■ <code>readUncommitted</code> implements dirty read (isolation level 0 locking). When this option is set, it is possible to read uncommitted or dirty data, change values in the data, and have rows appear or disappear in the data set before the end of the transaction.</li> <li>■ <code>repeatableRead</code> places locks on all data that is used in a query, preventing other users from updating the data.</li> <li>■ <code>serializable</code> places a range lock on the data set, preventing other users from updating or inserting rows into the data set until the transaction is complete.</li> </ul>
xmlaInfo	The vendor-specific information used to connect to the multidimensional data source.
xmlaCatalog	The list of catalogs available. The cube tables correspond to the catalog you use in the connection pool.
xmlaUseSession	If set to true, causes queries go through a common session.
multiThreaded	If set to true, indicates that the connection pool supports multi-threading, or in other words, that one connection pool can support multiple queries. If this option is set to false, each query is tied to a single database connection.
type	The call interface type.
appServerName	The name of the ADF application server.
appServerPort	The port number of the ADF application server.
appID	The ADF application ID.
appEJBBean	The name of the ADF application Enterprise Java Bean.
javaHostServiceName	The name of the JavaHost service. The JavaHost is used as a connector between the Oracle BI Server and data sources that use Java, such as ADF.

**Table 12–10 (Cont.) Connection Pool Tag Attributes**

Attribute Name	Description
isSiebelJDBSecured	For Siebel OM data sources only. Indicates whether the connection between the Oracle BI Server and the Siebel data source is encrypted.
csfKey	This attribute is not currently used.
isAW	This attribute is not currently used.
useCert	This attribute stands for "Use Certificate." It is used for ADF data sources and indicates whether to use a certificate when securing the connection.

The connection pool tag includes the following child elements:

**Table 12–11 Connection Pool Child Elements**

Element Name	Description
AfterQueryString	Contains a connection script that is executed after the query is run.
BeforeQueryString	Contains a connection script that is executed before the query is run.
PostConnectString	Contains SQL queries executed after the connection is closed.
PreDisconnectString	Contains SQL queries executed before the connection is established.
RelationalConnPool	This child element is reserved for a future release.
RelationalDataFolder	This child element is reserved for a future release.
SQLBypassDB	For Oracle ADF data sources only. References the SQL Bypass database, if one has been specified.  The SQL Bypass feature directly queries the database so that aggregations and other transformations are pushed down where possible, reducing the amount of data streamed and worked on in Oracle Business Intelligence.  The database object is contained in a sub-element called RefDatabase.

### Syntax

```
<ConnectionPool ...
  bulkInsertBufferSize=" "
  transactionBoundary=" "
  unicodeDB=" "
  tempTablePrefix=" "
  tempTableOwner=" "
  tempTableDatabase=" "
  tempTableSpace=" "
  user=" "
  password=" "
  timeout=" "
  maxConnDiff=" "
  dataSource=" "
  reqQualifiedTableName=" "
  isSharedLogin=" "
  isConcurrentQueriesInConnection=" "
  isCloseAfterEveryRequest=" "
  isAsyncExecution=" "
```

```
executeOnCmd=" "  
xslPath=" "  
maxConn=" "  
xmlRefreshInterval=" "  
scriptPath=" "  
outputType=" "  
gwDelim=" "  
xpath=" "  
convertScriptPath=" "  
ignoreFirstLine=" "  
xmlHeaderPath=" "  
trailerPath=" "  
supportParams=" "  
isolationLevel=" "  
xmlaInfo=" "  
xmlaCatalog=" "  
xmlaUseSession=" "  
multiThreaded=" "  
type=" "  
appServerName=" "  
appServerPort=" "  
appID=" "  
appEJBBean=" "  
javaHostServiceName=" "  
isSiebelJDBSecured=" "  
csfKey=" "  
useCert=" ">  
<Description />  
<AfterQueryString flag=" ">  
  <Value .../>  
</AfterQueryString>  
<BeforeQueryString flag=" ">  
  <Value .../>  
</BeforeQueryString>  
<PostConnectString flag=" ">  
  <Value .../>  
</PostConnectString>  
<PreDisconnectString flag=" ">  
  <Value .../>  
</PreDisconnectString>  
<SQLBypassDB>  
  <RefDatabase .../>  
</SQLBypassDB>  
</ConnectionPool>
```

### Example

```
<ConnectionPool name="Sample Sales XML B"  
  parentName="&quot;B - Sample Fcst Data&quot;"  
  parentId="3023:760"  
  parentUid="69265"  
  id="3029:762"  
  uid="69266"  
  password="D7EDED84BC624A917F5B462A4DCA05CDCE256EEEEEDC97D5AC4D07C3A079829F"  
  timeout="300"  
  maxConnDiff="10"  
  maxConn="10"  
  dataSource="VALUEOF(BI_EE_HOME)/sample/sample_app/xml_data"  
  type="Default"  
  reqQualifiedTableName="false"  
  isSharedLogin="false"
```

```

isConcurrentQueriesInConnection="false"
isCloseAfterEveryRequest="true"
xmlRefreshInterval="4294967295"
outputType="xml"
bulkInsertBufferSize="0"
transactionBoundary="0"
xmlaUseSession="false"
multiThreaded="false"
supportParams="false"
isSiebelJDBSecured="false">
<Description />
</ConnectionPool>

```

## 12.8 Physical Key

The physical key element corresponds to the physical key object in the Physical layer.

The physical key tag includes the following child elements:

**Table 12–12 Physical Key Child Elements**

Element Name	Description
Columns	References the column that defines this physical key. The column is contained in a sub-element, either <code>RefPhysicalColumn</code> or <code>RefCubeColumn</code> .

The physical key element does not include any attributes.

### Syntax

```

<PhysicalKey ...>
  <Description />
  <Columns>
    <RefPhysicalColumn .../>
    <RefPhysicalColumn .../>
  </Columns>
</PhysicalKey>

```

### Example

```

<PhysicalKey name="FactKey" parentName="&quot;Paint&quot;...&quot;Fact&quot;"
parentId="3001:550"
id="3008:556"
uid="566">
<Description />
<Columns>
  <RefPhysicalColumn id="3003:551" qualifiedName="&quot;Paint&quot;...
&quot;Fact&quot;.&quot;MktKey&quot;" />
  <RefPhysicalColumn id="3003:552" qualifiedName="&quot;Paint&quot;...
&quot;Fact&quot;.&quot;ProdKey&quot;"
  />
  <RefPhysicalColumn id="3003:553" qualifiedName="&quot;Paint&quot;...
&quot;Fact&quot;.&quot;PerKey&quot;" />
</Columns>
</PhysicalKey>

```

## 12.9 Physical Foreign Key

The physical foreign key element corresponds to the physical foreign key object in the Physical layer.

The physical foreign key tag includes the following attributes:

**Table 12–13 Physical Foreign Key Tag Attributes**

Attribute Name	Description
hints	For Oracle Databases only. Lists any database hints, such as index hints or leading hints, that were specified for this physical foreign key.

The physical foreign key tag includes the following child elements:

**Table 12–14 Physical Foreign Key Child Elements**

Element Name	Description
Columns	References the physical columns in the table that the foreign key references. Each physical column is contained in a sub-element called either <code>RefPhysicalColumn</code> or <code>RefCubeColumn</code> .
CounterPartKey	References the corresponding primary key. Each primary key is contained in a sub-element called <code>RefPhysicalKey</code> .

### Syntax

```
<PhysicalForeignKey ...
  hints="">
  <Columns>
    <RefPhysicalColumn .../>
    <RefPhysicalColumn .../>
  </Columns>
  <CounterPartKey>
    <RefPhysicalKey .../>
  </CounterPartKey>
</PhysicalForeignKey>
```

### Example

```
<PhysicalForeignKey name="Forecast_FKey#2"
  parentName="&quot;Forecast&quot;...&quot;Forecast&quot;"
  parentId="3001:681"
  id="3006:687"
  uid="769">
  <Description />
  <Columns>
    <RefPhysicalColumn id="3003:683" qualifiedName="&quot;Forecast&quot;...
      &quot;Forecast&quot;.&quot;PERKEY&quot;" />
  </Columns>
  <CounterPartKey>
    <RefPhysicalKey id="3008:600" qualifiedName="&quot;Paint&quot;...
      &quot;Period&quot;.&quot;Period_Key&quot;" />
  </CounterPartKey>
</PhysicalForeignKey>
```

## 12.10 Complex Join

The complex join element corresponds to the complex join object in the Physical layer.

The complex join tag includes the following attributes:

**Table 12–15 Complex Join Tag Attributes**

Attribute Name	Description
hints	For Oracle Databases only. Lists any database hints, such as index hints or leading hints, that were specified for this complex join.
cardinality	Indicates the cardinality of the join. Valid values are: ONE TO ONE, ZERO OR ONE TO ONE, ONE TO ZERO OR ONE, ZERO OR ONE TO ZERO OR ONE, ONE TO MANY, ZERO OR ONE TO MANY, ZERO OR ONE TO MANY, MANY TO ONE, MANY TO ZERO OR ONE, or MANY TO MANY.
extName	The external name for the join.

The complex join tag includes the following child elements:

**Table 12–16 Complex Join Child Elements**

Element Name	Description
Tables	References the physical tables in the join. Each physical table is contained in a sub-element called <code>RefPhysicalTable</code> or <code>RefCubeTable</code> .  Note that the <code>RefAWCube</code> and <code>RefAWDimension</code> sub-elements are reserved for a future release.
Expr	Contains the expression that defines the relationship between the two tables.
ExternalExpr	Contains the external expression used for ADF Business Component data sources.

### Syntax

```
<ComplexJoin ...
  hints=""
  cardinality=""
  extName="">
  <Tables>
    <RefPhysicalTable .../>
    <RefPhysicalTable .../>
  </Tables>
  <Expr> ... </Expr>
  <ExternalExpr> ... </ExternalExpr>
</ComplexJoin>
```

### Example

```
<ComplexJoin name="10 Dim Rolling Time Mth_09 Fact Rolling Time Mth#1"
  id="3012:1275"
  uid="2160747203">
  <Description />
  <Tables>
    <RefPhysicalTable uid="2160748027" id="3001:104" qualifiedName=
      "&quot;1 - Sample App Data&quot;;...&quot;D04 Time Rolling Mth&quot;" />
    <RefPhysicalTable uid="2160748004" id="3001:102" qualifiedName=
      "&quot;1 - Sample App Data&quot;;...&quot;F12 Facts Rolling Time Mth&quot;" />
  </Tables>
```

```

</Tables>
<Expr>
  <![CDATA[ "1 - Sample App Data"."."."."D04 Time Rolling Mth"."Mth_Key"
  >= "1 - Sample App Data"."."."."F12 Facts Rolling Time Mth"."Mth_Key"  ]]>
</Expr>
</ComplexJoin>

```

## 12.11 Cube Table

The cube table element corresponds to the physical cube table object in the Physical layer.

The cube table tag includes the following attributes:

**Table 12–17 Cube Table Tag Attributes**

Attribute Name	Description
extName	The external name for the data source.
type	The type of physical cube table. Options are as follows: <ul style="list-style-type: none"> <li>▪ <code>select</code> indicates that this physical table object is a <code>SELECT</code> statement.</li> <li>▪ <code>sp</code> indicates that this physical cube table is a stored procedure.</li> <li>▪ <code>alias</code> indicates that this physical cube table is an alias table to a logical table source.</li> <li>▪ <code>none</code> indicates that this physical cube table is a regular physical cube table.</li> </ul>
isCacheable	If set to true, indicates that this table is included in the Oracle BI Server query cache.
CacheExpiry	How long table entries should persist in the query cache. A value of 0 indicates that cache entries do not expire.
isCacheEventTable	If set to true, indicates that this table has been registered as an Oracle BI Server event polling table.
pollFreq	The polling frequency, in seconds. Only applies if this table is an Oracle BI Server event polling table. The default value is 3600 seconds.
x	The <i>x</i> coordinate of the table when it is shown in the physical diagram.
y	The <i>y</i> coordinate of the table when it is shown in the physical diagram.
rowCount	The latest number of rows retrieved for this physical cube table.
lastUpdated	The time at which row counts were last updated for this physical cube table.
scriptPath	For XML data sources only. The extended gateway script path.
isSystemGenerated	If set to true, indicates that an internal utility has generated this physical cube table.
isOverrideCacheProperties	For alias tables only. If set to true, indicates that the alias table has its own cache properties that override the cache properties of the source table.
isDDLAggr	Indicates whether this cube table is an aggregate table.
memberReference	For Essbase data sources only. Indicates the cube property (for example, Member Name).

The cube table tag includes the following child elements:

**Table 12–18 Cube Table Child Elements**

Element Name	Description
Aliases	<p>For Essbase data sources only. For any alias tables for this Essbase cube, lists the alias to use (such as default, LongNames, French, and so on).</p> <p>Each alias is represented by a sub-element called <code>AliasTableVar</code>, which contains a sub-element called <code>RefVariable</code>.</p>
CubeVars	<p>For SAP/BW data sources only. Cube variables are used as a means of parameterizing queries.</p> <p>Each cube variable is contained in a sub-element called <code>CubeVar</code>. This sub-element has the following attributes:</p> <ul style="list-style-type: none"> <li>■ <code>name</code>: Name of the cube variable.</li> <li>■ <code>caption</code>: A description (label or caption) associated with the cube variable, mainly used for display purposes.</li> <li>■ <code>type</code>: The type of cube variable (<code>SAP_VAR_TYPE_MEMBER</code>, <code>SAP_VAR_TYPE_HIERARCHY</code>, or <code>SAP_VAR_TYPE_NUMERIC</code>).</li> <li>■ <code>selectionType</code>: The selection type of the cube variable, for cube variables of type <code>SAP_VAR_TYPE_MEMBER</code> (<code>SAP_VAR_SEL_TYPE_VALUE</code>, <code>SAP_SEL_TYPE_INTERVAL</code>, or <code>SAP_VAR_SEL_TYPE_COMPLEX</code>).</li> <li>■ <code>entryType</code>: Indicates whether replacing variables is optional or mandatory. Values include <code>SAP_VAR_INPUT_TYPE_OPTIONAL</code>, <code>SAP_VAR_INPUT_TYPE_MANDATORY</code>, or <code>SAP_VAR_INPUT_TYPE_MANDATORY_NOT_INITIAL</code>.</li> <li>■ <code>refDimension</code>: The reference dimension. This column contains a <code>DIMENSION_UNIQUE_NAME</code> for the parameter type <code>SAP_VAR_TYPE_HIERARCHY</code>.</li> <li>■ <code>refHierarchy</code>: The reference hierarchy. This column contains a <code>HIERARCHY_UNIQUE_NAME</code> for the variable type <code>SAP_VAR_TYPE_MEMBER</code>.</li> <li>■ <code>defaultLow</code>: Contains a default value for the variable, or is zero.</li> <li>■ <code>defaultHigh</code>: Contains a default value for the variable, or is zero. This property is only important for variables with the selection type <code>SAP_VAR_SEL_TYPE_INTERVAL</code> and <code>SAP_VAR_SEL_TYPE_SELECTION</code>.</li> <li>■ <code>overrideLow</code>: The default value for the cube variable (used if <code>defaultLow</code> is zero).</li> <li>■ <code>overrideHigh</code>: The default value for the cube variable (used if <code>defaultHigh</code> is zero).</li> </ul>

### Syntax

```
<CubeTable ...
  extName=" "
  type=" "
  isCacheable=" "
  cacheExpiry=" "
  isCacheEventTable=" "
  pollFreq=" "
  x=" "
  y=" "
```

```

    rowCount=""
    lastUpdated=""
    scriptPath=""
    isSystemGenerated=""
    isOverrideCacheProp=""
    isDDLAggr=""
    memberReference="">
<Aliases>
  <AliasTableVar>
    <RefVariable .../>
    <RefVariable .../>
  </AliasTableVar>
</Aliases>
<CubeVars>
  <CubeVar .../>
  <CubeVar .../>
</CubeVars>
</CubeTable>

```

### Example

```

<CubeTable name="Budget" parentName="&quot;FoodMart&quot;..&quot;&quot;;"
  parentId="3023:3038"
  id="3039:4280"
  uid="2147510222"
  type="none"
  extName="Budget">
<Description></Description>
</CubeTable>

```

## 12.12 Physical Dimension

The physical dimension element corresponds to the physical dimension object in the Physical layer.

The physical dimension tag includes the following attributes:

**Table 12–19 Physical Dimension Tag Attributes**

Attribute Name	Description
defaultMember	The default member for this physical dimension.

The physical dimension tag includes the following child elements:

**Table 12–20 Physical Dimension Child Elements**

Element Name	Description
Hierarchies	References the hierarchies that belong to this physical dimension. Each hierarchy is contained in a sub-element called <code>RefPhysicalHierarchy</code> .
UserAttributes	References the dimension properties for this physical dimension. Each dimension property is contained in a sub-element called <code>RefCubeColumn</code> .

**Table 12–20 (Cont.) Physical Dimension Child Elements**

Element Name	Description
AlternateHierarchyNames	For Essbase physical dimension objects, lists the names of any alternate hierarchies that belong to this dimension. Each hierarchy name is listed in a sub-element called Name.

**Syntax**

```
<PhysicalDimension ...
  defaultMember="">
  <Hierarchies>
    <RefPhysicalHierarchy .../>
  </Hierarchies>
  <UserAttributes>
    <RefCubeColumn .../>
  </UserAttributes>
  <AlternateHierarchyNames>
    <Name .../>
  </AlternateHierarchyNames>
</PhysicalDimension>
```

**Example**

```
<PhysicalDimension name="Calendar Months" parentName=
  "&quot;2 - Sampl App ESSBASE&quot;.&quot;BISAMPLE&quot;..&quot;Sample&quot;"
  parentId="3039:16617" parentUid="2160773306" id="3064:16467"
  uid="2160773156">
  <Description />
  <Hierarchies>
    <RefPhysicalHierarchy uid="2160773085" id="3041:16396" qualifiedName=
      "&quot;2 - Sampl App ESSBASE&quot;.&quot;BISAMPLE&quot;..
      &quot;Sample&quot;.&quot;Calendar Months&quot;" />
  </Hierarchies>
  <UserAttributes>
    <RefCubeColumn uid="2160773353" id="3043:16664" qualifiedName=
      "&quot;2 - Sampl App ESSBASE&quot;.&quot;BISAMPLE&quot;..
      &quot;Sample&quot;.&quot;Calendar Months Memnor&quot;" />
  </UserAttributes>
</PhysicalDimension>
```

## 12.13 Physical Hierarchy

The physical hierarchy element corresponds to the physical hierarchy object in the Physical layer.

The physical hierarchy tag includes the following attributes:

**Table 12–21 Physical Hierarchy Tag Attributes**

Attribute Name	Description
memberType	Indicates whether the ALL member has been designated as the default. This option corresponds to <b>Default member type ALL</b> in the Physical Hierarchy dialog in the Administration Tool.
extName	The external name for the physical hierarchy.

**Table 12–21 (Cont.) Physical Hierarchy Tag Attributes**

Attribute Name	Description
type	The type of physical hierarchy. Options include FULLY BALANCED, UNBALANCED, RAGGED BALANCED, and NETWORK. This option corresponds to the <b>Hierarchy Type</b> option in the Physical Hierarchy dialog in the Administration Tool.
dimType	The dimension type (for example, Measure Dimension) for the dimension to which this hierarchy belongs.
rowCount	The latest number of rows retrieved for this physical hierarchy.
isTimeDim	If set to true, indicates that this physical dimension is a time dimension.
dimUniqueName	The name of the dimension to which this hierarchy belongs.
isMemberAliasUnique	Indicates whether member names (including aliases) are unique in a given hierarchy so that the Oracle BI Server can take advantage of specific MDX syntax to optimize performance. This option corresponds to the <b>Use unqualified member name for better performance</b> option in the Physical Hierarchy dialog in the Administration Tool.

The physical hierarchy tag includes the following child elements:

**Table 12–22 Physical Hierarchy Child Elements**

Element Name	Description
Columns	For parent-child (value) hierarchies. References the set of cube columns that belong to this physical hierarchy. Each cube column is contained in a sub-element called RefCubeColumn.
MemberKey	For parent-child (value) hierarchies. References the cube column that is the member key for this hierarchy. The member key column is contained in a sub-element called RefCubeColumn.
ParentKey	For parent-child (value) hierarchies. References the cube column that is the parent key for this hierarchy. The parent key column is contained in a sub-element called RefCubeColumn.
Levels	For level-based hierarchies. References the set of physical levels that belong to this physical hierarchy. Each level is contained in a sub-element called RefPhysicalLevel.

### Syntax

```
<PhysicalHierarchy ...
  memberType=" "
  extName=" "
  type=" "
  dimType=" "
  rowCount=" "
  isTimeDim=" "
  dimUniqueName=" "
  isMemberAliasUnique=" ">
  <Columns>
```

```

        <RefCubeColumn .../>
    </Columns>
    <MemberKey>
        <RefCubeColumn .../>
    </MemberKey>
    <ParentKey>
        <RefCubeColumn .../>
    </ParentKey>
    <Levels>
        <RefPhysicalLevel .../>
    </Levels>
</PhysicalHierarchy>

```

### Example

```

<PhysicalHierarchy name="Time"
  parentName="&quot;FoodMart&quot;;...&quot;Sales&quot;;"
  parentId="3039:4260"
  id="3041:4200"
  uid="2147487210"
  extName="Time"
  type="FULLY BALANCED"
  dimUniqueName="Time">
  <Description></Description>
</PhysicalHierarchy>

```

## 12.14 Physical Level

The physical level element corresponds to the hierarchical levels for a physical cube table object in the Physical layer.

The physical level tag includes the following attributes:

**Table 12–23 Physical Level Tag Attributes**

Attribute Name	Description
levelNum	Identifies the order of this physical level in the hierarchy.
extName	Fully qualified name for the level.
rowCount	The latest number of rows retrieved for this physical level.

The physical level tag includes the following child elements:

**Table 12–24 Physical Level Child Elements**

Element Name	Description
LevelKey	References the key column for this physical level. The key column is contained in a sub-element called RefCubeColumn.

### Syntax

```

<PhysicalLevel ...
  levelNumber=" "
  extName=" "
  rowCount=" ">
  <LevelKey>
    <RefCubeColumn .../>
  </LevelKey>

```

```
</PhysicalLevel>
```

**Example**

```
<PhysicalLevel name="Year"
  parentName="&quot;FoodMart&quot;...&quot;Sales&quot;.&quot;Time&quot;"
  parentId="3041:4200"
  id="3045:5791"
  uid="2147496776"
  levelNum="0"
  extName="Year">
  <Description></Description>
  <LevelKey>
    <RefCubeColumn id="3043:4261" qualifiedName="&quot;FoodMart&quot;...
      &quot;Sales&quot;.&quot;Year&quot;" />
  </LevelKey>
</PhysicalLevel>
```

## 12.15 Cube Column

The cube column element corresponds to the cube column of a physical cube object in the Physical layer.

The cube column tag includes the following attributes:

**Table 12–25 Cube Column Tag Attributes**

Attribute Name	Description
extName	The external name for the cube column. This attribute is required if the same name (such as STATE) is used in multiple hierarchies.
aggrType	The type of aggregation on the column, if any.
dataType	The data type of the cube column, such as VARCHAR.
nullable	If set to true, indicates that null values are allowed for the column. This allows null values to be returned to the user, which is expected with certain functions and with outer joins.
precision	The precision of the data type of the cube column.
scale	The scale of the data type of the column.
rowCount	The latest number of rows retrieved for this cube column.
lastUpdated	The time at which row counts were last updated for this cube column.

**Table 12–25 (Cont.) Cube Column Tag Attributes**

Attribute Name	Description
dimPropType	<p>For Essbase dimensional columns only. Indicates the property type of the cube column. Valid values are:</p> <ul style="list-style-type: none"> <li>▪ <code>uda</code>: User Defined Attribute (UDA) type.</li> <li>▪ <code>memnor</code>: Memnor type, used for outline sorts in the logical layer. Imported at the lowest level of each dimension. Called <b>Outline Sort</b> in the Administration Tool.</li> <li>▪ <code>attribute</code>: Attribute type, for attribute dimensions.</li> <li>▪ <code>other</code>: The type is different than those listed, or unknown.</li> <li>▪ <code>none</code>: The column does not have a property type. Note that this type is mapped to <b>Member Alias</b> in the Administration Tool.</li> <li>▪ <code>ancestorRef</code>: References the ancestor of a dimension.</li> <li>▪ <code>memberKey</code>: The column is a member key.</li> <li>▪ <code>levelNumber</code>: The column is the lowest member of the hierarchy. Called <b>Leaf</b> in the Administration Tool.</li> <li>▪ <code>genNumber</code>: The column is the root member of the hierarchy. Called <b>Root</b> in the Administration Tool.</li> <li>▪ <code>parentRef</code>: References the parent of a dimension.</li> </ul>

The cube column tag includes the following child elements:

**Table 12–26 Cube Column Child Elements**

Element Name	Description
AttributeHierarchy	<p>References the physical hierarchy to which this cube column belongs.</p> <p>The hierarchy is contained in a sub-element called <code>RefPhysicalHierarchy</code>.</p>
PhysicalLevel	<p>References the physical level to which this cube column belongs.</p> <p>The level is contained in a sub-element called <code>RefPhysicalLevel</code>.</p>

### Syntax

```

<CubeColumn ...
  extName=" "
  aggrType=" "
  dataType=" "
  nullable=" "
  precision=" "
  rowCount=" "
  lastUpdated=" "
  scale=" ">
  <AttributeHierarchy>
    <RefPhysicalHierarchy .../>
  </AttributeHierarchy>
  <PhysicalLevel>
    <RefPhysicalLevel .../>
  </PhysicalLevel>
</CubeColumn>

```

**Example**

```
<CubeColumn name="Year" parentName="&quot;FoodMart&quot;...&quot;Sales&quot;"
  parentId="3039:4260"
  id="3043:4261"
  uid="2147487198"
  extName="Year"
  dataType="VARCHAR"
  scale="0"
  precision="8"
  nullable="false">
<Description></Description>
</CubeColumn>
```

**12.16 Analytic Workspace**

This element is reserved for a future release.

**12.17 AW Cube**

This element is reserved for a future release.

**12.18 AW Dimension**

This element is reserved for a future release.

**12.19 AW Hierarchy**

This element is reserved for a future release.

**12.20 AW Level**

This element is reserved for a future release.

**12.21 AW Column**

This element is reserved for a future release.

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## Presentation Elements

Presentation elements are typically those elements that are exposed in the Presentation layer, or in other words, the elements that appear in the left-hand pane of the Administration Tool.

This chapter contains the following topics:

- [Section 13.1, "Presentation Catalog"](#)
- [Section 13.2, "Presentation Schema"](#)
- [Section 13.3, "Presentation Table"](#)
- [Section 13.4, "Presentation Column"](#)
- [Section 13.5, "Presentation Hierarchy"](#)
- [Section 13.6, "Presentation Level"](#)

### 13.1 Presentation Catalog

The presentation catalog element corresponds to the subject area object in the Presentation layer.

The presentation catalog tag includes the following attributes:

**Table 13–1 Presentation Catalog Tag Attributes**

Attribute Name	Description
isExportKeys	If set to true, indicates that logical keys for this subject area are exposed to other applications.
isAutoAggr	This attribute is not used.
hasDispName	Indicates whether this subject area has a custom display name.
dispName	The value of the custom display name, if one exists for this subject area.
hasDispDescription	Indicates whether this subject area has a custom description.
dispDescription	The value of the custom description, if one exists for this subject area.

The presentation catalog tag includes the following child elements:

**Table 13–2 Presentation Catalog Child Elements**

Element Name	Description
RefBusinessModel	References the business model for this subject area.
DefaultFactCol	References the implicit fact column for this subject area, if one has been set. This column is used to specify a default join path between dimension tables when there are several possible alternatives or contexts.  The implicit fact column is contained in a sub-element called RefLogicalColumn.
Aliases	Lists any aliases that have been defined for this subject area. Aliases are created when presentation objects are renamed to ensure that any references to the old names still work in logical SQL queries.  Each alias is contained in a sub-element called Alias, with one attribute called name.
Tables	References the presentation tables that belong to this subject area.  Each presentation table is contained in a sub-element called RefPresentationTable.

**Syntax**

```

<PresentationCatalog ...
  isExportKeys=" "
  hasDispName=" "
  dispName=" "
  hasDispDescription=" "
  dispDescription=" ">
  <RefBusinessModel .../>
  <DefaultFactCol>
    <RefLogicalColumn .../>
  </DefaultFactCol>
  <Aliases .../>
  <Tables>
    <RefPresentationTable .../>
  </Tables>
</PresentationCatalog>

```

**Example**

```

<PresentationCatalog name="Paint" id="4004:457" uid="413"
  hasDispName="false"
  hasDispDescription="false"
  isExportKeys="true"
  isAutoAggr="true">
  <Description />
  <RefBusinessModel id="2000:17" qualifiedName="&quot;Paint&quot;" />
  <Aliases />
  <Tables>
    <RefPresentationTable id="4008:459" qualifiedName="&quot;Paint&quot;;..
&quot;Markets&quot;" />
    <RefPresentationTable id="4008:460" qualifiedName="&quot;Paint&quot;;..
&quot;Products&quot;" />
    <RefPresentationTable id="4008:461" qualifiedName="&quot;Paint&quot;;..
&quot;Periods&quot;" />
    <RefPresentationTable id="4008:462" qualifiedName="&quot;Paint&quot;;..
&quot;Sales Measures&quot;" />
    <RefPresentationTable id="4008:463" qualifiedName="&quot;Paint&quot;;..

```

```

    &quot;Share Measures&quot;" />
    <RefPresentationTable id="4008:464" qualifiedName="&quot;Paint&quot;..
    &quot;Forecast Measures&quot;" />
  </Tables>
</PresentationCatalog>

```

## 13.2 Presentation Schema

The presentation schema element is not used.

## 13.3 Presentation Table

The presentation table element corresponds to the presentation table object in the Presentation layer.

The presentation table tag includes the following attributes:

**Table 13–3 Presentation Table Tag Attributes**

Attribute Name	Description
hasDispName	Indicates whether this presentation table has a custom display name.
dispName	The value of the custom display name, if one exists for this presentation table.
hasDispDescription	Indicates whether this presentation table has a custom description.
dispDescription	The value of the custom description, if one exists for this presentation table.

The presentation table tag includes the following child elements:

**Table 13–4 Presentation Table Child Elements**

Element Name	Description
Aliases	Lists any aliases that have been defined for this presentation table. Aliases are created when presentation objects are renamed to ensure that any references to the old names still work in logical SQL queries.  Each alias is contained in a sub-element called <code>Alias</code> , with one attribute called <code>name</code> .
Columns	References the presentation columns that belong to this presentation table.  Each presentation column is contained in a sub-element called <code>RefPresentationColumn</code> .

### Syntax

```

<PresentationTable ...
  hasDispName=" "
  dispName=" "
  hasDispDescription=" "
  dispDescription=" " />
<Aliases>
  <Alias name=" " />
  <Alias name=" " />
</Aliases>

```

```

<Columns>
  <RefPresentationColumn .../>
</Columns>
</PresentationTable>

```

### Example

```

<PresentationTable name="Time"
  parentName="&quot;Sample App Reduced&quot;.&quot;&quot;"
  parentId="4004:2137"
  parentUid="73609"
  id="4008:2139"
  uid="73611"
  hasDispName="false"
  hasDispDescription="false">
  <Description>
    <![CDATA[ Time dimension attributes and time calculations objects ]]>
  </Description>
  <Aliases>
    <Alias name="D0 Time" />
  </Aliases>
  <Columns>
    <RefPresentationColumn uid="72783" id="4010:1681" qualifiedName=
      "&quot;Sample App Reduced&quot;.&quot;Time&quot;.&quot;Day Date&quot;" />
    <RefPresentationColumn uid="72791" id="4010:1682" qualifiedName=
      "&quot;Sample App Reduced&quot;.&quot;Time&quot;.&quot;Week&quot;" />
    <RefPresentationColumn uid="72787" id="4010:1683" qualifiedName=
      "&quot;Sample App Reduced&quot;.&quot;Time&quot;.&quot;Month&quot;" />
    <RefPresentationColumn uid="72789" id="4010:1684" qualifiedName=
      "&quot;Sample App Reduced&quot;.&quot;Time&quot;.&quot;Quarter&quot;" />
    <RefPresentationColumn uid="72793" id="4010:1685" qualifiedName=
      "&quot;Sample App Reduced&quot;.&quot;Time&quot;.&quot;Year&quot;" />
  </Columns>
</PresentationTable>

```

## 13.4 Presentation Column

The presentation column element corresponds to the presentation column object in the Presentation layer.

The presentation column tag includes the following attributes:

**Table 13–5 Presentation Column Tag Attributes**

Attribute Name	Description
overrideLogicalName	Indicates whether the presentation column has been configured to always use the logical column name.  This option corresponds to <b>Use Logical Column Name</b> in the Administration Tool. A <code>false</code> value for this attribute indicates that this option has been selected.
hasDispName	Indicates whether this presentation column has a custom display name.
dispName	The value of the custom display name, if one exists for this presentation column.
hasDispDescription	Indicates whether this presentation column has a custom description.
dispDescription	The value of the custom description, if one exists for this presentation column.

The presentation column tag includes the following child elements:

**Table 13–6 Presentation Column Child Elements**

Attribute Name	Description
RefLogicalColumn	References the logical column upon which this presentation column is based.
Aliases	Lists any aliases that have been defined for this presentation column. Aliases are created when presentation objects are renamed to ensure that any references to the old names still work in logical SQL queries.  Each alias is contained in a sub-element called <code>Alias</code> , with one attribute called <code>name</code> .

### Syntax

```
<PresentationColumn ...
  overrideLogicalName=" "
  hasDispName=" "
  dispName=" "
  hasDispDescription=" "
  dispDescription=" " />
<RefLogicalColumn ... />
<Aliases>
  <Alias name=" " />
  <Alias name=" " />
</Aliases>
</PresentationColumn>
```

### Example

```
<PresentationColumn name="Customer Name"
  parentName="&quot;Sample App Reduced&quot;..&quot;Customers&quot;"
  parentId="4008:2140"
  parentUid="73615"
  id="4010:1686"
  uid="72845"
  hasDispName="false"
  hasDispDescription="false"
  overrideLogicalName="true">
<Description>
  <![CDATA[ Help : Customer Name stores the first name followed by the last
  name.]]>
</Description>
<RefLogicalColumn uid="782" id="2006:24" qualifiedName="&quot;Sample
Sales&quot;..&quot;D1 Customer&quot;..&quot;C1 Cust Name&quot;" />
<Aliases>
  <Alias name="L2 Customer Name" />
</Aliases>
</PresentationColumn>
```

## 13.5 Presentation Hierarchy

The presentation hierarchy element corresponds to the presentation hierarchy object in the Presentation layer.

The presentation hierarchy tag includes the following attributes:

**Table 13–7 Presentation Hierarchy Tag Attributes**

Attribute Name	Description
hasDispName	Indicates whether this presentation hierarchy has a custom display name.
dispName	The value of the custom display name, if one exists for this presentation hierarchy.
hasDispDescription	Indicates whether this presentation hierarchy has a custom description.
dispDescription	The value of the custom description, if one exists for this presentation hierarchy.

The presentation hierarchy tag includes the following child elements:

**Table 13–8 Presentation Hierarchy Child Elements**

Element Name	Description
Levels	References the presentation levels for this presentation hierarchy. Each presentation level is contained in a sub-element called <code>RefPresentationLevel</code> .
Aliases	Lists any aliases that have been defined for this presentation hierarchy. Aliases are created when presentation objects are renamed to ensure that any references to the old names still work in logical SQL queries. Each alias is contained in a sub-element called <code>Alias</code> , with one attribute called <code>name</code> .
DisplayColumns	For parent-child hierarchies only. This element references the columns designated to be used for display for this parent-child hierarchy. Each display column is contained in a sub-element called <code>RefPresentationColumn</code> .
Dimension	References the logical dimension upon which this presentation hierarchy is based. The dimension is contained in a sub-element called <code>RefDimension</code> .

### Syntax

```
<PresentationHierarchy ...
  hasDisplayName=" "
  displayName=" "
  hasDispDescription=" "
  dispDescription=" " />
<Levels>
  <RefPresentationLevel .../>
</Levels>
<Aliases>
  <Alias name=" " />
  <Alias name=" " />
</Aliases>
<DisplayColumns>
  <RefPresentationColumn .../>
</DisplayColumns>
<Dimension>
  <RefDimension .../>
</Dimension>
</PresentationHierarchy>
```

**Example**

```

<PresentationHierarchy name="Product"
  parentName="&quot;Sample App Reduced&quot;..&quot;Product&quot;"
  parentId="4008:39335"
  parentUid="2160738998"
  id="4028:39336"
  uid="2160738999"
  hasDispName="false"
  hasDispDescription="false">
<Description />
<Levels>
  <RefPresentationLevel uid="2160739000" id="4030:39337" qualifiedName=
    "&quot;Sample App Reduced&quot;..&quot;Product&quot;.&quot;Product&quot;."
    &quot;Total&quot;" />
  <RefPresentationLevel uid="2160739001" id="4030:39338" qualifiedName=
    "&quot;Sample App Reduced&quot;..&quot;Product&quot;.&quot;Product&quot;."
    &quot;Brand&quot;" />
  <RefPresentationLevel uid="2160739002" id="4030:39339" qualifiedName=
    "&quot;Sample App Reduced&quot;..&quot;Product&quot;.&quot;Product&quot;."
    &quot;LOB&quot;" />
  <RefPresentationLevel uid="2160739003" id="4030:39340" qualifiedName=
    "&quot;Sample App Reduced&quot;..&quot;Product&quot;.&quot;Product&quot;."
    &quot;Type&quot;" />
  <RefPresentationLevel uid="2160739004" id="4030:39341" qualifiedName=
    "&quot;Sample App Reduced&quot;..&quot;Product&quot;.&quot;Product&quot;."
    &quot;Detail Product&quot;" />
</Levels>
<Aliases>
  <Alias name="H4 Product" />
</Aliases>
<Dimension>
  <RefDimension uid="1674" id="2019:18" qualifiedName=
    "&quot;Sample Sales&quot;.&quot;H4 Product&quot;" />
</Dimension>
</PresentationHierarchy>

```

## 13.6 Presentation Level

The presentation level element corresponds to the presentation level object in the Presentation layer.

The presentation level tag includes the following attributes:

**Table 13–9 Presentation Level Tag Attributes**

Attribute Name	Description
hasDispName	Indicates whether this presentation level has a custom display name.
dispName	The value of the custom display name, if one exists for this presentation level.
hasDispDescription	Indicates whether this presentation level has a custom description.
dispDescription	The value of the custom description, if one exists for this presentation level.

The presentation level tag includes the following child elements:

**Table 13–10 Presentation Level Child Elements**

Element Name	Description
RefLogicalLevel	References the logical level upon which this presentation level is based.
DrillTo	This option is reserved for a future release and is not currently used.
DisplayColumns	References the columns that have been designated to be used for display for this presentation level (on drill-down). Each column is contained in a sub-element called RefPresentationColumn.
Aliases	Lists any aliases that have been defined for this presentation level. Aliases are created when presentation objects are renamed to ensure that any references to the old names still work in logical SQL queries. Each alias is contained in a sub-element called Alias, with one attribute called name.

**Syntax**

```

<PresentationLevel ...
  hasDisplayName=" "
  displayName=" "
  hasDispDescription=" "
  dispDescription=""/>
<RefLogicalLevel .../>
<DrillTo>
  <RefPresentationLevel .../>
  <RefPresentationLevel .../>
</DrillTo>
<DisplayColumns>
  <RefPresentationColumn .../>
  <RefPresentationColumn .../>
</DisplayColumns>
<Aliases>
  <Alias name=""/>
  <Alias name=""/>
</Aliases>
</PresentationLevel>

```

**Example**

```

<PresentationLevel name="Total"
  parentName="&quot;Sample App Reduced&quot;..&quot;Product&quot;."
  &quot;Product&quot;" parentId="4028:39336" parentUid="2160738999"
  id="4030:39337" uid="2160739000"
  hasDispName="false"
  hasDispDescription="false">
  <Description></Description>
  <RefLogicalLevel uid="1683" id="2025:558" qualifiedName="&quot;Sample
  Sales&quot;..&quot;H4 Product&quot;..&quot;Total&quot;"/>
</PresentationLevel>

```

---

## Marketing, Security, and Other Elements

This chapter describes the XML API elements for Oracle Marketing Segmentation objects, security objects, and miscellaneous objects that do not fall in other categories.

This chapter contains the following topics:

- [Section 14.1, "Marketing Elements"](#)
- [Section 14.2, "Security Elements"](#)
- [Section 14.3, "Other Elements"](#)

### 14.1 Marketing Elements

Marketing elements are typically those elements that are related to features for the Oracle Marketing Segmentation product. For information about features and options related to Oracle Marketing Segmentation, see the administrator documentation for the Oracle Marketing Segmentation application.

Marketing elements include:

- [Section 14.1.1, "Catalog Link"](#)
- [Section 14.1.2, "Target Level"](#)
- [Section 14.1.3, "List Catalog"](#)
- [Section 14.1.4, "Qualified List Item"](#)
- [Section 14.1.5, "Qualifying Key"](#)
- [Section 14.1.6, "Sampling Table"](#)
- [Section 14.1.7, "Seg Catalog"](#)

#### 14.1.1 Catalog Link

The catalog link element corresponds to the conforming dimension link object in the Marketing metadata. A conforming dimension links a fact that contains target-level IDs to a fact that does not contain target-level IDs by navigating along a dimension that is shared by both fact tables.

The catalog link tag includes the following child elements:

**Table 14–1 Catalog Link Child Elements**

Element Name	Description
From	References the presentation column that represents the primary key of the subject area from which the dimension link originates.  The primary key column is contained in a sub-element called <code>RefPresentationColumn</code> .
To	References the presentation column that represents the primary key of the subject area to which the dimension link points.  The primary key column is contained in a sub-element called <code>RefPresentationColumn</code> .

The catalog link tag does not include any attributes.

### Syntax

```
<CatalogLink ...>
  <From>
    <RefPresentationColumn .../>
  </From>
  <To>
    <RefPresentationColumn .../>
  </To>
</CatalogLink>
```

### Example

```
<CatalogLink name="Customer Profile->Campaign Contacts" id="4012:280960"
  uid="2150823331">
  <Description>
    <![CDATA[Used by both Contact and Account Target Levels to filter with
      "Offered Product_segmentation" catalog.]]>
  </Description>
  <To>
    <RefPresentationColumn uid="2150707139" id="4010:223709" qualifiedName=
      "&quot;Campaign Contacts_segmentation&quot;..&quot;- Contact Profile&quot;;.
      &quot;ROW_ID" />
  </To>
</CatalogLink>
```

## 14.1.2 Target Level

The target level element corresponds to the target level object in the Marketing metadata. A target level is the entity that a marketer wants to count, typically customer types like individuals, businesses, or households.

The target level tag includes the following attributes:

**Table 14–2 Target Level Tag Attributes**

Attribute Name	Description
hasDispName	Indicates whether this target level has a custom display name.
dispName	The value of the custom display name, if one exists for this target level.
hasDispDescription	Indicates whether this target level has a custom description.

**Table 14–2 (Cont.) Target Level Tag Attributes**

Attribute Name	Description
dispDescription	The value of the custom description, if one exists for this target level.

The target level tag includes the following child elements:

**Table 14–3 Target Level Child Elements**

Element Name	Description
PrimaryQLI	References the primary qualified list item for this target level. The qualified list item is contained in a sub-element called <code>RefQualifiedListItem</code> .
PrimaryPresCatalog	References the primary segmentation catalog for this target level. The segmentation catalog is contained in a sub-element called <code>RefPresentationCatalog</code> .
SamplingTables	References the physical tables used as sampling tables for this target level. Each physical table is contained in a sub-element called <code>RefPhysicalTable</code> .
Catalogs	References the set of segmentation catalogs for this target level. Each segmentation catalog is contained in a sub-element called <code>RefSegCatalog</code> .
PresentationCatalog	References the subject area for saved result sets (the saved results catalog). The saved results catalog is contained in a sub-element called <code>RefPresentationCatalog</code> .
TargetColumn	References the Target Id presentation column. The Target Id column is contained in a sub-element called <code>RefPresentationColumn</code> .
NodeColumn	References the GUID presentation column. The GUID column is contained in a sub-element called <code>RefPresentationColumn</code> .
PhysicalTable	References the physical table that stores the result sets for this target level. The physical table is contained in a sub-element called <code>RefPhysicalTable</code> .
ConnectionPool	References the connection pool in which this target level is mapped. The connection pool is contained in a sub-element called <code>RefConnectionPool</code> .
HeaderSQL	Contains the physical SQL to insert the Saved Result Header. Used when users save a result set.
DelHeaderSQL	Contains the physical SQL to delete the saved result set header. Used when users purge saved result sets.
DelDataSQL	Contains the physical SQL to delete the saved result data set. Used when users purge saved result sets.

**Syntax**

```

<TargetLevel ...
  hasDispName=""
  dispName=""
  hasDispDescription=""
  dispDescription="" >
<PrimaryQLI>
  <RefQualifiedListItem .../>
</PrimaryQLI>
<PrimaryPresCatalog>
  <RefPresentationCatalog.../>
</PrimaryPresCatalog>
<SamplingTables>
  <RefPhysicalTable .../>
</SamplingTables>
<Catalogs>
  <RefSegCatalog ../>
  <RefSegCatalog ../>
</Catalogs>
<PresentationCatalog>
  <RefPresentationCatalog.../>
</PresentationCatalog>
<TargetColumn>
  <RefPresentationColumn.../>
</TargetColumn>
<NodeColumn>
  <RefPresentationColumn.../>
</NodeColumn>
<PhysicalTable>
  <RefPhysicalTable.../>
</PhysicalTable>
<ConnectionPool>
  <RefConnectionPool.../>
</ConnectionPool>
<HeaderSQL.../>
<DelHeaderSQL.../>
<DelDataSQL.../>
</TargetLevel>

```

**Example**

```

<TargetLevel name="Contacts" id="4014:280966" uid="2150343035"
  hasDispName="false"
  hasDispDescription="false">
<Description></Description>
<PrimaryQLI>
  <RefQualifiedListItem uid="2150343036" id="4018:280973" qualifiedName=
    "&quot;Contacts&quot;"/>
</PrimaryQLI>
<PrimaryPresCatalog>
  <RefPresentationCatalog uid="2150319327" id="4004:275472" qualifiedName=
    "&quot;Customer Profile_segmentation&quot;"/>
</PrimaryPresCatalog>
<SamplingTables>
  <RefSamplingTable uid="2150831204" id="4024:281051" qualifiedName=
    "&quot;Contacts&quot;.&quot;M_10C_PERSON_D&quot;"/>
</SamplingTables>
<Catalogs>
  <RefSegCatalog uid="2150343042" id="4026:281055" qualifiedName=
    "&quot;Contacts&quot;.&quot;Contacts_Customer Profile_segmentation&quot;"/>

```

```

<RefSegCatalog uid="2150343043" id="4026:281056" qualifiedName=
"&quot;Contacts&quot;.&quot;Contacts_Orders_segmentation&quot;"/>
<RefSegCatalog uid="2150343044" id="4026:281057" qualifiedName=
"&quot;Contacts&quot;.&quot;Contacts_Assets_segmentation&quot;"/>
<RefSegCatalog uid="2150343041" id="4026:281058" qualifiedName=
"&quot;Contacts&quot;.&quot;Contacts_Activities_segmentation&quot;"/>
</Catalogs>
<TargetColumn>
  <RefPresentationColumn uid="2150343373" id="4010:226666" qualifiedName=
"&quot;Marketing Segmentation Cache and Saved Results&quot;.&quot;- Contact
Results Data&quot;.&quot;Person ID&quot;"/>
</TargetColumn>
<NodeColumn>
  <RefPresentationColumn uid="2150343375" id="4010:226665" qualifiedName=
"&quot;Marketing Segmentation Cache and Saved Results&quot;.&quot;- Contact
Results Data&quot;.&quot;GUID&quot;"/>
</NodeColumn>
<PhysicalTable>
  <RefPhysicalTable uid="2150343168" id="3001:99531" qualifiedName=
"&quot;Oracle Data Warehouse&quot;.&quot;Catalog&quot;.&quot;dbo&quot;.&
&quot;M_SR_CONTACT&quot;"/>
</PhysicalTable>
<HeaderSQL>
  <![CDATA[INSERT INTO M_SR_HEADER (GUID, SEGMENT_PATH, SR_CUSTOM_LABEL,
PRIORITY, NODE_PATH, NODE_LABEL, TARGET_LEVEL, CREATED_BY, "COUNT", DATE_
TIME, SR_PATH, CONNECTION_POOL) VALUES ('@{guid}', '@{segmentPath}',
'@{srCustomLabel}', @{priority}, '@{nodePath}', '@{nodeLabel}',
'@{targetLevel}', '@{createdBy}', @{count}, '@{createdTime}', '@{srPath}',
'@{connectionPool}')] ]>
</HeaderSQL>
<DelHeaderSQL>
  <![CDATA[DELETE FROM M_SR_HEADER WHERE GUID IN (@{guids}]]>
</DelHeaderSQL>
<DelDataSQL>
  <![CDATA[DELETE FROM M_SR_CONTACT WHERE GUID IN (@{guids}]]>
</DelDataSQL>
</TargetLevel>

```

### 14.1.3 List Catalog

The list catalog element corresponds to the list catalog object in the Marketing metadata. A list catalog is an object that is used to generate a list of data at the target level.

The list catalog tag includes the following child elements:

**Table 14–4 List Catalog Child Elements**

Element Name	Description
RefPresentationCatalog	References the subject area for this list catalog. The name of the subject area is used as the name of the list catalog.
QualifyingKeys	References the set of qualifying keys for this list catalog. Each qualifying key is contained in a sub-element called RefQualifyingKey.

The list catalog tag does not include any attributes.

**Syntax**

```

<ListCatalog ...>
  <RefPresentationCatalog .../>
  <QualifyingKeys>
    <RefQualifyingKey .../>
    <RefQualifyingKey .../>
  </QualifyingKeys>
</ListCatalog>

```

**Example**

```

<ListCatalog name="Marketing Contact List" id="4016:281114" uid="2150825512">
  <Description></Description>
  <RefPresentationCatalog uid="2150704699" id="4004:275681" qualifiedName=
    "&quot;Marketing Contact List&quot;"/>
  <QualifyingKeys>
    <RefQualifyingKey uid="2150831265" id="4020:280989" qualifiedName=
      "&quot;Service Requests&quot;.&quot;Qualifying Key#36&quot;"/>
    <RefQualifyingKey uid="2150831263" id="4020:281020" qualifiedName=
      "&quot;Orders&quot;.&quot;Qualifying Key#37&quot;"/>
  </QualifyingKeys>
</ListCatalog>

```

**14.1.4 Qualified List Item**

The qualified list item element corresponds to the qualified list item object in the Marketing metadata. A qualified list item is an entity that is evaluated against segment criteria so that the information related to that entity can be exported in a list file.

The qualified list item tag includes the following attributes:

**Table 14–5 Qualified List Item Tag Attributes**

Attribute Name	Description
cacheTable	Indicates whether this qualified list item is cached.

The qualified list item tag includes the following child elements:

**Table 14–6 Qualified List Item Child Elements**

Element Name	Description
CacheCatalog	References the subject area for the cache for this qualified list item. The subject area is contained in a sub-element called <code>RefPresentationCatalog</code> .
CacheConnPool	References the connection pool for the cached table. The connection pool is contained in a sub-element called <code>RefConnectionPool</code> .
TargetColumn	References the Target Id presentation column. The Target Id column is contained in a sub-element called <code>RefPresentationColumn</code> .
NodeColumn	References the GUID presentation column. The GUID column is contained in a sub-element called <code>RefPresentationColumn</code> .

**Table 14–6 (Cont.) Qualified List Item Child Elements**

Element Name	Description
PhysicalTable	References the physical table that stores the cached qualified list item.  The physical table is contained in a sub-element called <code>RefPhysicalTable</code> .
DeleteSQL	Contains the physical SQL used to delete the cached results.

**Syntax**

```
<QualifiedListItem ...
  cacheTable="">
  <CacheCatalog>
    <RefPresentationCatalog .../>
  </CacheCatalog>
  <CacheConnPool>
    <RefConnectionPool .../>
  </CacheConnPool>
  <TargetColumn>
    <RefPresentationColumn .../>
  </TargetColumn>
  <NodeColumn>
    <RefPresentationColumn .../>
  </NodeColumn>
  <DeleteSQL>
    <![CDATA[...]]>
  </DeleteSQL>
</QualifiedListItem>
```

**Example**

```
<QualifiedListItem name="Service Requests" id="4018:280972" uid="2150831252">
  <Description></Description>
  <DeleteSQL>
    <![CDATA[DELETE FROM M_C_GENERIC WHERE GUID = '{@guid}']]>
  </DeleteSQL>
</QualifiedListItem>
```

## 14.1.5 Qualifying Key

The qualifying key element corresponds to the qualifying keys that are used in list catalog or segmentation catalog objects in the Marketing metadata. Qualifying keys map qualified list items to presentation columns.

The qualifying key tag includes the following child elements:

**Table 14–7 Qualifying Key Child Elements**

Element Name	Description
RefSegCatalog	References the segmentation catalog to which this qualifying key belongs.
RefListCatalog	References the list catalog to which this qualifying key belongs.
RefPresentationColumn	References the presentation column for this qualifying key.

The qualifying key tag does not include any attributes.

**Syntax**

```
<QualifyingKey ...>
  <RefSegCatalog ../>
  <RefListCatalog ../>
  <RefPresentatonColumn ../>
</QualifyingKey>
```

**Example**

```
<QualifyingKey name="Qualifying Key#37" parentName="Orders" "
  parentId="4018:280974"
  parentUid="2150831254"
  id="4020:281020"
  uid="2150831263">
  <Description></Description>
  <RefListCatalog uid="2150825512" id="4016:281114" qualifiedName=
    "&quot;Marketing Contact List&quot;"/>
  <RefPresentationColumn uid="2150705283" id="4010:266234" qualifiedName=
    "&quot;Marketing Contact List&quot;..&quot;Order&quot;.&quot;ROW_ID&quot;"/>
</QualifyingKey>
```

## 14.1.6 Sampling Table

The sampling table element corresponds to the sampling table object in the Marketing metadata. Sampling tables are created and managed as part of target level objects.

The sampling table tag includes the following attributes:

**Table 14–8 Sampling Table Tag Attributes**

Attribute Name	Description
factor	The sampling factor (for example, 10%).

The sampling table tag includes the following child elements:

**Table 14–9 Sampling Table Child Elements**

Element Name	Description
RefPhysicalTable	References the physical table being used as the sampling table.

**Syntax**

```
<SamplingTable ...
  factor="5%">
  <RefPhysicalTable ../>
</SamplingTable>
```

**Example**

```
<SamplingTable name="M_10C_PERSON_D" parentName="Contacts" "
  parentId="4014:280966"
  parentUid="2150343035"
  id="4024:281051"
  uid="2150831204"
  factor="0.1">
  <Description></Description>
  <RefPhysicalTable uid="2253227" id="3001:86873" qualifiedName="&quot;Oracle
    Data Warehouse&quot;.&quot;Catalog&quot;.&quot;dbo&quot;.&quot;
    &quot;Dim_W_PARTY_PER_D_Contact&quot;"/>
</SamplingTable>
```

## 14.1.7 Seg Catalog

The seg catalog element corresponds to the segmentation catalog object in the Marketing metadata. Segmentation catalogs are Oracle BI subject areas that are enabled for segmentation. Segmentation catalogs provides a set of dimensions and fact measures that can be used to create segment criteria.

The seg catalog tag includes the following child elements:

**Table 14–10 Seg Catalog Child Elements**

Element Name	Description
RefPresentationCatalog	References the subject area for this segmentation catalog.
QualifyingKeys	References the set of qualifying keys for this list catalog. Each qualifying key is contained in a sub-element called RefQualifyingKey.

The seg catalog tag does not include any attributes.

### Syntax

```
<SegCatalog ...>
  <RefPresentationCatalog .../>
  <QualifyingKeys>
    <RefQualifyingKey .../>
  </QualifyingKeys>
</SegCatalog>
```

### Example

```
<SegCatalog name="Contacts_Customer Profile_segmentation"
  parentName="&quot;Contacts&quot;"
  parentId="4014:280966"
  parentUid="2150343035"
  id="4026:281055"
  uid="2150343042">
  <Description></Description>
  <RefPresentationCatalog uid="2150319327" id="4004:275472" qualifiedName=
    "&quot;Customer Profile_segmentation&quot;" />
  <QualifyingKeys>
    <RefQualifyingKey uid="2150707126" id="4020:280992" qualifiedName=
      "&quot;Contacts&quot;.&quot;Qualifying Key&quot;" />
    <RefQualifyingKey uid="2150823314" id="4020:281033" qualifiedName=
      "&quot;Accounts&quot;.&quot;Qualifying Key#21&quot;" />
  </QualifyingKeys>
</SegCatalog>
```

## 14.2 Security Elements

Security elements are typically those elements that are related to Oracle Business Intelligence security features, such as those related to variables, authentication, privileges, users, and application roles. Security elements include:

- [Section 14.2.1, "Variable"](#)
- [Section 14.2.2, "LDAP Server"](#)
- [Section 14.2.3, "Init Block"](#)
- [Section 14.2.4, "Custom Authenticator"](#)

- [Section 14.2.5, "Privilege Package"](#)
- [Section 14.2.6, "Object Privilege"](#)
- [Section 14.2.7, "Query Privilege"](#)
- [Section 14.2.8, "User"](#)
- [Section 14.2.9, "Group"](#)
- [Section 14.2.10, "DB Sign-On"](#)
- [Section 14.2.11, "FMW Security"](#)

## 14.2.1 Variable

The variable element corresponds to the variable object in the Physical layer of the repository.

The variable tag includes the following attributes:

**Table 14–11 Variable Tag Attributes**

Attribute Name	Description
securityMask	<p>For session variables only. This attribute stores the value of the following options:</p> <ul style="list-style-type: none"> <li>■ <b>Enable any user to set the value.</b> When selected, lets session variables be set after the initialization block has populated the value (at user login) by calling the ODBC store procedure <code>NQSSetSessionValue()</code>. For example, this option lets non-administrators set this variable for sampling.</li> <li>■ <b>Security Sensitive.</b> When selected, identifies the variable as sensitive to security for virtual private databases (VPDs). When filtering cache table matches, the Oracle BI Server looks at the parent database of each column or table that is referenced in the logical request projection list. If the physical database source is a VPD, the Oracle BI Server matches a list of security-sensitive variables to each prospective cache hit. Cache hits would only occur on cache entries that included and matched all security-sensitive variables.</li> </ul>
isSessionVar	<p>If set to true, indicates that this variable is a session variable. Session variables are created and assigned a value when each user logs on, unlike repository variables, which have static values.</p>

The variable tag includes the following child elements:

**Table 14–12 Variable Child Elements**

Element Name	Description
Expr	Contains the expression that forms the definition of this variable.

### Syntax

```
<Variable name="" id="" uid=""
  securityMask=""
  isSessionVar="" >
  <Description />
  <Expr>...</Expr>
```

```
</Variable>
```

### Example

```
<Variable name="Current Month" id="3031:16" uid="17">
  <Description />
  <Expr>
    <![CDATA[ CURRENT_DATE ]]>
  </Expr>
</Variable>
```

## 14.2.2 LDAP Server

The LDAP server element corresponds to the LDAP server object in the Security Manager dialog in the Administration Tool.

The LDAP server tag includes the following attributes:

**Table 14–13 LDAP Server Tag Attributes**

Attribute Name	Description
hostName	The host name of the LDAP server.
port	The port number of the LDAP server (for example, 389).
baseDN	The base distinguished name (DN) that identifies the starting point of the authentication search.
bindDN	The optional DN that is required to bind to the LDAP server. This option is required if <code>isADSI</code> is set to true.
userNameAttrType	A value that uniquely identifies a user, such as the user ID, the RDN (relative distinguished name), or (for ADSI) <code>sAMAccountName</code> .
domainID	A domain identifier that uniquely identifies the domain for which the LDAP object is responsible. This is especially useful when there are multiple LDAP objects.
password	The user password associated with the Bind DN. This option is required if <code>isADSI</code> is set to true. Note that passwords are encrypted.
timeout	The time period after which Administration Tool import attempts or Oracle BI Server user authentication attempts against this LDAP server will time out.
cacheExpiry	The interval at which the authentication cache entry in the LDAP cache for a logged on user is refreshed.  This option corresponds to <b>Cache refresh interval</b> in the Repository tab of the Options dialog in the Administration Tool.
isADSI	If set to true, indicates that this is an Active Directory LDAP server.
useSSL	If set to true, indicates that the connection to the LDAP server uses Secure Sockets Layer (SSL).
keyFile	The name of the key file that holds the client certificate and Certificate Authority (CA) certificate. Required if <code>useSSL</code> is set to true.  This option corresponds to <b>Key file name</b> in the Repository tab of the Options dialog in the Administration Tool.
version	The LDAP version number of the LDAP server, either 2 or 3. The default is 3.

**Table 14–13 (Cont.) LDAP Server Tag Attributes**

Attribute Name	Description
cacheEntries	<p>The maximum number of entries in the authentication cache, preallocated when the Oracle BI Server starts. If the number of users exceeds this limit, cache entries are replaced using the LRU algorithm. If this value is 0, then the authentication cache is disabled.</p> <p>This option corresponds to <b>Number of Cache Entries</b> in the Repository tab of the Options dialog in the Administration Tool.</p>

The LDAP server tag does not include any child elements.

### Syntax

```
<LDAPServer ...
  hostName=" "
  port=" "
  baseDN=" "
  bindDN=" "
  userNameAttrType=" "
  domainID=" "
  password=" "
  timeout=" "
  cacheExpiry=" "
  entities=" "
  isADSI=" "
  useSSL=" "
  keyFile=" "
  version=" "
  cacheEntries=" " >
</LDAPServer>
```

### Example

```
<LDAPServer name="ldap" id="3035:3119" uid="5032"
  hostName="sdacns05"
  port="389"
  version="3"
  baseDN="name1"
  bindDN="name2"
  userNameAttrType="sAMAccountName"
  domainID="as"
  password="D7EDED84BC624A917F5B462A4DCA05CDCE256EEEEEDC97D5A3D4B868D64238CA"
  timeout="60"
  cacheExpiry="86400"
  cacheEntries="1000"
  isADSI="true"
  useSSL="true">
<Description></Description>
</LDAPServer>
```

## 14.2.3 Init Block

The init block element corresponds to the initialization block object in the Physical layer. Initialization blocks are used to initialize dynamic repository variables, system session variables, and nonsystem session variables.

The init block tag includes the following attributes:

**Table 14–14 Init Block Tag Attributes**

Attribute Name	Description
isSessionVar	If set to true, indicates that this initialization block is a session initialization block. Session initialization blocks are used with session variables.  The default value is false.
refreshPeriod	The refresh interval for this initialization block, in seconds. For repository initialization blocks only.  The default value is 0.
baseTime	The start date and time for this initialization block. For repository initialization blocks only.  The default value is 2001-01-01 00:00:00.
isRowWiseInit	If set to true, indicates that row-wise initialization has been enabled. Row-wise initialization lets you create session variables dynamically and set their values when a session begins. For session initialization blocks only.  The default value is false.
isRowWiseCacheEnabled	If set to true, indicates that the <b>Use caching</b> option has been enabled. This option directs the Oracle BI Server to store the results of the query in a main memory cache. This option is only available if row-wise initialization has been enabled.  The default value is true.
isSuccRequired	Indicates that the <b>Required for Authentication</b> option has been selected for this initialization block in the Administration Tool.  If this option is selected, this initialization block must succeed for users to log in. In other words, users will be denied access to Oracle BI EE if the initialization block fails to execute. Failure to execute can occur if the wrong credentials have been defined in the initialization block, or if there is an error in the default initialization string.  The default value is false.
isEnabled	If set to true, indicates that this initialization block is enabled. For session initialization blocks only.  The default value is true.

The init block tag includes the following child elements:

**Table 14–15 Init Block Child Elements**

Element Name	Description
RefConnectionPool	References the connection pool for this initialization block.  This element is only used if the data source type for this initialization block is Database or XML.
DBMap	Stores the value of database-specific strings. The <DBMap> element contains an <Item> tag, which in turn contains a <Value> tag, as follows:  <pre>&lt;Item name=""&gt;   &lt;Value /&gt; &lt;/Item&gt;</pre>

**Table 14–15 (Cont.) Init Block Child Elements**

Element Name	Description
Predecessors	References the initialization blocks, if any, that are initialized before this initialization block  Each initialization block is contained in a sub-element called <code>RefInitBlock</code> .
Variables	References the variables that are associated with this initialization block.  Each variable is contained in a sub-element called <code>RefVariable</code> .
InitString	The SQL initialization string needed to populate the variables.  This element is only used if the data source type for this initialization block is Database or XML.
LDAPServers	References the LDAP servers that are associated with this initialization block.  Each LDAP server is contained in a sub-element called <code>RefLDAPServer</code> .  This element is only used if the data source type for this initialization block is LDAP.

**Syntax**

```

<InitBlock name="" id="" uid=""
  isSessionVar=""
  refreshPeriod=""
  baseTime=""
  isRowWiseInit=""
  isRowWiseCacheEnabled=""
  isSuccRequired=""
  isEnabled="">
  <Description />
  <RefConnectionPool .../>
  <DBMap>
    <Item name="">
      <Value .../>
    </Item>
  </DBMap>
  <Predecessors>
    <RefInitBlock .../>
  </Predecessors>
  <Variables>
    <RefVariable .../>
    <RefVariable .../>
  </Variables>
  <InitString .../>
  <LDAPServers>
    <RefLDAPServer .../>
    <RefLDAPServer .../>
  </LDAPServers>
</InitBlock>

```

**Example**

```

<InitBlock name="Test Block" id="3033:3052" uid="2147485020"
  isSessionVar="true"
  isRowWiseCacheEnabled="false">
  <Description></Description>

```

```

<RefConnectionPool id="3029:3045"
qualifiedName="&quot;SQLDB_NorthwindCodedRec&quot;.
&quot;NorthwindCodedRec Connections&quot;"/>
<DBMap>
  <Item name="DefaultMulDB">
    <Value><![CDATA[SELECT region, country, 'SQLDB', 'North', 'wind',
'Customers' FROM employees WHERE employeeid = 1]]></Value>
  </Item>
</DBMap>
<Variables>
  <RefVariable id="3031:160" qualifiedName="&quot;Test Block&quot;.
&quot;REGION&quot;"/>
  <RefVariable id="3031:161" qualifiedName="&quot;Test Block&quot;.
&quot;COUNTRY&quot;"/>
  <RefVariable id="3031:169" qualifiedName="&quot;Test Block&quot;.
&quot;SQLDB&quot;"/>
  <RefVariable id="3031:170" qualifiedName="&quot;Test Block&quot;.
&quot;North&quot;"/>
  <RefVariable id="3031:171" qualifiedName="&quot;Test Block&quot;.
&quot;wind&quot;"/>
  <RefVariable id="3031:173" qualifiedName="&quot;Test Block&quot;.
&quot;CustomersSamplingTable&quot;"/>
</Variables>
<InitString><![CDATA[SELECT region, country, 'SQLDB', 'North', 'wind',
'Customers' FROM employees WHERE employeeid = 1]]></InitString>
</InitBlock>

```

## 14.2.4 Custom Authenticator

The Custom Authenticator element corresponds to the Custom Authenticator object in the Security Manager dialog in the Administration Tool.

The Custom Authenticator tag includes the following attributes:

**Table 14–16 Custom Authenticator Tag Attributes**

Attribute Name	Description
cacheExpiry	The interval at which the authentication cache entry for a logged on user is refreshed for this custom authenticator.
path	The path and name of the authenticator plug-in dll.
configParam	Lists any parameters for this custom authenticator that have been explicitly exposed for configuration.
hiddenParam	Lists any parameters for this custom authenticator that have been encrypted, such as passwords.
cacheEntries	The maximum number of entries in the authentication cache for this custom authenticator, preallocated when the Oracle BI Server starts. If the number of users exceeds this limit, cache entries are replaced using the LRU algorithm. If this value is 0, then the authentication cache is disabled.

The Custom Authenticator element does not include any child elements.

### Syntax

```

<CustomAuthenticator name="" id="" uid=""
  cacheExpiry=""
  path=""
  configParam=""

```

```

        hiddenParam=""
        cacheEntries="" >
</CustomAuthenticator>

```

### Example

```

<CustomAuthenticator name="Authenticator" id="3047:1210"
    uid="1148510121"
    cacheExpiry="1000"
    path="authenticate.dll" >
<Description></Description>
</CustomAuthenticator>

```

## 14.2.5 Privilege Package

The privilege package element is a container for other privileges. It corresponds to a set of permissions that applies to a particular user or application role object in the repository metadata. The privilege package element contains the information available on the Object Permissions, Data Filters, and Query Limits tabs of the User/Application Role Permissions dialog in the Administration Tool.

Because privilege packages can be associated with more than one user or application role, the total number of privilege packages may not equal the total number of users and application roles.

The privilege package tag includes the following child elements:

**Table 14–17 Privilege Package Child Elements**

Element Name	Description
QueryPrivileges	<p>References any query privileges that belong to this privilege package, along with the corresponding database.</p> <p>Each pair of query privileges and database name is contained in a sub-element called <code>Mapping</code>.</p> <p>Each <code>Mapping</code> sub-element contains two additional sub-elements: <code>RefDatabase</code>, which references the database name, and <code>RefQueryPrivilege</code>, which references the query privilege.</p> <p>See the syntax for the privilege package element to see the complete hierarchy for the <code>QueryPrivileges</code> child element.</p>
Filters	<p>References any data filters that belong to this privilege package by mapping an object name with the filter expression.</p> <p>Each pair of object name and filter expression is contained in a sub-element called <code>Mapping</code>. This sub-element has one attribute called <code>Status</code>. Valid values are <code>Enabled</code>, <code>Disabled</code>, and <code>Ignored</code>.</p> <p>Each <code>Mapping</code> sub-element contains two additional sub-elements: <code>RefObject</code>, which references the metadata object name, and <code>Expr</code>, which contains the filter expression.</p> <p>See the syntax for the privilege package element to see the complete hierarchy for the <code>Filters</code> child element.</p>
ObjectPrivileges	<p>References any object privileges that belong to this privilege package.</p> <p>Each object privilege is contained in a sub-element called <code>RefObjectPrivilege</code>.</p>

The privilege package tag does not include any attributes. Note that the schema lists attributes for none, read, write, readwrite, delete, grant, and all, but these attributes are not used. Instead, these permissions are exposed as part of the child element definitions.

### Syntax

```
<PrivilegePackage ...>
  <QueryPrivileges>
    <Mapping>
      <RefDatabase .../>
      <RefQueryPrivilege .../>
    </Mapping>
  </QueryPrivileges>
  <RefTypePrivilege ../>
  <Filters>
    <Mapping status="">
      <RefObject .../>
      <Expr .../>
    </Mapping>
  </Filters>
  <ObjectPrivileges>
    <RefObjectPrivilege .../>
  </ObjectPrivileges>
</PrivilegePackage>
```

### Example

```
<PrivilegePackage name="PrivPack_4209:16704985826474" id="4209:469" uid="425">
  <Description />
  <Filters>
    <Mapping status="enable">
      <RefObject id="4008:459" qualifiedName="&quot;Paint&quot;;..
        &quot;Markets&quot;" />
      <Expr>
        <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
      </Expr>
    </Mapping>
    <Mapping status="enable">
      <RefObject id="4008:462" qualifiedName="&quot;Paint&quot;;..&quot;Sales
        Measures&quot;" />
      <Expr>
        <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
      </Expr>
    </Mapping>
    <Mapping status="enable">
      <RefObject id="4008:463" qualifiedName="&quot;Paint&quot;;..&quot;Share
        Measures&quot;" />
      <Expr>
        <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
      </Expr>
    </Mapping>
    <Mapping status="enable">
      <RefObject id="4008:464" qualifiedName="&quot;Paint&quot;;..&quot;Forecast
        Measures&quot;" />
      <Expr>
        <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
      </Expr>
    </Mapping>
    <Mapping status="enable">
      <RefObject id="4008:465" qualifiedName="&quot;Paint Exec&quot;
```

```

    ..&quot;Measures&quot;" />
  <Expr>
    <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
  </Expr>
</Mapping>
<Mapping status="enable">
  <RefObject id="4008:466" qualifiedName="&quot;Paint Exec&quot;..
    &quot;Markets&quot;" />
  <Expr>
    <![CDATA[ "Paint"."Markets"."Region" = 'Eastern Region' ]]>
  </Expr>
</Mapping>
</Filters>
<ObjectPrivileges />
</PrivilegePackage>

```

## 14.2.6 Object Privilege

The object privilege element corresponds to the set of object permissions you can apply to metadata objects such as logical or presentation columns. In the Administration Tool, you can set object permissions in the Presentation layer, or in the Object Permissions tab of the User/Application Role Permissions dialog.

The object privilege tag includes the following attributes:

**Table 14–18 Object Privilege Tag Attributes**

Attribute Name	Description
type	<p>Contains the type of privilege applied to the objects. Valid values are:</p> <ul style="list-style-type: none"> <li>■ read: corresponds to the <b>Read</b> privilege in the Administration Tool</li> <li>■ readWrite: corresponds to the <b>Read/Write</b> privilege in the Administration Tool</li> <li>■ none: corresponds to the <b>No Access</b> privilege in the Administration Tool</li> </ul> <p>This attribute can contain the following other values: delete, write, grant, and all. These other values are for internal use.</p>

The object privilege tag includes the following child elements:

**Table 14–19 Object Privilege Child Elements**

Element Name	Description
Objects	<p>References the set of objects for which this privilege type applies.</p> <p>Each object is contained in a sub-element called RefObject.</p>

### Syntax

```

<ObjectPrivilege ...
  privilege="">
  <Objects>
    <RefObject.../>
    <RefObject.../>
  </Objects>
</ObjectPrivilege>

```

**Example**

```

<ObjectPrivilege name="ObjPriv_1500:10072891258596599" id="1500:1007289"
  uid="2162635189"
  type="read">
  <Description></Description>
  <Objects>
    <RefObject id="4004:275554" uid="2156776977" qualifiedName="&quot;Sales - CRM
    Sales Activity&quot;"/>
    <RefObject id="4004:275556" uid="2156689246" qualifiedName="&quot;Sales - CRM
    Pipeline&quot;"/>
    <RefObject id="4004:275636" uid="2156689916" qualifiedName="&quot;Sales - CRM
    Forecasting&quot;"/>
    <RefObject id="4004:275663" uid="2156776077" qualifiedName="&quot;Sales - CRM
    Customer Overview&quot;"/>
    <RefObject id="4004:275728" uid="2160717431" qualifiedName="&quot;Sales - CRM
    Quota Management&quot;"/>
  </Objects>
</ObjectPrivilege

```

**14.2.7 Query Privilege**

The query privilege element corresponds to the set of query privileges you can apply to users or application roles. In the Administration Tool, you can set query privileges in the Query Limits tab of the User/Application Role Permissions dialog.

The query privilege tag includes the following attributes:

**Table 14–20 Query Privilege Tag Attributes**

Attribute Name	Description
maxExecTime	The maximum number of minutes queries can run on a database.
maxExecTimePrivilege	Specifies the status of the maximum query run time limit. Valid values are: <ul style="list-style-type: none"> <li>■ <b>Enable:</b> Limits the time to the value specified in maxExecTime.</li> <li>■ <b>Disable:</b> Disables any limits set in maxExecTime.</li> <li>■ <b>Warn:</b> Does not enforce limits, but logs queries that exceed the set time limit in the Query log.</li> <li>■ <b>Ignore:</b> Inherits limits from the parent application role. If there is no time limit to inherit, no limit is enforced.</li> </ul>
maxRows	The maximum number of rows for users to retrieve from a database.
maxRowsPrivilege	Specifies the status of the maximum number of rows limit. Valid values are: <ul style="list-style-type: none"> <li>■ <b>Enable:</b> Limits the number of rows to the value specified. If the number of rows exceeds the maxRows value, the query is terminated.</li> <li>■ <b>Disable:</b> Disables any limits set in maxRows.</li> <li>■ <b>Warn:</b> Does not enforce limits, but logs queries that exceed the set limit in the Query log.</li> <li>■ <b>Ignore:</b> Inherits limits from the parent application role. If there is no row limit to inherit, no limit is enforced.</li> </ul>

**Table 14–20 (Cont.) Query Privilege Tag Attributes**

Attribute Name	Description
populatePrivilege	Specifies whether the Populate privilege is granted or denied for a database. The Populate stored procedure writes the Cache/Saved Result Set value to the database when a criteria block is cached. Valid values are: <ul style="list-style-type: none"> <li>▪ <b>Allow:</b> Explicitly grants the Populate privilege.</li> <li>▪ <b>Disallow:</b> Explicitly denies the Populate privilege.</li> <li>▪ <b>Ignore:</b> Inherits limits from the parent application role. If there is no limit to inherit, then the Populate privilege is allowed or disallowed based on the property <b>Allow populate queries by default</b> for the database object.</li> </ul>
execPhysicalPrivilege	Specifies whether direct database requests can be executed by default. Valid values are: <ul style="list-style-type: none"> <li>▪ <b>Allow:</b> Explicitly grants the ability to execute direct database requests.</li> <li>▪ <b>Disallow:</b> Explicitly denies the ability to execute direct database requests.</li> <li>▪ <b>Ignore:</b> Inherits limits from the parent application role. If there is no limit to inherit, then direct database requests are allowed or disallowed based on the property <b>Allow direct database requests by default</b> for the database object.</li> </ul>

The query privilege tag includes the following child elements:

**Table 14–21 Query Privilege Child Elements**

Element Name	Description
ExecTimeTable	If database access has been restricted to particular time periods, lists the time periods and whether access is allowed or disallowed.  Each time period is contained in a sub-element called <code>Item</code> . The <code>Item</code> child element has three attributes: <code>allow</code> (true or false), <code>startTime</code> , and <code>endTime</code> .

### Syntax

```
<QueryPrivilege ...
  maxExecTime=" "
  maxExecTimePrivilege=" "
  maxRows=" "
  maxRowsPrivilege=" "
  populatePrivilege=" "
  execPhysicalPrivilege=" ">
  <ExecTimeTable>
    <Item allow="true" startTime=" " endTime=" " />
    <Item allow="true" startTime=" " endTime=" " />
  </ExecTimeTable>
</QueryPrivilege>
```

### Example

```
<QueryPrivilege name="QueryPriv_4204:8253601255133864" id="4204:825360"
  uid="2162247182"
  maxExecTime="600"
  maxRows="100000">
  <Description></Description>
```

```
</QueryPrivilege
```

## 14.2.8 User

The user element corresponds to the user object in the repository. These objects represent the metadata repository copies or versions of externally managed user objects.

The user tag includes the following attributes:

**Table 14–22 User Tag Attributes**

Attribute Name	Description
fullName	The full name of this user.
password	This attribute is not used.
periodicity	This attribute is not used.
loggingLevel	The logging level for this user.
logStatisticsStatus	This attribute is not used.
noExpiry	This attribute is not used.

The user tag includes the following child elements:

**Table 14–23 User Child Elements**

Element Name	Description
RefPrivilegePackage	References the privilege package, or set of object privileges, data filters, and query privileges, that apply to this user.
Groups	References the application roles to which this user belongs. Each application role is contained in a sub-element called RefGroup.
DBSignInList	References database login user names and passwords, along with the corresponding database, if this user has database-specific logins defined. Each pair of database credentials and database name is contained in a sub-element called DBSignInMap. Each DBSignInMap sub-element contains two additional sub-elements: RefDBSignIn, which references the database credentials, and RefDatabase, which references the database name. Note that passwords are encrypted. See the syntax for the user element to see the complete hierarchy for the DBSignInList child element.

### Syntax

```
<User ...
  fullName=" "
  loggingLevel=" " >
  <RefPrivilegePackage .../>
  <Groups>
    <RefGroup .../>
    <RefGroup .../>
  </Groups>
  <DBSignInList>
    <DBSignInMap>
      <RefDBSignIn .../>
```

```

        <RefDatabase .../>
    </DBSignInMap>
.....
    </DBSignInList>
</User>

```

### Example

```

<User name="mgr" id="1501:7" uid="8"
    fullName="East Region Manager"
    loggingLevel="0">
    <Description>
        <![CDATA[ my_desc ]]>
    </Description>
    <Groups>
        <RefGroup id="4206:4" qualifiedName="&quot;Region Manager&quot;" />
    </Groups>
</User>

```

## 14.2.9 Group

The group element corresponds to the application role object in the repository metadata.

The group tag includes the following child elements:

**Table 14–24 Group Child Elements**

Element Name	Description
RefPrivilegePackage	References the privilege package, or set of object privileges, data filters, and query privileges, that apply to this application role.
ChildGroups	References the set of application roles that belong to this application role. Each child application role is contained in a sub-element called RefGroup.
Users	References the users that belong to this application role. Each user is contained in a sub-element called RefUser.

The group tag does not include any attributes. Note that the schema lists attributes for logLevel and logStatisticsStatus, but these attributes are not used.

### Syntax

```

<Group ...>
    <RefPrivilegePackage .../>
    <ChildGroups>
        <RefGroup .../>
    </ChildGroups>
    <Users>
        <RefUser .../>
    </Users>
</Group>

```

### Example

```

<Group name="Region Manager" id="4206:4" uid="5">
    <Description />
    <RefPrivilegePackage id="4209:469" qualifiedName="&quot;
    PrivPack_4209:16704985826474&quot;" />

```

```
</Group>
```

### 14.2.10 DB Sign-On

The DB sign-on element corresponds to the information provided in the Logons tab of the user object. If the repository has been set up for database-specific login IDs and passwords, you can set up database-specific credentials to allow privileged users to connect to the underlying databases at the level of authority granted to those users in the databases.

The DB sign-on tag includes the following attributes:

**Table 14–25 DB Sign-on Tag Attributes**

Attribute Name	Description
user	The user name for the underlying database.
password	The corresponding password for the underlying database. Note that passwords are encrypted.

The DB sign-on tag does not include any child elements.

#### Syntax

```
<DBSignOn ...
  user=""
  password="">
</DBSignOn>
```

#### Example

```
<DBSignOn name="LOGON_4211:205511263581806" id="4211:20551" uid="2160777097"
  user="my_db_user"
  password="D7EDED84BC624A917F5B462A4DCA05CDCE256EEEEEDC97D51DC6FAD705A87E76AC4
  D07C3A079829F">
<Description />
</DBSignOn>
```

### 14.2.11 FMW Security

The FMW security element is not used.

## 14.3 Other Elements

The elements described in this section are miscellaneous elements that do not fit into any other category. These elements include:

- [Section 14.3.1, "Project"](#)
- [Section 14.3.2, "Query Object"](#)

### 14.3.1 Project

The project element corresponds to the project object in the repository metadata. Projects support multiuser development by enabling developers to work on projects in their area of responsibility.

The project tag includes the following child elements:

**Table 14–26 Project Child Elements**

<b>Element Name</b>	<b>Description</b>
Catalogs	References the subject areas that belong to the project. Each subject area is contained in a sub-element called <code>RefPresentationCatalog</code> .
FactTables	References the logical fact tables that belong to the project. Each fact table is contained in a sub-element called <code>RefLogicalTable</code> .
Groups	References the application roles that belong to the project. Each application role is contained in a sub-element called <code>RefGroup</code> .
Users	References the users that belong to the project. Each user is contained in a sub-element called <code>RefUser</code> .
Variables	References the variables that belong to the project. Each variable is contained in a sub-element called <code>RefVariable</code> .
InitBlocks	References the initialization blocks that belong to the project. Each initialization block is contained in a sub-element called <code>RefInitBlock</code> .
ListCatalogs	References the list catalogs that belong to the project. Each list catalog is contained in a sub-element called <code>RefListCatalog</code> .
Tables	References the presentation tables that belong to the project. Each presentation table is contained in a sub-element called <code>RefPresentationTable</code> .
Columns	References the presentation columns that belong to the project. Each presentation column is contained in a sub-element called <code>RefPresentationColumn</code> .
Hierarchies	References the presentation hierarchies that belong to the project. Each presentation hierarchy is contained in a sub-element called <code>RefPresentationHierarchy</code> .
Levels	References the presentation levels that belong to the project. Each presentation level is contained in a sub-element called <code>RefPresentationLevel</code> .
ExcludedCatalogs	References any subject areas that do not belong to the project, but that are mapped to logical objects that do belong to the project. Each subject area is contained in a sub-element called <code>RefPresentationCatalog</code> .
ExcludedTables	References any presentation tables that do not belong to the project, but that are mapped to logical objects that do belong to the project. Each presentation table is contained in a sub-element called <code>RefPresentationTable</code> .

**Table 14–26 (Cont.) Project Child Elements**

Element Name	Description
ExcludedColumns	References any presentation columns that do not belong to the project, but that are mapped to logical objects that do belong to the project.  Each presentation column is contained in a sub-element called <code>RefPresentationColumn</code> .
ExcludedHierarchies	References any presentation hierarchies that do not belong to the project, but that are mapped to logical objects that do belong to the project.  Each presentation hierarchy is contained in a sub-element called <code>RefPresentationHierarchy</code> .
ExcludedLevels	References any presentation levels that do not belong to the project, but that are mapped to logical objects that do belong to the project.  Each subject area is contained in a sub-element called <code>RefPresentationLevel</code> .

The project tag does not include any attributes.

### Syntax

```
<Project ...>
  <Catalogs>
    <RefPresentationCatalog.../>
  </Catalogs>
  <FactTables>
    <RefLogicalTable .../>
  </FactTables>
  <Groups>
    <RefGroup.../>
  </Groups>
  <Users>
    <RefUser .../>
  </Users>
  <Variables>
    <RefVariable .../>
  </Variables>
  <InitBlocks>
    <RefInitBlock.../>
  </InitBlocks>
  <ListCatalogs>
    <RefListCatalog .../>
  </ListCatalogs>
  <Tables>
    <RefPresentationTable.../>
  </Tables>
  <Columns>
    <RefPresentationColumn.../>
  </Columns>
  <Hierarchies>
    <RefPresentationHierarchy.../>
  </Hierarchies>
  <Levels>
    <RefPresentationLevel.../>
  </Levels>
  <ExcludedCatalogs>
```

```

    <RefPresentationCatalog.../>
</ExcludedCatalogs>
<ExcludedTables>
    <RefPresentationTable.../>
</ExcludedTables>
<ExcludedColumns>
    <RefPresentationColumn.../>
</ExcludedColumns>
<ExcludedHierarchies>
    <RefPresentationHierarchy.../>
</ExcludedHierarchies>
<ExcludedLevels>
    <RefPresentationLevel.../>
</ExcludedLevels>
</Project>

```

### Example

```

<Project name="FUSION_SPE" id="4213:281691" uid="2160747109">
  <Description></Description>
  <FactTables>
    <RefLogicalTable uid="2248630" id="2035:9160" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Order Item&quot;"/>
    <RefLogicalTable uid="2248632" id="2035:9371" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Service Request&quot;"/>
    <RefLogicalTable uid="2248634" id="2035:9578" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Revenue&quot;"/>
    <RefLogicalTable uid="2248653" id="2035:9995" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Service Request Year Ago&quot;"/>
    <RefLogicalTable uid="2248654" id="2035:10002" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Service Request Quarter Ago&quot;"/>
    <RefLogicalTable uid="2248657" id="2035:10009" qualifiedName=
      "&quot;Core&quot;.&quot;Fact - CRM - Asset&quot;"/>
  </FactTables>
  <Groups>
    <RefGroup uid="2351522" id="4206:1" qualifiedName=
      "&quot;BIAdministrators&quot;"/>
  </Groups>
  <Users>
    <RefUser uid="2226247" id="1501:2" qualifiedName=
      "&quot;Administrator&quot;"/>
  </Users>
  <Variables>
    <RefVariable uid="2156160753" id="3031:250" qualifiedName=
      "&quot;User Hierarchy Level&quot;.&quot;HIER_LEVEL&quot;"/>
    <RefVariable uid="2160681301" id="3031:337" qualifiedName=
      "&quot;GetCRMCalendar&quot;.&quot;CRM_CAL_ID&quot;"/>
    <RefVariable uid="2160723641" id="3031:338" qualifiedName="&quot;TERR_HIER_
      LEVEL&quot;"/>
    <RefVariable uid="2160708142" id="3031:339" qualifiedName="&quot;Resource
      Hierarchy Level&quot;.&quot;RESOURCE_HIER_LEVEL&quot;"/>
  </Variables>
  <InitBlocks>
    <RefInitBlock uid="2156160754" id="3033:68605" qualifiedName=
      "&quot;User Hierarchy
      Level&quot;"/>
    <RefInitBlock uid="2160681306" id="3033:68645" qualifiedName=
      "&quot;GetCRMCalendar&quot;"/>
    <RefInitBlock uid="2160714425" id="3033:68649" qualifiedName=
      "&quot;Resource Hierarchy Level&quot;"/>
  </InitBlocks>

```

```

    <RefInitBlock uid="2327724" id="3033:68694" qualifiedName=
    "&quot;Authentication&quot;" />
    <RefInitBlock uid="2327727" id="3033:68696" qualifiedName=
    "&quot;Authorization&quot;" />
  </InitBlocks>
</Project>

```

## 14.3.2 Query Object

The query object element corresponds to the saved query object in the repository metadata. You can save a query from the Query Repository dialog in the Administration Tool.

The query object tag includes the following child elements:

**Table 14–27 Query Object Child Elements**

Element Name	Description
QueryString	Contains the query string that qualifies and defines the query.

The query object tag does not include any attributes.

### Syntax

```

<QueryObject ...>
  <QueryString.../>
</QueryObject>

```

### Example

```

<QueryObject name="samplequery" id="4217:20552" uid="2160777099">
  <Description />
  <QueryString>
    <![CDATA[ (128 = "*" ) AND (6 = Business Model) AND (0) ]]>
  </QueryString>
</QueryObject>

```



---

---

# Glossary

This glossary defines terms for Oracle Business Intelligence Enterprise Edition. See also the Oracle Fusion Middleware Master Glossary for additional terms and definitions.

## **action**

Provides functionality to navigate to related content or to invoke operations, functions or processes in external systems. You can include actions in analyses, dashboard pages, agents, scorecard objectives, scorecard initiatives, and KPIs.

See also [action link](#).

## **Action Framework**

The Action Framework is a component of the Oracle BI EE architecture and includes a J2EE application called the Action Execution Service (AES) and actions-specific JavaScript functionality deployed as part of Oracle BI EE. The action framework also includes client-side functionality for creating actions and invoking certain action types directly from the browser.

## **action link**

A link to an action that you have embedded in an analysis, dashboard page, scorecard objective, scorecard initiative, or KPI that, when clicked, runs an associated action.

See also [action](#).

## **ADF Business Intelligence Component**

Provides the developer the ability to include Oracle Business Intelligence catalog objects in ADF Applications. This component uses a SOAP connection to access the Oracle BI Presentation Catalog.

## **Admin Server**

Is part of the WebLogic domain, and runs the processes that manage Oracle Business Intelligence components. The Admin Server contains the Oracle WebLogic Server Administration Console, and Fusion Middleware Control.

See also [Fusion Middleware Control](#) and [Managed Server](#).

## **Administration Tool**

See [Oracle BI Administration Tool](#).

**agent**

Enables you to automate your business processes. You can use them to provide event-driven alerting, scheduled content publishing, and conditional event-driven action execution.

Agents can dynamically detect information-based problems and opportunities, determine the appropriate individuals to notify, and deliver information to them through a wide range of devices (e-mail, phones, and so on).

**aggregate persistence**

A feature that automates the creation and loading of aggregate tables and their corresponding Oracle Business Intelligence metadata mappings to enable aggregate navigation.

**aggregate table**

A table that stores precomputed results from measures that have been aggregated over a set of dimensional attributes. Each aggregate table column contains data at a given set of levels. For example, a monthly sales table might contain a precomputed sum of the revenue for each product in each store during each month. Using aggregate tables optimizes performance.

**aggregation rule**

In an Oracle BI repository, a rule applied to a logical column or physical cube column that specifies a particular aggregation function to be applied to the column data, such as SUM.

In Presentation Services, users can see the rules that have been applied in the repository. Users can also change the default aggregation rules for measure columns.

**alias table**

A physical table that references a different physical table as its source. Alias tables can be used to set up multiple tables, each with different keys, names, or joins, when a single physical table needs to serve in different roles. Because alias table names are included in physical SQL queries, you can also use alias tables to provide meaningful table names, making the SQL statements easier to read.

**analysis**

A query that a user creates on the Criteria tab in Presentation Services. An analysis can optionally contain one or more filters or selection steps to restrict the results.

See also [filter](#) and [selection step](#).

**analysis criteria**

Consists of the columns, filters, and selection steps that you specify for an analysis.

See also [analysis](#).

**analysis prompt**

A prompt that is added to an analysis. When the user selects a prompt value, that value then determines the content that displays in the analysis containing the prompt, only.

See [dashboard prompt](#) and [prompt](#).

**attribute**

The details of a dimension in an Oracle BI repository. Attributes usually appear as columns of a dimension table.

**attribute column**

In Presentation Services, a column that holds a flat list of values that are also known as members. No hierarchical relationship exists between these members, as is the case for members of a hierarchical column. Examples include ProductID or City.

See [hierarchical column](#).

**BI domain**

Contains configurable System components (the coreapplication) and Java components (the WebLogic domain), and also includes the Web-based management tools and applications that utilize resources.

A BI domain can be a set of middleware homes spread across one or more physical servers.

See also [BI instance](#).

**BI instance**

Refers to the System components (coreapplication) of a BI domain

See also [BI domain](#).

**BI object**

A piece of business intelligence content that is created with Presentation Services and saved to the Oracle BI Presentation Catalog. Examples of BI objects include analyses, dashboards, dashboard pages, scorecards, and KPIs.

**BI Search**

A search tool that resides outside of Presentation Services. BI Search is available from the Home Page after the Administrator adds a link to the BI Search URL. BI Search provides a mechanism for searching for objects in the Oracle BI Presentation Catalog that is similar to a full-text search engine.

**bookmark link**

Captures the path to a dashboard page and all aspects of the page state.

See [prompted link](#).

**bridge table**

A table that enables you to resolve many-to-many relationships between two other tables.

**briefing book**

See [Oracle BI Briefing Books](#).

**business model**

Contains the business model definitions and the mappings from logical to physical tables. Business models are always dimensional, unlike objects in the Physical layer, which reflect the organization of the data sources. Each business model contains logical tables, columns, and joins.

### **Business Model and Mapping layer**

A layer of the Oracle BI repository that defines the business, or logical, model of the data and specifies the mapping between the business model and the Physical layer schemas. This layer can contain one or more business models.

The Business Model and Mapping layer determines the analytic behavior that is seen by users, and defines the superset of objects available to users. It also hides the complexity of the source data models.

### **business owner**

The person responsible for managing and improving the business value and performance of a KPI or scorecard object, such as an objective, cause and effect map, and so on.

### **catalog**

See [Oracle BI Presentation Catalog](#).

### **cause & effect map**

A component of a scorecard that lets you illustrate the cause and effect relationships of an objective.

See also [Oracle Scorecard and Strategy Management](#).

### **chronological key**

A column in a time dimension that identifies the chronological order of the members within a dimension level. The key must be unique at its level.

### **Cluster Controller**

A process that serves as the first point of contact for new requests from Presentation Services and other clients. The Cluster Controller determines which Oracle BI Server in the cluster to direct the request to based on Oracle BI Server availability and load. It monitors the operation of servers in the cluster, including the Oracle BI Scheduler instances. The Cluster Controller is deployed in active-passive configuration.

### **column**

In an Oracle BI repository, columns can be physical columns, logical columns, or presentation columns.

In Presentation Services, indicates the pieces of data that an analysis will return. Together with filters and selection steps, columns determine what analyses will contain. Columns also have names that indicate the types of information that they contain, such as Account and Contact.

See also [analysis](#), [attribute column](#), [hierarchical column](#), and [measure column](#).

### **column filter**

See [filter](#).

### **column prompt**

A type of filter that allows you to build specific value prompts on a data column to either stand alone on the dashboard or analysis or to expand or refine existing dashboard and analysis filters.

See also [prompt](#).

**complex join**

A join in the Physical layer of an Oracle BI repository that uses an expression other than equals.

**condition**

Objects that return a single Boolean value based on the evaluation of an analysis or of a key performance indicator (KPI). You use conditions to determine whether agents deliver their content and execute their actions, whether actions links are displayed in dashboard pages, or whether sections and their content are displayed in dashboard pages.

See also [action](#), [action link](#), [agent](#) and [key performance indicator \(KPI\)](#).

**connection pool**

An object in the Physical layer of an Oracle BI repository that contains the connection information for a data source.

See also [Physical layer](#).

**content designer**

The user who creates business intelligence objects such as analyses, dashboards, and scorecards.

**contextual event action**

A pre-delivered action that utilizes the Action Framework to pass content from the business intelligence object to another region on an ADF page.

See also [action](#), [Action Framework](#), and [action link](#).

**criteria**

See [analysis criteria](#).

**cube**

An OLAP (online analytical processing) data structure that lets data be analyzed more quickly and with greater flexibility than structures in relational databases. Cubes are made up of measures and organized by dimensions. Cubes in multidimensional data sources roughly correspond to star schemas in relational database models.

**currency prompt**

A prompt that allow the user to change the currency type that displays in the currency columns on an analysis or dashboard.

See also [prompt](#).

**custom view**

A component of a scorecard that lets you show a customized view of your business and strategy data.

See also [Oracle Scorecard and Strategy Management](#).

**dashboard**

An object that provides personalized views of corporate and external information. A dashboard consists of one or more pages. Pages can display anything that you can access or open with a Web browser, such as results of analyses, images, alerts from agents, and so on.

### **dashboard prompt**

A prompt that is added to the dashboard. When the user selects a prompt value, that value then determines the content that will display in all analyses included on the dashboard.

See [analysis prompt](#) and [prompt](#).

### **Dashboard URL**

Used for incorporating or referencing the content of a specific dashboard in external portals or applications. It has a number of forms and optional arguments that can be used to control its behavior.

### **data source name (DSN)**

A data structure that contains the information about a specific database, typically used by an ODBC driver to connect to the database. The DSN contains information such as the name, directory, and driver of the database.

Connection pool objects in the Physical layer of the Oracle BI repository contain DSN information for individual data sources.

### **database hint**

Instructions placed within a SQL statement that tell the database query optimizer the most efficient way to execute the statement. Hints override the optimizer's execution plan, so you can use hints to improve performance by forcing the optimizer to use a more efficient plan. Hints are only supported for Oracle Database data sources.

### **dimension**

A hierarchical organization of logical columns (attributes). One or more logical dimension tables may be associated with at most one dimension.

A dimension may contain one or more (unnamed) hierarchies. There are two types of logical dimensions: dimensions with level-based hierarchies (structure hierarchies), and dimensions with parent-child hierarchies (value hierarchies).

A particular type of level-based dimension, called a time dimension, provides special functionality for modeling time series data.

See also [hierarchy](#).

### **dimension table**

A logical table that contains columns used by a particular dimension. A dimension table cannot be a fact table.

See also [fact table](#).

### **driving table**

A mechanism used to optimize the manner in which the Oracle BI Server processes multi-database joins when one table is very small (the driving table) and the other table is very large.

### **DSN**

See [data source name \(DSN\)](#).

### **event polling table**

Event polling tables (also called event tables) provide information to the Oracle BI Server about which physical tables have been updated. They are used to keep the query cache up-to-date. The Oracle BI Server cache system polls the event table,

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extracts the physical table information from the rows, and purges stale cache entries that reference those physical tables.

**Essbase**

A multidimensional database management system available from Oracle that provides a multidimensional database platform upon which to build business intelligence applications. Also referred to as Oracle's Hyperion Essbase.

**fact table**

In an Oracle BI repository, a logical table in the Business Model and Mapping layer that contains measures and has complex join relationships with dimension tables.

See also [dimension table](#).

**filter**

Criteria that are applied to attribute and measure columns to limit the results that are displayed when an analysis is run. For measure columns, filters are applied before the query is aggregated and affect the query and thus the resulting values.

See also [prompt](#) and [selection step](#).

**foreign key**

A column or a set of columns in one table that references the primary key columns in another table.

**fragmentation content**

The portion, or fragment, of the set of data specified in a logical table source when the logical table source does not contain the entire set of data at a given level.

Fragmentation content is defined by the logical columns that are entered in the **Fragmentation content** box in the Content tab of the Logical Table Source dialog box.

**Fusion Middleware Control**

Provides Web-based management tools that enable you to monitor and configure Fusion Middleware components.

**global header**

An Oracle BI Presentation Services user interface object that contains links and options that allow the user to quickly begin a task or locate a specific object within the Presentation Catalog. The global header always displays in the Presentation Services user interface, thus allowing users to quickly access links and search the catalog without having to navigate to the Home Page or Catalog page.

**Go URL**

Used to incorporate specific business intelligence results into external portals or applications. The Go URL is used when you add a result to your favorites or add a link to a request to your dashboard or external Web site. It has a number of forms and optional arguments that can be used to control its behavior.

**hierarchical column**

In Presentation Services, a column that holds data values that are organized using both named levels and parent-child relationships. This column is displayed using a tree-like structure. Individual members are shown in an outline manner, with lower-level members rolling into higher-level members. For example, a specific day belongs to a particular month, which in turn is within a particular year. Examples include Time or Geography.

See also [attribute column](#).

**hierarchy**

In an Oracle BI repository, a system of levels in a logical dimension that are related to each other by one-to-many relationships. All hierarchies must have a common leaf level and a common root (all) level.

Hierarchies are not modeled as separate objects in the metadata. Instead, they are an implicit part of dimension objects.

See also [dimension](#), [logical level](#), and [presentation hierarchy](#).

**hierarchy level**

In Presentation Services, an object within a hierarchical column that either rolls up or is rolled up from other levels. Corresponds to a presentation level in an Oracle BI repository.

See also [presentation level](#).

**home page**

Provides an intuitive, task-based entry way into the functionality of Presentation Services. The Home page is divided into sections that allow you to quickly begin specific tasks, locate an object, or access technical documentation.

**image prompt**

A prompt that provides an image with different areas mapped to specific values. The user clicks an image area to select the prompt value that populates the analysis or dashboard.

See also [prompt](#).

**initialization block**

Used to initialize dynamic repository variables, system session variables, and nonsystem session variables. An initialization block contains the SQL statements that will be executed to initialize or refresh the variables associated with that block.

**initiative**

Used in a scorecard, an initiative is a time-specific task or project that is necessary to achieve objectives. As such, you can use initiatives that support objectives as milestones as they reflect progress toward strategy targets.

See also [objective](#) and [Oracle Scorecard and Strategy Management](#).

**Java components**

Fusion Middleware Control components that are deployed as one or more Java EE applications (and a set of resources) and are managed by Node Manager.

See also [Node Manager](#).

**key performance indicator (KPI)**

A measurement that defines and tracks specific business goals and strategic objectives. KPIs often times roll up into larger organizational strategies that require monitoring, improvement, and evaluation. KPIs have measurable values that usually vary with time, have targets to determine a score and performance status, include dimensions to allow for more precise analysis, and can be compared over time for trending purposes and to identify performance patterns.

See also [Oracle Scorecard and Strategy Management](#).

### **KPI watchlist**

A method of distributing KPIs to end users. A watchlist is a collection of KPIs that are built by adding the KPIs stored in the catalog. After a KPI watchlist is built and saved, it is stored as a catalog object and can be added to dashboards and scorecards.

See also [key performance indicator \(KPI\)](#).

### **level**

See [hierarchy level](#).

### **logical display folder**

Folders used to organize objects in the Business Model and Mapping layer. They have no metadata meaning.

### **logical join**

Joins that express relationships between logical tables. Logical joins are *conceptual*, rather than physical, joins. In other words, they do not join to particular keys or columns. A single logical join can correspond to many possible physical joins.

### **logical layer**

See [Business Model and Mapping layer](#).

### **logical level**

In an Oracle BI repository, a component of a level-based hierarchy that either rolls up or is rolled up from other levels.

Parent-child hierarchies have implicit, inter-member levels between ancestors and descendants that are not exposed as logical level objects in the metadata. Although parent-child hierarchies also contain logical level objects, these levels are system generated and exist to enable aggregation across all members only.

See also [dimension](#) and [hierarchy](#).

### **Logical SQL**

The SQL statements that are understood by the Oracle BI Server. The Oracle BI Server Logical SQL includes standard SQL, plus special functions (SQL extensions) like `AGO`, `TODATE`, `EVALUATE`, and others.

Clients like Presentation Services send Logical SQL to the Oracle BI Server when a user makes a request. In addition, Logical SQL is used in the Business Model and Mapping layer to enable heterogeneous database access and portability. The Oracle BI Server transforms Logical SQL into physical SQL that can be understood by source databases.

### **logical table**

A table object in the Business Model and Mapping layer of an Oracle BI repository. A single logical table can map to one or more physical tables. Logical tables can be either fact tables or dimension tables.

See also [dimension table](#) and [fact table](#).

### **logical table source**

Objects in the Business Model and Mapping layer of an Oracle BI repository that define the mappings from a single logical table to one or more physical tables. The

physical to logical mapping can also be used to specify transformations that occur between the Physical layer and the Business Model and Mapping layer, as well as to enable aggregate navigation and fragmentation.

### **Managed Server**

An individual J2EE application container (JMX MBean container). It provides local management functions on individual hosts for Java components and System components contained within the local middleware home, and refers to the Admin Server for all of its configuration and deployment information.

See also [Admin Server](#) and [Fusion Middleware Control](#).

### **measure column**

A column that can change for each record and can be added up or aggregated in some way. Typical measures are sales dollars and quantity ordered. Measures are calculated from data sources at query time.

Measure columns are displayed in the Oracle BI repository, usually in fact tables, or in Presentation Services.

### **metadata**

Data about data. Metadata objects include the descriptions of schemas (such as tables, columns, data types, primary keys, foreign keys, and so on) and logical constructs (like fact tables, dimensions, and logical table source mappings).

The Oracle BI repository is made up of the metadata used by the Oracle BI Server to process queries.

### **metadata dictionary**

A static set of XML documents that describe metadata objects, such as a column, including its properties and relationships with other metadata objects. A metadata dictionary can help users obtain more information about metrics or attributes for repository objects.

### **mission statement**

A statement in a scorecard that specifies the key business goals and priorities that are required to achieve your vision.

See also [Oracle Scorecard and Strategy Management](#) and [vision statement](#).

### **multi-database join**

A join between two tables in an Oracle BI repository, where each table resides in a different database.

### **Node Manager**

A daemon process that provides remote server start, stop, and restart capabilities when Java processes become unresponsive or terminate unexpectedly.

See also [Java components](#).

### **OCI**

See [Oracle Call Interface \(OCI\)](#).

### **ODBC**

See [Open Database Connectivity \(ODBC\)](#).

**object properties**

Information about an object and attributes that the owner can assign to an object. Examples of properties include name, description, date stamps, read-only access, and do not index flag.

See also [permissions](#).

**objective**

A required or desired outcome in a scorecard that forms your corporate strategy.

See also [initiative](#) and [Oracle Scorecard and Strategy Management](#).

**offline mode**

In the Oracle BI Administration Tool, a mode where a repository builder can edit a repository that is not loaded into the Oracle BI Server.

**online mode**

In the Oracle BI Administration Tool, a mode where a repository builder can edit a repository while it is available for query operations. Online mode also allows user session monitoring for users connected to the subject areas in the repository.

**opaque view**

A Physical layer table that consists of a `SELECT` statement. In the Oracle BI repository, opaque views appear as view tables in the physical databases, but the view does not actually exist.

**Open Database Connectivity (ODBC)**

A standard interface used to access data in both relational and non-relational databases. Database applications can use ODBC to access data stored in different types of database management systems, even if each database uses a different data storage format and programming interface.

**OPMN**

See [Oracle Process Manager and Notification Server \(OPMN\)](#).

**Oracle BI Administration Tool**

A Windows application that is used to create and edit Oracle BI repositories. The Administration Tool provides a graphical representation of the three parts of a repository: the Physical layer, Business Model and Mapping layer, and the Presentation layer.

**Oracle BI Briefing Books**

A collection of static or updatable snapshots of dashboard pages, individual analyses, and BI Publisher reports. You can download briefing books in PDF or MHTML format for printing and viewing. You also can update, schedule, and deliver briefing books using agents.

**Oracle BI JavaHost**

A service that gives Presentation Services the ability to use functionality that is provided in Java libraries to support components such as graphs. The services are provided based on a request-response model.

### **Oracle BI Logical SQL View Object**

Provides the developer the ability to create a Logical SQL statement to access the Oracle BI Server and fetch business intelligence data and bind it to native ADF components for inclusion on an ADF page. This view object uses a BI JDBC connection to the Oracle BI Server.

### **Oracle BI Presentation Catalog**

Stores business intelligence objects, such as analyses and dashboards, and provides an interface where users create, access, and manage objects, and perform specific object-based tasks (for example, export, print, and edit). The catalog is organized into folders that are either shared or personal.

### **Oracle BI Presentation Services**

Provides the framework and interface for the presentation of business intelligence data to Web clients. It maintains a Presentation Catalog service on the file system for the customization of this presentation framework. It is a standalone process and communicates with the Oracle BI Server using ODBC over TCP/IP. It consists of components that are known as Answers, Delivers, and Interactive Dashboards.

See also [ODBC](#); [Oracle BI Server](#); [Oracle BI Presentation Catalog](#); [Oracle BI Presentation Services server](#).

### **Oracle BI Presentation Services server**

The Oracle BI Web server that exchanges information and data with the Oracle BI Server.

### **Oracle BI Publisher**

A J2EE application that provides enterprise-wide publishing services in Oracle Business Intelligence. It generates highly formatted, pixel-perfect reports.

See also [report](#).

### **Oracle BI Publisher report**

See [report](#).

### **Oracle BI repository**

A file that stores Oracle Business Intelligence metadata. The metadata defines logical schemas, physical schemas, physical-to-logical mappings, aggregate table navigation, and other constructs. The repository file has an extension of .rpd. Oracle BI repositories can be edited using the Oracle BI Administration Tool.

See also [metadata](#) and [Oracle BI Administration Tool](#).

### **Oracle BI Scheduler**

An extensible scheduling application for scheduling results to be delivered to users at specified times. It is the engine behind the Oracle BI Delivers feature.

See also [results](#).

### **Oracle BI Server**

A standalone process that maintains the logical data model that it provides to Presentation Services and other clients through ODBC. Metadata is maintained for the data model in a local proprietary file called the repository file. The Oracle BI Server processes user requests and queries underlying data sources.

**Oracle BI Server XML API**

Provides utilities to create a generic, XML-based representation of the Oracle BI repository metadata. This XML file version of the repository can be used to programmatically modify the metadata. The Oracle BI Server XML API objects correspond to metadata repository objects in an RPD file. These objects are not the same as Oracle BI Presentation Catalog XML objects.

**Oracle Business Intelligence Web Services**

See [Oracle Business Intelligence Session-Based Web Services](#) and [Oracle Business Intelligence Web Services for SOA](#).

**Oracle Business Intelligence Session-Based Web Services**

An API that implements SOAP. These Web services are designed for programmatic use, where a developer uses one Web service to invoke many different business intelligence objects. These Web services provide functionality on a wide range of Presentation Services operations. These Web services allow the developer to extract results from Oracle BI Presentation Services and deliver them to external applications, perform Presentation Services management functions, and execute Oracle Business Intelligence alerts (known as Intelligent Agents).

See also [Oracle Business Intelligence Web Services for SOA](#).

**Oracle Business Intelligence Web Services for SOA**

Contains three Web services, ExecuteAgent, ExecuteAnalysis, and ExecuteCondition, which are hosted by the bimiddleware J2EE application. These web services are designed to enable developers to use third-party Web services clients (for example, Oracle SOA Suite) to browse for and include business intelligence objects in service oriented architecture components.

See also [Oracle Business Intelligence Session-Based Web Services](#).

**Oracle Call Interface (OCI)**

A connection interface that the Oracle BI Server can use to connect to Oracle Database data sources. You should always use OCI when importing metadata from or connecting to an Oracle Database.

**Oracle Process Manager and Notification Server (OPMN)**

A process management tool that manages all System components (server processes), and supports both local and distributed process management, automatic process recycling and the communication of process state (up, down, starting, stopping). OPMN detects process unavailability and automatically restarts processes).

See also [System components](#).

**Oracle Scorecard and Strategy Management**

A performance management tool that lets you describe and communicate your business strategy. You can drive and assess your corporate strategy and performance from the top of your organization down, or from the bottom up.

**Oracle Technology Network (OTN)**

A repository of technical information about Oracle's products where you can search for articles, participate in discussions, ask the user community technical questions, and search for and download Oracle products and documentation.

### **parent-child hierarchy**

A hierarchy of members that all have the same type. All the dimension members of a parent-child hierarchy occur in a single data source. In a parent-child hierarchy, the inter-member relationships are parent-child relationships between dimension members.

See also [dimension](#).

### **parent-child relationship table**

A table with values that explicitly define the inter-member relationships in a parent-child hierarchy. Also called a closure table.

### **pass-through calculation**

A calculation that will not be computed by the Oracle BI Server but will instead be passed to another data source. Enables advanced users to leverage data source features and functions without the need to modify the Oracle BI repository.

### **permissions**

Specify which users can access an object, as well as limit how users can interact with an object. Examples of permissions include write, delete, and change permissions.

See [object properties](#).

### **perspective**

A category in your organization with which to associate initiatives, objectives, and KPIs in a scorecard. A perspective can represent a key stakeholder (such as a customer, employee, or shareholder/financial) or a key competency area (such as time, cost, or quality).

See also [initiative](#), [key performance indicator \(KPI\)](#), [objective](#), and [Oracle Scorecard and Strategy Management](#).

### **physical catalog**

An object in the Physical layer of a repository that groups different schemas. A catalog contains all the schemas (metadata) for a database object.

### **physical display folder**

Folders that organize objects in the Physical layer of an Oracle BI repository. They have no metadata meaning.

### **physical join**

Joins between tables in the Physical layer of an Oracle BI repository.

### **Physical layer**

A layer of the Oracle BI repository that contains objects that represent physical data constructs from back-end data sources. The Physical layer defines the objects and relationships available for writing physical queries. This layer encapsulates source dependencies to enable portability and federation.

### **physical schema**

An object in the Physical layer of an Oracle BI repository that represents a schema from a back-end database.

**physical table**

An object in the Physical layer of an Oracle BI repository, usually corresponding to a table that exists in a physical database.

See also [Physical layer](#).

**presentation hierarchy**

An object in the Presentation layer of an Oracle BI repository that provides an explicit way to expose the multidimensional model in Presentation Services and other clients. Presentation hierarchies expose analytic functionality such as member selection, custom member groups, and asymmetric queries. Users can create hierarchy-based queries using presentation hierarchies.

In Presentation Services, presentation hierarchies are displayed as hierarchical columns.

See also [hierarchical column](#) and [presentation level](#).

**Presentation layer**

Provides a way to present customized, secure, role-based views of a business model to users. It adds a level of abstraction over the Business Model and Mapping layer in the Oracle BI repository. The Presentation layer provides the view of the data seen by users who build analyses in Presentation Services and other client tools and applications.

See also [Business Model and Mapping layer](#).

**presentation level**

In the Oracle BI repository, a component of a presentation hierarchy that either rolls up or is rolled up from other levels. Presentation levels are displayed as levels within hierarchical columns in Presentation Services.

See also [hierarchy level](#) and [presentation hierarchy](#).

**Presentation Services**

See [Oracle BI Presentation Services](#).

**Presentation Services server**

See [Oracle BI Presentation Services server](#).

**presentation table**

An object in the Presentation layer of an Oracle BI repository that is used to organize columns into categories that make sense to the user community. A presentation table can contain columns from one or more logical tables. The names and object properties of the presentation tables are independent of the logical table properties.

**primary key**

A column (or set of columns) where each value is unique and identifies a single row of a table.

**process instance**

A unique process on an individual workstation that is associated with a BI instance.

See also [BI instance](#).

**prompt**

A type of filter that allows the content designer to build and specify data values or the end user to choose specific data values to provide a result sets for an individual analysis or multiple analyses included on a dashboard or dashboard page. A prompt expands or refines existing dashboard and analysis filters.

The types of prompts are column prompts, currency prompts, image prompts, and variable prompts.

See also [column prompt](#), [currency prompt](#), [filter](#), [image prompt](#), and [variable prompt](#).

**prompted link**

Captures the path to a dashboard page and a simplified presentation of the dashboard prompt.

See [bookmark link](#).

**query**

Contains the underlying SQL statements that are issued to the Oracle BI Server. You do not have to know a query language to use Oracle Business Intelligence.

**query cache**

A facility to store query results for use by other queries.

**ragged hierarchy**

See [unbalanced hierarchy](#).

**report**

The response returned to the user from the execution of a query created using Oracle BI Publisher. Reports can be formatted, presented on a dashboard page, saved in the Oracle BI Presentation Catalog, and shared with other users.

See also [analysis](#).

**repository**

See [Oracle BI repository](#).

**repository variable**

See [variable](#).

**results**

The output returned from the Oracle BI Server for an analysis.

See also [analysis](#).

**scorecard**

See [Oracle Scorecard and Strategy Management](#).

**selection step**

A choice of values that is applied after the query is aggregated that affects only the members displayed, not the resulting aggregate values. Along with filters, selection steps restrict the results for an analysis.

See also [analysis](#) and [filter](#).

**session variable**

See [variable](#).

**skip-level hierarchy**

A hierarchy where some members do not have a value for a particular ancestor level. For example, in the United States, the city of Washington in the District of Columbia does not belong to a state. The expectation is that users can still navigate from the country level (United States) to Washington and below without the need for a state.

See also [hierarchy](#).

**snowflake schema**

A dimensional schema where one or more of the dimensions are partially or completely normalized.

**SQL**

See [structured query language \(SQL\)](#).

**star schema**

A relational schema that allows dimensional analysis of historical information. Star schemas have one-to-many relationships between the logical dimension tables and the logical fact table. Each star consists of a single fact table joined to a set of denormalized dimension tables.

**strategy map**

A component of a scorecard that shows how the objectives that have been defined for a scorecard and the KPIs that measure their progress are aligned by perspectives. It also shows cause and effect relationships.

See also [Oracle Scorecard and Strategy Management](#).

**strategy tree**

A component of a scorecard that shows an objective and its supporting child objectives and KPIs hierarchically in a tree diagram.

See also [Oracle Scorecard and Strategy Management](#).

**structured query language (SQL)**

A standard programming language for querying and modifying data. Oracle Business Intelligence supports standard SQL-92 with several value-added proprietary extensions.

See also [Logical SQL](#).

**subject area**

In an Oracle BI repository, an object in the Presentation layer that organizes and presents data about a business model. It is the highest-level object in the Presentation layer and represents the view of the data that users see in Presentation Services. Oracle BI repository subject areas contain presentation tables, presentation columns, and presentation hierarchies.

In Presentation Services, subject areas contain folders, measure columns, attribute columns, hierarchical columns, and levels.

### **System components**

Server processes (not Java applications) that are managed by the Oracle Process Manager and Notification server (OPMN).

See also [Oracle Process Manager and Notification Server \(OPMN\)](#).

### **transformation**

Work that is performed on data when moving from a database to another location (sometimes another database). Some transformations are typically performed on data when it is moved from a transaction system to a data warehouse system.

### **unbalanced hierarchy**

A hierarchy where the leaves do not have the same depth. For example, an organization may choose to have data for the current month at the day level, data for the previous at the month level, and data for the previous five years at the quarter level.

See also [hierarchy](#).

### **value hierarchy**

See [parent-child hierarchy](#).

### **variable**

Objects in an Oracle BI repository that are used to streamline administrative tasks and dynamically modify metadata content to adjust to a changing data environment.

Variables are of the following types:

- Repository variables have a single value at any point in time. There are two types of repository variables: static and dynamic.
- Session variables are created and assigned a value when each user logs on. There are two types of session variables: system and nonsystem.

### **variable prompt**

Allows the user to select a value specified in the variable prompt to display on the dashboard. A variable prompt is not dependent upon column data, but allows you to manipulate, for example add or multiply, the column data on an analysis.

See also [prompt](#).

### **virtual physical table**

A physical table that is made from a stored procedure or a `SELECT` statement. Creating virtual tables can provide the Oracle BI Server and the underlying databases with the proper metadata to perform some advanced query requests.

### **vision statement**

A short statement in a scorecard that describes what your organization wants to become sometime in the future. For example, it might be to become the most successful business in the South America Polypropylene Market.

See also [mission statement](#) and [Oracle Scorecard and Strategy Management](#).

### **WebLogic domain**

Contains Java components that are configured to participate in the servicing of SOAP, HTTP, and other forms of requests.

**WebLogic Scripting Tool (WLST)**

A command-line scripting interface that enables you to configure, manage, and persist changes to WebLogic Server instances and domains and to monitor and manage server runtime events.

**XML API**

See [Oracle BI Server XML API](#).



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