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Edition

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

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Preface

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

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

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

This guide contains information about system administration tasks and includes topics on enabling and managing a secure environment.

Audience

This guide is intended for system administrators who are responsible for managing Oracle Business Intelligence security.

Documentation Accessibility

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Related Documents

For more information, see the following documents in 'Oracle Fusion Middleware' and 'Oracle Business Intelligence Enterprise Edition' 11g Release 1 (11.1.1) documentation sets:

- the Oracle Business Intelligence chapter in the *Oracle Fusion Middleware Release Notes*
- *Oracle Fusion Middleware Installation Guide for Oracle Business Intelligence*
- *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*
- *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 Application Security Guide*

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

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

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<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.

New Features in Oracle Business Intelligence Security

This preface describes changes in securing Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1). If you are upgrading to Oracle Business Intelligence from a previous release, read the following information carefully, because there are significant differences in features, tools, and procedures.

This preface contains the following topics:

- [New Features for Oracle BI EE 11g Release 1 \(11.1.1.5\)](#)
- [New Features for Oracle BI EE 11g Release 1 \(11.1.1.3\)](#)

New Features for Oracle BI EE 11g Release 1 (11.1.1.5)

This section contains the following topics:

- [New Features](#)
- [Upgrade Considerations](#)

New Features

There are no new security features in Oracle BI EE 11g Release 1 (11.1.1.5).

Upgrade Considerations

There are no new upgrade considerations for Oracle BI EE 11g Release 1 (11.1.1.5):

For information about upgrading to Oracle BI EE 11g, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

New Features for Oracle BI EE 11g Release 1 (11.1.1.3)

This section contains the following topics:

- [New Features](#)
- [Upgrade Considerations](#)

New Features

New security features in Oracle BI EE 11g Release 1 (11.1.1.3) include:

- [Integrated with Fusion Middleware Security Model](#)
- [Direct Access to LDAP Servers](#)

- [Simplified SSL Configuration](#)
- [Improved Model for Managing Administrative Privileges](#)
- [Repository Protection and Encryption](#)

Integrated with Fusion Middleware Security Model

All components of Oracle Business Intelligence are fully integrated with Oracle Fusion Middleware security architecture. Oracle Business Intelligence authenticates users using an Oracle WebLogic Server authentication provider against user information held in an identity store. User and group information is no longer held within the repository (RPD) and the upgrade process migrates repository users and groups to become users and groups in Oracle WebLogic Server embedded directory server, which is the default identity store. Oracle Business Intelligence defines its security policy in terms of Application roles held in a policy store and stores credentials in a credential store. For more information, see [Chapter 1, "Introduction to Security in Oracle Business Intelligence"](#).

Direct Access to LDAP Servers

Oracle BI Delivers now accesses information about users, their groups, and email addresses directly from the configured identity store. In many cases this completely removes the need to extract this information from your corporate directory into a database and configure SA Subject System Area to enable all Delivers functionality. SA System Subject Area is still supported for backward compatibility. For more information, see [Chapter 2, "Managing Security Using the Default Security Configuration"](#).

Simplified SSL Configuration

Configuring Oracle Business Intelligence to use SSL for communication between processes in the middle-tier has been greatly simplified. In addition, a trusted system identity, rather than the Administrator's identity, is used to establish trust between Oracle Business Intelligence processes. This allows an administrative user to change his or her password without any impact on middle-tier communications. For more information, see [Chapter 5, "SSL Configuration in Oracle Business Intelligence"](#) and [Chapter 2, "Managing Security Using the Default Security Configuration"](#).

Improved Model for Managing Administrative Privileges

In 11g any named user can be granted administrative permissions if desired. This compares to 10g where there was a single user with administrative permissions who was named Administrator. For more information, see [Appendix B, "Understanding the Default Security Configuration"](#).

Repository Protection and Encryption

The repository is protected by a password and the same password is used to encrypt its contents. For more information, see [Section B.6.2, "Planning to Upgrade a 10g Repository"](#).

Upgrade Considerations

The following list identifies what you must be aware of if your site is upgrading to Oracle BI EE 11g Release 1 (11.1.1.3):

- The Everyone Group has been replaced with the AuthenticatedUser role. For information, see [Appendix D, "Managing Security for Dashboards and Analyses"](#).

- If using the default authentication, any RPD initialization blocks containing the :USER system variable must be disabled or deleted. For more information, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

For more information about upgrading to Oracle BI EE 11g, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

Introduction to Security in Oracle Business Intelligence

This chapter introduces the Oracle Business Intelligence security model, discusses the tools used to configure security, and provides a detailed roadmap for configuring security in Oracle Business Intelligence.

Note: For a high-level roadmap for setting up security, see [Section 1.1, "High-level Roadmap for Setting Up Security In Oracle Business Intelligence"](#).

This chapter contains the following sections:

- [Section 1.1, "High-level Roadmap for Setting Up Security In Oracle Business Intelligence"](#)
- [Section 1.2, "Overview of Security in Oracle Business Intelligence"](#)
- [Section 1.3, "About Authentication"](#)
- [Section 1.4, "About Authorization"](#)
- [Section 1.5, "About Pre Configured Users, Groups, and Application Roles"](#)
- [Section 1.6, "What Tools Configure Security in Oracle Business Intelligence?"](#)
- [Section 1.7, "Example: Looking at the Installed Users, Groups, and Application Roles"](#)
- [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#)
- [Section 1.9, "Comparing the Oracle Business Intelligence 10g and 11g Security Models"](#)
- [Section 1.10, "Terminology"](#)

1.1 High-level Roadmap for Setting Up Security In Oracle Business Intelligence

To set up security in Oracle Business Intelligence, you must do the following:

1. Read the rest of this chapter 'Introduction to Security in Oracle Business Intelligence' to get an overview of security concepts, tools, and terminology.

2. Learn about the default set of Users, Groups, and Application roles by reading the summary in [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#).
3. Decide which authentication provider to use to authenticate users.
4. Set up the required users and groups.
5. Set up the required Application roles.
6. Assign each group to an appropriate Application role.
7. Fine tune the permissions that users and groups have in the Oracle BI repository (that is, the RPD file).
8. Fine tune the permissions that users and groups have in the Oracle BI Presentation Catalog.
9. If required, configure Single Sign-On (SSO).
10. If required, configure Secure Sockets Layer (SSL).

For a detailed list of setup steps, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

1.2 Overview of Security in Oracle Business Intelligence

Oracle Business Intelligence 11g is tightly integrated with the Oracle Fusion Middleware Security architecture and delegates core security functionality to components of that architecture. Specifically, any Oracle Business Intelligence installation makes use of the following types of security providers:

- An **authentication provider** that knows how to access information about the users and groups accessible to Oracle Business Intelligence and is responsible for authenticating users.
- A **policy store provider** that provides access to Application roles and Application Policies, which forms a core part of the security policy and determines what users can and cannot see and do in Oracle Business Intelligence.
- A **credential store provider** that is responsible for storing and providing access to credentials required by Oracle Business Intelligence.

By default, an Oracle Business Intelligence installation is configured with an authentication provider that uses the Oracle WebLogic Server embedded LDAP server for user and group information. The Oracle Business Intelligence default policy store provider and credential store provider store Credentials, Application roles and Application Policies in files in the domain.

After installing Oracle Business Intelligence you can reconfigure the domain to use alternative security providers, if desired. For example, you might want to reconfigure your installation to use an Oracle Internet Directory, Oracle Virtual Directory, Microsoft Active Directory, or another LDAP server for authentication. You might also decide to reconfigure your installation to use Oracle Internet Directory, rather than files, to store Credentials, Application roles, and Application Policies.

Several Oracle Business Intelligence legacy authentication options are still supported for backward compatibility. The best practice is to perform authentication and authorization using an identity store and authentication provider via the default security model described in this chapter. However, there are certain scenarios where this is not possible or where certain aspects of the legacy approach to authentication and authorization are required. Typically the use of these alternative methods requires

that your user population and groups are not held in the Identity store referenced by the authentication provider configured in the Oracle WebLogic domain. Consequently, when using alternative authentication methods, several sections of this chapter are not relevant. Instead, refer to [Appendix A, "Alternative Security Administration Options"](#). Please note that Application roles described in this chapter are still used with alternative authentication and authorization mechanisms. Also note that the authentication provider configured in the Oracle WebLogic domain is always used by the BI System User, even when using alternative methods for other users.

1.3 About Authentication

Each Oracle Business Intelligence 11g installation has an associated Oracle WebLogic Server domain. Oracle Business Intelligence delegates user authentication to the first authentication provider configured for that domain.

The default authentication provider accesses user and group information stored in the LDAP server embedded in the Oracle Business Intelligence's Oracle WebLogic Server domain. The Oracle WebLogic Server Administration Console can be used to create and manage users and groups in the embedded LDAP server.

You might choose to configure an authentication provider for an alternative directory. In this case, Oracle WebLogic Server Administration Console enables you to view the users and groups in your directory. However, you need to continue to use the appropriate tools to make any modifications to the directory. For example, if you reconfigure Oracle Business Intelligence to use OID, you can view users and groups in Oracle WebLogic Server Administration Console but you must manage them in OID Console.

For more information about managing users and groups in the embedded LDAP server, see [Chapter 2, "Managing Security Using the Default Security Configuration"](#).

For more information about Oracle WebLogic Server domains and authentication providers, see *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

You can continue to use the external table authentication method, instead of the default authentication provided with this release. For more information, see [Appendix A.1.2, "Setting Up External Table Authentication"](#).

1.4 About Authorization

After a user has been authenticated, the next critical aspect of security is ensuring that the user can do and see what they are authorized to do and see. Authorization for Oracle Business Intelligence Release 11g is controlled by a security policy defined in terms of Applications Roles.

1.4.1 About Application Roles

Instead of defining the security policy in terms of users in groups in a directory server, Oracle Business Intelligence uses a role-based access control model. Security is defined in terms of Application roles that are assigned to directory server groups and users. For example, the default Application roles BIAAdministrator, BICustomer, and BIAuthor.

Application roles represent a functional role that a user has, which gives that user the privileges required to perform that role. For example, having the Sales Analyst Application role might grant a user access to view, edit and create reports on a company's sales pipeline.

This indirection between Application roles and directory server users and groups allows the administrator for Oracle Business Intelligence to define the Application roles and policies without creating additional users or groups in the corporate LDAP server. Instead, the administrator defines Application roles that meet the authorization requirements and assigns those roles to pre-existing users and groups in the corporate LDAP server.

In addition, the indirection afforded by Application roles allows the artifacts of a business intelligence system to be easily moved between development, test and production environments. No change to the security policy is needed and all that is required is to assign the Application roles to the users and groups available in the target environment.

The Figure 1-1 shows an example using the default set of users, groups, and Application roles.

Figure 1-1 Example Users, Groups, Application Roles, and Permissions

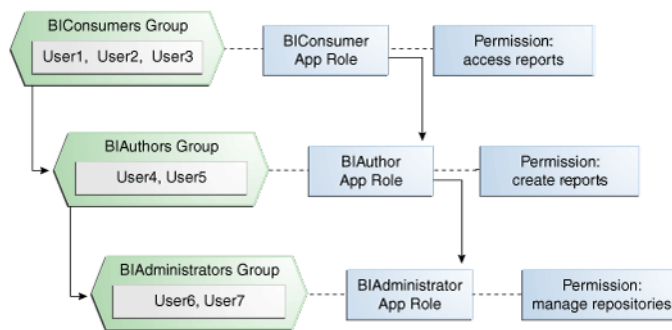


Figure 1-1 shows the following:

- The group named 'BIConsumers' contains User1, User2, and User3. Users in the group 'BIConsumers' are assigned the Application role 'BIConsumer', which enables the users to view reports.
- The group named 'BIAuthors' contains User4 and User5. Users in the group 'BIAuthors' are assigned the Application role 'BIAuthor', which enables the users to create reports.
- The group named 'BIAdministrators' contains User6 and User7. Users in the group 'BIAdministrators' are assigned the Application role 'BIAdministrator', which enables the users to manage responsibilities.

1.4.2 About The Security Policy

In Oracle Business Intelligence Release 11g, the security policy definition is split across the following components:

- Presentation Services Catalog – This defines which catalog objects and Oracle BI Presentation Services functionality can be accessed by which users with specific Application roles. Access to functionality is defined in the Managing Privileges page in terms of Oracle BI Presentation Catalog privileges and access to Oracle BI Presentation Catalog objects is defined in the Permission dialog.
- Repository – This defines which metadata items within the repository can be accessed by which Application roles and users. The Oracle BI Administration Tool is used to define this security policy.

- Policy Store – This defines which Oracle BI Server, BI Publisher, and Real Time Decisions functionality can be accessed by given users or users with given Application roles. In the default Oracle Business Intelligence configuration, the policy store is managed using Oracle Enterprise Manager Fusion Middleware Control. For more information about the policy store, see *Oracle Fusion Middleware Application Security Guide*.

To find out about using these components, see [Section 1.7, "Example: Looking at the Installed Users, Groups, and Application Roles"](#).

1.5 About Pre Configured Users, Groups, and Application Roles

When you install Oracle Business Intelligence, there are a number of pre configured Users, Groups, and Application roles that you can use to deploy Oracle Business Intelligence (for more information, see [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#)).

1.6 What Tools Configure Security in Oracle Business Intelligence?

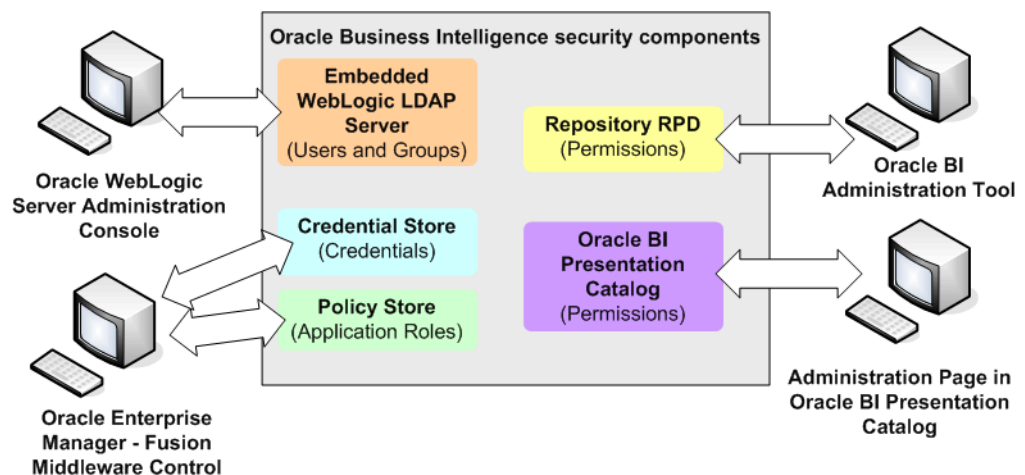
To configure security in Oracle Business Intelligence, you use the following tools:

- "Oracle WebLogic Server Administration Console"
- "Oracle Fusion Middleware Control"
- "Oracle BI Administration Tool"
- "Administration Page in Oracle BI Analytics"

Note: To see an example of using the Oracle Business Intelligence tools to configure the installed Users, Groups, and Application roles, see [Section 2.2, "An Example Security Setup Using the Default Groups and Application Roles"](#).

The figure below summarizes the tools used to configure security in a default installation Oracle Business Intelligence using the embedded WebLogic LDAP Server.

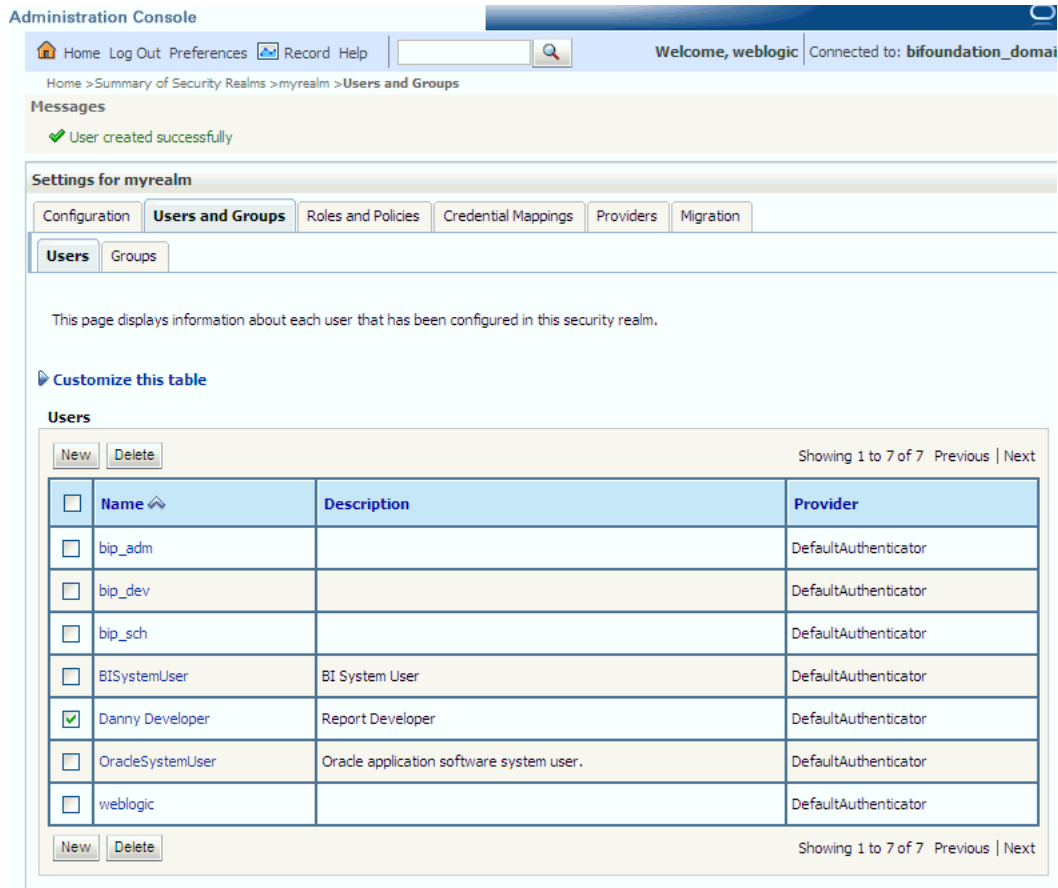
Figure 1–2 Summary of Tools for Configuring Security in a Default Installation



1.6.1 Oracle WebLogic Server Administration Console

You use Oracle WebLogic Server Administration Console to manage the embedded directory server that is used to authenticate users and groups.

The example screen shot below shows the **users and groups\Users** page in Oracle WebLogic Server Administration Console displaying a list of users in Oracle Business Intelligence.

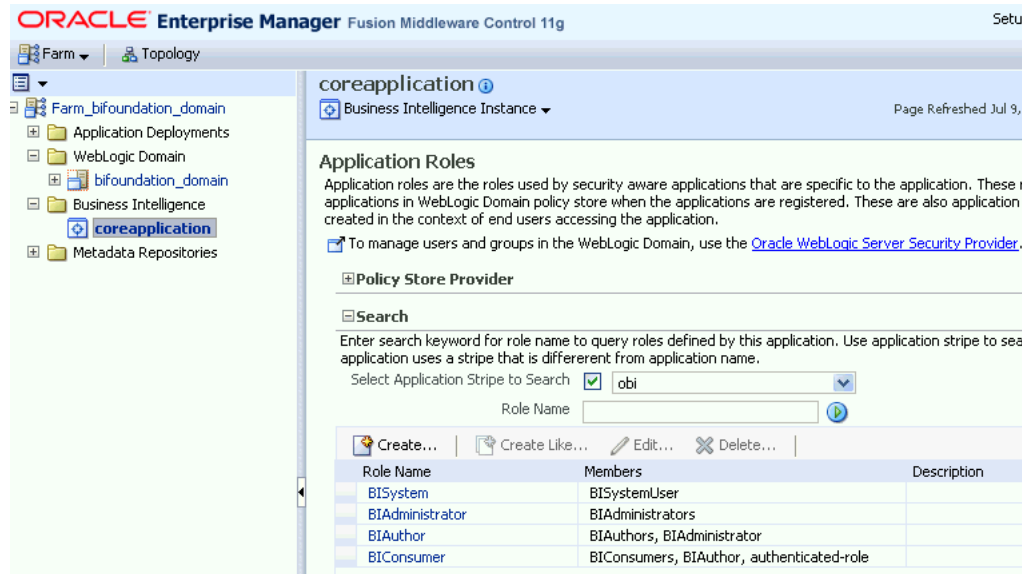


Note: If you use Oracle Internet Directory as the authentication provider instead of the default the embedded WebLogic LDAP Server, then you use OID Console to manage users and groups.

1.6.2 Oracle Fusion Middleware Control

You use Oracle Fusion Middleware Control to create and manage the Application roles and Application Policies that control access to Oracle Business Intelligence resources.

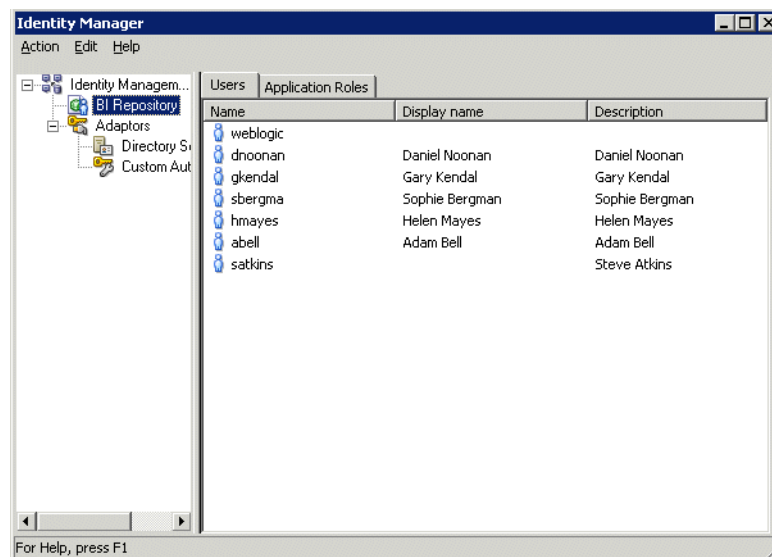
The example screen shot below shows the **Application roles** page in Fusion Middleware Control displaying the default Application roles named BIAdministrator, BIAuthor, and BIConsumer.



1.6.3 Oracle BI Administration Tool

You use the Oracle BI Administration Tool to configure privileges in the metadata repository (that is, the RPD file).

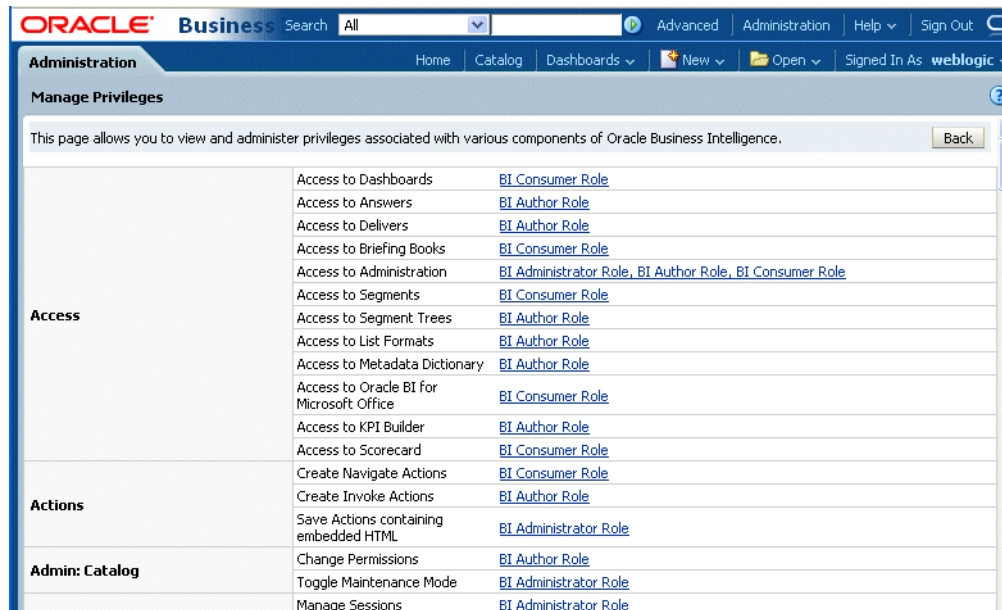
The screenshot below shows the Identity Manager dialog, which enables you to manage users and Application roles.



1.6.4 Administration Page in Oracle BI Analytics

You use the Administration Page in Oracle BI Analytics to configure privileges for users.

The screenshot below shows the Manage Privileges dialog, which enables you to manage privileges and associated Application roles.



1.7 Example: Looking at the Installed Users, Groups, and Application Roles

This example takes a closer look at the installed Users, Groups, and Application roles using the Oracle Business Intelligence tools. Follow the steps in this section to learn how to use the Oracle Business Intelligence tools to configure security options.

1.7.1 About Using Oracle WebLogic Server Administration Console

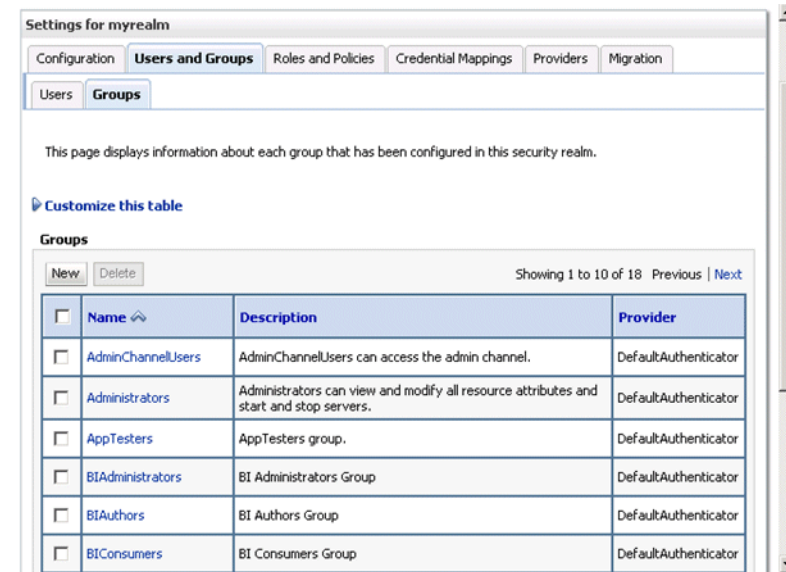
To display installed objects in Oracle WebLogic Server Administration Console:

1. Log in to Oracle WebLogic Server Administration Console.
2. In the Domain Structure tab at the left-hand side, select the **Security Realms** link.
3. In the list of Realms, select the realm that you are configuring.

For example, myrealm.

4. Use the tabs and options on the Settings for <Realm name> dialog to configure users and groups.

For example, display the users and groups tab to edit users and groups. In the example screenshot below, you can see the installed groups named BIAdministrators, BIAuthors, and BIConsumers.

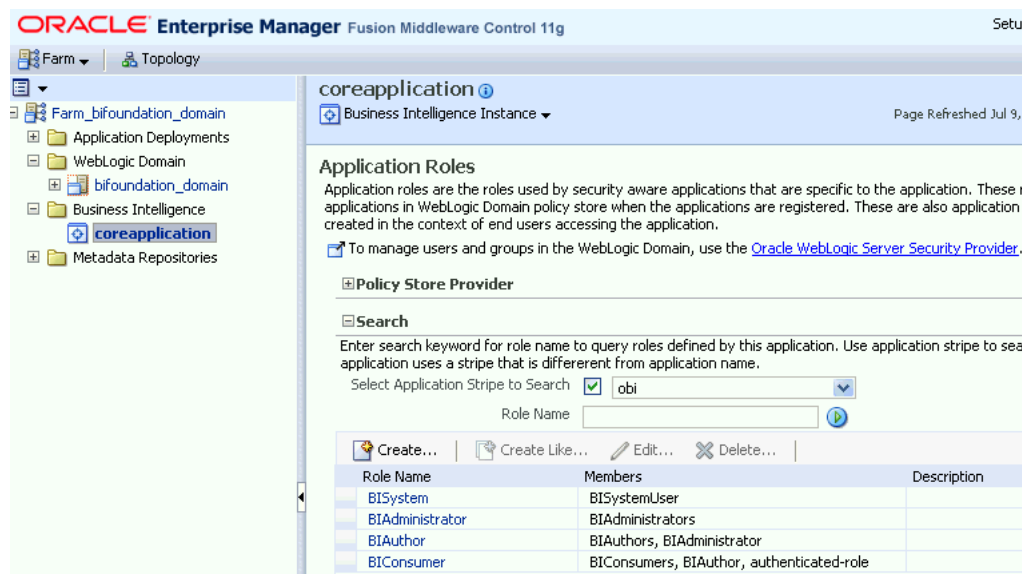


1.7.2 About Using Fusion Middleware Control

To display installed objects in Fusion Middleware Control:

1. Log in to Fusion Middleware Control.
2. From the Home page, select the Business Intelligence link.
3. Select the coreapplication link.
4. Display the Security tab.
5. Select the **Configure and Manage Application Roles** link.

In the example screenshot below, you can see the installed Application roles BIAuthor, BIAdministrator, and BIConsumer.



1.7.3 About Using the Oracle BI Administration Tool

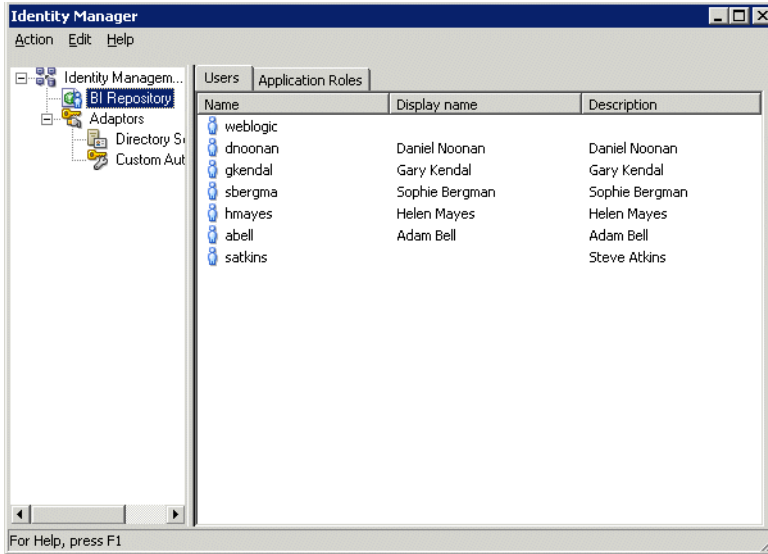
To display installed objects in the Administration Tool:

1. Log in to the Administration Tool.

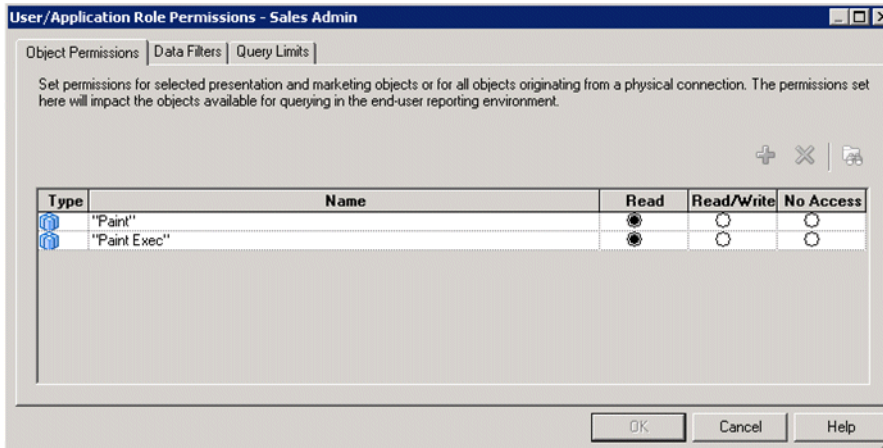
Note: If you log in to the Administration Tool in online mode, then you can view all users from the WebLogic Server. If you log in to the Administration Tool in offline mode, then you can only view users that are stored in the repository.

2. Choose Manage, then Identity to display the Identity Manager dialog.

In the example screenshot below you can see the installed Application roles BIAAdministrator, BIAuthor, and BIConsumer.

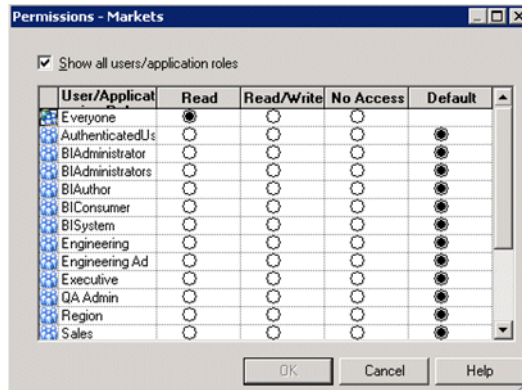


If you double-click the Application role named 'Sales Admin' to display the Application role <Name> dialog, then click Permissions, you can use the Object Permissions tab to set (in the repository) the Read and Write permissions for that Application role, in relation to objects and folders in the Oracle BI Presentation Catalog.



3. Close Identity Manager.
4. In the Presentation pane, expand the Paint folder, then right-click Markets to display the Presentation Table <Table name> dialog.
5. Click Permissions to display the Permissions <Table name> dialog.

In the example screenshot below, you can see the installed Application roles BIAdministrator, BIAuthor, and BIConsumer, and the radio buttons Read, Read/Write, No Access, and Default that are used to set the permissions for the Application roles.

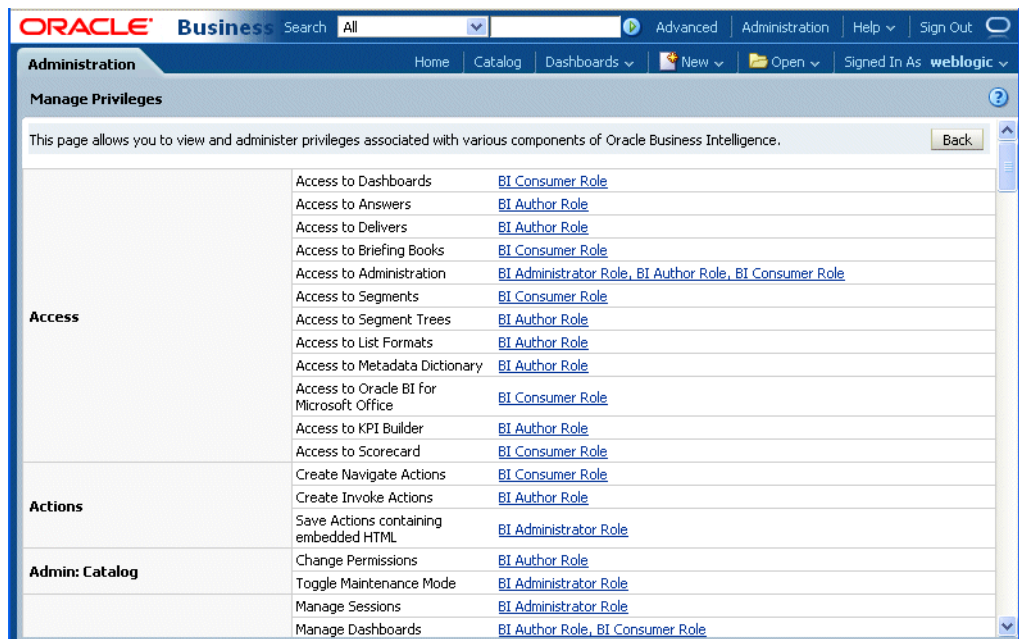


1.7.4 About Using Administration Page in Oracle BI Presentation Catalog

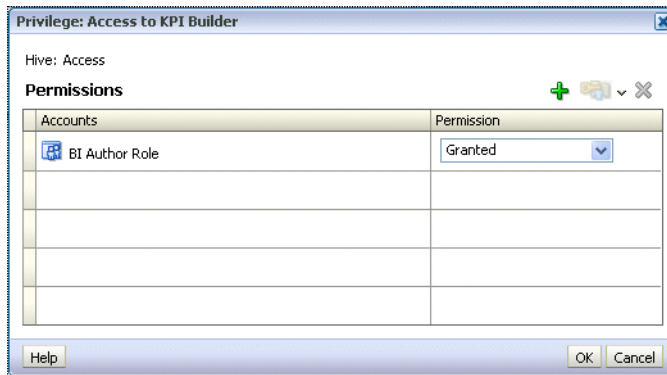
To display installed objects in Administration Page in Oracle BI Presentation Catalog:

1. Log in to BI EE with Administrator privileges.
2. Select the **Administration** link to display the Administration page.
3. Select the **Manage Privileges** link.

In the example screenshot below, you can see the installed Application roles BIAdministrator, BIAuthor, and BIConsumer listed against each of the privileges that they have been assigned.

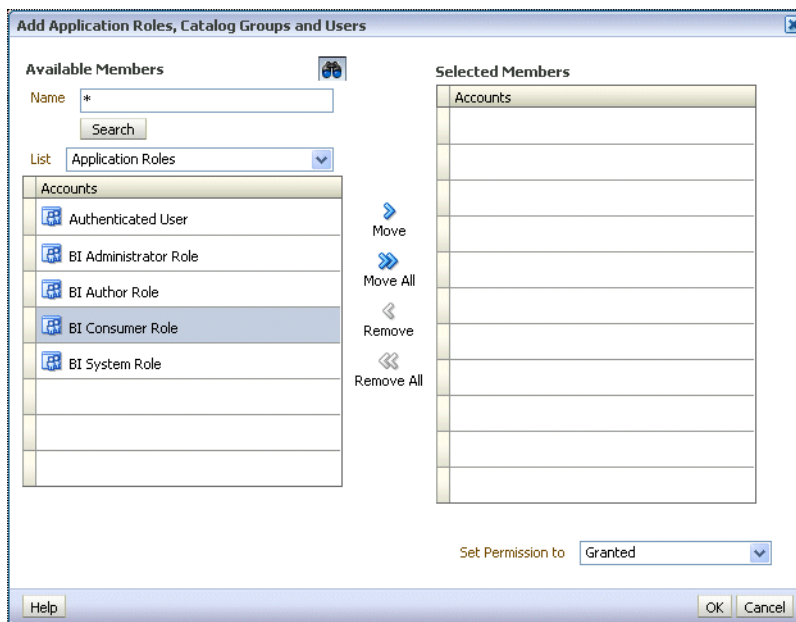


4. Select the BIAuthor link in the 'Access to KPI Builder' row, to display the Privilege <Privilege name> dialog.



- Click the Add users/roles icon (+) to display the Add Application roles, Catalog Groups, and Users dialog.

In the example screenshot below you can see the installed Application roles BIAdministrator, BIAuthor, and BIConsumer, which can be assigned to this privilege.



1.8 Detailed List of Steps for Setting Up Security In Oracle Business Intelligence

This section explains how to set up security in a new installation of Oracle Business Intelligence. Some tasks are mandatory, some are optional, and some are conditionally required depending on the configuration choices that you make. You might also refer to this section if you are maintaining an existing installation of Oracle Business Intelligence.

After you have installed Oracle Business Intelligence, you typically evaluate the product using the default pre configured Users, Groups, and Application roles. Later, you typically create and develop your own Users, Groups, and Application roles iteratively to meet your business requirements.

After you have installed Oracle Business Intelligence, Oracle recommends that you complete these tasks in the order listed below.

1. Read this chapter 'Introduction to Security in Oracle Business Intelligence' to get an overview of security concepts, tools, and terminology. In particular, you should familiarize yourself with the Oracle Business Intelligence components and tools for configuring security by reading [Section 1.6, "What Tools Configure Security in Oracle Business Intelligence?"](#)
2. Learn about the default set of Users, Groups, and Application roles by reading the summary in [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#).
3. Decide which authentication provider to use to authenticate users, as follows:
 - If you want to use the default embedded WebLogic LDAP Server, then follow the tasks listed in Step 4 below.
 - If you want to reconfigure Oracle Business Intelligence to use a commercial authentication provider such as Oracle Internet Directory, then follow the tasks listed in Step 5 below.

Tip: Oracle does not recommend using WebLogic Embedded LDAP Server in an environment with more than 1000 users. If you require a production environment with high-availability and scalability, then you should use a commercial directory server such as Oracle Internet Directory (OID) or a third-party directory server.

For information about where to find the full list of supported authentication providers, see ["System Requirements and Certification"](#).

4. (Embedded WebLogic LDAP Server-specific) If you are using the default embedded WebLogic LDAP Server as the authentication provider, do the following:

Tip: The simplest way to set up security is to create users and assign them to the default groups (that is, BIConsumers, BIAuthors, and BIAdministrators). For detailed steps, see [Section 2.3.1.1, "Assigning a User to a Default Group"](#).

If you want to build a more complex security model using your own groups, create new groups and/or new Application roles, then assign your users to the new groups. For detailed steps, see [Section 2.3.1.2, "Assigning a User to a New Group and a New Application Role"](#).

Note: If you have upgraded to this release from 10g, and want to authenticate users using the authentication provider configured for the Oracle WebLogic domain, you should review any RPD initialization blocks that set the USER system session variable. Setting the USER session variable is an alternative authentication mechanism that will be used to authenticate users attempting to access the BI Server if they fail authentication using the authentication provider configured for the Oracle WebLogic domain. For more information about working with RPDs, see [Appendix A.1.1.2, "Defining a USER Session Variable for LDAP Authentication"](#) and *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

- a. Set up the users that you want to deploy as described in [Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server"](#).
For example, if you want to deploy Oracle Business Intelligence to 20 people who need to view analyses, you might create 20 users.
 - b. If you want to assign users to the default groups, (that is, BICongsumers, BIAuthors, and BIAdministrators), then follow the steps in [Section 2.3.1.1, "Assigning a User to a Default Group"](#).
For example, you might assign a set of users to the group named BICongsumers, a set of users to the group named BIAuthors, and a set of users to the group named BIAdministrators.
 - c. If you want to create new groups, set up the groups that you want to use as described in [Section 2.3.4, "Creating a Group in the Embedded WebLogic LDAP Server"](#).
For example, you might use the pre configured group named BICongsumers, or you might create your own group with similar privileges.
 - d. Assign your users to appropriate groups, as described in [Section 2.3.5, "Assigning a User to a Group in the Embedded WebLogic LDAP Server"](#).
For example, you might assign users to the pre configured group named BICongsumers, or you might assign users to a new group that you have created.
5. (Oracle Internet Directory (OID) specific) If you are using OID as the authentication provider, do the following:
 - a. Configure OID as the authentication provider as described in [Section 3.2.1, "High Level Steps for Configuring Alternative Authentication Providers"](#).
 - b. (Optional) Configure OID as the Credential Store and Policy Store Provider as described in [Section 3.3, "Configuring OID as the Policy Store and Credential Store"](#).
 - c. Use your authentication provider tools (for example, OID Console) to create your users and groups as required.
 6. Set up the Application roles that you want to deploy as described in [Section 2.4.2, "Creating Application Roles Using Fusion Middleware Control"](#).
For example, you might use the default Application roles named BICongsumer, BIAuthor, and BIAdministrator, or you might create your own Application roles.
 7. (Optional) If you do not want to use the pre configured Application Policies, set up the Application Policies that you want to deploy as described in [Section 2.4.3, "Creating Application Policies Using Fusion Middleware Control"](#).
For example, you might use the default Application Policies that are used by the default Application roles named BICongsumer, BIAuthor, and BIAdministrator, or you might create your own Application Policies.
 8. Assign each group to an appropriate Application role, as follows:
 - If you are using the default groups (that is, BICongsumers, BIAuthors, and BIAdministrators) that are installed with the default embedded WebLogic LDAP Server, then these groups are assigned to an appropriate Application role (that is, BICongsumer, BIAuthor, or BIAdministrator). No additional steps are required to assign the default groups to Application roles.

If you have created new groups, you must assign the new groups to appropriate Application roles as described in [Section 2.4.2.3, "Assigning a Group to an Application Role"](#).

- If you are using a commercial Authenticator Provider such as Oracle Internet Directory, then you must assign the groups to appropriate Application roles as described in [Section 2.4.2.3, "Assigning a Group to an Application Role"](#).
9. If you want to fine tune the permissions that users and groups have in the Oracle BI repository (that is, the RPD file), use the Administration Tool to update the permissions as described in [Section 2.5, "Managing Metadata Repository Privileges Using the Oracle BI Administration Tool"](#).

For example, you might want to enable an Application role called BISuperConsumer to create analyses, so you use the Administration Tool to change the 'Read' access to a subject area to 'Read/Write' access.

Note: If you are using the default SampleAppLite.rpd file in a production system, you should change the password from its installed value, using the Administration Tool (for more information about the SampleAppLite RPD file, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*).

10. If you want to fine tune the permissions that users and groups have in the Oracle BI Presentation Catalog, use the Administration Page in Analytics to change the permissions as described in [Section 2.6, "Managing Presentation Services Catalog Privileges Using Application Roles"](#).

For example, you might want to prevent an Application role called BISuperConsumer from viewing scorecards, so you use Administration Page in Analytics to change the Scorecard\View Scorecard privileges for BISuperConsumer from 'Granted' to 'Denied'.

11. If you want to deploy Single Sign-On, follow the steps in [Chapter 4, "Enabling SSO Authentication"](#).

Note: If you do not want to deploy Oracle Business Intelligence in a SSO environment, then no additional configuration steps are required to deploy the default configuration.

12. If you want to deploy secure sockets layer (SSL), follow the steps in [Chapter 5, "SSL Configuration in Oracle Business Intelligence"](#).

Oracle Business Intelligence is installed with SSL turned off. If you want to deploy Oracle Business Intelligence in an SSL environment, follow the steps in [Chapter 5, "SSL Configuration in Oracle Business Intelligence"](#).

Note: If you do not want to deploy Oracle Business Intelligence in an SSL environment, then no additional configuration steps are required to deploy the default configuration.

1.9 Comparing the Oracle Business Intelligence 10g and 11g Security Models

The Release 10g and Release 11g security models differ in the following ways:

- Defining users and groups - In Oracle Business Intelligence Release 10g users and groups could be defined within a repository file using the Oracle BI Administration Tool. In Oracle Business Intelligence Release 11g users and groups can no longer be defined within a repository. The Oracle Business Intelligence

Enterprise Edition Upgrade Assistant migrates users and groups from a Release 10g repository into the embedded LDAP server in a Release 11g installation.

- Defining security policies – In Oracle Business Intelligence Release 10g security policies in the Oracle BI Presentation Catalog and repository could be defined to reference groups within a directory. In Oracle Business Intelligence Release 11g a level of indirection is introduced whereby security policies are defined in terms of Application roles, which are in turn assigned to users and groups in a directory. This indirection allows an Oracle Business Intelligence Release 11g system to be deployed without changes to the corporate directory and eases movement of artifacts between development, test and production environments.
- Use of the Administrator user – In an Oracle Business Intelligence Release 10g installation, a special user named Administrator has full administrative permissions and is also used to establish trust between processes within that installation. In Oracle Business Intelligence Release 11g there is no special significance to the name Administrator and there can be one or more users who are authorized to undertake different sets of administrative functions. In Oracle Business Intelligence Release 11g the identity used to establish trust between processes in an installation is configurable and independent.
- Repository encryption – in Oracle Business Intelligence Release 10g certain sensitive elements within a repository are encrypted. In Oracle Business Intelligence Release 11g the entire repository is encrypted using a key derived from a user supplied password.

Caution: A Release 11g repository can only be opened with the password. There is no mechanism for recovering a lost password.

The following aspects of the Oracle Business Intelligence Release 10g security model remain in Release 11g:

- Oracle BI Server Initialization Blocks – Oracle BI Server in Release 11g continues to support the use of initialization blocks for authentication and authorization. In Release 10g Oracle BI Server falls back to use initialization blocks if a matching user cannot be found in the repository. In Release 11g Oracle Business Intelligence falls back to use initialization blocks if the user cannot be authenticated by the installation's configured authentication provider.
- Presentation Services Catalog Groups – Oracle Business Intelligence Release 11g continues to support the definition of Catalog groups within the Presentation Services Catalog. These groups are only visible within Oracle BI Presentation Services. Oracle recommends that Oracle BI Presentation Catalog groups be used for backward compatibility only and that Application roles be used instead for new installations.
- SA System Subject Area – Oracle Business Intelligence Release 11g supports the use of SA System Subject Area, in combination with Oracle BI Server initialization blocks, to access user, group and profile information stored in database tables.

For more information, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

1.10 Terminology

The following terms are used throughout this guide:

Application Policy

Oracle Business Intelligence permissions are granted by its Application roles. In the default security configuration, each role conveys a predefined set of permissions. An Application Policy is a collection of Java EE and JAAS policies that are applicable to a specific application. The Application Policy is the mechanism that defines the permissions each Application role grants. Permission grants are managed in the Application Policy corresponding to an Application role.

Application Role

Represents a role a user has when using Oracle Business Intelligence. Is also the container used by Oracle Business Intelligence to grant permissions to members of a role. Application roles are managed in the policy store provider.

Authentication

The process of verifying identity by confirming the credentials presented during logon.

Authentication Provider

A security provider used to access user and group information and is responsible for authenticating users. Oracle Business Intelligence default authentication provider is Oracle WebLogic Server embedded directory server and is named DefaultAuthenticator.

Authorization

The process of granting an authenticated user access to a resource in accordance to their assigned privileges.

Catalog Groups

A Catalog group is defined locally in Oracle BI Presentation Services and is used to grant privileges in the Oracle Business Intelligence user interface in addition to granting Oracle BI Presentation Catalog permissions.

Credential Store

An Oracle Business Intelligence credential store is a file used to securely store system credentials used by the software components. This file is automatically replicated across all machines in the installation.

Credential Store Provider

The credential store is used to store and manage credentials securely that are used internally between Oracle Business Intelligence components. For example, SSL certificates are stored here.

Encryption

A process that enables confidential communication by converting plaintext information (data) to unreadable text which can be read only with the use of a key. Secure Sockets Layer (SSL) enables secure communication over TCP/IP networks, such as Web applications communicating through the Internet.

Globally Unique Identifier (GUID)

A GUID is typically a 32-character hexadecimal string that is system-generated to form a unique identifier for an object. In Oracle Business Intelligence a GUID is used to refer to individual users and groups.

Impersonation

Impersonation is a feature used by Oracle Business Intelligence components to establish a session on behalf of a user without employing the user's password. For example, impersonation is used when Oracle BI Scheduler executes an Agent.

Oracle WebLogic Server Domain

A logically related group of Oracle WebLogic Server resources that includes an instance known as the Administration Server. Domain resources are configured and managed in the Oracle WebLogic Server Administration Console. During installation an Oracle WebLogic Server domain is created and Oracle Business Intelligence is installed into that domain. For more information, see [Section B.2.2, "Oracle WebLogic Server Domain"](#).

Identity Store

An **identity store** contains user name, password, and group membership information. In Oracle Business Intelligence, the identity store is typically a directory server and is what an authentication provider accesses during the authentication process. For example, when a user name and password combination is entered at log in, the authentication provider searches the identity store to verify the credentials provided. Oracle Business Intelligence can be re configured to use alternative identity stores. For a complete list, see *System Requirements and Supported Platforms for Oracle Fusion Middleware 11gR1*. For more information, see [System Requirements and Certification](#).

Policy Store Provider

The policy store is the repository of system and application-specific policies. It holds the mapping definitions between the default Oracle Business Intelligence Application roles, permissions, users and groups all configured as part of installation. Oracle Business Intelligence permissions are granted by assigning users and groups from the identity store to Application roles and permission grants located in the policy store.

Policy Store

Contains the definition of Application roles, Application Policies, and the members assigned (Users, Groups, and Applications Roles) to Application roles. The default policy store is a file that is automatically replicated across all machines in an Oracle Business Intelligence installation. A policy store can be file-based or LDAP-based.

Presentation Services Catalog Permissions

These rights grant Presentation Services object level access. They are stored in the Presentation Services Catalog and managed by Oracle BI Presentation Server.

Presentation Services Catalog Privileges

These rights grant access to Oracle BI Presentation Catalog features. They are stored in the Presentation Services Catalog and managed by Oracle BI Presentation Server. These privileges are either granted or denied.

Secure Sockets Layer (SSL)

Provides secure communication links. Depending upon the options selected, SSL might provide a combination of encryption, authentication, and repudiation. For HTTP based links the secured protocol is known as HTTPS.

Security Policy

The security policy defines the collective group of access rights to Oracle Business Intelligence resources that an individual user or a particular Application role have been granted. Where the access rights are controlled is determined by which Oracle Business Intelligence component is responsible for managing the resource being requested. A user's security policy is the combination of permission and privilege grants governed by the following elements:

- Presentation Services Catalog: defines which Oracle BI Presentation Catalog objects and Oracle BI Presentation Services functionality can be accessed by users. Access to this functionality is managed in Oracle Business Intelligence user

interface. These permissions and privileges can be granted to individual users or by membership in corresponding Application roles.

- **Repository File:** defines access to the specified metadata within the repository file. Access to this functionality is managed in the Oracle BI Administration Tool. These permissions and privileges can be granted to individual users or by membership in corresponding Application roles.
- **Policy Store:** defines which Oracle Business Intelligence, Oracle BI Publisher, and Real Time Decisions functionality can be accessed. Access to this functionality is managed in Oracle Enterprise Manager Fusion Middleware Control. These permissions and privileges can be granted to individual users or by membership in corresponding Application roles.

Security Realm

During installation an Oracle WebLogic Server domain is created and Oracle Business Intelligence is installed into that domain. Security for an Oracle WebLogic Server domain is managed in its **security realm**. A security realm acts as a scoping mechanism. Each security realm consists of a set of configured security providers, users, groups, security roles, and security policies. Only one security realm can be active for the domain. Oracle Business Intelligence authentication is performed by the authentication provider configured for the default security realm for the WebLogic Server domain in which it is installed. Oracle WebLogic Server Administration Console is the Administration Tool for managing an Oracle WebLogic Server domain.

Single Sign-On

A method of authorization enabling a user to authenticate once and gain access to multiple software application during a single browser session.

Users and Groups

A **user** is an entity that can be authenticated. A user can be a person, such as an application user, or a software entity, such as a client application. Every user is given a unique identifier within in the identity store.

Groups are organized collections of users that have something in common. A group is a static identifier that is assigned by a system administrator. Users organized into groups facilitate efficient security management. There are two types of groups: an LDAP group and a Catalog group. A *Catalog group* is used to support the existing user base in Presentation Services to grant privileges in the Oracle Business Intelligence user interface. Using Catalog groups is not considered a best practice and is available for backward compatibility in upgraded systems.

Managing Security Using the Default Security Configuration

This chapter explains how to deploy Oracle Business Intelligence using the default embedded WebLogic LDAP Server.

Note: For a detailed list of security setup steps, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

By deploying the default embedded WebLogic LDAP Server, you can use the preconfigured Users, Groups, and Application Roles. You can also develop your own Users, Groups, and Application Roles.

This chapter contains the following sections:

- [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#)
- [Section 2.2, "An Example Security Setup Using the Default Groups and Application Roles"](#)
- [Section 2.3, "Creating and Managing Users and Groups in the Embedded WebLogic LDAP Server"](#)
- [Section 2.4, "Creating and Managing Application Roles and Application Policies Using Fusion Middleware Control"](#)
- [Section 2.5, "Managing Metadata Repository Privileges Using the Oracle BI Administration Tool"](#)
- [Section 2.6, "Managing Presentation Services Catalog Privileges Using Application Roles"](#)
- [Section 2.7, "Enabling High Availability of the Default Embedded Oracle WebLogic Server LDAP Identity Store"](#)

You can migrate users (with their encrypted passwords), and groups from the default embedded WebLogic LDAP server into an alternative authentication provider (for example, OID, external tables, or another LDAP directory). For more information, see *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

2.1 Working with the Default Users, Groups, and Application Roles

When you install Oracle Business Intelligence, there are a number of preconfigured Users, Groups, and Application Roles that you can use to deploy Oracle Business Intelligence. For example, there is a user that is assigned to a BIAdministrators group

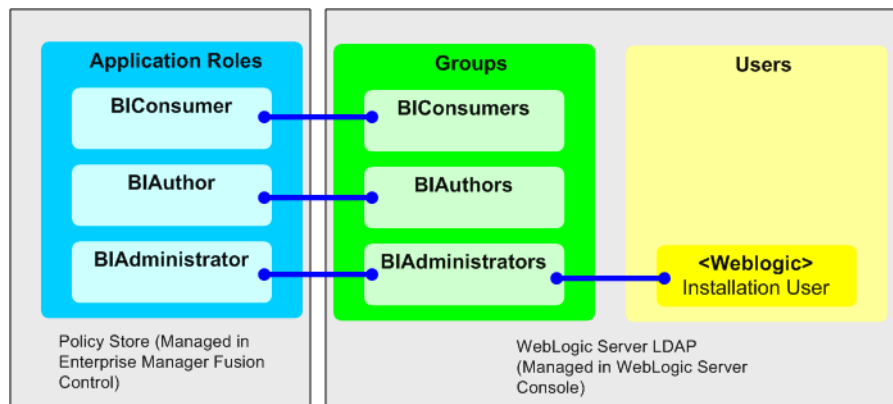
(with a name that is user-specified at installation time, for example Weblogic), a group named 'BIAdministrators', and an associated Application Role named 'BIAdministrator'. The default installed Users, Groups, and Application Roles are preconfigured to work together. For example, the installed BIConsumers group is assigned to the BIConsumer Application Role. For a detailed description of the default security configuration, refer to [Appendix B, "Understanding the Default Security Configuration"](#).

Caution: Oracle recommends that you do not modify the default Users, Groups, or Application Roles, unless explicitly advised to do so by Oracle Support. Oracle recommends that you only modify copies that you have made of the installed Groups and Application Roles.

The installed Application Roles are preconfigured with appropriate permissions and privileges to enable them to work with the installed Oracle BI Presentation Catalog, BI Repository (RPD), and Policy Store. For example, the Application Role named BIAuthor is preconfigured with permissions and privileges that are required to create dashboards, reports, actions, and so on.

The figure below shows the Users, Groups, and Application Roles that are installed and preconfigured.

Figure 2–1 Installed Application Roles, Groups, and Users



The following groups are available:

- BIConsumers (preconfigured with the BIConsumer Application Role).
- BIAuthors (preconfigured with the BIAuthor Application Role).
- BIAdministrators (preconfigured with the BIAdministrator Application Role).

The user that is specified at installation time (for example, Weblogic), is automatically assigned to the WebLogic Administrators group named 'BIAdministrators' and to the associated Application Role named 'BIAdministrator'. The user has permissions to log in to the Oracle Business Intelligence tools to create and administer other users.

Note: Groups are organized hierarchically, and inherit privileges from parent groups. In other words, the BIAdministrators group automatically inherits privileges from the BIAuthors and BIConsumers groups. Oracle recommends that you do not change this hierarchy.

You can use the installed groups and Application Roles to deploy security, and if required you can develop your own groups and Application Roles to meet your business needs. For example:

- If you want to enable an employee called Fred to create dashboards and reports, you might create a new user called 'Fred' and assign 'Fred' to the default BIAuthors group.
- If you want to enable user Fred to perform BIAuthors and BIAdministrator duties, you might create a new Application Role called 'BIManager', which has both BIAuthors privileges and BIAdministrators privileges
- If you want user Fred to be a Sales dashboard author, you might create an Application Role called 'Sales Dashboard Author' that has permissions to see Sales subject areas in the repository and edit Sales dashboards.

For detailed information about the installed Users, Groups, and Application Roles, see [Appendix B, "Understanding the Default Security Configuration."](#)

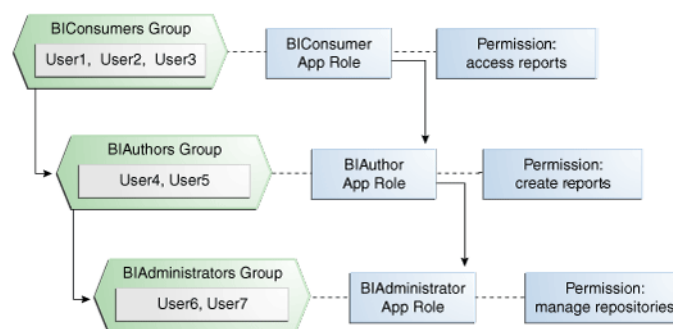
2.2 An Example Security Setup Using the Default Groups and Application Roles

This example uses a small set of Users, Groups, and Application Roles to illustrate how you set up a security policy using the default groups and Application Roles. In this example, you want to implement the following:

- Three users named User1, User2, and User3, who need to view business intelligence reports.
- Two users named User4 and User5, who need to create business intelligence reports.
- Two users named User6 and User7, who administer Oracle Business Intelligence.

The figure below shows the Users, Groups, and Application Roles that you would deploy to implement this security model.

Figure 2–2 Example Groups, Application Roles, and Users



The example above shows the following:

- The group named 'BIConsumers' contains User1, User2, and User3. Users in the group 'BIConsumers' are assigned to the Application Role named 'BIConsumer', which enables the users to view reports.
- The group named 'BIAuthors' contains User4 and User5. Users in the group 'BIAuthors' are assigned to the Application Role named 'BIAuthor', which enables the users to create reports.

- The group named 'BIAdministrators' contains User6 and User7. Users in the group 'BIAdministrators' are assigned to the Application Role named 'BIAdministrator', which enables the users to manage repositories.

To implement this example security model, you would do the following:

1. Create seven users named User1 to User 7, as described in [Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server"](#).
2. Assign the users to the installed and preconfigured groups, as follows:
 - Assign User1, User2, and User3 to the preconfigured group named BICongsumers.
 - Assign User4 and User5 to the preconfigured group named BIAuthors.
 - Assign User6 and User7 to the preconfigured group named BIAdministrators.

For more information, see in [Section 2.3.5, "Assigning a User to a Group in the Embedded WebLogic LDAP Server"](#).

2.3 Creating and Managing Users and Groups in the Embedded WebLogic LDAP Server

This section explains how to create and manage users and groups in the Embedded WebLogic LDAP Server, and contains the following topics:

- [Section 2.3.1, "Overview of Setting Up Users, Groups, and Application Roles"](#)
- [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#)
- [Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server"](#)
- [Section 2.3.4, "Creating a Group in the Embedded WebLogic LDAP Server"](#)
- [Section 2.3.5, "Assigning a User to a Group in the Embedded WebLogic LDAP Server"](#)
- [Section 2.3.6, "\(Optional\) Changing a User Password in the Embedded WebLogic LDAP Server"](#)

2.3.1 Overview of Setting Up Users, Groups, and Application Roles

This section summarizes recommended approaches for setting up Users, Groups, and Application Roles.

- The simplest way to set up security is to create Users and assign them to the default groups (that is, BICongsumers, BIAuthors, or BIAdministrators).

For example, you might create a user called Fred and assign Fred to the default group named BIAuthors. The group BIAuthors is preconfigured with the privileges it requires to access the other BI components, such as the metadata repository (RPD) and Oracle BI Presentation Catalog.

For detailed steps, see [Section 2.3.1.1, "Assigning a User to a Default Group"](#).

- If the default groups (that is, BICongsumers, BIAuthors, or BIAdministrators) do not meet your business requirements, you can extend the default security model by creating your own groups and Application Roles.

For example, you might want to create a user called Jim and assign Jim to a new group called BIMarketingGroup that is assigned to a new Application Role named BIMarketingRole.

For detailed steps, see [Section 2.3.1.2, "Assigning a User to a New Group and a New Application Role"](#).

2.3.1.1 Assigning a User to a Default Group

To create a new user and assign that user to a default group:

1. Launch WebLogic Administration Console as described in [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. Create a new user as described in [Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server"](#).
3. Assign the new user to one of the installed groups (that is, BICustomers, BIAuthors, or BIAdministrators) as described in [Section 2.3.5, "Assigning a User to a Group in the Embedded WebLogic LDAP Server"](#).

2.3.1.2 Assigning a User to a New Group and a New Application Role

To create a new user and assign the user to a new group and a new Application Role:

1. Launch WebLogic Administration Console as described in [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. Create a new user as described in [Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server"](#).
3. Create a new group as described in [Section 2.3.4, "Creating a Group in the Embedded WebLogic LDAP Server"](#).
4. Create a new Application Role and assign it to the new group as described in [Section 2.4.2.2, "Creating an Application Role"](#).

If you simply want to assign a group to an Application Role, follow the steps in [Section 2.4.2.3, "Assigning a Group to an Application Role"](#).

5. Edit the repository (RPD file) and set up the privileges for the new Application Role as described in [Section 2.5.2, "Setting Repository Privileges for an Application Role"](#).
6. Edit the Oracle BI Presentation Catalog and set up the privileges for the new user and group as described in [Section 2.6.3, "Setting Oracle BI Presentation Catalog Privileges for an Application Role"](#).

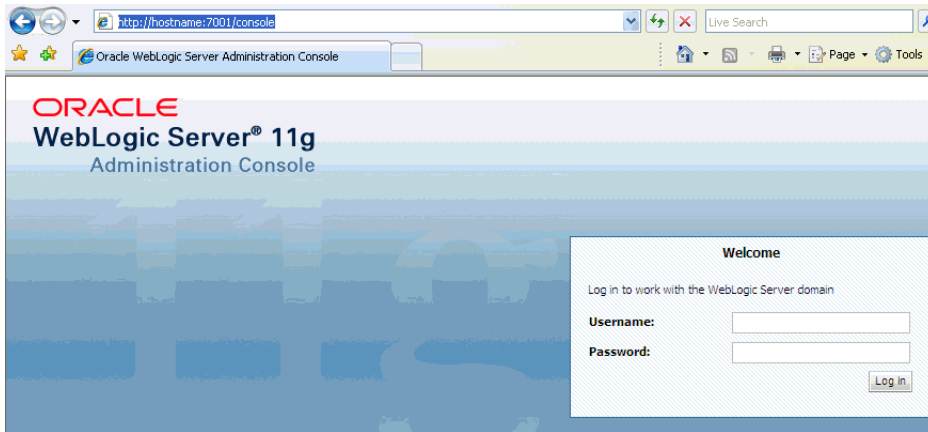
2.3.2 Launching Oracle WebLogic Server Administration Console

Oracle WebLogic Server is automatically installed and serves as the default administration server. The Administration Console is browser-based and is used, among other things, to manage the embedded directory server that is configured as the default authenticator. It is launched by entering its URL into a Web browser. The default URL takes the following form: `http://hostname:port_number/console`. The port number is the same as used for the Administration Server; 7001 is the default. For more information about using the Administration Console, see *Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help*.

To launch the Oracle WebLogic Server Administration Console:

1. Log in to Oracle WebLogic Server by entering its URL into a Web browser.

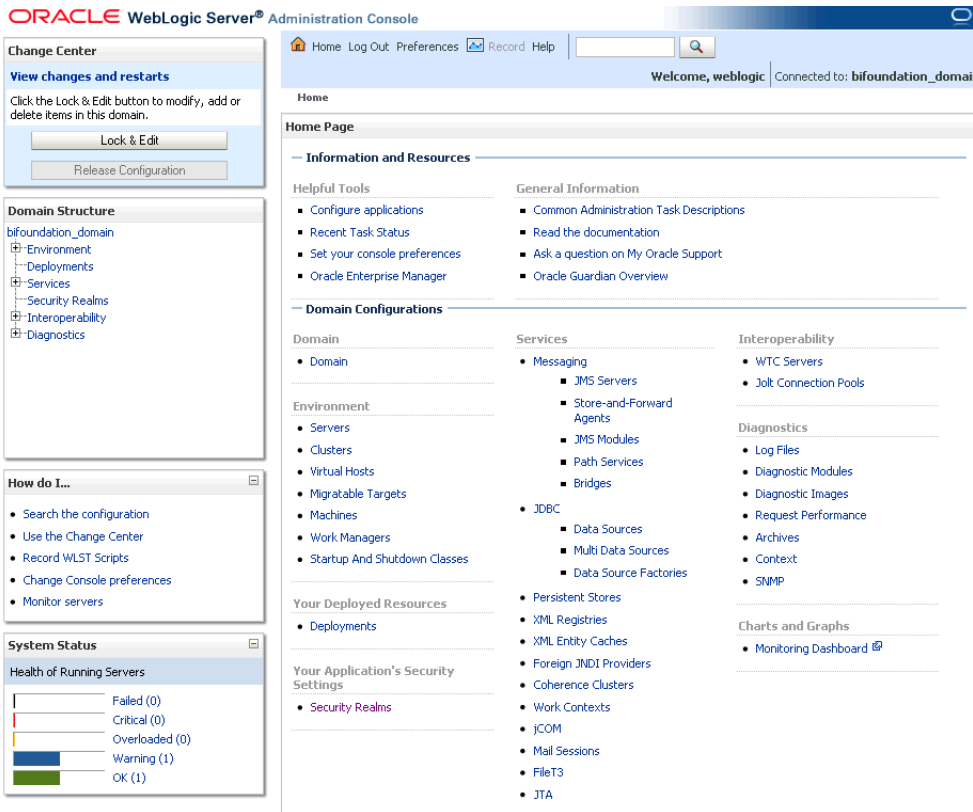
For example, `http://hostname:7001/console`.



2. Log in using the Oracle Business Intelligence administrative user and password credentials and click **Login**.

The user name and password were supplied during the installation of Oracle Business Intelligence. If these values have since been changed, then use the current administrative user name and password combination.

The Administration Console displays.



2.3.3 Creating a New User in the Embedded WebLogic LDAP Server

You typically create a separate user for each business user in your Oracle Business Intelligence environment. For example, you might plan to deploy 30 report consumers, three report authors, and 1 administrator. In this case, you would use Oracle WebLogic Server Administration Console to create 34 users, which you would then assign to

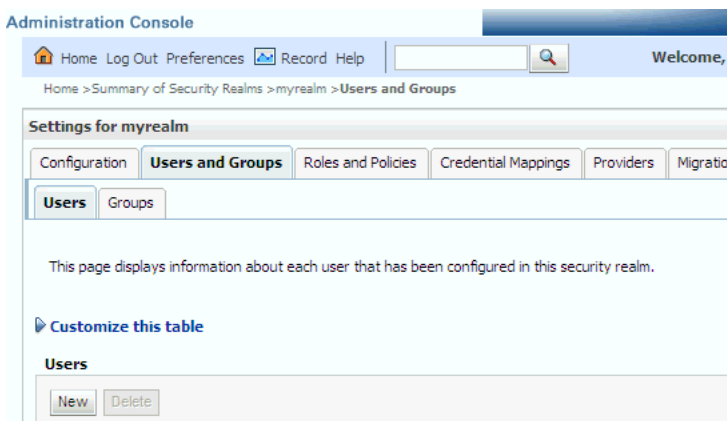
appropriate groups (for example, you might use the preconfigured groups named BIConsumers, BIAuthors, and BIAdministrators).

Tip: For an example security model showing a set of Users, Groups, and Application Roles, see [Section 2.2, "An Example Security Setup Using the Default Groups and Application Roles"](#).

Repeat this task for each user that you want to deploy

To create a new user in the embedded WebLogic LDAP server:

1. Launch Oracle WebLogic Server Administration Console.
For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**.
3. Select **Users and Groups** tab, then **Users**. Click **New**.



4. In the **Create a New User** page provide the following information:
 - **Name:** Enter the name of the user. See online help for a list of invalid characters.
 - (Optional) **Description:** Enter a description.
 - **Provider:** Select the authentication provider from the list that corresponds to the identity store where the user information is contained. DefaultAuthenticator is the name for the default authentication provider.
 - **Password:** Enter a password for the user that is at least 8 characters long.
 - **Confirm Password:** Re-enter the user password.

The screenshot shows the 'Create a New User' form in the Administration Console. The breadcrumb trail is 'Home > Summary of Security Realms > myrealm > Users and Groups'. The form title is 'Create a New User'. It contains the following elements:

- Buttons: OK, Cancel (top left)
- Section: **User Properties**
- Text: 'The following properties will be used to identify your new User. * Indicates required fields'
- Text: 'What would you like to name your new User?'
 - * Name:
- Text: 'How would you like to describe the new User?'
 - Description:
- Text: 'Please choose a provider for the user.'
 - Provider:
- Text: 'The password is associated with the login name for the new User.'
 - * Password:
 - * Confirm Password:
- Buttons: OK, Cancel (bottom left)

5. Click **OK**.

The user name is added to the User table.

2.3.4 Creating a Group in the Embedded WebLogic LDAP Server

You typically create a separate group for each functional type of business user in your Oracle Business Intelligence environment. For example, a typical deployment might require three groups: BIConsumers, BIAuthors, and BIAdministrators. In this case, you could either use the preconfigured groups named BIConsumers, BIAuthors, and BIAdministrators that are installed with Oracle Business Intelligence, or you might create your own custom groups.

Tip: For an example security model showing a set of Users, Groups, and Application Roles, see [Section 2.2, "An Example Security Setup Using the Default Groups and Application Roles"](#).

Repeat this task for each group that you want to deploy

To create a group in the embedded WebLogic LDAP server:

1. Launch Oracle WebLogic Server Administration Console.
 - For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**.
3. Select **Users and Groups** tab, then **Groups**. Click **New**
4. In the **Create a New Group** page provide the following information:

- **Name:** Enter the name of the group. Group names are case insensitive but must be unique. See online help for a list of invalid characters.
 - (Optional) **Description:** Enter a description.
 - **Provider:** Select the authentication provider from the list that corresponds to the identity store where the group information is contained. DefaultAuthenticator is the name for the default authentication provider.
5. Click **OK**

The group name is added to the Group table.

2.3.5 Assigning a User to a Group in the Embedded WebLogic LDAP Server

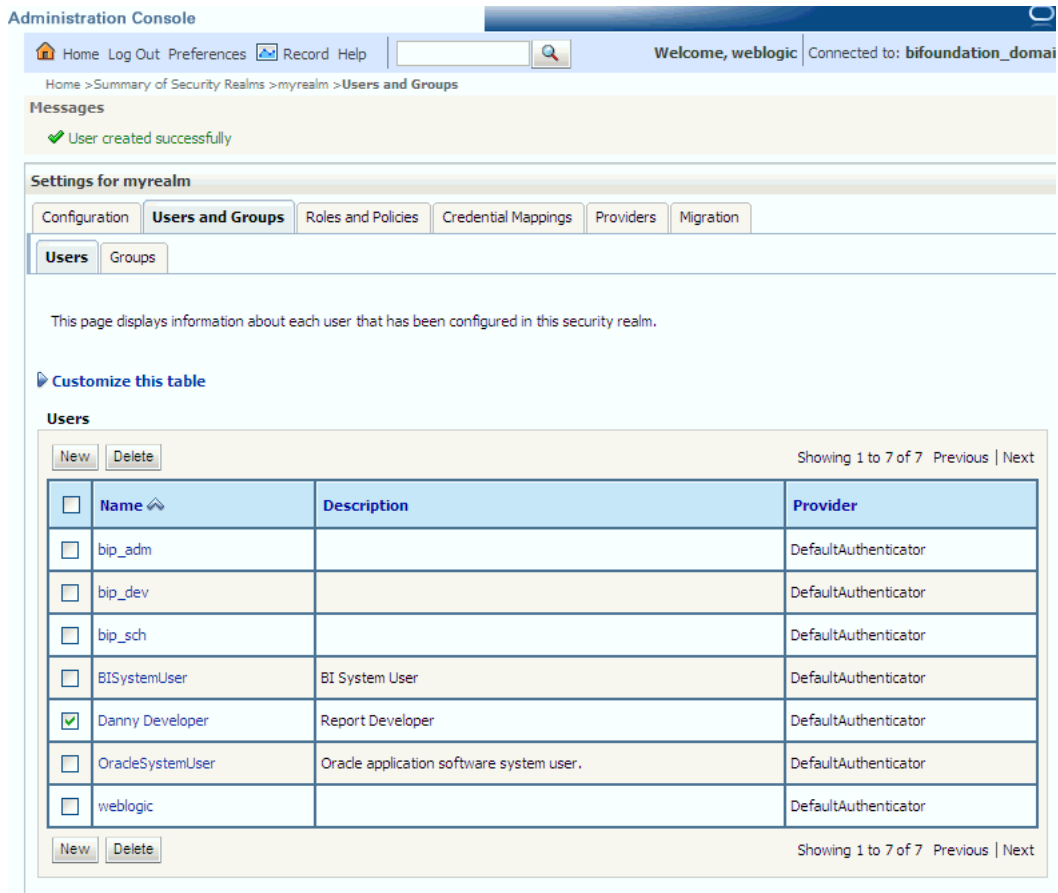
You typically assign each user to an appropriate group. For example, a typical deployment might require user IDs created for report consumers to be assigned to a group named BIconsumers. In this case, you could either assign the users to the default group named BIconsumers, or you could assign the users to your own custom group that you have created.

Tip: For an example security model showing a set of Users, Groups, and Application Roles, see [Section 2.2, "An Example Security Setup Using the Default Groups and Application Roles"](#).

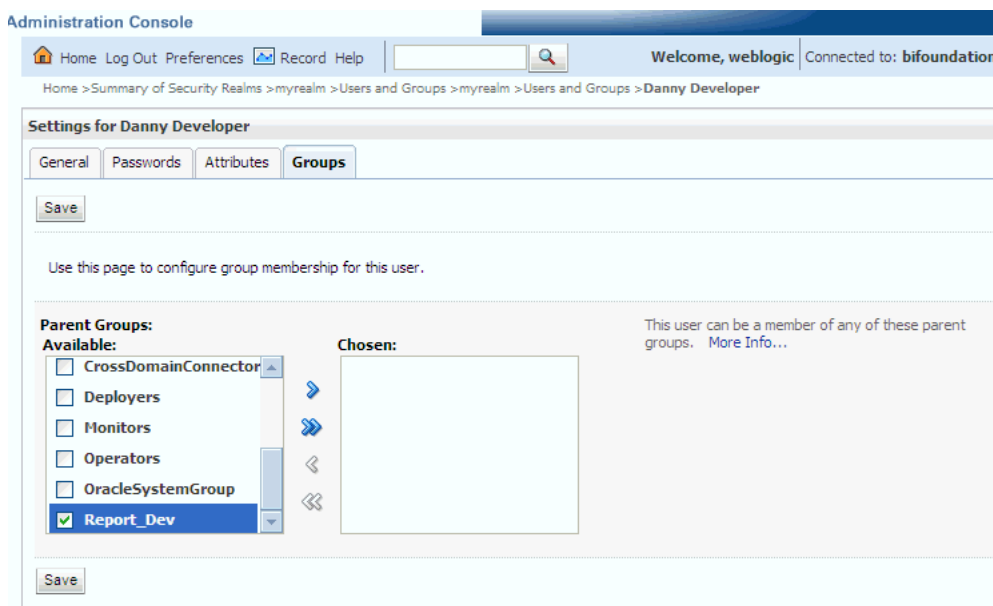
Repeat this task to assign each user to an appropriate group.

To add a user to a group in the embedded WebLogic LDAP server:

1. Launch Oracle WebLogic Server Administration Console.
For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**.
3. Select **Users and Groups** tab, then **Users**.
4. In the Users table select the user you want to add to a group.



5. Select the **Groups** tab.
6. Select a group or groups from the **Available** list box.



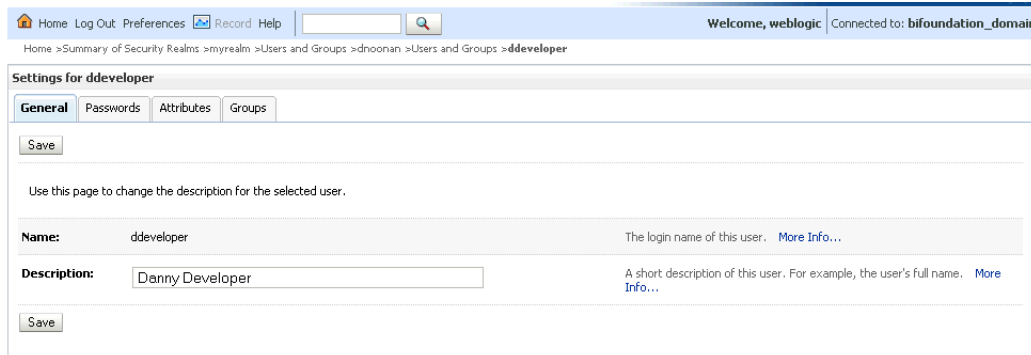
7. Click **Save**.

2.3.6 (Optional) Changing a User Password in the Embedded WebLogic LDAP Server

Perform this optional task if you want to change the default password for a user.

To change a user password in the embedded WebLogic LDAP server:

1. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**.
2. Select **Users and Groups** tab, then **Users**
3. In the Users table select the user you want to change the password for. The user's **Settings** page displays.



4. Select the **Passwords** tab and enter the password in the **New Password** and **Confirm Password** fields.
5. Click **Save**.

Note: If you change the password of the system user, you also need to change it in the credential store.

2.4 Creating and Managing Application Roles and Application Policies Using Fusion Middleware Control

In Oracle Business Intelligence, you use Fusion Middleware Control to manage Application Roles and Application Policies that provide permissions for users and groups. For detailed information about using Fusion Middleware Control, see *Oracle Fusion Middleware Administrator's Guide*.

- [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#)
- [Section 2.4.2, "Creating Application Roles Using Fusion Middleware Control"](#)
- [Section 2.4.3, "Creating Application Policies Using Fusion Middleware Control"](#)
- [Section 2.4.4, "Modifying Application Roles Using Oracle Fusion Middleware Control"](#)

Tip: If you are using the default groups (that is, BIConsumers, BIAuthors, and BIAdministrators) that are installed with the default embedded WebLogic LDAP Server, then these groups are assigned to an appropriate Application Role (that is, BIConsumer, BIAuthor, or BIAdministrator). No additional steps are required to assign the default groups to Application Roles.

The simplest way to set up security is to assign your groups to the default Application Roles, (that is, BIconsumer, BIAuthor, and BIAdministrator). Each default group is preconfigured to use the appropriate default Application Role. For example, the default group named BIAuthors is assigned to the default Application Role named BIAuthor. In other words, any users that you add to the default group named BIAuthors automatically have the privileges required to create reports and perform related duties.

If you want to create a more complex or fine grained security model, you might create your own Application Roles and Application Policies as described in this section. For example, you might want report authors in a Marketing department to only have write-access to the Marketing area of the metadata repository and Oracle BI Presentation Catalog. To achieve this, you might create a new Application Role called BIAuthorMarketing, and provide it with appropriate privileges.

Caution: If you are deploying the default Policy Store, then Oracle recommends that you make a copy of the original `system-jazn-data.xml` policy file and place it in a safe location. Use the copy of the original file to restore the default policy store configuration, if needed. Changes to the default security configuration might lead to an unwanted state. The default location is `MW_HOME/user_projects/domain/your_domain/config/fmwconfig`.

To set up the Application Roles that you want to deploy, do the following:

- If required, create new Application Roles. For more information, see [Section 2.4.2, "Creating Application Roles Using Fusion Middleware Control"](#).

Note: You can create Application Roles based on default Application Policies, or you can create your own Application Policies. For more information about the default Users, Groups, and Application Roles, see [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#).

- If required, create new Application Policies. For more information, see [Section 2.4.3, "Creating Application Policies Using Fusion Middleware Control"](#).
- (Optional) If required, modify the permission grants or membership for an Application Role. For more information, see [Section 2.4.4, "Modifying Application Roles Using Oracle Fusion Middleware Control"](#).

2.4.1 Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security

This section explains how to start Oracle Fusion Middleware Control and Locate the pages used to manage security components, and contains the following sections:

- [Section 2.4.1.1, "Overview"](#)
- [Section 2.4.1.2, "Displaying the Security Menu in Fusion Middleware Control from coreapplication"](#)
- [Section 2.4.1.3, "Displaying the Security Menu in Fusion Middleware Control from bifoundation_domain"](#)

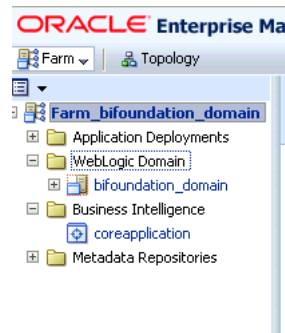
2.4.1.1 Overview

Fusion Middleware Control is a Web browser-based, graphical user interface that you can use to monitor and administer a farm. A farm is a collection of components

managed by Fusion Middleware Control. It can contain Oracle WebLogic Server domains, one Administration Server, one or more Managed Servers, clusters, and the Oracle Fusion Middleware components that are installed, configured, and running in the domain. During installation an Oracle WebLogic Server domain is created and Oracle Business Intelligence is installed into that domain. If you performed a Simple or Enterprise installation type, this domain is named **bifoundation_domain** and is located under WebLogic Domain in the Fusion Middleware Control target navigation pane.

Launch Fusion Middleware Control by entering its URL into a Web browser. The URL includes the name of the host and the administration port number assigned during the installation. This URL takes the following form: `http://hostname:port_number/em`. The default port is 7001.

There are several methods available for accessing the common Fusion Middleware Control security pages used when managing the Oracle Business Intelligence security configuration. Depending upon the access point used in the target navigation pane, the obi application stripe is pre-selected for you. The access points are as follows:



- From **coreapplication** - You can reach the **Application Policies** and **Application Roles** pages using a shortcut menu. The obi application stripe is pre-selected and the Oracle Business Intelligence Application Policies or Application Roles are displayed. You cannot reach all Fusion Middleware Control Security menu options from this shortcut menu.

For more information, see [Section 2.4.1.2, "Displaying the Security Menu in Fusion Middleware Control from coreapplication"](#).

- From **bifoundation_domain** - If you select either **Application Policies** or **Application Roles** from the **Security** menu, the obi application stripe must be selected and a search initiated. All Fusion Middleware Control Security menu options are available from this method.

For more information, see [Section 2.4.1.3, "Displaying the Security Menu in Fusion Middleware Control from bifoundation_domain"](#).

For more information about using Fusion Middleware Control, see *Oracle Fusion Middleware Administrator's Guide*.

2.4.1.2 Displaying the Security Menu in Fusion Middleware Control from coreapplication

To display the Security menu in Fusion Middleware Control from coreapplication:

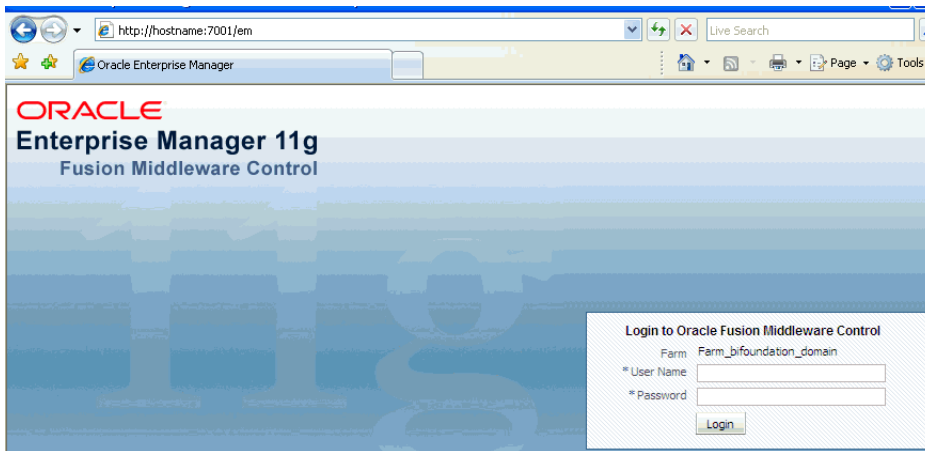
Using one of the following methods provides a shortcut for accessing the **Application Policies** or **Application Roles** pages with the obi (Oracle Business Intelligence) application stripe pre-selected and the corresponding Oracle Business Intelligence

policies or roles displaying (the Policy Store is organized by stripe and we use the obi stripe).

1. Log in to Fusion Middleware Control by entering the URL in a Web browser.

For example, `http://hostname:port_number/em`.

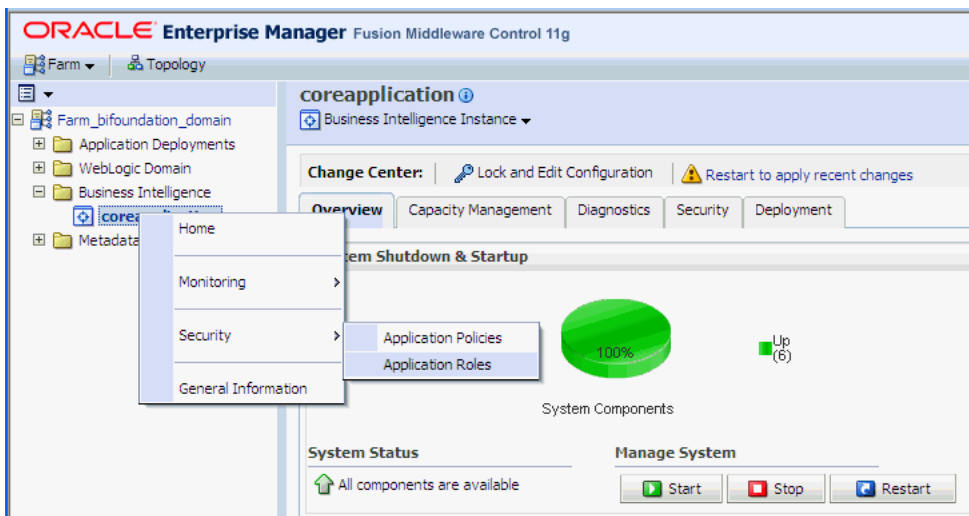
The Fusion Middleware Control login page displays.



2. Enter the Oracle Business Intelligence administrative user name and password and click **Login**

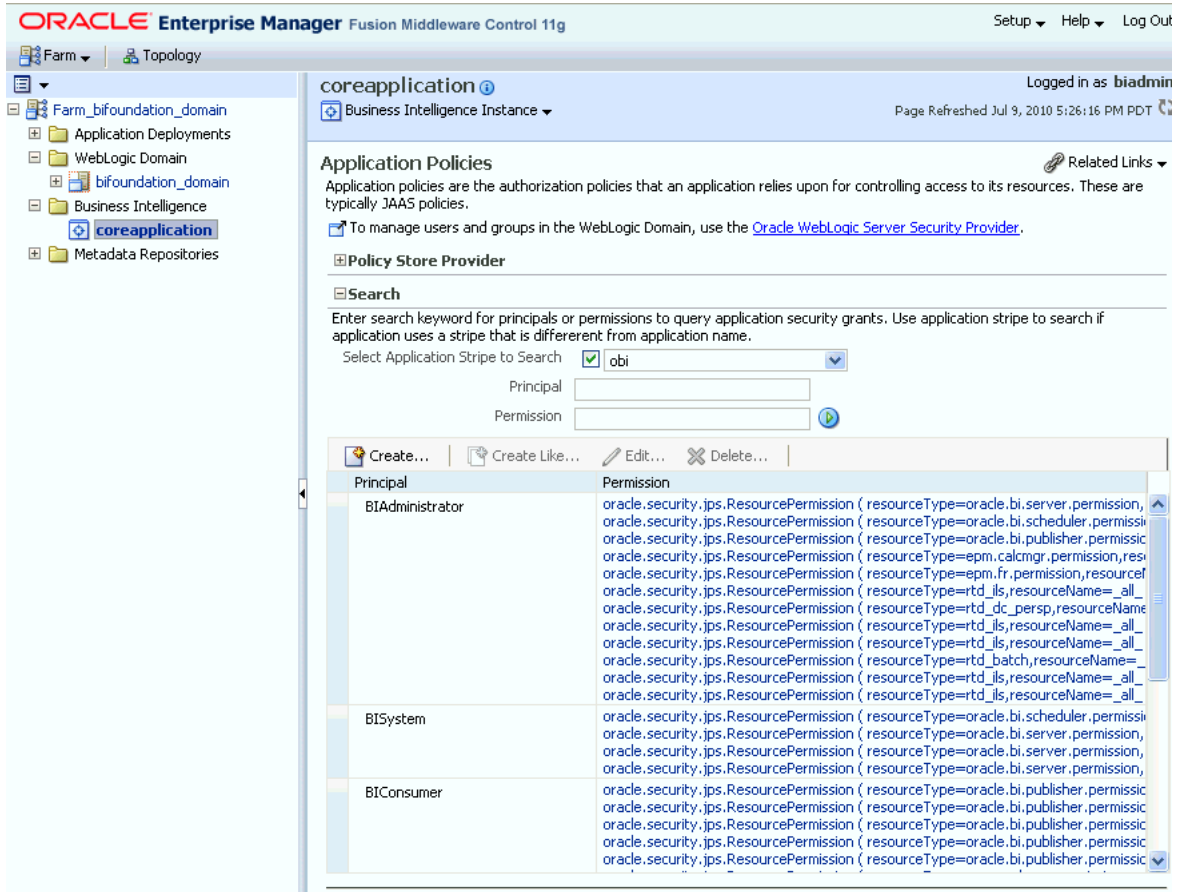
The password is the one you supplied during the installation of Oracle Business Intelligence. If these values have been changed, then use the current administrative user name and password combination.

3. From the target navigation pane, open **Business Intelligence** and select **coreapplication**. Display the **Security** menu by selecting one of the following methods:
 - Right-click **coreapplication**, then select **Security** to display a submenu with **Application Policies** and **Application Roles** as options.

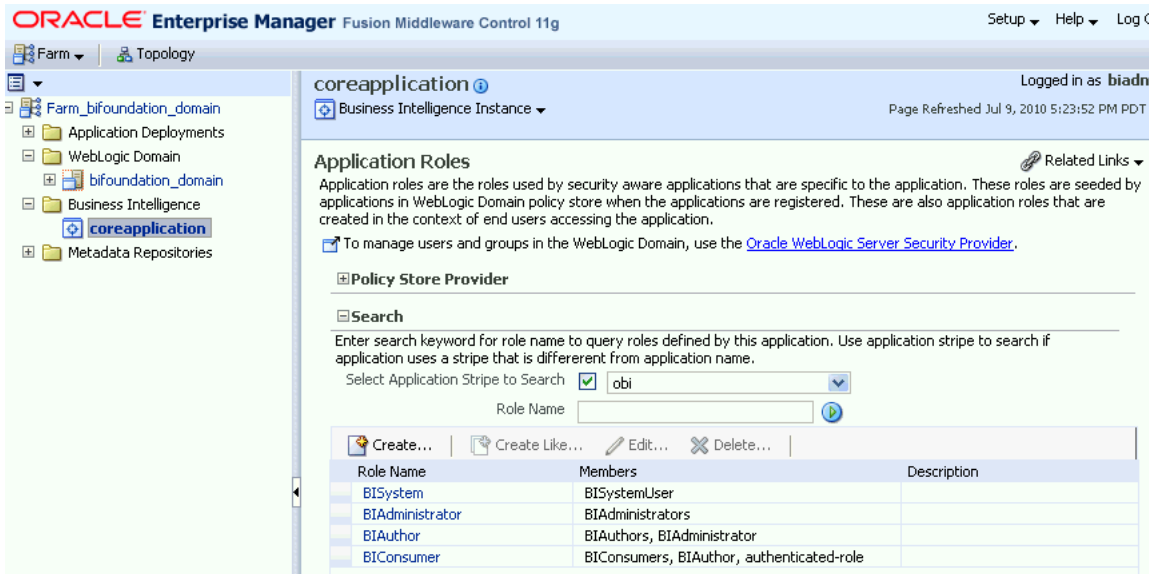


- From the content pane, select the **Business Intelligence Instance** menu, then select **Security** to display a submenu with **Application Policies** and **Application Roles** as options.

4. Select **Application Policies** or **Application Roles** as needed. The obi (Oracle Business Intelligence) application stripe is selected and the corresponding Oracle Business Intelligence policies or roles are displayed.
 - The following figure shows an example of **Application Policies** page displaying the default Oracle Business Intelligence Application Policies.



- The following figure shows an example of **Application Roles** page displaying the default Oracle Business Intelligence Application Roles.

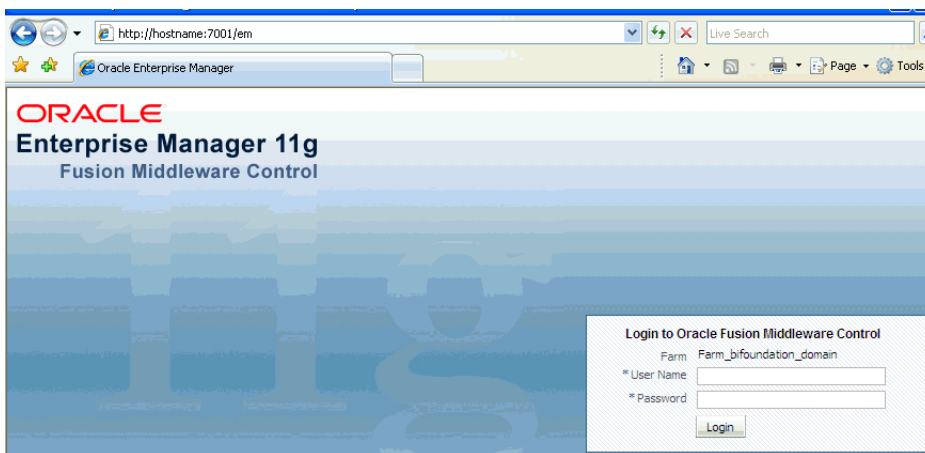


2.4.1.3 Displaying the Security Menu in Fusion Middleware Control from bifoundation_domain

To display the Security menu in Fusion Middleware Control from bifoundation_domain:

Using one of the following methods requires you later select the obi application stripe to search for the Oracle Business Intelligence Application Policies or Application Roles.

1. Log in to Fusion Middleware Control by entering the URL in a Web browser.
For example, `http://hostname:port_number/em`.
The Fusion Middleware Control login page displays.

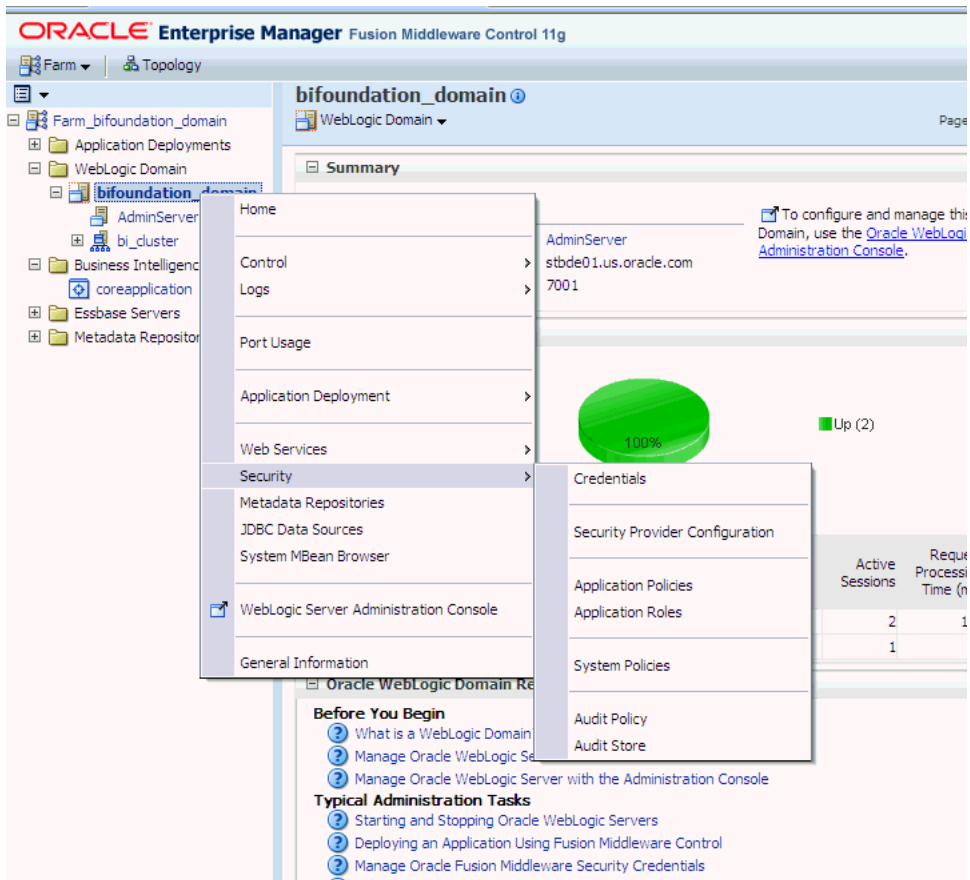


2. Enter the Oracle Business Intelligence administrative user name and password and click **Login**.

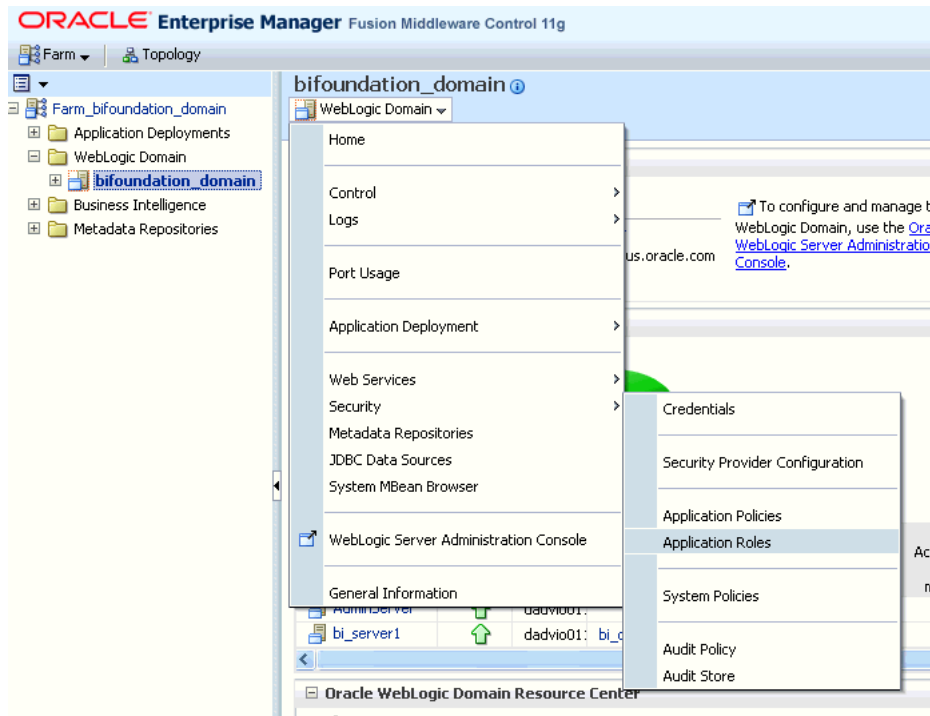
The password is the one you supplied during the installation of Oracle Business Intelligence. If these values have been changed, then use the current administrative user name and password combination.

3. From the target navigation pane, open **WebLogic Domain** and select **bifoundation_domain**. Display the **Security** menu by selecting one of the following methods:

- Right-click **bifoundation_domain**, then select **Security** to display a submenu.



- From the content pane, select the **WebLogic Server** menu, then select **Security** to display a submenu.



2.4.2 Creating Application Roles Using Fusion Middleware Control

This section explains how to create and manage Application Roles using Oracle Fusion Middleware Control, and contains the following topics:

- [Section 2.4.2.1, "Overview"](#)
- [Section 2.4.2.2, "Creating an Application Role"](#)
- [Section 2.4.2.3, "Assigning a Group to an Application Role"](#)

2.4.2.1 Overview

In a new Oracle Business Intelligence deployment, you typically create an Application Role for each type of business user activity in your Oracle Business Intelligence environment. For example, a typical deployment might require three Application Roles: BICustomer, BIAuthors, and BIAdministrator. In this case, you could either use the preconfigured Application Roles named BICustomer, BIAuthor, and BIAdministrator that are installed with Oracle Business Intelligence, or you could create your own custom Application Roles. For more information about the default Application Roles, see [Section 2.1, "Working with the Default Users, Groups, and Application Roles"](#).

Oracle Business Intelligence Application Roles represent a role that a user has. For example, having the Sales Analyst Application Role might grant a user access to view, edit and create reports on a company's sales pipeline. You can create new Application Roles to supplement or replace the default roles configured during installation. Keeping Application Roles separate and distinct from the directory server groups enables you to better accommodate authorization requirements. You can create new Application Roles to match business roles for your environment without needing to change the groups defined in the corporate directory server. To control authorization requirements more efficiently, you can then assign existing groups of users from the directory server to Application Roles.

Note: Before creating a new Application Role and adding it to the default Oracle Business Intelligence security configuration, familiarize yourself with how permission and group inheritance works. It is important when constructing a role hierarchy that circular dependencies are not introduced. For more information, see [Section B.4.4, "How Permissions Are Granted Using Application Roles"](#).

For more information about creating Application Roles, see "Managing Policies with Fusion Middleware Control" in *Oracle Fusion Middleware Application Security Guide*.

Note: For advanced-level information about using a BI repository in offline mode, see [Section 2.5.3.1, "About Managing Application Roles in the Metadata Repository"](#).

2.4.2.2 Creating an Application Role

There are two methods for creating a new Application Role:

- **Create New** - A new Application Role is created. Members can be added at the same time or you can save the new role after naming it and add members later.
- **Copy Existing** - A new Application Role is created by copying an existing Application Role. The copy contains the same members as the original, and is made a Grantee of the same Application Policy as is the original. Modifications can be made as needed to the copy to further customize the new Application Role.

Membership in an Application Role is controlled using the **Application Roles** page in Fusion Middleware Control. Valid members of an Application Role are Users, Groups, and other Application Roles.

Permission grants are controlled in the **Application Policies** page in Fusion Middleware Control. The permission grant definitions are set in the Application Policy, then the Application Policy is *granted* to the Application Role. For more information, see [Section 2.4.3, "Creating Application Policies Using Fusion Middleware Control"](#).

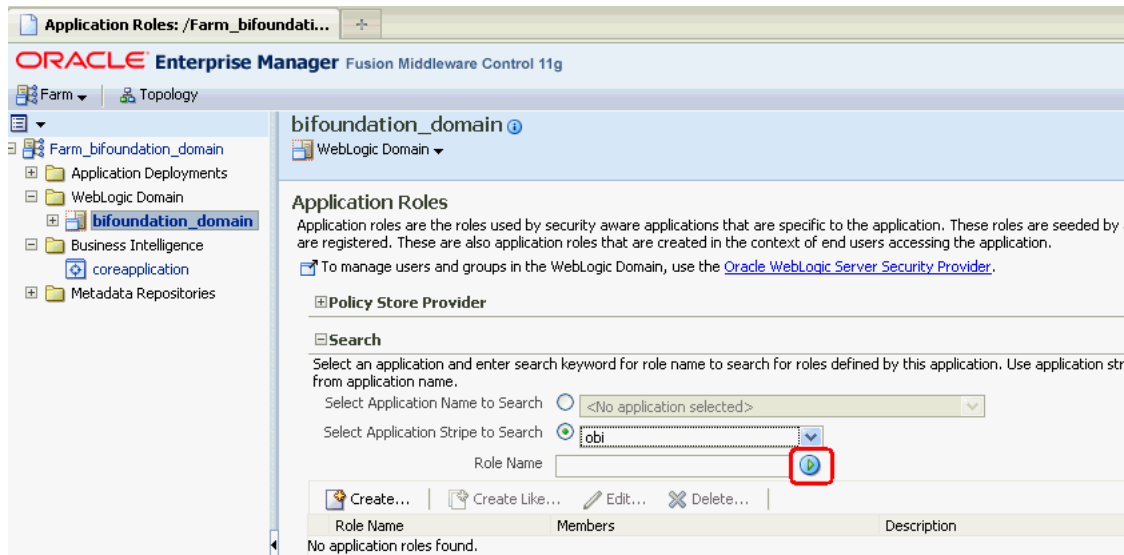
To create a new Application Role:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Roles** to display the **Application Roles** page.

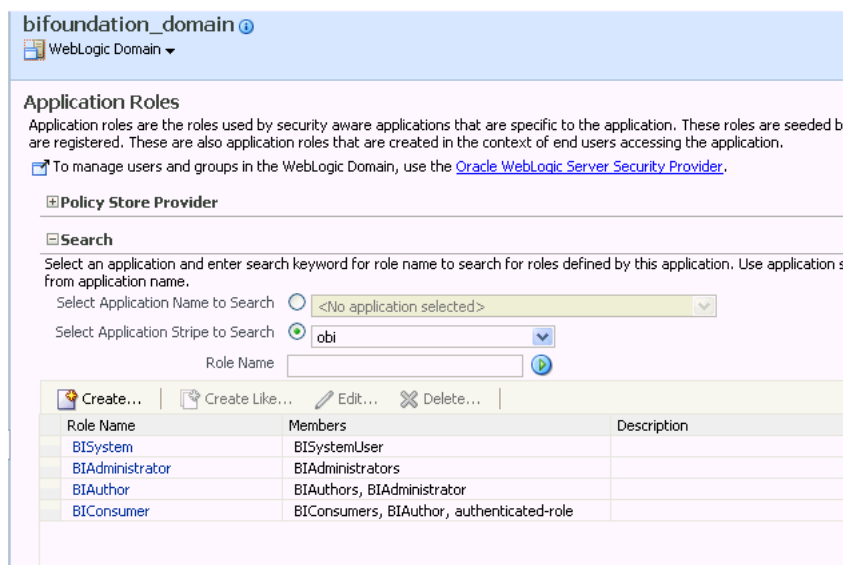
For information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the **obi** application stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Roles** page.

2. If necessary, select **Select Application Stripe to Search**, then select **obi** from the list. Click the search icon next to **Role Name**.



The Oracle Business Intelligence Application Roles display. The following figure shows the default Application Roles.



3. Click **Create** to display the **Create Application Role** page. You can enter all information at once or you can enter a **Role Name**, save it, and complete the remaining fields later. Complete the fields as follows:

In the **General** section:

- **Role Name** - Enter the name of the Application Role
- (Optional) **Display Name** - Enter the display name for the Application Role.
- (Optional) **Description** - Enter a description for the Application Role.

In the **Members** section, select the Users, Groups, or Application Roles to be assigned to the Application Role. Select **Add Application Role** or **Add Group** or **Add Users** accordingly. To search in the dialog box that displays:

- Enter a name in **Name** field and click the blue button to search.
- Select from the results returned in the **Available** box.

- Use the shuttle controls to move the desired name to the **Selected** box.
 - Click **OK** to return to the **Create Application Role** page.
 - Repeat the steps until all desired members are added to the Application Role.
4. Click **OK** to return to the **Application Roles** page.

The Application Role just created displays in the table at the bottom of the page.

To create an Application Role based on an existing one:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Roles** to display the **Application Roles** page.

For information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the obi application stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Roles** page.

2. If necessary, select **Select Application Stripe to Search**, then select **obi** from the list. Click the search icon next to **Role Name**.

The Oracle Business Intelligence Application Roles display.

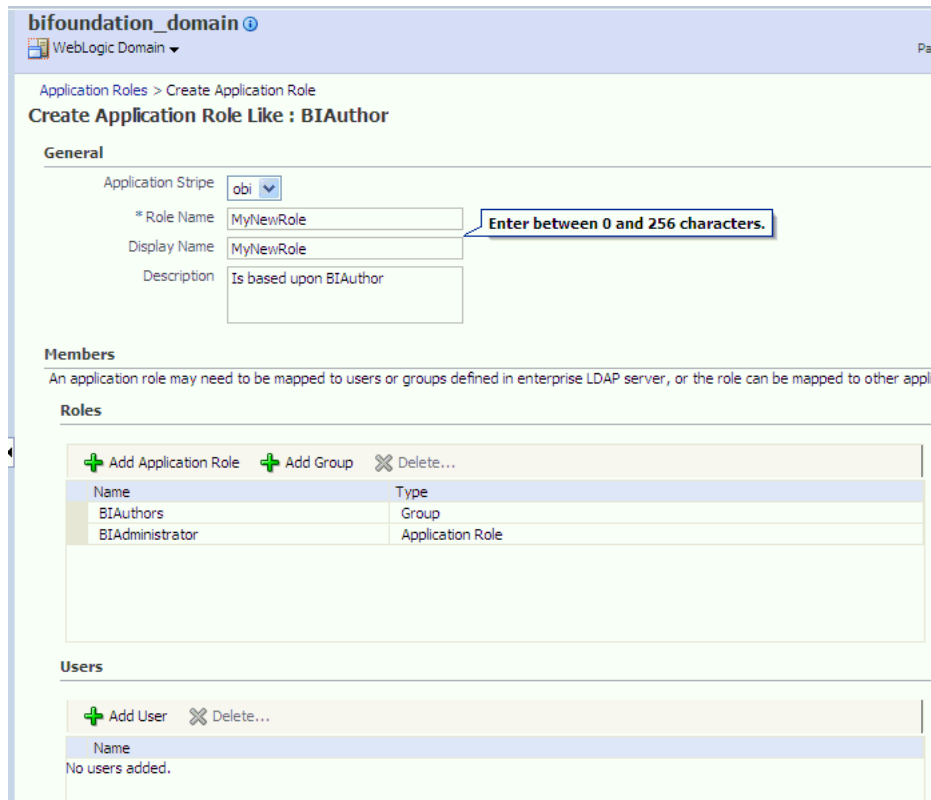
3. Select the Application Role you want to copy from the list to enable the action buttons.

4. Click **Create Like** to display the **Create Application Role Like** page.

The **Members** section is completed with the same Application Roles, Groups, or Users that are assigned to the original role.

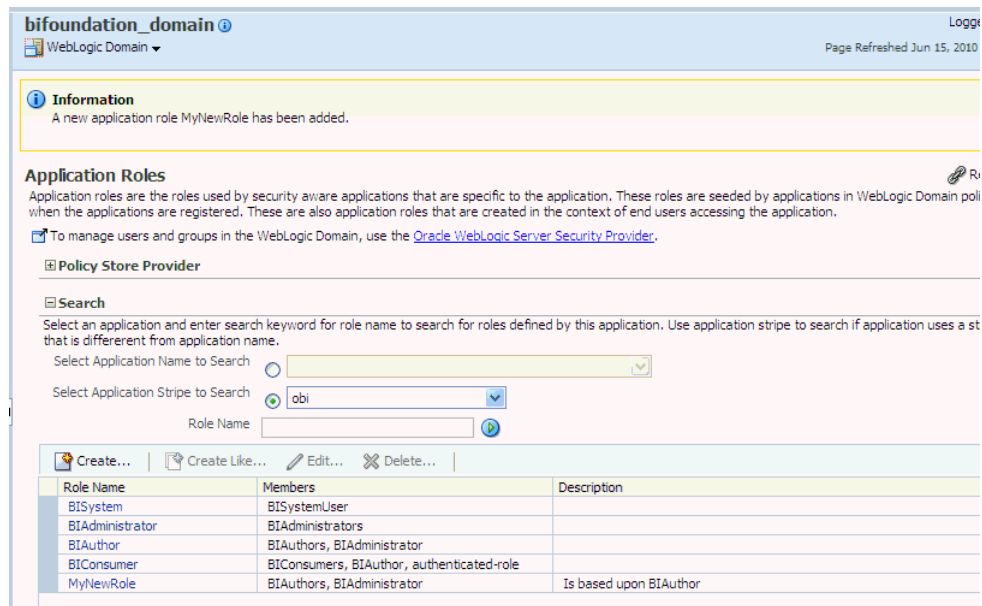
5. Complete the **Role Name**, **Display Name**, and **Description** fields.

The following figure shows a new Application Role that is based upon the default BIAuthor Application Role and has been named **MyNewRole**.



6. Modify the members as appropriate and click **OK**.

The just created Application Role displays in the table at the bottom of the page. The following figure shows the example **MyNewRole** that is based upon the default **BIAuthor** Application Role.



2.4.2.3 Assigning a Group to an Application Role

You assign a group to an Application Role to provide users in that group with appropriate security privileges. For example, a group for marketing report consumers

named `BIMarketingGroup` might require an Application Role called `BIconsumerMarketing`, in which case you assign the group named `BIMarketingGroup` to the Application Role named `BIconsumerMarketing`.

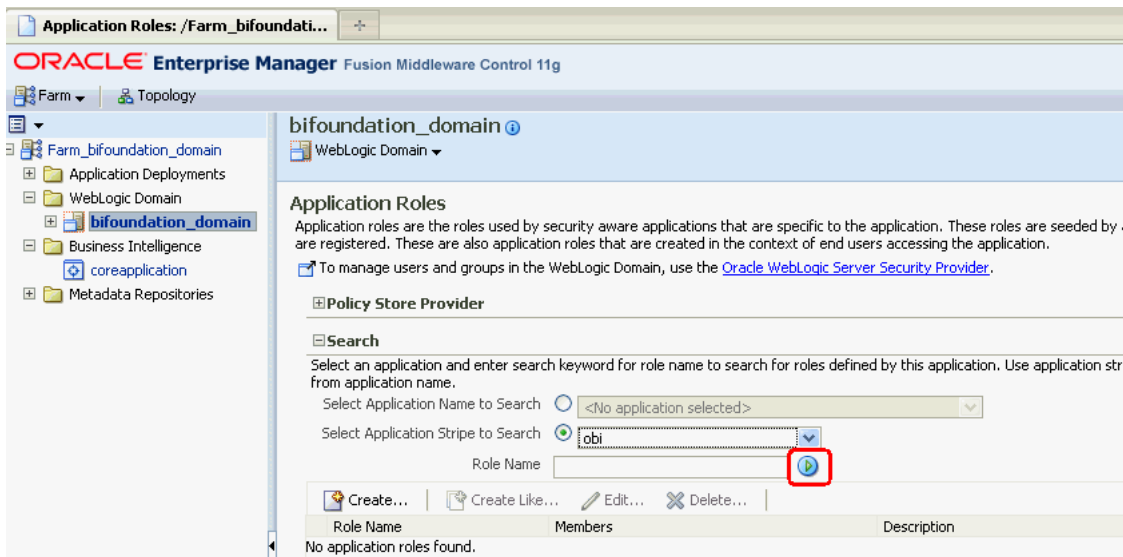
To assign a group to an Application Role:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Roles** to display the **Application Roles** page.

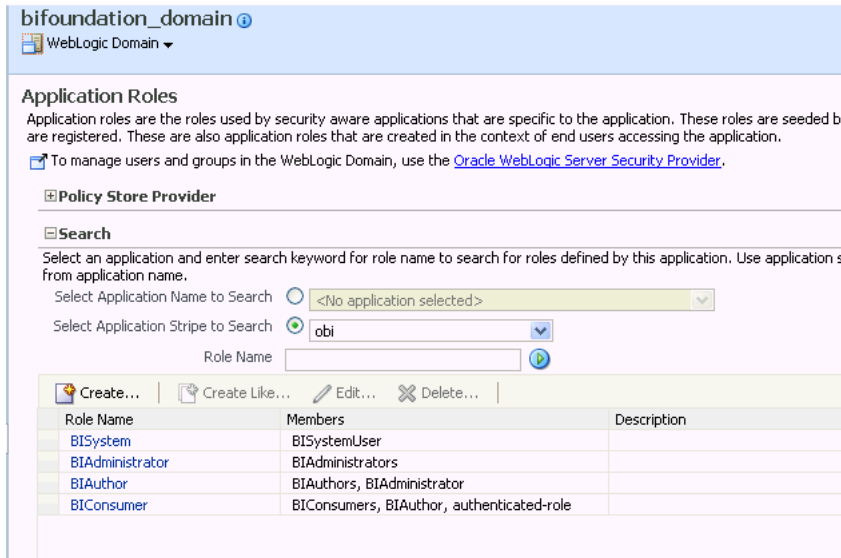
For information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the `obi` application stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Roles** page.

2. If necessary, select **Select Application Stripe to Search**, then select `obi` from the list. Click the search icon next to **Role Name**.



The Oracle Business Intelligence Application Roles display. The following figure shows the default Application Roles.



3. Select an Application Role in the list and click Edit to display an edit dialog, and complete the fields as follows:
4. In the **Members** section, use the **Add Group** option to add the group that you want to assign to the **Roles** list.

For example, if a group for marketing report consumers named BIMarketingGroup require an Application Role called BIConsumerMarketing, then add the group named BIMarketingGroup to **Roles** list.
5. Click **OK** to return to the **Application Roles** page.

2.4.3 Creating Application Policies Using Fusion Middleware Control

You can create Application Roles based on default preconfigured Application Policies, or you can create your own Application Policies.

Application Policies do not apply privileges to RPD or Oracle BI Presentation Catalog objects and functionality.

All Oracle Business Intelligence permissions are provided as part of the installation and you cannot create new permissions. The Application Policy is the mechanism that defines the permissions grants. Permission grants are controlled in the Fusion Middleware Control **Application Policies** page. The permission grants are defined in an Application Policy. An Application Role, User, or Group, is then assigned to an Application Policy. This process makes the Application Role a **Grantee** of the Application Policy.

There are two methods for creating a new Application Policy:

- **Create New** - A new Application Policy is created and permissions are added to it.
- **Copy Existing** - A new Application Policy is created by copying an existing Application Policy. The copy is named and existing permissions are removed or permissions are added.

For more information about creating Application Policies, see "Managing Policies with Fusion Middleware Control" in *Oracle Fusion Middleware Application Security Guide*.

To create a new Application Policy:

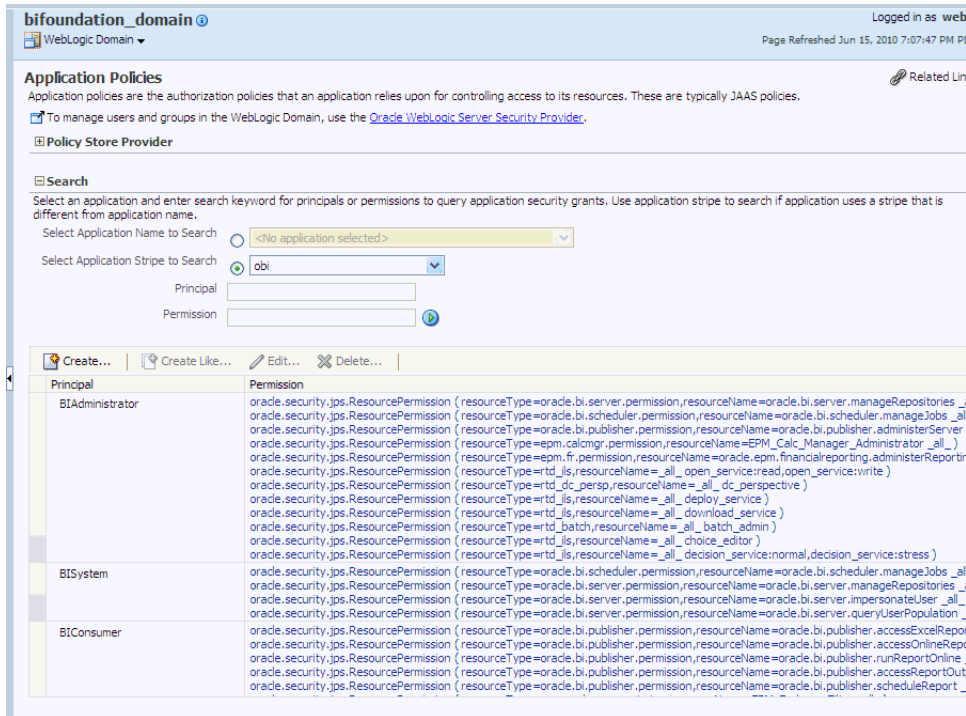
1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Policies** to display the **Application Policies** page.

For information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the obi application stripe is pre-selected and the Oracle Business Intelligence Application Policies are displayed depends upon the method used to navigate to the **Application Policies** page.

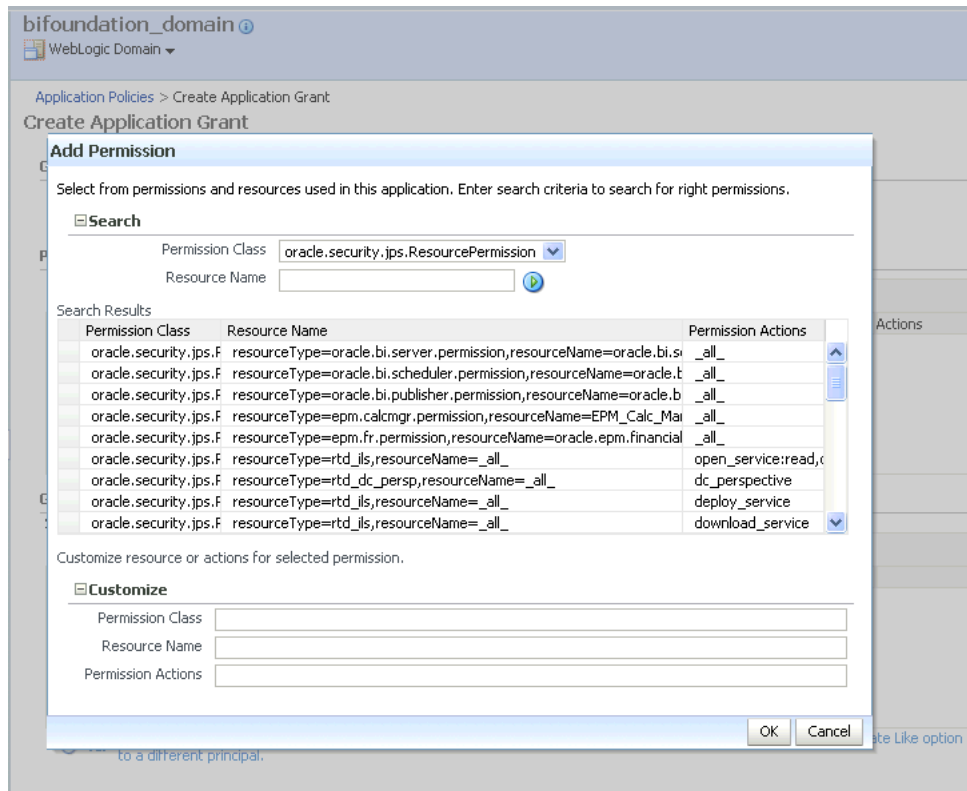
2. If necessary, select **Select Application Stripe to Search**, then select the **obi** from the list. Click the search icon next to **Role Name**.

The Oracle Business Intelligence Application Policies are displayed. The **Principal** column displays the name of the policy **Grantee**.



3. Click **Create** to display the **Create Application Grant** page.
4. To add permissions to the policy being created, click **Add** in the **Permissions** area to display the **Add Permission** dialog.
 - Complete the **Search** area and click the blue search button next to the **Resource Name** field.

All permissions located in the **obi** application stripe are displayed.

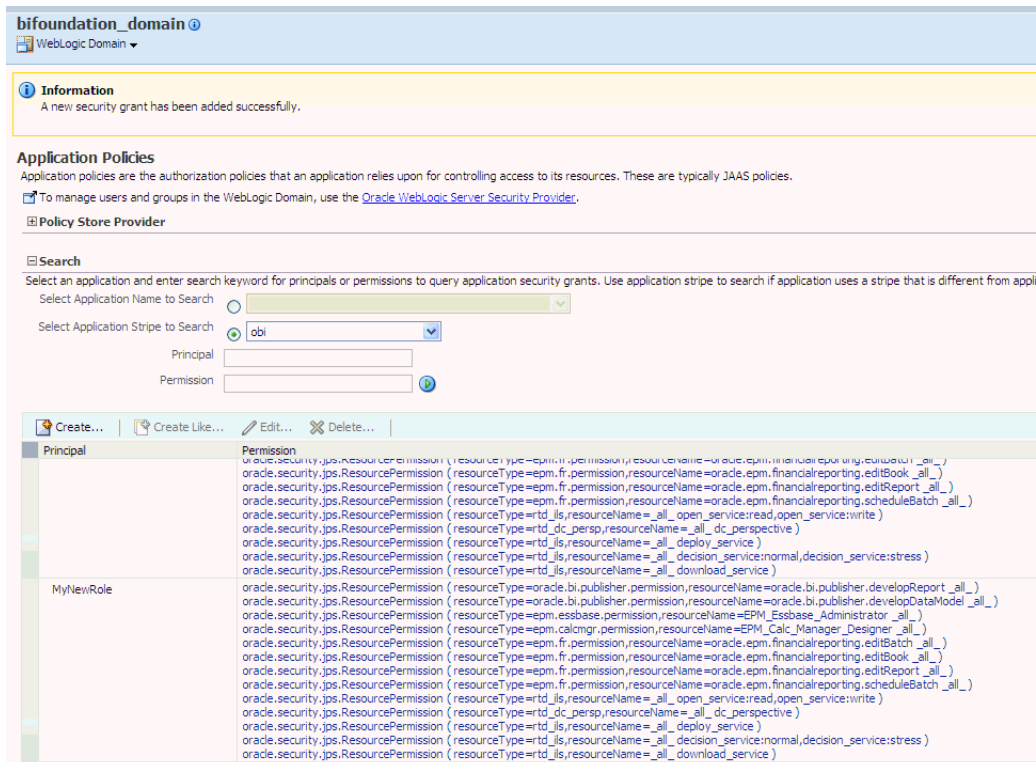


- Select the desired Oracle Business Intelligencer permission and click **OK**. Repeat until all desired permissions are selected. Selecting non-Oracle Business Intelligence permissions have no effect in the policy.
- To remove any items, select it and click **Delete**.

You are returned to the **Create Application Grant** page. The selected permissions display in the **Permissions** area.

- To add an Application Role to the policy being created, click **Add Application Role** in the **Grantee** area to display the **Add Application Role** dialog.
 - Complete the **Search** area and click the blue search button next to the **Resource Name** field.
 - Select from the **Available Roles** list and use the shuttle controls to move it to **Selected Roles**.
 - Click **OK**.

You are returned to the **Application Policies** page. The Principal and Permissions of the policy created are displayed in the table. The following figure shows the new Application Policy just created with MyNewRole Application Role as the Grantee (**Principal**).



To create an Application Policy based on an existing one:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Policies** to display the **Application Policies** page.

For information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

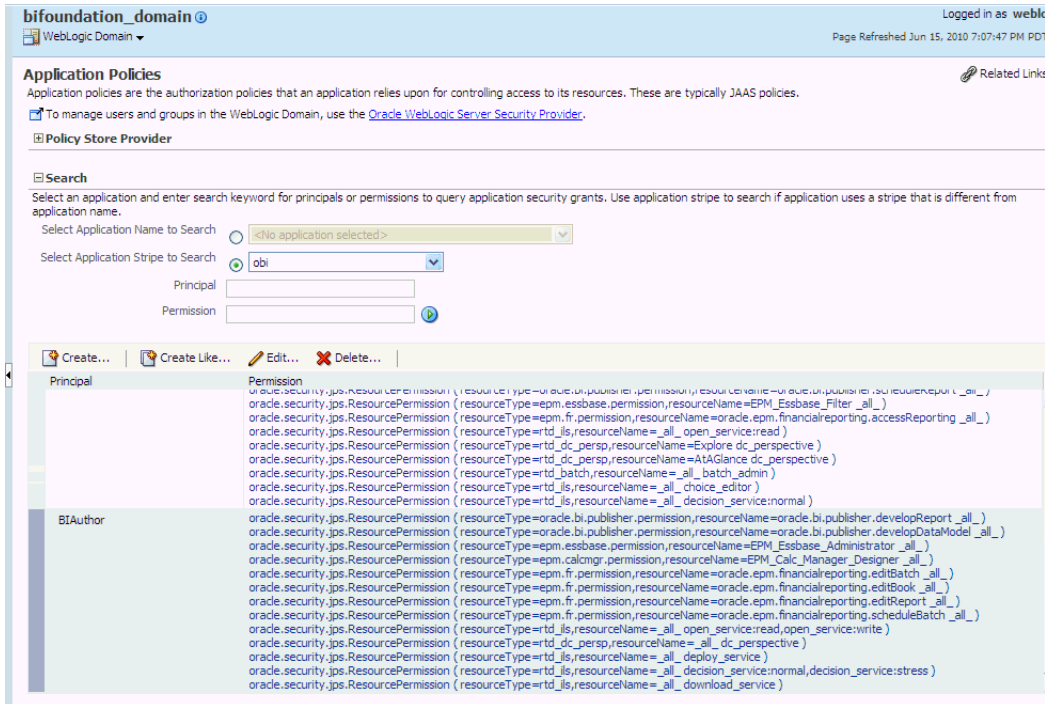
Whether or not the obi application stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Policies** page.

2. If necessary, select **Select Application Stripe to Search**, then select the **obi** from the list. Click the search icon next to **Role Name**.

The Oracle Business Intelligence Application Policies are displayed. The **Principal** column displays the name of the policy **Grantee**.

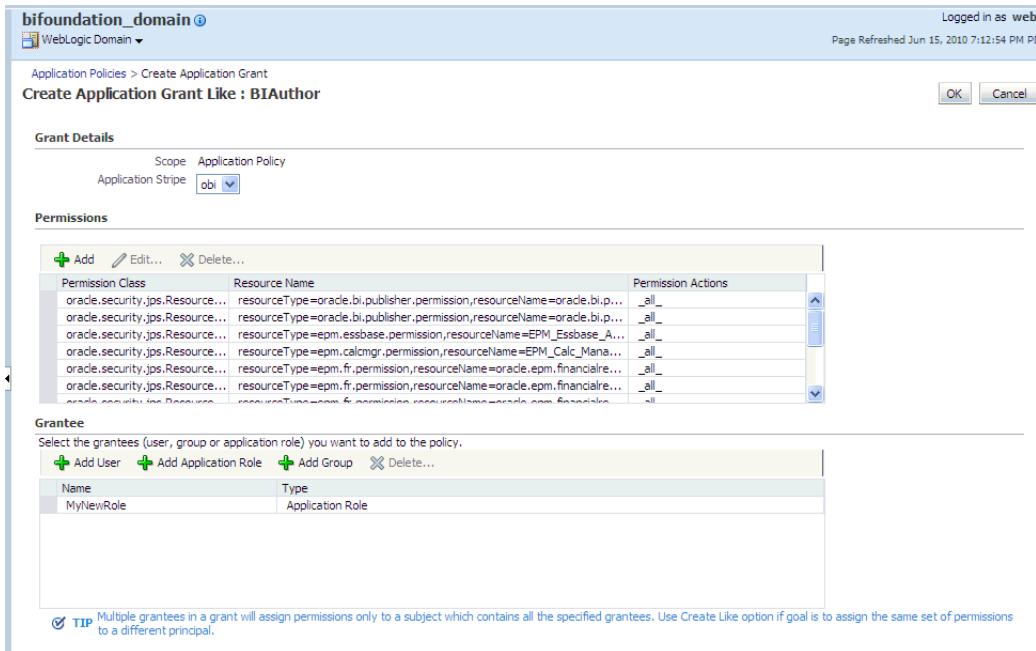
3. Select an existing policy from the table.

The following figure shows the **BIAuthor** Principal selected with the **Create Like** button activated, which is used as an example in this procedure.



4. Click **Create Like** to display the **Create Application Grant Like** page. The Permissions table is automatically filled in with permissions granted by the policy selected.

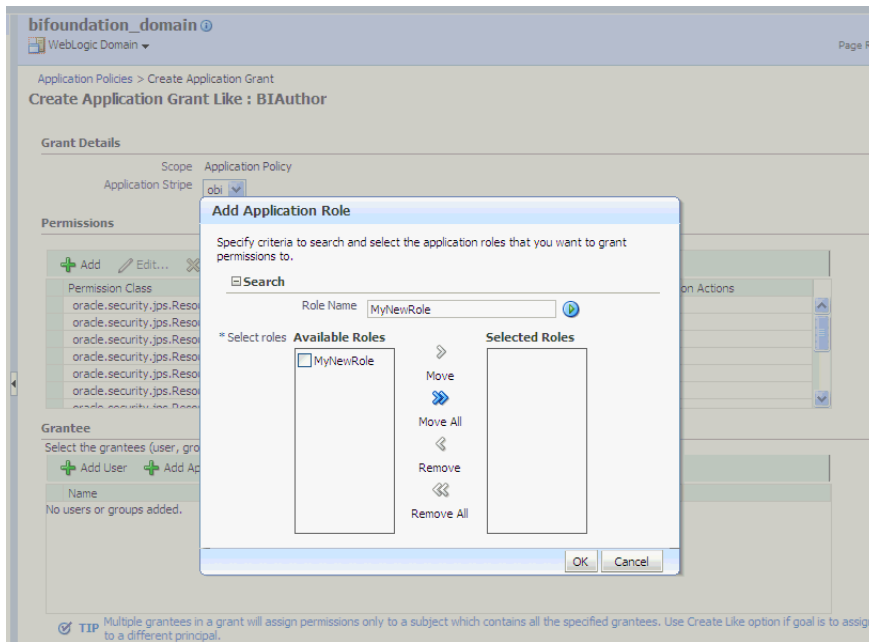
The following figure shows the **Create Application Grant Like** dialog after the BIAuthor policy has been selected. Note that the Permissions section is completed with the permission grants for the BIAuthor policy.



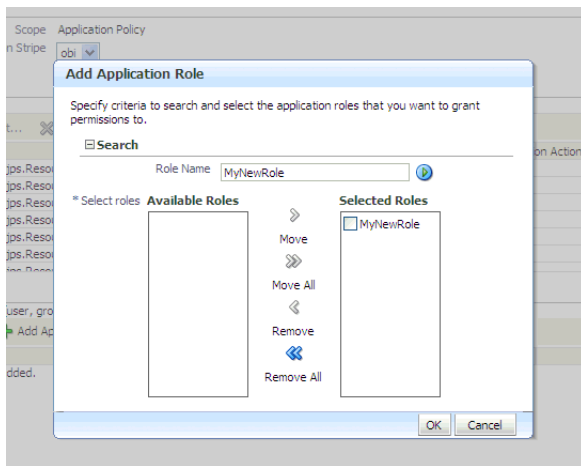
5. To remove any items, select it and click **Delete**.
6. To add Application Roles to the policy, click **Add Application Role** in the **Grantee** area to display the **Add Application Role** dialog.

The following figures use the **MyNewRole** Application Role as an example.

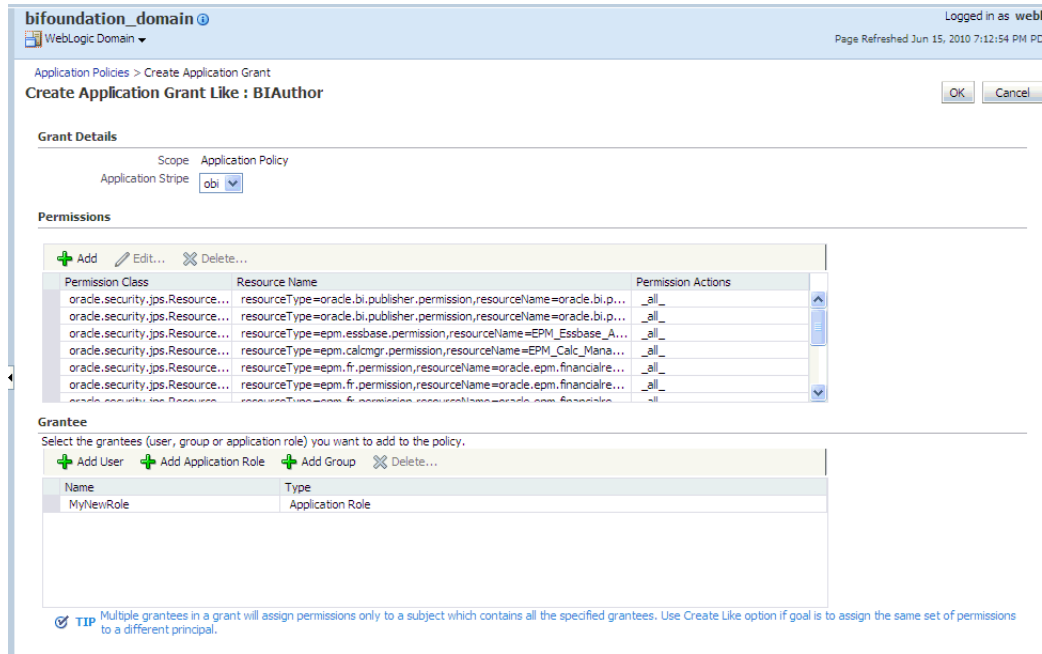
- Complete the **Search** area and click the blue search button next to the **Resource Name** field. The Application Roles matching the search are displayed.



- Select from the **Available Roles** list and use the shuttle controls to move it to **Selected Roles**. The **Create Application Grant Like** page displays with the selected Application Role added as **Grantee**.

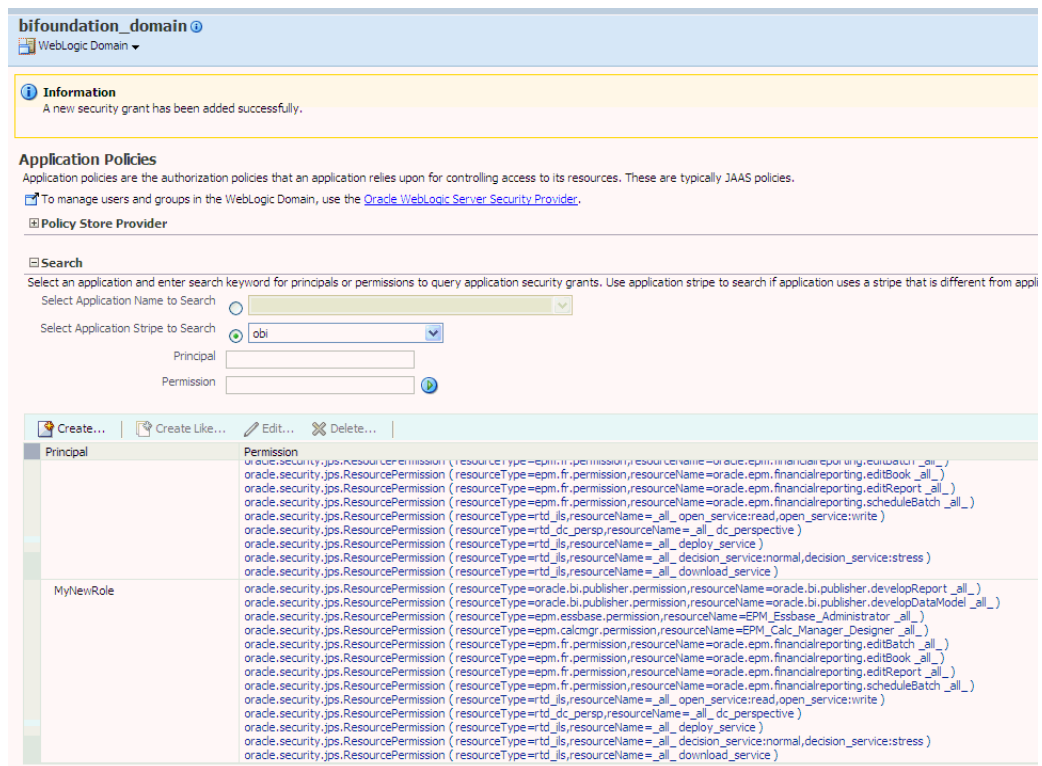


- Click **OK**. You are returned to the **Create Application Grant Like** dialog and the **Grantee** section is completed.



- Click **OK** to return to the **Application Policies** page.

The Principal and Permissions of the Application Policy just created are displayed in the table.



2.4.4 Modifying Application Roles Using Oracle Fusion Middleware Control

The members of an Application Role can be changed using Oracle Fusion Middleware Control. If an Application Role is the Grantee of an Application Policy, the permissions

grants are changed by modifying the permission grants of the corresponding Application Policy.

Caution: Oracle recommends that you do not change the permission grants and membership for the default Application Roles name BIConsumer, BIAuthor, and BIAdministrator.

For more information about managing Application Policies and Application Roles, see "Managing Policies with Fusion Middleware Control" in *Oracle Fusion Middleware Application Security Guide*.

2.4.4.1 Adding or Removing Permission Grants from an Application Role

Use this procedure if you want to change the permission grants for an Application Role. This is done by adding or removing the permission grants for the Application Policy which the Application Role is a grantee of.

To add or remove permission grants from an Application Policy:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Policies** to display the **Application Policies** page.

For more information, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the **obi** stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Policies** page.

2. If necessary, select **Select Application Stripe to Search**, then select **obi** from the list. Click the search icon next to **Role Name**.

The Oracle Business Intelligence Application Policies are displayed. The **Principal** column displays the name of the policy **Grantee**.

3. Select the Application Role from the Principal column and click **Edit**.
4. Add or delete permissions from the **Edit Application Grant** view and click **OK** to save the changes.

2.4.4.2 Adding or Removing Members from an Application Role

Members can be added to or deleted from an Application Role using Fusion Middleware Control. You must perform these tasks while in the WebLogic Domain that Oracle Business Intelligence is installed in. For example, bifoundation_domain. Valid members of an Application Role are Users, Groups, or other Application Roles. Being assigned to an Application Role is to become a member of an Application Role. Best practice is to assign groups instead of individual users to Application Roles.

Note: Be very careful when changing the permission grants and membership for the default Application Roles. For example, the BISystem Application Role provides the permissions required for system communication and changes to it could result in an unusable system.

To add or remove members from an Application Role:

1. Log in to Fusion Middleware Control, navigate to **Security**, then select **Application Roles** to display the **Application Roles** page.

For information about navigating to the **Security** menu, see [Section 2.4.1, "Starting Oracle Fusion Middleware Control and Locating the Pages for Managing Security"](#).

Whether or not the obi application stripe is pre-selected and the Application Policies are displayed depends upon the method used to navigate to the **Application Roles** page

2. If necessary, select **Select Application Stripe to Search**, then select the **obi** from the list. Click the search icon next to **Role Name**.

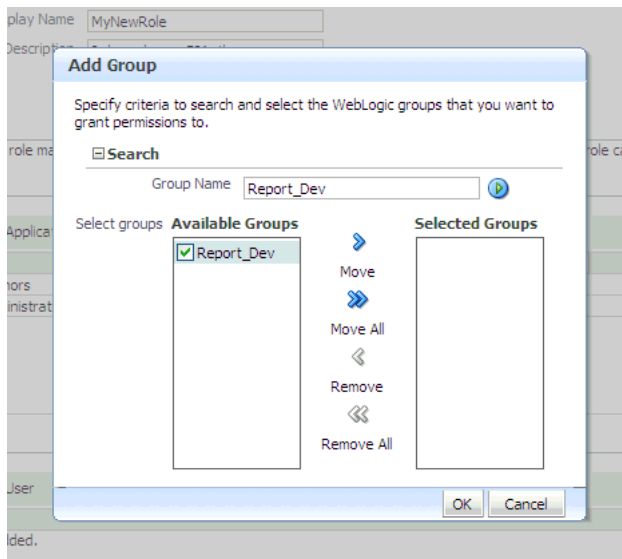
The Oracle Business Intelligence Application Roles are displayed.

3. Select the cell next to the Application Role name and click **Edit** to display the **Edit Application Role** page.

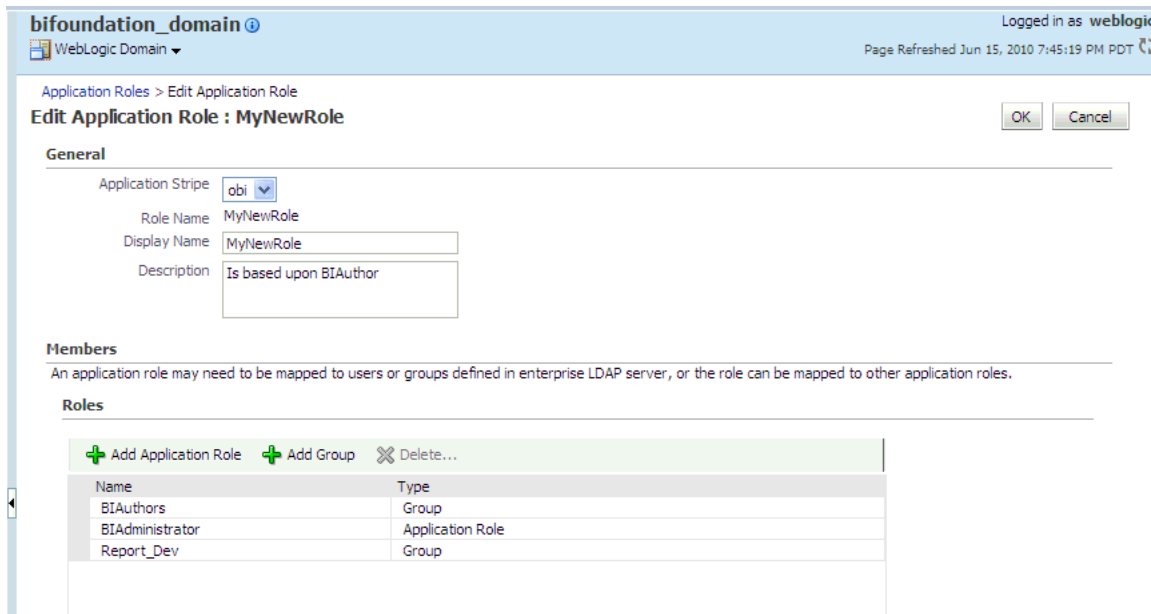
You can add or delete members from the **Edit Application Role** page. Valid members are Application Roles, Groups, and Users.

4. From **Members**, select from the following options:
 - **To delete a member:** Select the **Name** of the member to activate the **Delete** button. Click **Delete**.
 - **To add a member:** Click the **Add** button that corresponds to the member type being added. Select from **Add Application Role**, **Add Group**, and **Add User**.
5. If adding a member, complete **Search** and select from the available list. Use the shuttle controls to move the member to the selected field. Click **OK**.

For example, the following figure shows the **Add Group** dialog and after the **Report_Dev** group has been selected.



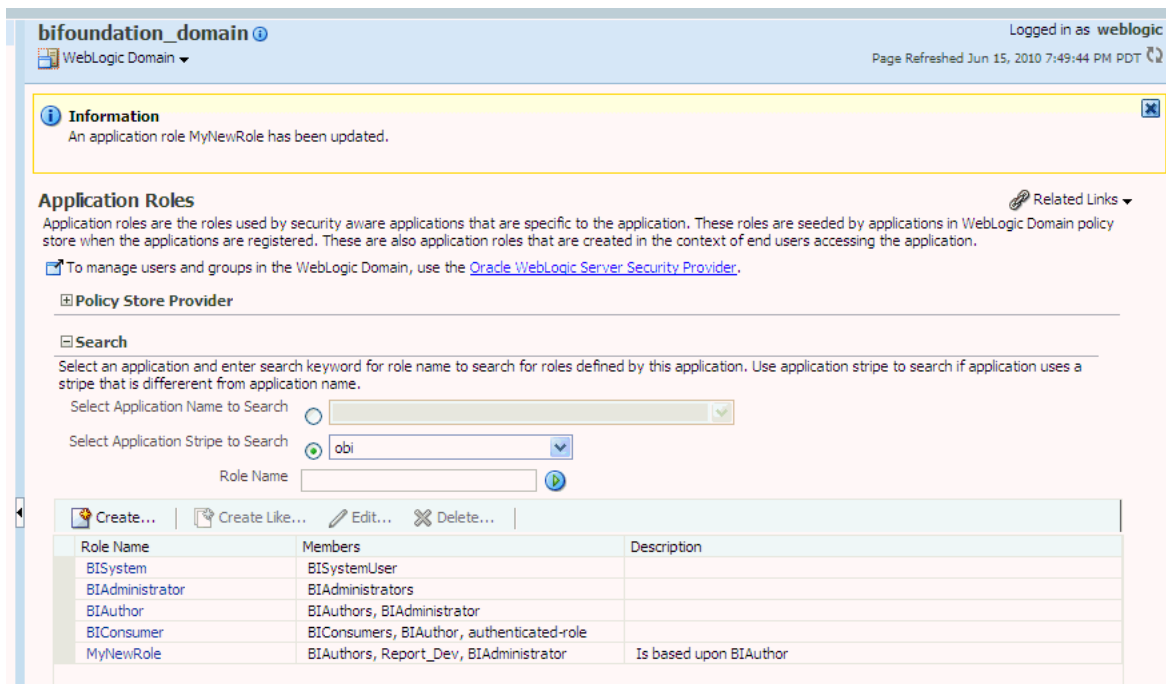
The added member displays in the **Members** column corresponding to the Application Role modified in the **Application Roles** page. For example, the following figure shows the **Edit Application Role** page for the **MyNewRole** Application Role after the **Report_Dev** group has been added.



- Click **OK** in the **Edit Application Role** page to return to the **Application Roles** page.

The members just added to the Application Role display in the **Members** section. If members were deleted, they no longer display.

The following figure shows the **MyNewRole** Application Role with the just added member **Report_Dev** group displaying.



For additional information, see "Managing Application Roles" in *Oracle Fusion Middleware Application Security Guide*.

2.5 Managing Metadata Repository Privileges Using the Oracle BI Administration Tool

This section explains how to use the Oracle BI Administration Tool to configure security in the metadata repository (that is, the RPD file), and contains the following topics:

- [Section 2.5.1, "Overview"](#)
- [Section 2.5.2, "Setting Repository Privileges for an Application Role"](#)
- [Section 2.5.3, "Advanced Security Configuration Topics"](#)

2.5.1 Overview

You use Identity Manager in the Oracle BI Administration Tool to manage permissions for Application Roles, and set access privileges for objects such as subject areas and tables. For an overview about using the Oracle BI Administration Tool to configure security, see [Section 1.7.3, "About Using the Oracle BI Administration Tool"](#).

Note: Oracle Business Intelligence Applications customers should read this section to understand the basics about security and setting up authentication, and then refer to the security and configuration information provided in the Oracle Business Intelligence Applications documentation.

2.5.2 Setting Repository Privileges for an Application Role

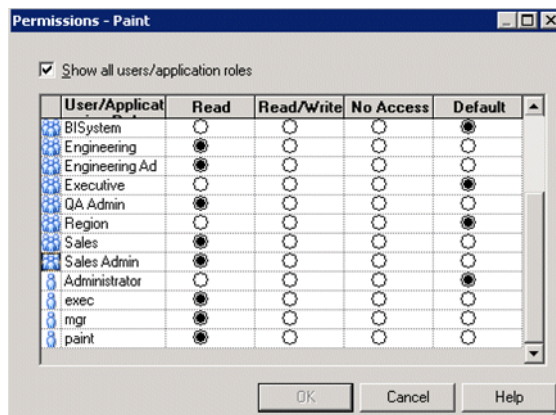
The default Application Roles (that is, BIConsumer, BIAuthor, and BIAdministrator) are preconfigured with permissions for accessing the metadata repository. If you create a new Application Role, you must set appropriate repository permissions for the new Application Role, to enable that role to access the metadata repository (RPD).

Note: In addition, you might assign Oracle BI Presentation Catalog privileges to a new Application Role in Presentation Catalog (for more information, see [Section 2.6.3, "Setting Oracle BI Presentation Catalog Privileges for an Application Role"](#)).

To set repository permissions for an Application Role:

1. Open the repository in the Oracle BI Administration Tool (in Online mode).
2. In the Presentation panel, navigate to the subject area or sub-folder for which you want to set permissions.
3. Right-click the subject area or sub-folder and choose Properties to display the properties dialog.
For example, to provide access to the Paint subject area, right-click Paint.
4. Click Permissions to display the Permissions <Name> dialog.

Note: Ensure that the **Show all users/application roles** check box is selected.



- Use the Permissions <Name> dialog to change the security permissions for Application Roles in the **User/Application Role** list.

For example, to enable users to create dashboards and reports, you might change the repository permissions for an Application Role named BISalesAnalysis from 'Read' to 'Read/Write'.

Note: Best practice is to modify permissions for Application Roles, not modify permissions for individual users.

Tip: To see all permissions for an object in the Presentation pane, right-click the object and choose Permission Report to display a list of Users and Application Roles and what permissions that have for the selected object.

2.5.3 Advanced Security Configuration Topics

This section contains advanced topics.

2.5.3.1 About Managing Application Roles in the Metadata Repository

Application Role definitions are maintained in the policy store and any changes must be made using the administrative interface. The repository maintains a *copy* of the policy store data to facilitate repository development. The Oracle BI Administration Tool displays Application Role data from the repository's copy; you are not viewing the policy store data in real time. Policy store changes made while you are working with an offline repository are not available in the Administration Tool until the policy store next synchronizes with the repository. The policy store synchronizes data with the repository copy whenever BI Server restarts; if a mismatch in data is found, an error message is displayed.

While working with a repository in offline mode, you might discover that the available Application Roles do not satisfy the membership or permission grants needed at the time. A *placeholder for an Application Role* definition can be created in the Administration Tool to facilitate offline repository development. But this is just a placeholder visible in the Administration Tool and is not an actual Application Role. You cannot create an actual Application Role in the Administration Tool. You can create an Application Role only in the policy store, using the administrative interface available for managing the policy store.

An Application Role must be defined in the policy store for each Application Role placeholder created using the Administration Tool *before* bringing the repository back online. If a repository with role placeholders created while in offline mode is brought online before valid Application Roles are created in the policy store, then the

Application Role placeholder disappears from the Administration Tool interface. Always create a corresponding Application Role in the policy store before bringing the repository back online when using role placeholders in offline repository development.

For more information about how to create a placeholder for an Application Role during repository development, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

2.6 Managing Presentation Services Catalog Privileges Using Application Roles

This section explains how to manage Oracle BI Presentation Catalog privileges using Application Roles, and contains the following topics:

- [Section 2.6.1, "Overview"](#)
- [Section 2.6.2, "About Presentation Services Catalog Privileges"](#)
- [Section 2.6.3, "Setting Oracle BI Presentation Catalog Privileges for an Application Role"](#)
- [Section 2.6.4, "Advanced Security Configuration Topics"](#)

2.6.1 Overview

The Oracle BI Presentation Server uses Presentation Services Catalog privileges to control access to features such as Answers, Delivers, and BI Publisher. The default Oracle Business Intelligence Application Roles (BIAdministrator, BIAuthor, BICustomer) are automatically configured with these privileges during installation, in addition to the Oracle Business Intelligence Application Policy permissions.

Systems upgraded from a previous release can continue to use Catalog groups to grant these privileges, but this is not considered a best practice. Best practice is to use Application Roles to manage privileges, which streamlines the security management process. For example, using the same set of Application Roles throughout the system eliminates the need to manage a separate set of Catalog groups and member lists. For more information regarding how to continue using upgraded Catalog groups to manage Presentation Services Catalog privileges, see [Section A.2.1, "Changes Affecting Security in Presentation Services"](#).

Note: Assigning an Application Role to be a member of a Catalog group creates complex group inheritance and maintenance situations and is not considered a best practice.

When groups are assigned to Application Roles, the group members are automatically granted associated Presentation Services Catalog privileges. This is in addition to the Oracle Business Intelligence permissions.

Tip: A list of Application Roles that a user is a member of is available from the Roles and Groups tab in the **My Account** dialog in Presentation Services.

2.6.2 About Presentation Services Catalog Privileges

Presentation Services Catalog privileges are maintained in BI Presentation Catalog. Presentation Services privileges control access only to Presentation Services Catalog

features. These privileges grant or deny access rights to Presentation Services features and have no effect in other Oracle Business Intelligence components.

Being a member of a group assigned to a default Application Role grants Presentation Services Catalog privileges, in addition to the Oracle Business Intelligence permissions discussed in [Section B.4.1.3, "Default Application Roles, Permission Grants, and Group Mappings"](#). The Presentation Services Catalog privileges granted by a default Application Role can be modified by adding or removing default privilege grants using the **Manage Privileges** page.

Whenever a new catalog is created, it is populated with the default Application Role to Presentation Services Catalog privilege mappings. If you have changed the default mappings and want to see the default associations, create a new catalog by pointing to a file location where no catalog exists. When the Oracle BI Presentation Server starts, a catalog is created as part of the initialization process.

Presentation Services privileges can be granted to users both explicitly and by inheritance. However, explicitly *denying* a Presentation Services privilege takes precedence over user access rights either granted or inherited as a result of group or Application Role hierarchy.

2.6.3 Setting Oracle BI Presentation Catalog Privileges for an Application Role

If you create an Application Role, you must set appropriate privileges for the Application Role in the Oracle BI Presentation Catalog to enable that role to perform various functional tasks. For example, you might want users with an Application Role named BISalesAdministrator to be able to create Actions in Oracle Business Intelligence. In this case, you would grant them a privilege named 'Create Invoke Action'.

Oracle BI Presentation Catalog privileges are stored in the BI Presentation Server and cannot be accessed from the administrative interfaces used to manage the policy store. If you have created a new Application Role to grant Oracle Business Intelligence permissions, then you must set Presentation Services Catalog privileges to that new role in addition to any Oracle Business Intelligence permissions.

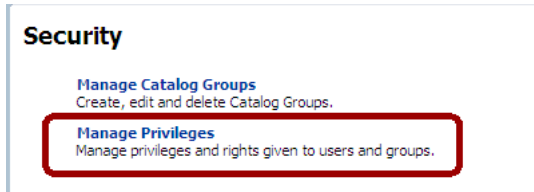
Note: Presentation Services Catalog privileges can be assigned to a new Application Role programmatically using SecurityService Service. For more information, see "SecurityService Service" in *Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition*

To set BI Presentation Catalog privileges for an Application Role:

1. Log in to Oracle Business Intelligence as a user with Administrator privileges.
2. From the Home page in Presentation Services, select **Administration** to display the Administration page.

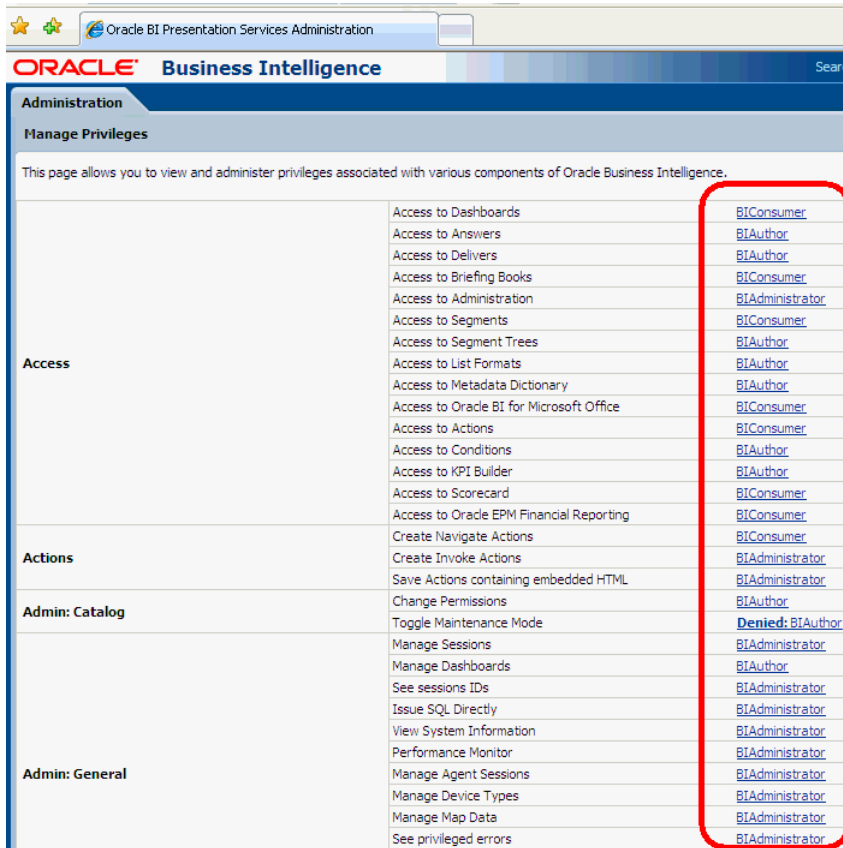


Note: If you log in as a user without Administrator privileges, the Administration option is not displayed.



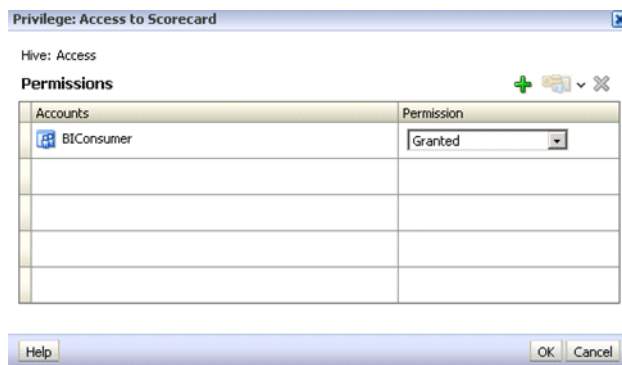
3. In the Security area, click **Manage Privileges** to display the Manage Privileges page.

The screenshot below shows the Manage Privileges page with Application Roles highlighted for BI Presentation Catalog privileges.



4. Click an Application Role next to the privilege that you want to edit to display the Manage Privileges page.

For example, to edit the privilege named 'Access to Scorecard' for the Application Role named BIConsumer, click the BIConsumer link next to Access\Access to Scorecard. The example screenshot below shows the Privilege dialog for the Access to Scorecard privilege.



Use the Privilege dialog to change permissions, grant privileges to Application Roles, and revoke privileges from an Application Role. For example, to grant the selected privilege to an Application Role, you must add the Application Role to the **Permissions** list.

5. To add an Application Role to the **Permissions** list, do the following:
 - a. Click **Add Users/Roles**.
 - b. Select **Application Roles** from the list and click **Search**.
 - c. Select the Application Role from the results list.
 - d. Use the shuttle controls to move the Application Role to the **Selected Members** list.
 - e. Click **OK**.
6. Set the permission for the Application Role by selecting **Granted** or **Denied** in the **Permission** list.

Note: Explicitly *denying* a Presentation Services privilege takes precedence over user access rights either granted or inherited as a result of group or Application Role hierarchy.
7. Save your changes.

Note: Existing Catalog groups are migrated during the upgrade process. Moving an existing Presentation Services Catalog security configuration to the role-based Oracle Fusion Middleware security model based requires that each Catalog group be replaced with a corresponding Application Role. To duplicate an existing Presentation Services configuration, replace each Catalog group with a corresponding Application Role that grants the same Presentation Services Catalog privileges. You can then delete the original Catalog group from Presentation Services.

2.6.4 Advanced Security Configuration Topics

This section contains advanced topics.

2.6.4.1 About Encryption in BI Presentation Services

The Oracle BI Server and Oracle BI Presentation Services client support industry-standard security for login and password encryption. When an end user enters a user name and password in the Web browser, the Oracle BI Server uses the Hyper Text Transport Protocol Secure (HTTPS) standard to send the information to a

secure Oracle BI Presentation Services port. From Oracle BI Presentation Services, the information is passed through ODBC to the Oracle BI Server, using Triple DES (Data Encryption Standard). This provides a high level of security (168 bit), preventing unauthorized users from accessing data or Oracle Business Intelligence metadata.

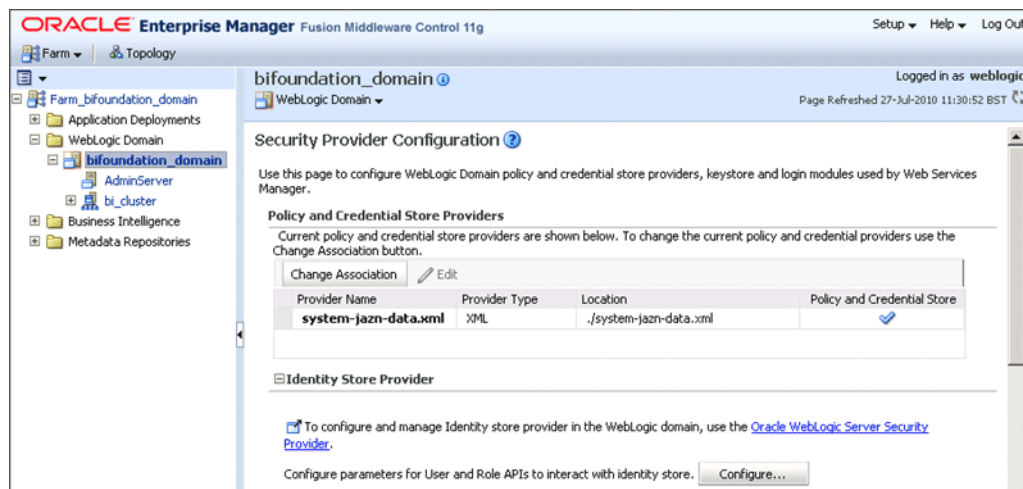
At the database level, Oracle Business Intelligence administrative users can implement database security and authentication. Finally, a proprietary key-based encryption provides security to prevent unauthorized users from accessing the metadata repository.

2.7 Enabling High Availability of the Default Embedded Oracle WebLogic Server LDAP Identity Store

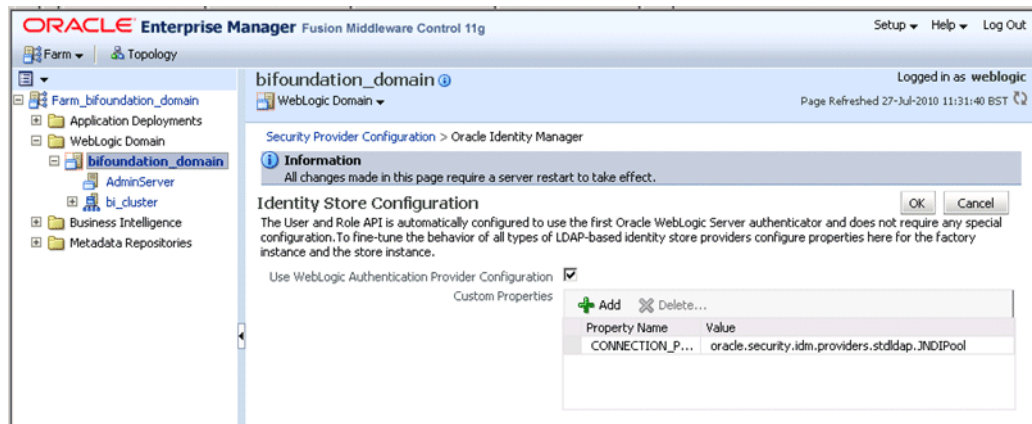
To enable high availability of the default embedded Oracle WebLogic Server LDAP Identity Store in a clustered environment, you configure the `virtualize` attribute. When you set the `virtualize` attribute value to `true`, Managed servers are able to use a copy of the embedded default Oracle WebLogic Server LDAP Identity Store.

To configure the `virtualize` attribute for high availability of the default embedded Oracle WebLogic Server LDAP Identity Store:

1. In Fusion Middleware Control, navigate to `\Weblogic domain\bifoundation_domain` in the navigation pane.
2. Right-click `bifoundation_domain` and select `Security`, then `Security Provider Configuration` to display the `Security Provider Configuration` page.

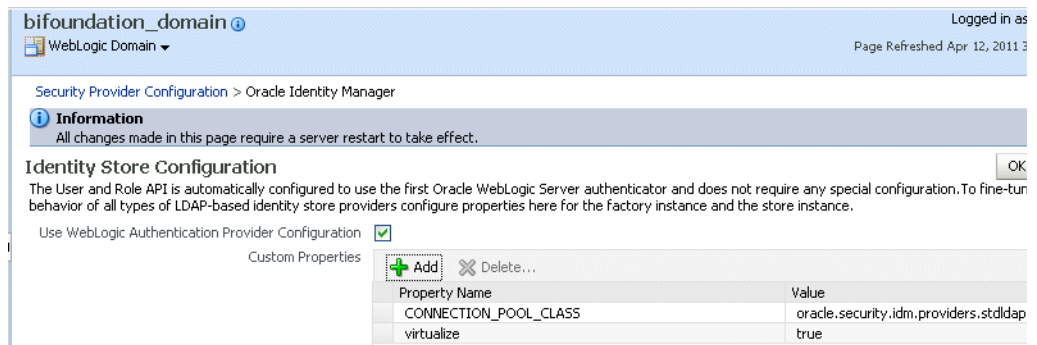


3. In the Identity Store Provider area, click **Configure** to display the Identity Store Configuration page.



4. In the Custom Properties area, use the Add option to add a Custom Property called virtualize.

The screenshot below shows an example set of Custom Properties including a new property called virtualize with its value set to true.



5. Click **OK** to save the changes.
6. Restart the Admin Server, Managed Server(s), and BI components.

Using Alternative Authentication Providers

This chapter explains how to configure Oracle Business Intelligence to use commercial directory servers for authentication instead of using the default Oracle WebLogic Server LDAP directory. This chapter explains how to set up Oracle Business Intelligence to use Oracle Internet Directory and other authentication providers, and also explains how to use OID as a policy store, and credential store.

Note: For a detailed list of security setup steps, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

This chapter contains the following sections:

- [Section 3.1, "Common Tasks for Deploying an Alternative Authentication Provider"](#)
- [Section 3.2, "Configuring Alternative Authentication Providers"](#)
- [Section 3.3, "Configuring OID as the Policy Store and Credential Store"](#)
- [Section 3.4, "Configuring an LDAP Authentication Provider as the Single Source"](#)

3.1 Common Tasks for Deploying an Alternative Authentication Provider

[Table 3–1](#) contains common authorization configuration tasks and provides links for more information.

Table 3–1 Task Map: Configuring Authorization for Oracle Business Intelligence

Task	Description	Information
Configure Oracle BI to use one or more alternative authentication providers.	Configure Oracle BI to use Oracle Internet Directory or Active Directory.	Section 3.2, "Configuring Alternative Authentication Providers"
Configure Oracle BI to use a new Credential Store and Policy Store provider.	Configure Oracle BI to use Oracle Internet Directory as the new Credential Store and Policy Store provider.	Section 3.3, "Configuring OID as the Policy Store and Credential Store"

3.2 Configuring Alternative Authentication Providers

When you use an alternative authentication provider, you will typically use administrative tools provided by your provider vendor to set up your users and groups. You can then assign these users and groups to the preconfigured Application

Roles (for example, BIConsumer, BIAuthors, and BIAAdministrator), and any additional Application Roles that you create. For more information about assigning users and groups to Application Roles, see [Section 2.4, "Creating and Managing Application Roles and Application Policies Using Fusion Middleware Control"](#).

You continue to use the other Oracle Business Intelligence tools (i.e. the Oracle BI Administration Tool, Fusion Middleware Control, and the Administration Page in Analytics) to manage the other areas of the security model.

For a current list of supported authentication providers and directory servers to use with Oracle Business Intelligence, you select the authentication provider from the **Type** list in the **Create a New Authentication Provider** page. For more information, see [System Requirements and Certification](#).

You can configure more than one supported authentication provider (for more information, see [Section 3.2.3.3, "Configuring Oracle Business Intelligence to use Multiple Authentication Providers"](#)).

If a directory server other than the default WebLogic LDAP Server is being used, you can view the users and groups from that directory server in Oracle WebLogic Server Administration Console. However, you must continue to manage the users and groups in the interface for the directory server being used. For example, if you are using OID, you must use OID Console to create and edit users and groups.

This topic contains the following sections:

- [Section 3.2.1, "High Level Steps for Configuring Alternative Authentication Providers"](#)
- [Section 3.2.2, "Prerequisites for Using Alternative Authentication Providers"](#)
- [Section 3.2.3, "Configuring Oracle Business Intelligence To Use Alternative Authentication Providers"](#)
- [Section 3.2.4, "Configuring User And Group Name Attributes In The Identity Store"](#)
- [Section 3.2.5, "Configuring the GUID Attribute in the Identity Store"](#)
- [Section 3.2.6, "Configuring a New Trusted User \(BISystemUser\)"](#)
- [Section 3.2.7, "Regenerating User GUIDs"](#)

3.2.1 High Level Steps for Configuring Alternative Authentication Providers

To configure alternative authentication providers:

Prerequisite: Ensure that only the Admin Server is running.

1. Setup and configure groups and users to enable Oracle Business Intelligence to use an alternative authentication provider as described in [Section 3.2.2, "Prerequisites for Using Alternative Authentication Providers"](#).
2. Configure Oracle Business Intelligence to use alternative authentication providers as described in [Section 3.2.3, "Configuring Oracle Business Intelligence To Use Alternative Authentication Providers"](#).
3. Configure the User Name Attribute in the Identity Store to match the User Name Attribute in the authentication provider as described in [Section 3.2.4, "Configuring User And Group Name Attributes In The Identity Store"](#).
4. Go to the myrealm\Users and Groups tab to verify that the users and groups from the alternative authentication provider are displayed correctly. If the users and

groups are displayed correctly, then proceed to Step 5. Otherwise, re-set your configuration settings and re-try.

5. Configure a new trusted user account for a user in the alternative authentication provider to match the account for DefaultAuthenticator as described in [Section 3.2.6, "Configuring a New Trusted User \(BISystemUser\)"](#).
6. Update the user GUIDs to be the values in the alternative authentication provider as described in [Section 3.2.7, "Regenerating User GUIDs"](#).
7. Assign Application Roles to the correct groups (enterprise roles) for the new identity store, using Fusion Middleware Control.

For more information, see [Section 2.4.4.2, "Adding or Removing Members from an Application Role"](#).

3.2.2 Prerequisites for Using Alternative Authentication Providers

Before you configure an Oracle Business Intelligence installation to use an alternative authentication provider, you must make sure that groups and users exist, and are correctly configured in the alternative authentication provider. They can then be associated with corresponding BI Application Roles that already exist in the Oracle Business Intelligence installation.

To setup users and groups in an alternative authentication provider:

For example, to set up users and groups for OID, you would carry out this task in the OID Console.

1. Create groups in the alternative authentication provider, that can be assigned to existing BI Application Roles. For example:
 - BIAdministrators, BISystemUsers, BIAuthors, BICongsumers
2. Create users in the alternative authentication provider, that correspond to the groups created in Step 1. For example:
BIADMIN, BISYSTEM, BIAUTHOR, BICONGSUMER.

3. Assign the users to their respective groups, in the alternative authentication provider.

For example you would assign the BIADMIN user to the BIAdministrators group, and the BISYSTEM user to the BISystemUsers group.

4. Make the BIAuthors group part of the BICongsumers group in the alternative authentication provider.

Doing this enables BIAuthors to inherit permissions and privileges of BICongsumers.

3.2.3 Configuring Oracle Business Intelligence To Use Alternative Authentication Providers

The following procedures describe how to configure your Oracle Business Intelligence installation to use an alternative authentication provider instead of the default Oracle WebLogic Server LDAP directory, and how to configure multiple authentication providers.

- [Section 3.2.3.1, "Configuring Oracle Business Intelligence to use Oracle Internet Directory as the Authentication Provider"](#)

- [Section 3.2.3.2, "Configuring Oracle Business Intelligence to use Active Directory as the Authentication Provider"](#)
- [Section 3.2.3.3, "Configuring Oracle Business Intelligence to use Multiple Authentication Providers"](#)

Note: This section shows settings for specific authentication providers. However, the instructions can also be used as a general guide for other authentication providers.

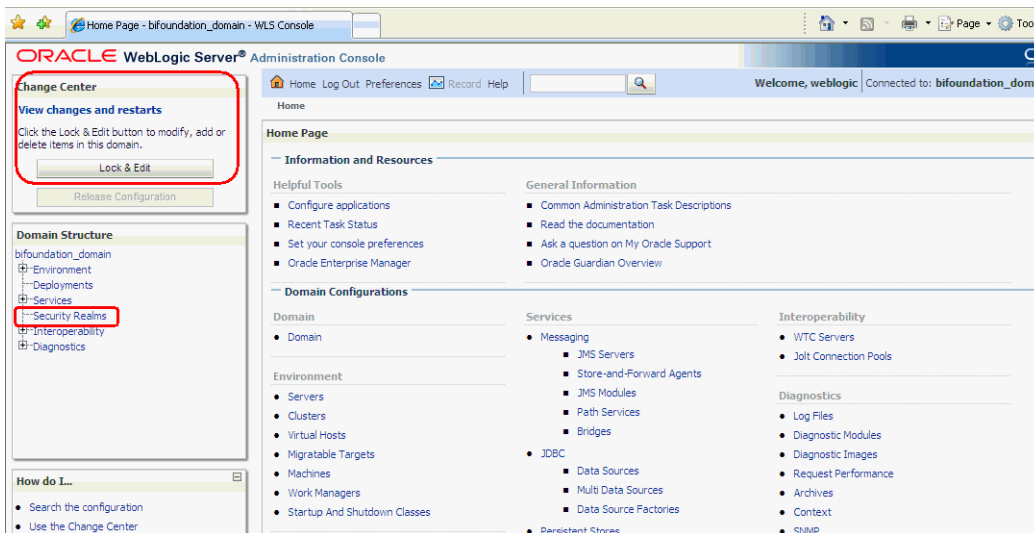
3.2.3.1 Configuring Oracle Business Intelligence to use Oracle Internet Directory as the Authentication Provider

This procedure illustrates how to reconfigure your Oracle Business Intelligence installation to use Oracle Internet Directory.

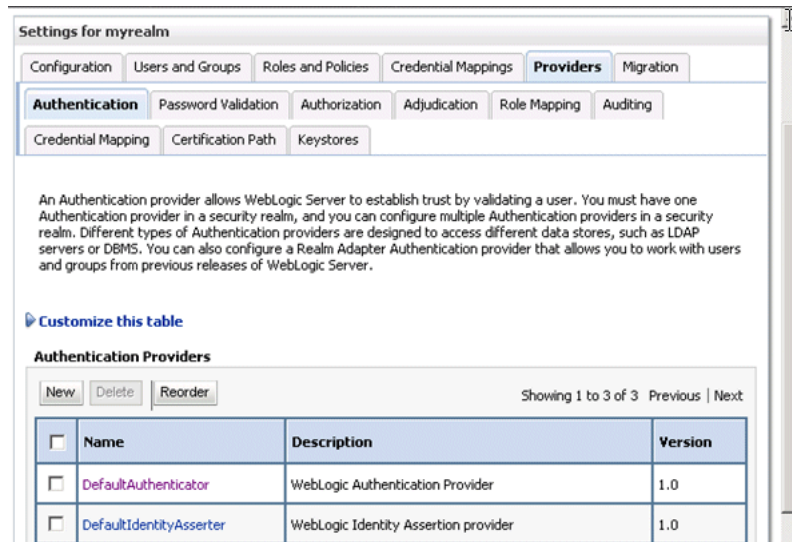
To configure Oracle Business Intelligence to use OID as the authentication provider:

1. Login to Oracle WebLogic Server Administration Console, and click **Lock & Edit** in the Change Center.

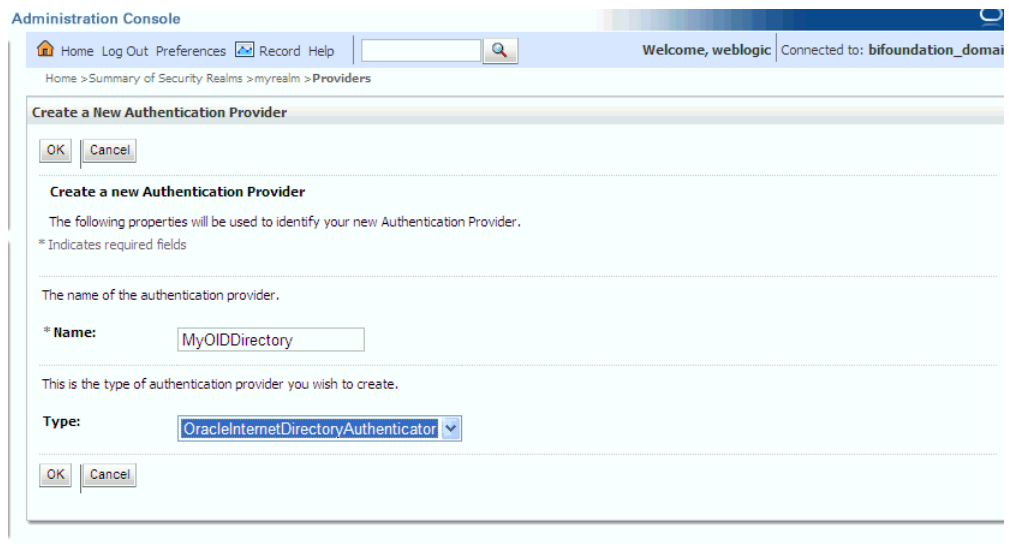
For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).



2. Select **Security Realms** from the left pane and click **myrealm**.
The default Security Realm is named **myrealm**.
3. Display the **Providers** tab, then display the **Authentication** sub-tab.



4. Click **New** to launch the **Create a New Authentication Provider** page.

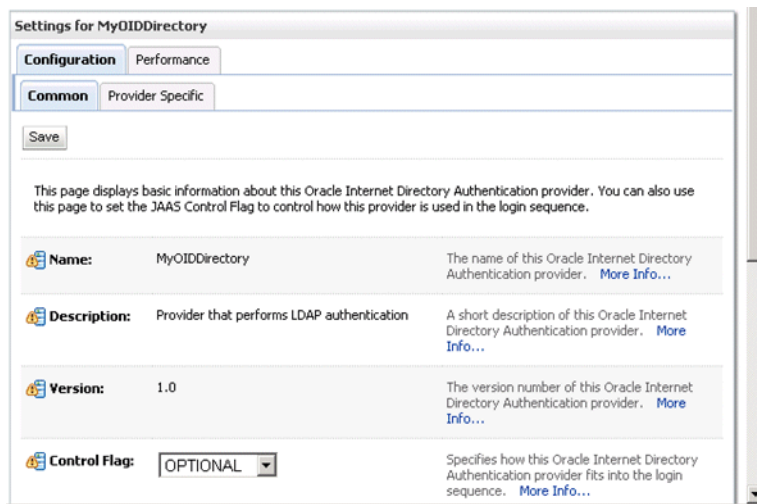


5. Enter values in the **Create a New Authentication Provider** page as follows:

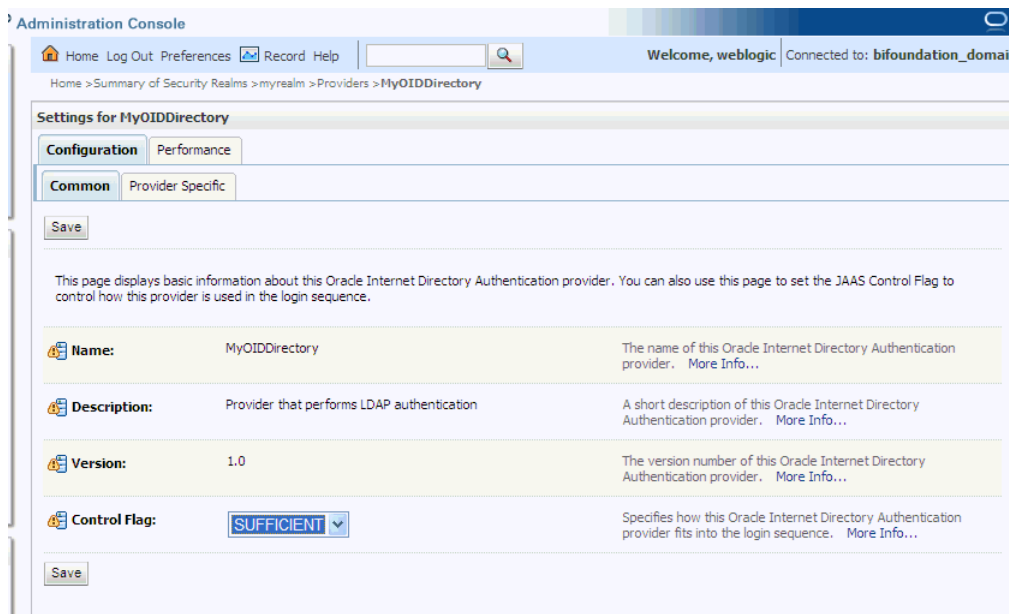
- **Name:** Enter a name for the authentication provider. For example, MyOIDDirectory.
- **Type:** Select OracleInternetDirectoryAuthenticator from the list.
- Click **OK** to save the changes and display the authentication providers list updated with the new authentication provider.



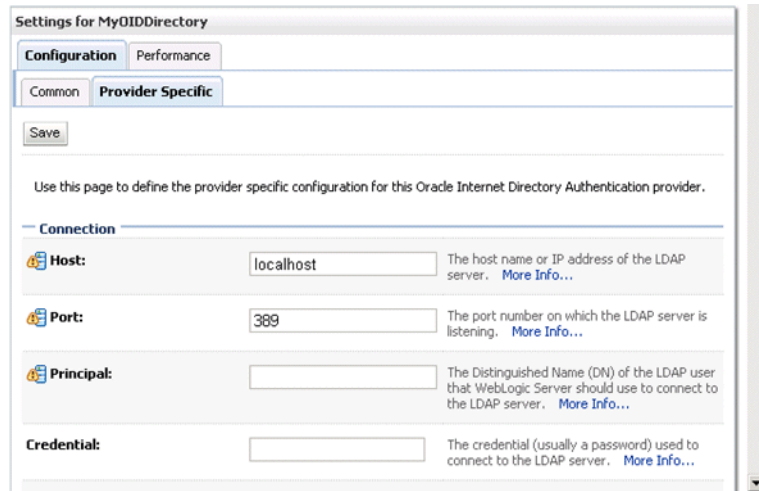
- Click MyOIDDirectory in the **Name** column to display the Settings page.



- Display the **Configuration \ Common** tab, and use the **Control Flag** list to select 'SUFFICIENT', then click **Save**.



- Display the **Provider Specific** tab.



9. Use the Provider Specific tab to specify the details listed in the table below.

Section Name	Field Name	Description
Connection	Host	The host name of the Oracle Internet Directory server.
Connection	Port	The port number on which the Oracle Internet Directory server is listening.
Connection	Principal	The distinguished name (DN) of the Oracle Internet Directory user to be used to connect to the Oracle Internet Directory server. For example: <code>cn=OIDUser,cn=users,dc=us,dc=mycompany,dc=com</code> .
Connection	Credential	Password for the Oracle Internet Directory user entered as the Principal.
Groups	Group Base DN	The base distinguished name (DN) of the Oracle Internet Directory server tree that contains groups.
Users	User Base DN	The base distinguished name (DN) of the Oracle Internet Directory server tree that contains users.
Users	All Users Filter	LDAP search filter. Click More Info... for details.
Users	User From Name Filter	LDAP search filter. Click More Info... for details.
Users	User Name Attribute	The attribute that you want to use to authenticate (for example, <code>cn</code> , <code>uid</code> , or <code>mail</code>). For example, to authenticate using a user's email address you set this value to <code>mail</code> . Note: The value that you specify here must match the User Name Attribute that you are using in the authentication provider, as described in the next task Section 3.2.4.1, "Configuring the User Name Attribute in the Identity Store" .

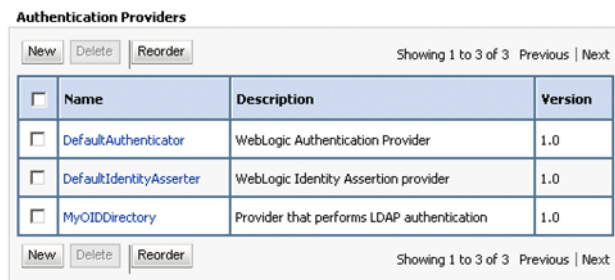
Section Name	Field Name	Description
General	GUID attribute	The attribute used to define object GUIDs in OID. orclguid Note: You should not normally change this default value, however, if you do, you must also specify the changed value in Fusion Middleware Control, as described in the task Section 3.2.5, "Configuring the GUID Attribute in the Identity Store" .

The screenshot below shows the users area of the Provider Specific tab.

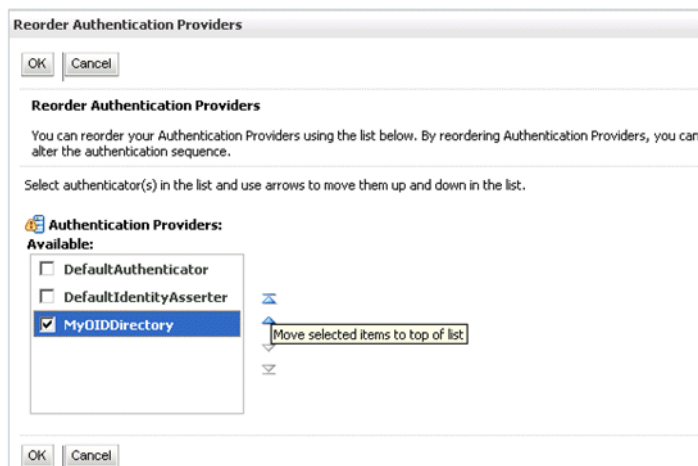


For more information about configuring authentication providers in Oracle WebLogic Server, see *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

10. Click **Save**.
11. At the main **Settings for myrealm** page, display the **Providers** tab, then display the **Authentication** sub-tab.



12. Click **Reorder**. to display the Reorder Authentication Providers page.
13. Select MyOIDDirectory and use the arrow buttons to move it into the first position in the list, then click **OK**.



The screenshot below shows the re-ordered list of authentication providers.

<input type="checkbox"/>	Name	Description	Version
<input type="checkbox"/>	MyOIDDirectory	Provider that performs LDAP authentication	1.0
<input type="checkbox"/>	DefaultAuthenticator	WebLogic Authentication Provider	1.0
<input type="checkbox"/>	DefaultIdentityAsserter	WebLogic Identity Assertion provider	1.0

14. Click DefaultAuthenticator in the **Name** column to display the **Settings for DefaultAuthenticator** page.
15. Display the **Configuration \ Common** tab, and use the **Control Flag** list to select 'SUFFICIENT', then click Save.
16. In the Change Center, click **Activate Changes**.
17. Restart Oracle WebLogic Server.

3.2.3.2 Configuring Oracle Business Intelligence to use Active Directory as the Authentication Provider

This procedure illustrates how to reconfigure your Oracle Business Intelligence installation to use Active Directory.

The example data in this section uses a fictional company called XYZ Corporation that wants to set up WNA SSO for Oracle Business Intelligence for their internal users.

This example uses the following information:

- Active Directory Domain
 - The XYZ Corporation has an AD domain, called xyzcorp.com, which authenticates all the internal users. When users log into the corporate network from Windows computers, the log into the AD domain. The domain controller is addc.xyzcor.cop, which controls the AD domain.
- Oracle BI EE WebLogic domain
 - The XYZ Corporation has a WebLogic domain called bifoundation_domain (default name) installed on a network server domain called bieesvr1.xyz2.com.
- System Administrator and Test user

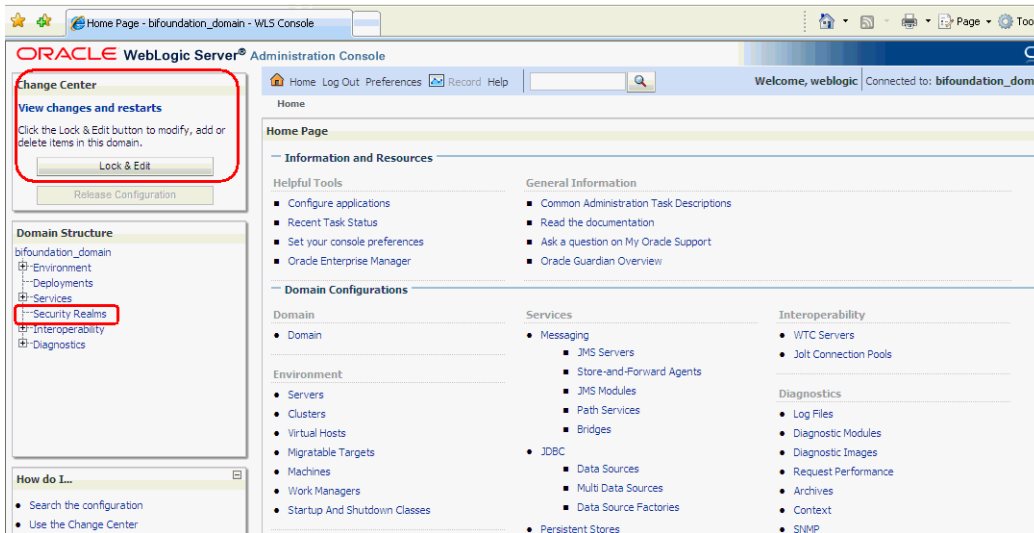
The following system administrator and domain user test the configuration:

- System Administrator user
Jo Smith (login=jsmith, hostname=xyz1.xyzcorp.com)
- Domain user
Bob Jones (login=bjones hostname=xyz47.xyzcorp.com)

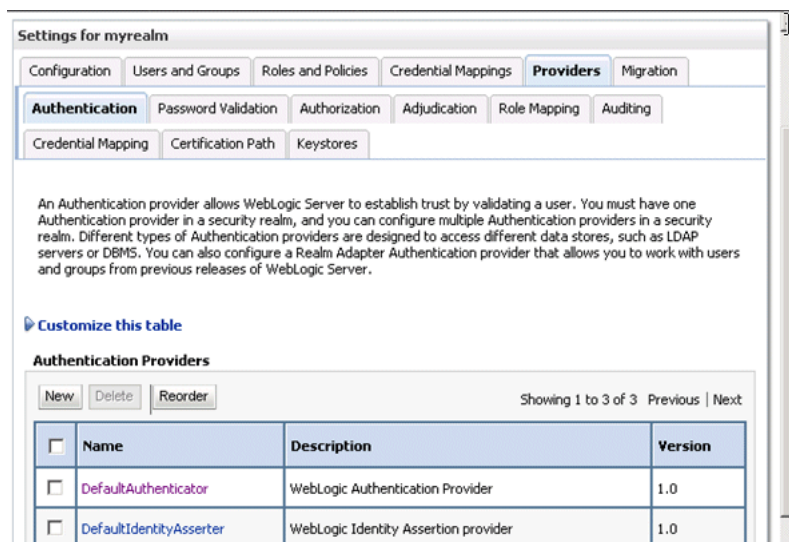
To configure Oracle Business Intelligence to use Active Directory as the Authentication Provider:

1. Login to Oracle WebLogic Server Administration Console, and click **Lock & Edit** in the Change Center.

For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).



2. Select **Security Realms** from the left pane and click **myrealm**.
The default Security Realm is named **myrealm**.
3. Display the **Providers** tab, then display the **Authentication** sub-tab.



4. Click **New** to launch the **Create a New Authentication Provider** page.

5. Enter values in the **Create a New Authentication Provider** page as follows:

- **Name:** Enter a name for the authentication provider. For example, ADAuthenticator.
- **Type:** Select ActiveDirectoryAuthenticator from the list.
- Click **OK** to save the changes and display the authentication providers list updated with the new authentication provider.

Name	Description
DefaultAuthenticator	WebLogic Authentication Provider
DefaultIdentityAsserter	WebLogic Identity Assertion provider
ADAuthenticator	Provider that performs LDAP authentication

6. Click DefaultAuthenticator in the **Name** column to display the Settings page.

7. In the Common Authentication Provider Settings page, change the **Control Flag** from REQUIRED to SUFFICIENT and click **Save**.

8. In the authentication providers table, click ADDirectory in the **Name** column to display the Settings page.

9. Display the **Configuration \ Common** tab, and use the **Control Flag** list to select 'SUFFICIENT', then click **Save**.

10. Display the **Provider Specific** tab to access the options which apply specifically to connecting to an Active Directory LDAP authentication store.
11. Use the Provider Specific tab to specify the details listed in the table below.

Section Name	Field Name	Description
Connection	Host	The name of the AD server addc.xyzcorp.com.
Connection	Port	The port number on which the AD server is listening (389).
Connection	Principal	The LDAP DN for the user we will connect to Active Directory as, when retrieving information about LDAP users. For example: cn=jsmith,cn=users,dc=us,dc=xyzcorp,dc=com.
Connection	Credential/Confirm Credential	Password for the Principal specified above (for example welcome1).
Groups	Group Base DN	The LDAP query used to find groups in AD. Note: Only groups defined under this path will be visible to WebLogic. (CN=Builtin,DC=xyzcorp,DC=com).
Users	User Base DN	The LDAP query used to find users in AD. CN=Users,DC=xyzcorp,DC=com
Users	User Name Attribute	Attribute used to specify user name in AD. Default value is cn. Do not change this value unless you know your AD is configured to use a different attribute for user name. If you do change it, see, Section 3.2.4.1, "Configuring the User Name Attribute in the Identity Store" .
Users	All Users Filter	LDAP search filter. Click More Info... for details.
Users	User From Name Filter	LDAP search filter. Click More Info... for details.
Users	User Object class	user
General	GUID attribute	The attribute used to define object GUIDs in AD. objectguid Note: You should not normally change this default value, however, if you do, you must also specify the changed value in Fusion Middleware Control, as described in the task Section 3.2.5, "Configuring the GUID Attribute in the Identity Store" .

For more information about configuring authentication providers in Oracle WebLogic Server, see *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

12. Click **Save**.

13. At the main **Settings for myrealm** page, display the **Providers** tab, then display the **Authentication** sub-tab.
14. Click **Reorder**. to display the Reorder Authentication Providers page.
15. Select ADDirectory and use the arrow buttons to move it into the first position in the list, then click OK.
16. In the Change Center, click **Activate Changes**.
17. Restart Oracle WebLogic Server.

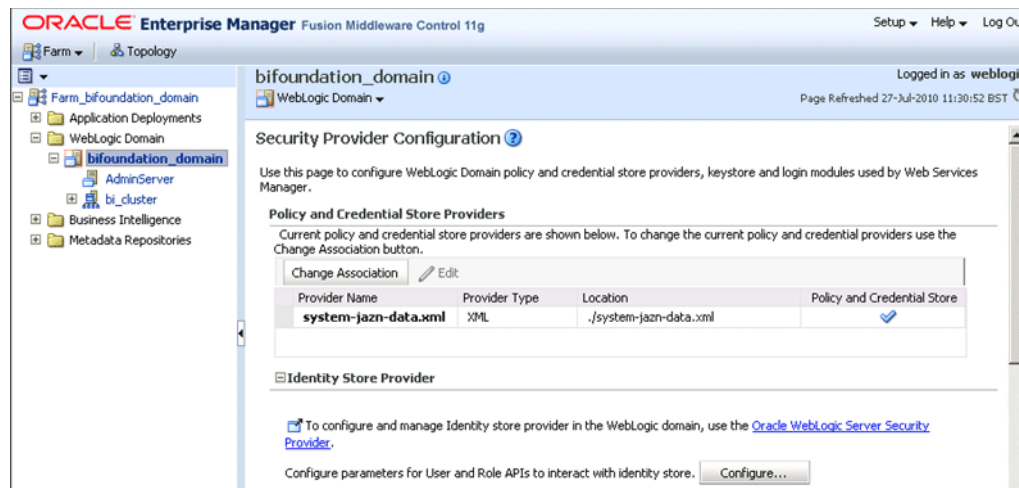
3.2.3.3 Configuring Oracle Business Intelligence to use Multiple Authentication Providers

This section describes how to configure Oracle Business Intelligence to use multiple authentication providers.

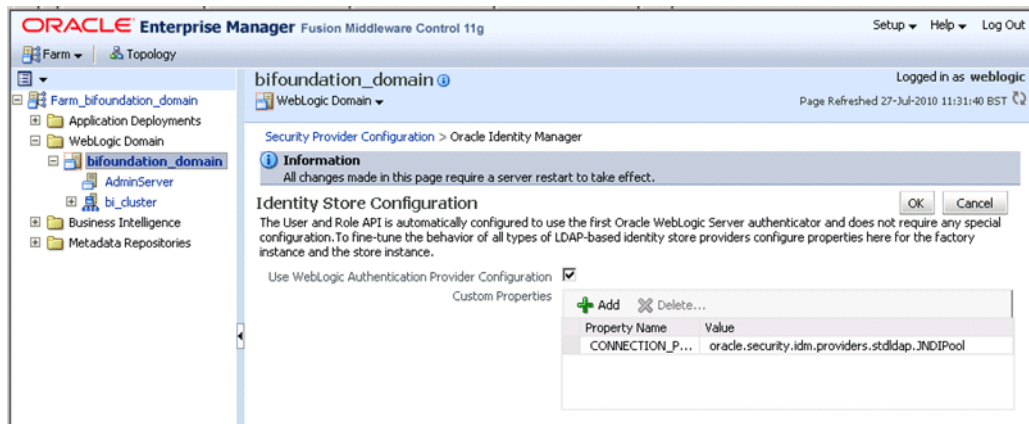
To configure multiple LDAP authentication providers using Fusion Middleware Control:

Note: If you are communicating with LDAP over SSL (one-way SSL only), see [Section 5.5.6, "Configuring SSL When Using Multiple Authenticators"](#).

1. (Optional) If not already done, configure supported authentication providers as described in previous topics in this section.
2. In Fusion Middleware Control, navigate to \Weblogic domain\bifoundation_domain in the navigation pane.
3. Right-click bifoundation_domain and select Security, then Security Provider Configuration to display the Security Provider Configuration page.



4. In the Identity Store Provider area, click **Configure** to display the Identity Store Configuration page.



5. In the Custom Properties area, use the **Add** option to add a new custom property as follows:
Property Name=virtualize
Value=true
6. Click **OK** to save the changes.
7. Restart the Admin Server and Managed Servers.

3.2.4 Configuring User And Group Name Attributes In The Identity Store

This topic contains the following sections:

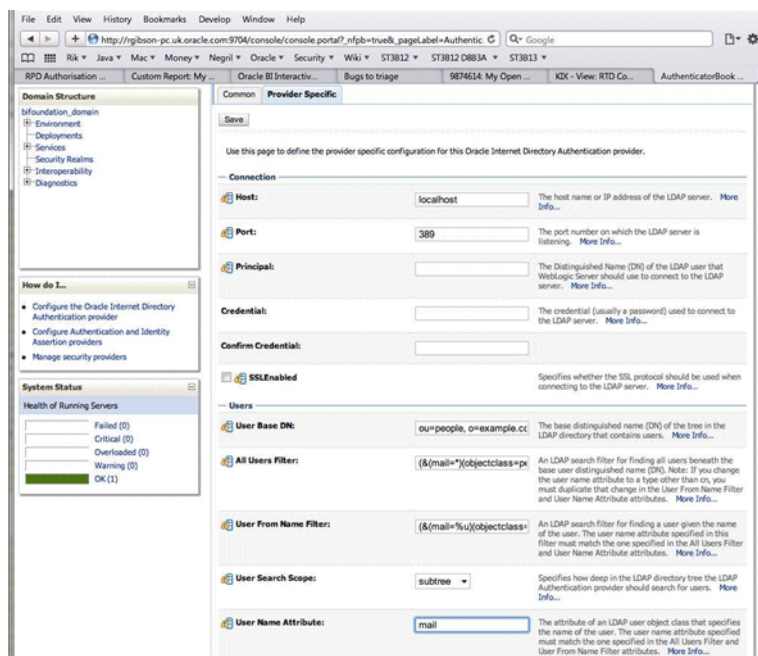
- [Section 3.2.4.1, "Configuring the User Name Attribute in the Identity Store"](#)
- [Section 3.2.4.2, "\(Optional for Active Directory\) To Change Group Name Attributes"](#)

3.2.4.1 Configuring the User Name Attribute in the Identity Store

If you configure an alternative authentication provider such as OID or AD, then you must ensure that the User Name Attribute that you use in the Identity Store matches the User Name Attribute that you use in the alternative authentication provider.

For example, to authenticate using a user's email address you might set the User Name Attribute to `mail` in both the Identity Store and the authentication provider.

The screenshot below shows an example where the **User Name Attribute** in OID Authenticator has been set to `mail`.



The `UserNameAttribute` in the alternative authentication provider is usually set to the value 'cn', if it is not, you must make sure the settings for `AllUsersFilter` and `UserFromNameFilter` are configured correctly as shown in [Table 3–2](#). [Table 3–2](#) illustrates the default setting (using the value 'cn'), and a required new setting (using a new value in the attribute `AnOtherUserAttribute`).

Table 3–2 Changing User Name Attributes

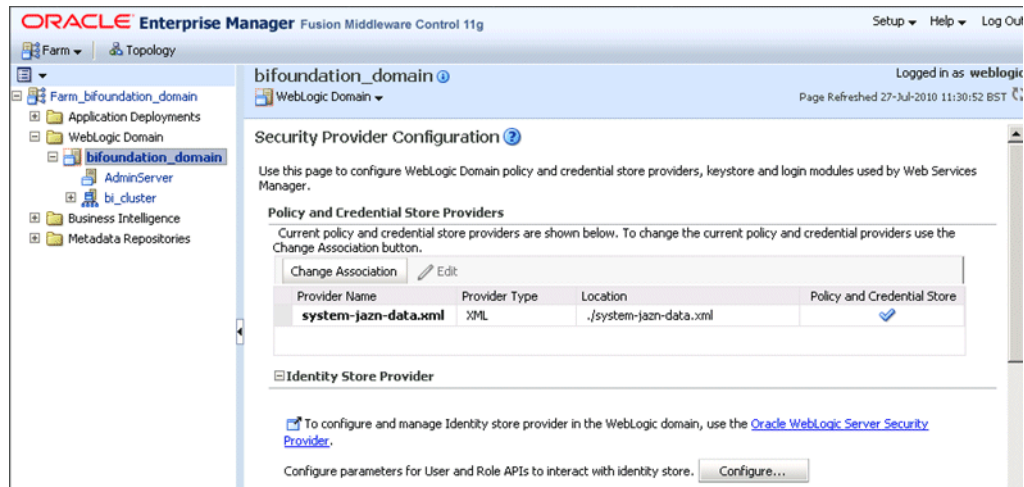
Attribute Name	Default Setting	Required New Setting
<code>UserNameAttribute</code>	cn	<code>AnOtherUserAttribute</code>
<code>AllUsersFilter</code>	<code>(&(cn=*)(objectclass=person))</code>	<code>(&(AnOtherUserAttribute=*)(objectclass=person))</code>
<code>UserFromNameFilter</code>	<code>(&(cn=%u)(objectclass=person))</code>	<code>(&(AnOtherUserAttribute=%u)(objectclass=person))</code>

Make the changes in the Provider Specific tab, using [Table 3–2](#) (substitute the `AnOtherGroupAttribute` setting with your own value). For more information about how to display the Provider Specific tab, see [Section 3.2.3, "Configuring Oracle Business Intelligence To Use Alternative Authentication Providers"](#).

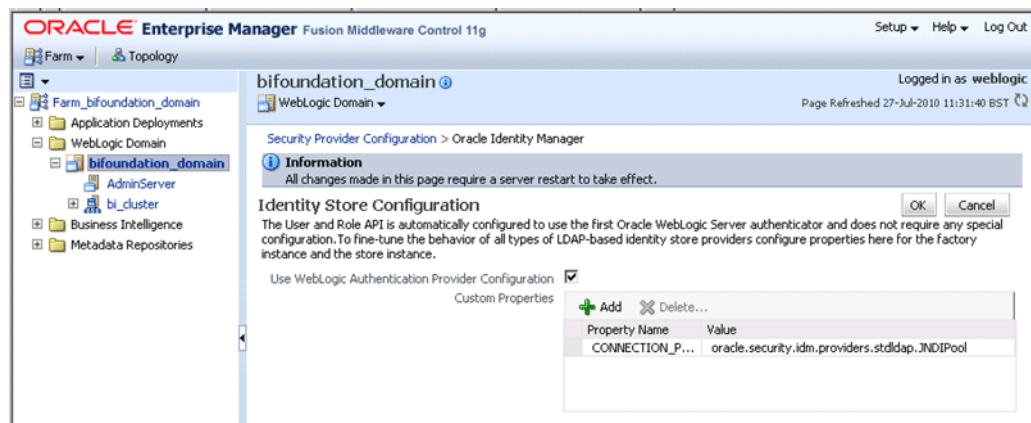
Note: For the `UserNameAttribute` only, you must use the following task to add two properties to the Identity Store configuration (`user.login.attr` and `username.attr`). This tells the Identity Store about the attribute you're expecting to get user name from (it defaults to using 'uid' if none is specified).

To configure the User Name attribute in the Identity Store:

1. In Fusion Middleware Control, navigate to `\Weblogic domain\bifoundation_domain` in the navigation pane.
2. Right-click `bifoundation_domain` and select Security, then Security Provider Configuration to display the Security Provider Configuration page.



- In the Identity Store Provider area, click **Configure** to display the Identity Store Configuration page.

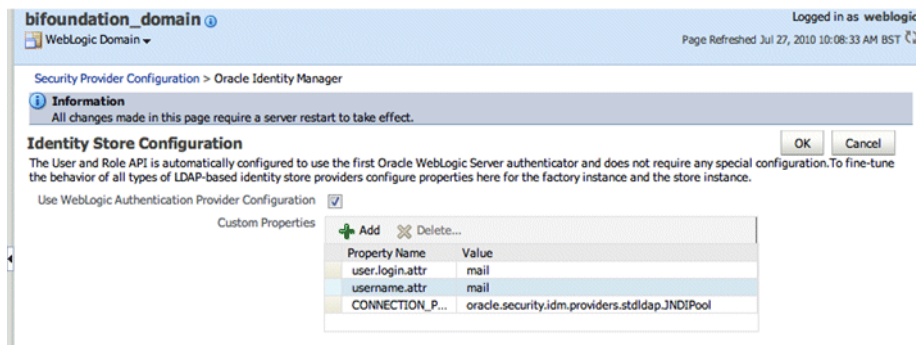


- In the Custom Properties area, use the Add option to add the following two Custom Properties:

Table 3–3 Custom Properties

Property Name	Value
user.login.attr	Specify the User Name Attribute that is set in the authentication provider. For example, if the User Name Attribute is set to mail in the authentication provider, then set this value to mail.
username.attr	Specify the User Name Attribute that is set in the authentication provider. For example, if the User Name Attribute is set to mail in the authentication provider, then set this value to mail.

The screenshot below shows an example set of Custom Properties with the User Name Attribute set to mail.



5. Click **OK** to save the changes.
6. Restart the Admin Server.

Note: Ensure that the users and groups from your authentication provider (for example, OID, AD), are displayed in WebLogic Console, as described in Step 4 in [Section 3.2.1, "High Level Steps for Configuring Alternative Authentication Providers"](#).

3.2.4.2 (Optional for Active Directory) To Change Group Name Attributes

If your AD server uses a Group Name attribute other than the default value 'cn', you must to change it. If you do change this attribute, you will also need to change the settings for AllGroupsFilter and GroupFromNameFilter as shown in [Table 3–4](#) (the example shows a group name stored in an attribute called AnOtherGroupAttribute).

Table 3–4 Changing Group Name Attribute

Attribute Name	Default Setting	Required New Setting
StaticGroupNameAttribute/DynamicGroupNameAttribute	cn	AnOtherGroupAttribute
AllGroupsFilter	(&(cn=*)(objectclass=person))	(&(AnOtherGroupAttribute=*)(objectclass=person))
GroupFromNameFilter	(&(cn=%u)(objectclass=person))	(&(AnOtherGroupAttribute=%u)(objectclass=person))

Make the changes in the Provider Specific tab, using [Table 3–4](#) (substitute the AnOtherGroupAttribute setting with your own value). For more information about how to display the Provider Specific tab, see [Section 3.2.3.2, "Configuring Oracle Business Intelligence to use Active Directory as the Authentication Provider"](#).

3.2.5 Configuring the GUID Attribute in the Identity Store

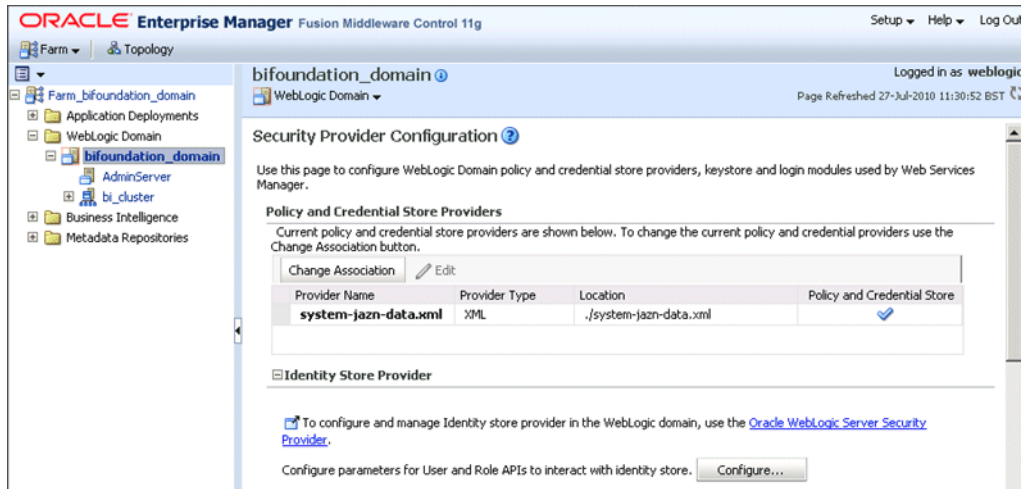
If you configure an alternative authentication provider such as OID or AD, and you change the GUID attribute from its default value, then you must ensure that the value that you use in the Identity Store matches the changed value that you are using in the alternative authentication provider.

For example, if you are using OID and have changed the default value of the GUID attribute from `orclguid` to `newvalue`, you must set the value to `newvalue` in both the Identity Store and the authentication provider.

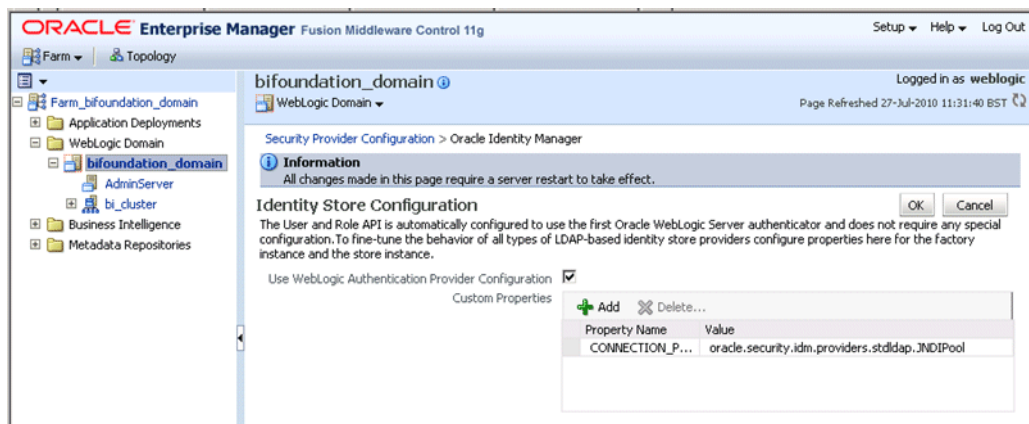
To configure the GUID attribute in the Identity Store:

1. In Fusion Middleware Control, navigate to `\Weblogic domain\bifoundation_domain` in the navigation pane.

- Right-click `bifoundation_domain` and select Security, then Security Provider Configuration to display the Security Provider Configuration page.



- In the Identity Store Provider area, click **Configure** to display the Identity Store Configuration page.

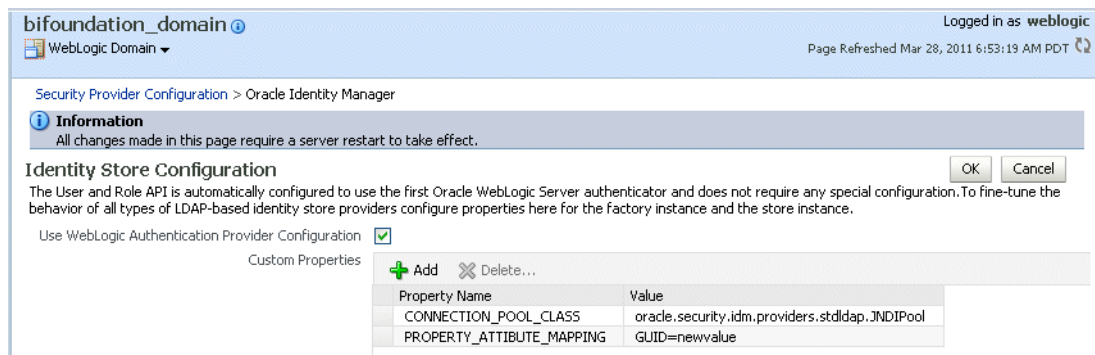


- In the Custom Properties area, use the Add option to add a Custom Property called `PROPERTY_ATTRIBUTE_MAPPING`:

Table 3–5 Custom Properties

Property Name	Value
PROPERTY_ATTRIBUTE_MAPPING	Specify the GUID attribute value that is set in the authentication provider. For example, if the GUID attribute is set to <code>newvalue</code> in the authentication provider, then set this value to <code>GUID=newvalue</code> .

The screenshot below shows an example set of Custom Properties including a new property called `PROPERTY_ATTRIBUTE_MAPPING` having a GUID attribute value set to `GUID=newvalue`.



5. Click **OK** to save the changes.
6. Restart the Admin Server, Managed Server(s), and BI components.

3.2.6 Configuring a New Trusted User (BISystemUser)

Oracle Business Intelligence uses a specific user for the configured authenticator for internal communication. If for example, you configure Oracle BI to use an alternative authentication provider (for example, OID, Active Directory), then you must create a new user (or select an existing user), in the alternative authentication provider to use for this purpose and grant that user the required permissions. You grant the chosen user the permission they need by making them a member of the pre-existing BISystem Application Role. When configuring multiple authenticators (for more information, see [Section 3.2.3.3](#)), this user only needs to exist in one of the Identity Stores.

To create a new trusted user account with a user from the alternative authentication provider:

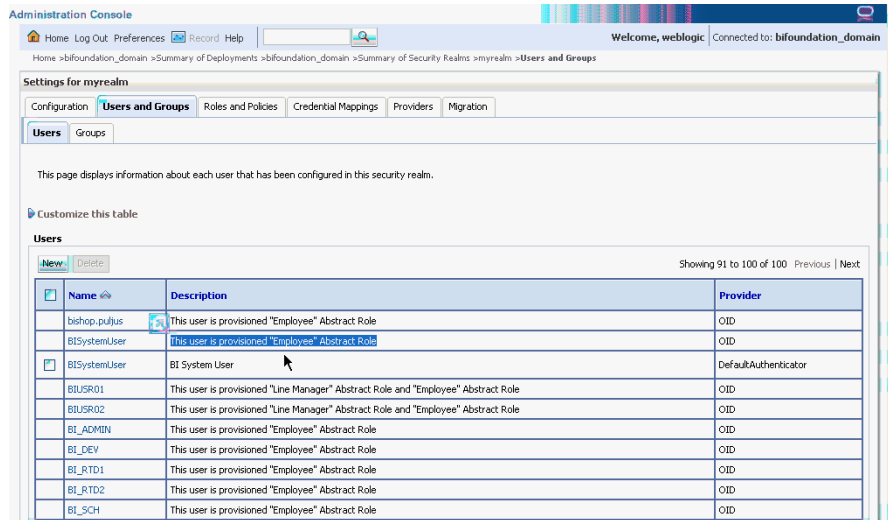
The credentials of the trusted user account are stored in the Credential Store under the system.user key. You must point the system.user key to a set of credentials available in your authentication provider (for example, OID, Active Directory).

Whether you decide to use an existing user or create a new one, the process for changing the system.user is the same.

1. In the alternative authentication provider create, or identify a user for the trusted user.

Best practice is to name this trusted user **BISystemUser** to clarify its purpose, but you might choose any name you want.

When you are finished, the **Users** table in Oracle WebLogic Server Administration Console should resemble the screenshot below (example is for OID).

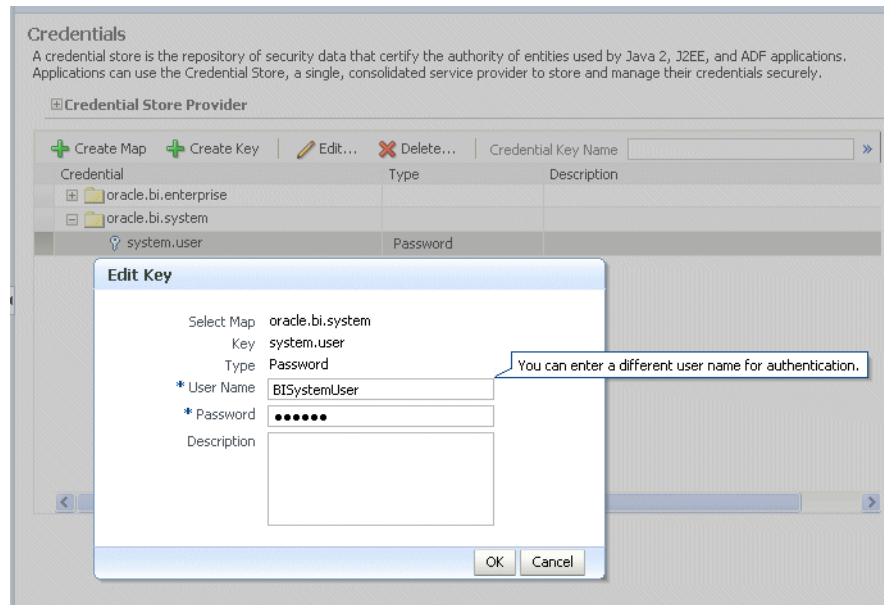


Next add the trusted user's credentials to the **oracle.bi.system** credential map.

2. From Fusion Middleware Control target navigation pane, expand the farm, then expand **WebLogic Domain**, and select **bifoundation_domain**.
 - From the WebLogic Domain menu, select **Security**, then **Credentials**.
 - Open the **oracle.bi.system** credential map, select **system.user** and click **Edit**.



- In the **Edit Key** dialog, enter **BISystemUser** (or name you selected) in the **User Name** field. In the **Password** field, enter the trusted user's password that is contained in the authentication provider (for example, Oracle Internet Directory, Active Directory).

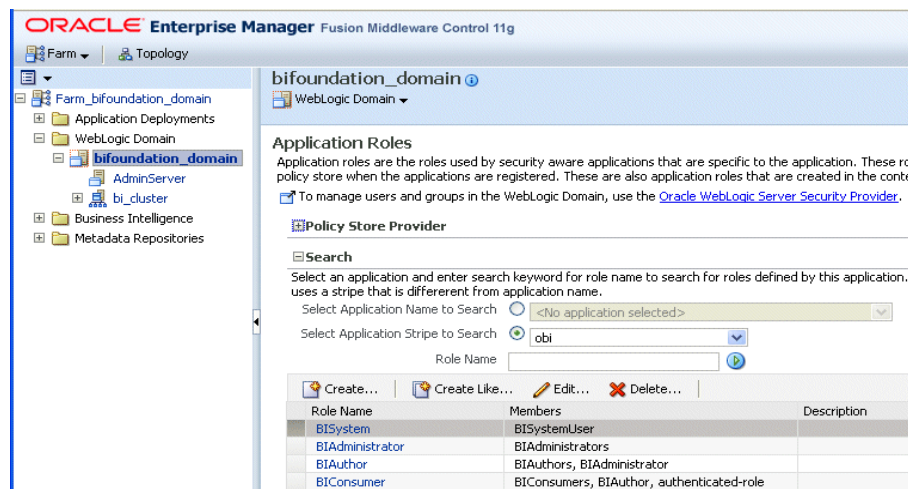


- Click **OK**.

Next you must make the new trusted user a member of the BISystem Application Role.

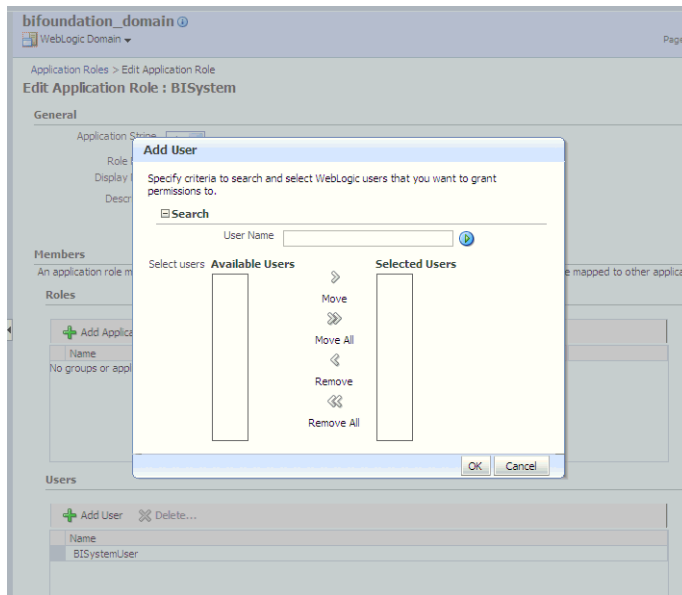
3. In Fusion Middleware Control target navigation pane, go to the Oracle WebLogic Server domain in which Oracle Business Intelligence is installed. For example, bifoundation_domain.
4. Select Security and Application Roles from the WebLogic Domain menu, to display the **Application Roles** page.
5. Click the **Select Application Stripe to Search** radio button, and select **obi** from the list. Click the search arrow to the right of the **Role Name** field.

The Oracle Business Intelligence Application Roles are displayed and should resemble the screenshot below.



6. Select the **BISystem** Application Role and click **Edit**.
7. In the **Edit Application Role** page, scroll down to the Users section and click **Add User**.

8. In the **Add User** dialog, click the arrow next to the **User Name** field to search for the trusted user created in the alternative authentication provider (for example, Oracle Internet Directory). Use the shuttle controls to move the trusted user name (**BISystemUser**) from the **Available Users** list to the **Selected Users** list.



9. Click **OK**.

The trusted user (**BISystemUser**) contained in the alternative authentication provider (for example, Oracle Internet Directory, or Active Directory), is now a member of the BISystem Application Role.

The next stage of configuring the new system user is to ensure they are part of the WebLogic Global Admin role.

10. In WebLogic Console, click myrealm to display the Settings for *<Realm>* page, display the Roles and Policies tab.
11. In the list of roles, click on the plus sign to expand Global Roles, then Roles, then click **View Role Conditions** link for the Admin Role.

Settings for myrealm

Configuration Users and Groups **Roles and Policies** Credential Mappings Providers Migration

Realm Roles Realm Policies

Use this table to view, add, modify or remove global or scoped security roles for this security realm. Global roles are listed in the Name column under the Global Roles node. Scoped roles are listed in the Name column under the individual resources that they secure.

Notes:

- This table does not list scoped roles for JNDI resources or Work Context resources. To see these scoped roles, view the Security tab for each JNDI node or Work Context object.
- If you imported security roles for EJBs or Web applications from deployment descriptors using the Install Application Assistant, you must activate changes to access the roles.

Roles

Edit Role Showing 1 to 7 of 7 Previous | Next

Name	Resource Type	Role Policy
Deployments		
Domain		
Global Roles		
Roles		
Admin	Global Role	View Role Conditions
AdminChannelUser	Global Role	View Role Conditions

12. Add the new trusted user to the Global Admin Role.

Ensure the conditions specified will match your user, either directly, or by virtue of a group they belong to (for example, condition may be User = BiSystemUser or Group=Administrators).

13. Click **Save**.

14. If you change the trusted user name to a value other than BiSystemUser, you must also change the equivalent user name for JMS Modules.

Oracle Business Intelligence Publisher JMS modules use BiSystemUser by default, therefore if you have changed your trusted user account name to a value other than BiSystemUser, you must also change the user name for JMS Modules to the value of the new trusted user.

- In WebLogic Console, select - Services - Messaging - JMS Modules.
- Select BipJmsResource.
- Go to the Security tab, and display the Policies sub-tab.
- Replace BiSystemUser with the name of the new trusted user.

15. Start the Managed Servers.

Once you have changed the system user credentials in this way, you will need to restart the BI Server and BI Presentation Server before these changes will take effect. The easiest way to do this is using Fusion Middleware Control - selecting Business Intelligence and Restart All Components.

The new trusted user from the authentication provider (for example, Oracle Internet Directory, Active Directory), is configured for Oracle Business Intelligence.

3.2.7 Regenerating User GUIDs

In Oracle Business Intelligence 11g Release 1 (11.1.1), users are recognized by their global unique identifiers (GUIDs), not by their names. GUIDs are identifiers that are unique for a given user. Using GUIDs to identify users provides a higher level of

security because it ensures that data and metadata is uniquely secured for a specific user, independent of the user name.

GUID regeneration is the process of regenerating any metadata references to user GUIDs in the Oracle BI repository and Oracle BI Presentation Catalog. During the GUID regeneration process, each user name is looked up in the identity store. Then, all metadata references to the GUID associated with that user name are replaced with the GUID in the identity store.

GUID regeneration might be required when Oracle Business Intelligence is reassociated with an identity store that has different GUIDs for the same users. This situation might occur when reassociating Oracle Business Intelligence with a different type of identity store, or when moving from test to production if a different identity store is used in production, and should be a rare event.

Note that if Oracle best practices are not observed and Oracle Business Intelligence repository data is migrated between systems that have different GUIDs for the same users, GUID regeneration is required for the system to function. This is not a recommended practice, because it raises the risk that data and metadata secured to one user (for example, John Smith, who left the company two weeks ago) becomes accessible to another user (for example, John Smith, who joined last week). Using Application Roles wherever possible and using GUIDs consistently across the full development production lifecycle prevents this problem from occurring.

To regenerate user GUIDs:

This task requires that you manually edit the configuration files to instruct Oracle BI Server and Oracle BI Presentation Server to regenerate the GUIDs on restart. Once completed, you edit these files to remove the modification. For information about where to locate Oracle Business Intelligence configuration files, see "Where Configuration Files are Located" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

1. Update the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter in `NQSCONFIG.INI`:
 - a. Open `NQSCONFIG.INI` for editing at:
`ORACLE_INSTANCE/config/OracleBIServerComponent/coreapplication_obisn`
 - b. Locate the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter and set it to `YES`, as follows:
`FMW_UPDATE_ROLE_AND_USER_REF_GUIDS = YES;`
 - c. Save and close the file.
2. Update the Catalog element in `instanceconfig.xml`:
 - a. Open `instanceconfig.xml` for editing at:
`ORACLE_INSTANCE/config/OracleBIPresentationServicesComponent/coreapplication_obipsn`
 - b. Locate the Catalog element and update it as follows:

```
<Catalog>
<UpgradeAndExit>false</UpgradeAndExit>
<UpdateAccountGUIDs>UpdateAndExit</UpdateAccountGUIDs>
</Catalog>
```
 - c. Save and close the file.

- Restart the Oracle Business Intelligence system components using opmnctl:

```
cd ORACLE_HOME/admin/instancen/bin
./opmnctl stopall
./opmnctl startall
```

- Set the FMW_UPDATE_ROLE_AND_USER_REF_GUIDS parameter in NQSCfg.INI back to NO.

Important: You must perform this step to ensure that your system is secure.

- Update the Catalog element in instanceconfig.xml to remove the UpdateAccount GUIDs entry.
- Restart the Oracle Business Intelligence system components again using opmnctl:

```
cd ORACLE_HOME/admin/instancen/bin
./opmnctl stopall
./opmnctl startall
```

3.3 Configuring OID as the Policy Store and Credential Store

To re-configure Oracle Business Intelligence to use OID as a Credential Store and Policy Store Provider, follow the steps in "Reassociating the OPSS Security Store" in *Oracle Fusion Middleware Application Security Guide*.

Notes

- The only LDAP server supported for this purpose in this release is Oracle Internet Directory. For more information, see "[System Requirements and Certification](#)". The pre-requisites for using an LDAP-based credential store are the same as for using an LDAP-based policy store. For more information, see "Using an LDAP-Based OPSS Security Store" in *Oracle Fusion Middleware Application Security Guide*.

3.4 Configuring an LDAP Authentication Provider as the Single Source

This topic explains how to reconfigure Oracle Business Intelligence to use a single LDAP authentication provider, by switching off the default WLS LDAP authenticator.

When you install Oracle Business Intelligence, the system is automatically configured to use WebLogic Server (WLS) LDAP as the default authenticator. The install process will automatically generate the required users and groups in WLS LDAP. However, you may have your own LDAP directory (for example OID) that you may want to use as the default authenticator, and switch off the WLS default authenticator. Having a single source authentication provider prevents user names and passwords being derived from multiple authentication sources, which could lead to multiple points of attack, or entry from unauthorized users.

This topic contains the following sections:

- [Section 3.4.1, "Configuring OID LDAP Authentication as the Single Source"](#)
- [Section 3.4.2, "Troubleshooting"](#)

3.4.1 Configuring OID LDAP Authentication as the Single Source

Note: The examples shown in this section are for configuring OID but could easily apply to other LDAP authentication providers by using minor changes.

To configure OID LDAP authentication as the single source:

- Task 1, "Backup and Recovery"
- Task 2, "WLS Removal Prerequisites"
- Task 3, "Identifying or Creating Essential Users Required in OID LDAP"
- Task 4, "Identifying or Creating Essential Groups in OID LDAP"
- Task 5, "Assigning OID Groups to the Global Role in the WebLogic Console"
- Task 6, "Setting User to Group Membership in OID LDAP"
- Task 7, "Setting OID Users and Groups Application Roles Membership in Fusion Middleware Control"
- Task 8, "Update the Credential Store Password for the New Trusted System User"
- Task 9, "Delete the Default Authenticator"
- Task 10, "(Optional) Remove Old GUID References"
- Task 11, "Restart your BI Services"
- Task 12, "Post Single LDAP OID Authentication Setup tasks"
- Task 13, "Stopping Alternative Methods of authentication"

Task 1 Backup and Recovery

Before you begin the process of switching off the WLS LDAP default method of authentication it is strongly recommended that you backup the system first. Otherwise, if you make an error during configuration you may find that you become locked out of the system or be unable to restart it.

To enable backup and recovery, during the re-configuration phase, take a copy of the config.xml file in <BIEE_HOME>\user_projects\domains\bifoundation_domain\config directory.

As you make changes it is advised that you keep copies of this file.

Task 2 WLS Removal Prerequisites

To remove the default WLS authenticators and use an alternative LDAP source (for example, OID), you must set the system up to use both WLS and the alternative method. For more information, see [Section 3.2, "Configuring Alternative Authentication Providers"](#). Your starting point should be that the WLS LDAP users (default authenticator) and the new alternative LDAP users are both configured to allow access to Oracle Business Intelligence.

When you have set this up to enable you to log on as either a WLS LDAP user or an OID LDAP user, you can then proceed to follow the steps to remove the WLS default authenticator, as described in these tasks.

Task 3 Identifying or Creating Essential Users Required in OID LDAP

You must ensure that the essential users shown in [Table 3–6](#) are migrated from WLS LDAP to OID LDAP.

Table 3–6 Essential Users Required in OID

Users	Standard WLS Users	New Users Required in OID
1	BISystemUser	OID_BISystemUser (this can be any existing OID user)
2	WebLogic	OID_Weblogic (This can be any existing OID user)

Table 3–6 (Cont.) Essential Users Required in OID

Users	Standard WLS Users	New Users Required in OID
3	OracleSystemUser	OracleSystemUser (This User has to exist with this name in OID - fixed requirement of OWSM)

Three users are created during install:

- **BISystemUser**
This user is created in WLS, and is used to perform the communication between OBIPS (the BI Presentation Server) and OBIS (the BI Server) Business Intelligence components. You must create or identify an equivalent user in OID LDAP (for example, OID_BISystemUser). Ensure that the passwords used here confirm to your security password standards (for example, never use welcome1).
- **Weblogic** (specified during install or upgrade, so can be different).
This administrator user is created during the install (sometimes called Weblogic, but can have any name). You need to identify or create an equivalent user in OID but this user can have any name.
- **OracleSystemUser**
This user is specifically required (by Oracle Web Services Manager - OWSM) for the Global Roles mapping, and you must create this user in OID using this exact name.

Task 4 Identifying or Creating Essential Groups in OID LDAP

The essential groups shown in [Table 3–7](#) are required in the OID LDAP directory.

Table 3–7 Essential Groups Required

Groups	WLS Groups Automatically Created	New OID Groups Required
1	Administrators	OID_Administrators
2	AdminChannelUsers	OID_AdminChannelUsers
3	AppTesters	OID_AppTesters
4	CrossDomainConnectors	OID_CrossDomainConnectors
5	Deployers	OID_Deployers
6	Monitors	OID_Monitors
7	Operators	OID_Operators
8	OracleSystemGroup	OracleSystemGroup (fixed requirement)
9	BIAdministrators	OID_BIAdministrators
10	BIAuthors	OID_BIAuthors
11	BICongsumers	OID_BICongsumers

The groups in [Table 3–7](#) are automatically created in WLS during the default Oracle Business Intelligence installation process.

Before you can remove the default WLS authentication you need to identify OID groups that will replace the WLS groups. You can choose to have an individual OID group for each WLS group (in [Table 3–7](#)) or use a single OID group to replace one or many WLS groups.

Currently the only specific requirement is that you must have a group defined in OID as OracleSystemGroup using this exact name (an OWSM requirement).

Task 5 Assigning OID Groups to the Global Role in the WebLogic Console

The global role mappings shown in [Table 3–8](#) must be configured in OID.

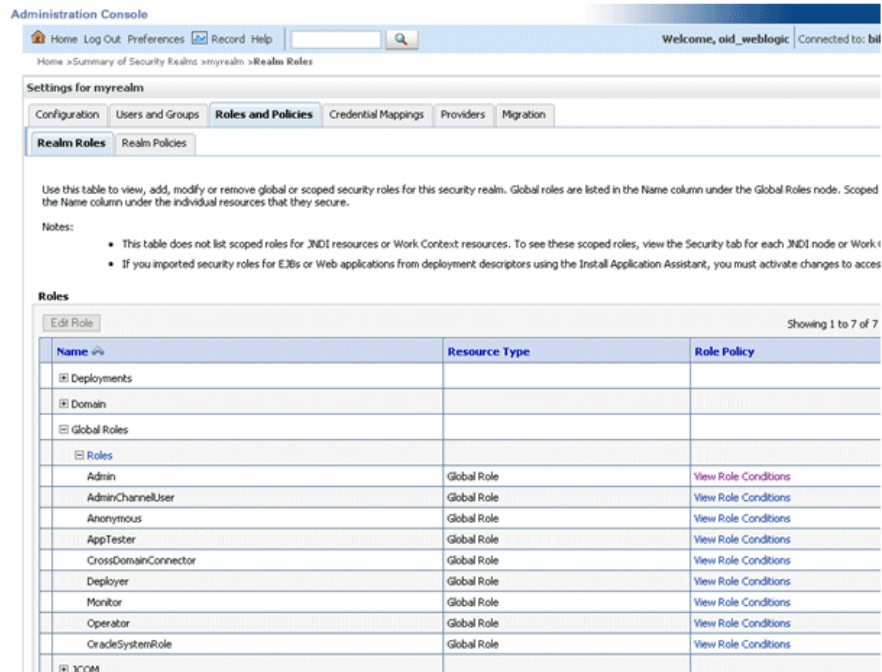
Table 3–8 Global Role Mapping in WebLogic Admin Console

Users	Global Roles	Current WLS Groups	New OID Groups Required
1	Admin	Administrators	OID_Administrators
2	AdminChannelUsers	AdminChannelUsers	OID_AdminChannelUsers
3	AppTester	AppTesters	OID_AppTesters
4	CrossDomainConnector	CrossDomainConnectors	OID_CrossDomainConnectors
5	Deployer	Deployers	OID_Deployers
6	Monitor	Monitors	OID_Monitors
7	Operator	Operators	OID_Operators
8	OracleSystemRole	OracleSystemGroup	OracleSystemGroup (fixed requirement)

You must associate the global roles from [Table 3–8](#) (displayed in the WLS console) with your replacement OID groups (defined in [Task 4](#)), before you can switch off the default WLS authenticator.

To associate groups with global roles in Oracle WebLogic Server Administration Console:

1. Login to Oracle WebLogic Server Administration Console, and click **Lock & Edit** in the Change Center.
For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. Select **Security Realms** from the left pane and click **myrealm**.
The default Security Realm is named **myrealm**.
3. Click **Realm Roles**.
4. Click **Global Roles** and expand **Roles**.

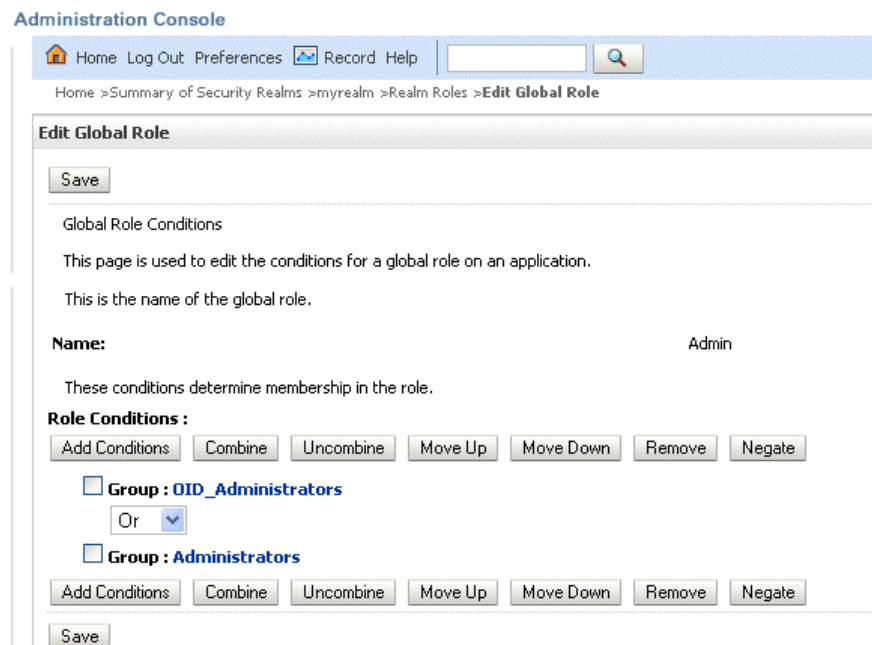


5. Add a new condition for each Role as follows:

Note: Do not do this for Anonymous and Oracle System role, which can both remain unchanged.

1. Click View Role Conditions.
2. Select group from the **Predicate List** drop down.
3. Enter your newly-associated OID group from [Table 3-7](#).

For example, you would assign the Admin role to the `OID_Admistrators` role.



Note: Once you have successfully switched off the Default WLS Authentication you can return here and remove the old WLS groups (for example, here you would remove Group: Administrators. For more information, see [Task 12, "Post Single LDAP OID Authentication Setup tasks"](#).

4. Save your changes.

Task 6 Setting User to Group Membership in OID LDAP

Now that you have created new users and groups in OID to replicate the users and groups automatically created in WLS LDAP you will need to ensure that these users and groups also have the correct group membership in OID as shown in [Table 3–9](#).

Table 3–9 User to Group Membership Required in OID

Groups	New OID User	Is A Member Of These New OID Groups
1	OID_BISystemUser	OID_Administrators Note: You can choose to assign this to OID_BIAAdministrators rather than OID_Administrators, if required, as this will also work.
2	OID_Weblogic	OID_Administrators OID_BIAAdministrators
3	OracleSystemUser Note: A user with this exact name must exist in OID.	OracleSystemGroup Note: A group with this exact name must exist in OID

Important Note: In order to achieve the User and group membership shown in [Table 3–9](#) you must have suitable access to update your LDAP OID server, or someone else must be able to update group membership on your behalf.

Task 7 Setting OID Users and Groups Application Roles Membership in Fusion Middleware Control

You must add the recently created OID users and groups (in [Table 3–10](#)), as members of existing Application Roles using Fusion Middleware Control.

Table 3–10 OID User and Group Application Roles Membership Required in Fusion Middleware Control

Groups	Make a member of the existing WLS Application Roles	New OID User/Groups
1	BISystem	OID_BISystemUser (OID user)
2	BIAdministrator	OID_BIAAdministrators (OID group)
3	BIAuthor	OID_BIAuthors (OID group)
4	BIConsumer	OID_BIConsumers (OID group)

To set required OID users and group Application Roles membership using Fusion Middleware Control:

1. Display the Security Menu in Fusion Middleware Control.
For more information, see [Section 2.4.1.3, "Displaying the Security Menu in Fusion Middleware Control from bifoundation_domain"](#).

2. Display the Application Roles for Oracle Business Intelligence.
For more information, see [Section 2.4.2.3, "Assigning a Group to an Application Role"](#).
3. Assign members to Application Roles as follows:

bifoundation_domain
WebLogic Domain

Application Roles
Application roles are the roles used by security aware applications that are specific to the application. These roles are also application roles that are created in the context of end users accessing the application.
To manage users and groups in the WebLogic Domain, use the [Oracle WebLogic Server Security Provider](#).

Policy Store Provider

Search
Select an application and enter search keyword for role name to search for roles defined by this application. Use . name.

Select Application Name to Search: <No application selected>
Select Application Stripe to Search: obi
Role Name: []

Buttons: Create..., Create Like..., Edit..., Delete...

Role Name	Members	Desi
BISystem	BISystemUser, OID_BISystemUser	
BIAdministrator	BIAdministrators, OID_BIAdministrators	
BIAuthor	BIAuthors, OID_BIAuthors, BIAdministrator	
BIConsumer	BIConsumers, OID_BIConsumer, BIAuthor, authenticated-role	

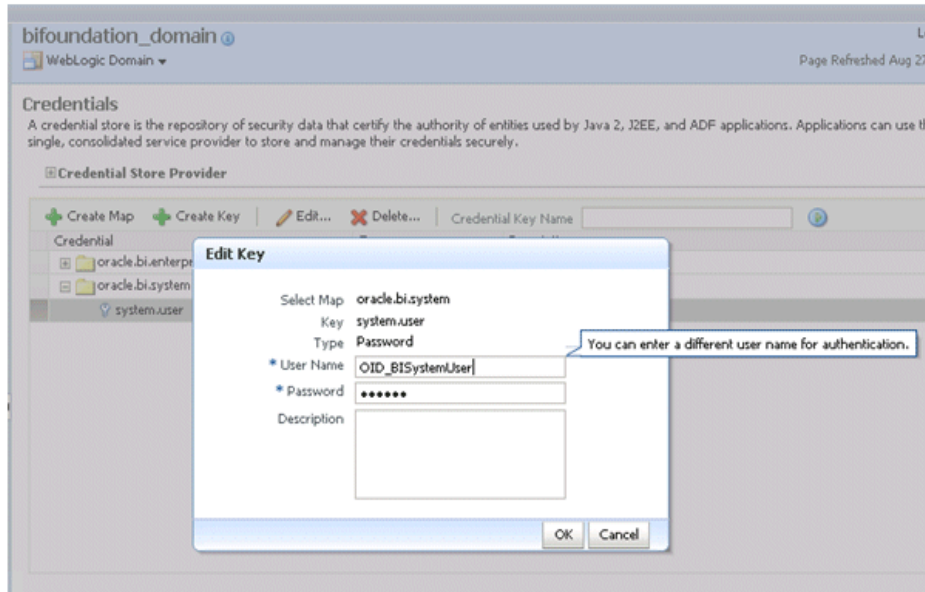
Caution: Although you can assign groups to the BISystem Application Role you should only ever assign users to this role to protect security.

Task 8 Update the Credential Store Password for the New Trusted System User

The user name and password you created for the BISystemUser in OID must be exactly the same as created in [Task 3, "Identifying or Creating Essential Users Required in OID LDAP"](#) (for example, for the OID_BISystemUser).

To update the Credential Store password for the new OID_BISystemUser:

1. Display the Security Menu and select Credentials in Fusion Middleware Control.
For more information, see [Section 2.4.1.3, "Displaying the Security Menu in Fusion Middleware Control from bifoundation_domain"](#).
2. Expand oracle.bi.system and select system.user.
3. Click the Edit button to display the Edit Key dialog.



4. Input the new user name and password.
5. Click OK.

Task 9 Delete the Default Authenticator

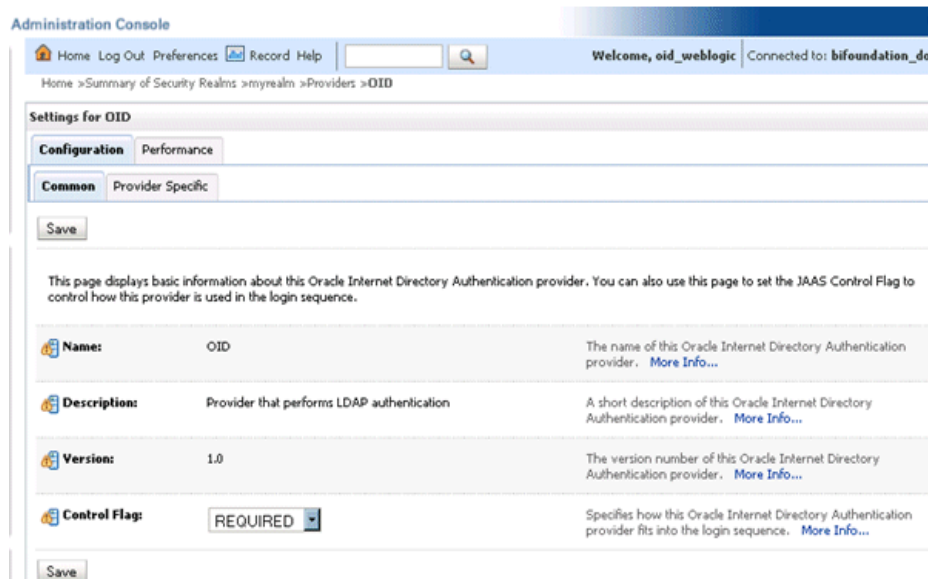
You are now ready to remove the Default Authenticators.

To remove the default authenticators:

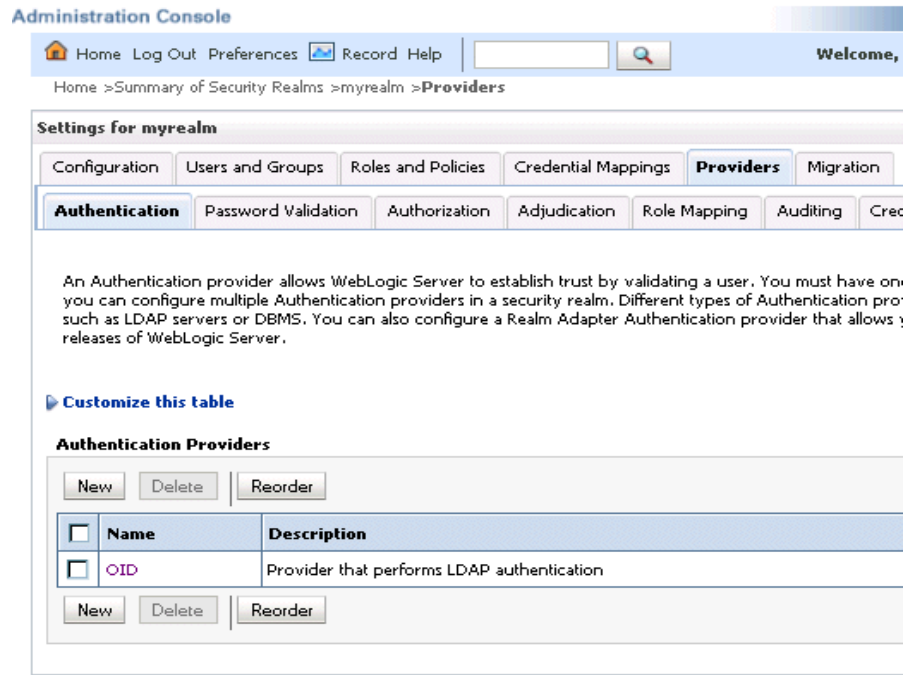
You must have first created an LDAP authenticator that maps to your LDAP source (for more information, see [Task 2, "WLS Removal Prerequisites"](#)).

1. Change the control flag from SUFFICIENT to REQUIRED in the WLS Administration Console.

For more information on how to display the control flag, see [Section 3.2.3.1, "Configuring Oracle Business Intelligence to use Oracle Internet Directory as the Authentication Provider"](#).



2. Save the changes.
3. Delete any other authenticators so that your LDAP OID authenticator is the single source.



Task 10 (Optional) Remove Old GUID References

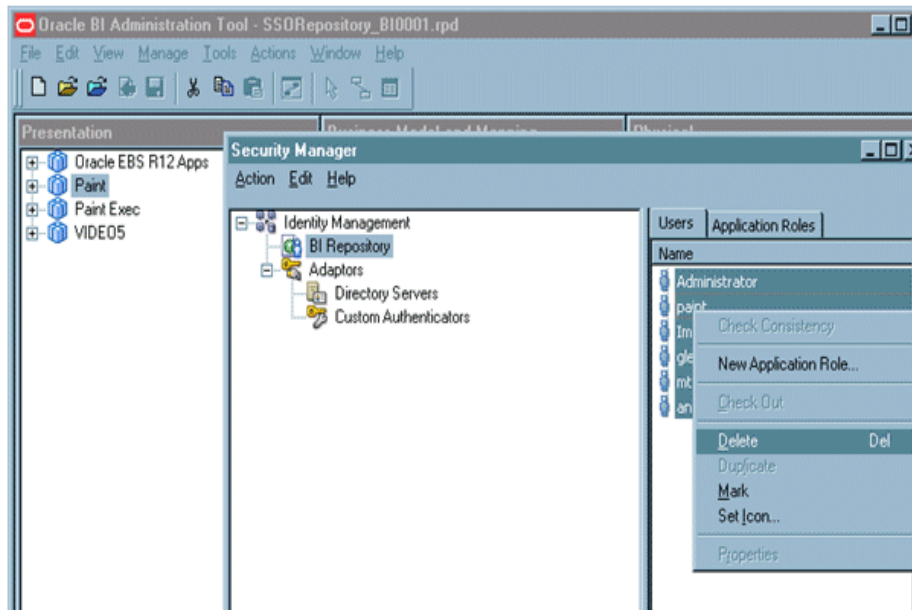
Complete this task if you are using OID LDAP for the first time, that is, if moving from a 10g LDAP authentication (upgraded to 11g) to OID LDAP authentication. This will resynchronize the system user GUID's (Global Unique Identifiers). Otherwise you may find you are unable to login and will get the following error message:

The GUID of user {username} does not match user reference GUID of the repository. Please ask the administrator to delete the old user reference at the repository and login again.

To remove old GUID references:

1. Stop all Oracle Business Intelligence Services.
In Windows use the menu option 'Stop BI Services' providing the original admin user name, and password specified during install (for example, weblogic/welcome1).
2. In the Administration Tool, open the R11 RPD you are using, in offline mode.
3. Select Manage and Identity from the menu.
4. Click BI Repository and display the Users tab.
5. Select all users and delete them.

Important Note: If you have specific permissions (in the RPD) defined for a particular user these will be lost. In this case, when you start up your BI system you will need to re-associate any user level permissions with these users in your LDAP (OID) source. This will ensure that a user with the same name, (but who is not the same person), will be identified correctly by the system, as a different user.



Task 11 Restart your BI Services

Now you are ready to restart your BI services. This has to be done using your new OID user who has been designated as the admin user (for example, `OID_Weblogic`), as the WLS user you created during the install has now been removed and all users must now exist in your single OID source.

Note: When you login to the Administration Tool online you must now provide the OID user and password (for example, `OID_Weblogic`) along with the RPD password.

Task 12 Post Single LDAP OID Authentication Setup tasks

If everything is working correctly.

Important Note: Backup your `config.xml`, now, before performing this step (see [Task 1, "Backup and Recovery"](#))

Edit Global Roles (section: [Task 5, "Assigning OID Groups to the Global Role in the WebLogic Console"](#)) Removing all the WLS Roles from the 'OR' clause, that were automatically created.

Such as:

- Admin
- AdminChannelUsers
- AppTester
- CrossDomainConnector
- Deployer
- Monitor
- Operator

Task 13 Stopping Alternative Methods of authentication

Oracle Business Intelligence Enterprise Edition allows various forms of authentication methods to be applied at once. While some can see this as a desirable feature it also comes with security risks. For users wishing to implement just a single source of

authentication, they should consider auditing the RPD for the follow alternative methods of authentication.

To Stop All Initialization Block Authentication Access:

Stopping access through initialization blocks is a relatively simple process. This is done using the Administration Tool. In order for successful authentication to happen a user name is required. Initialization blocks do this by populating the special System Session Variable called 'USER'. To stop all initialization block authentications you need to do the following.

1. Remove the System Variable 'USER' from the RPD.
2. Ensure that initialization blocks in the RPD do not have the check box 'Required for authentication' enabled.
3. Check that initialization blocks in the RPD that set the system session variables PROXY and especially PROXYLEVEL are not allowing users to bypass security.

The system variables PROXY and PROXYLEVEL will allow users once connected to impersonate other users with their security profile. This is fine if the person Proxies to an account that has less privileges, but if they proxy to an account that has more privileges then this can be seen as a security issue.

Caution: If you disable any initialization blocks, then any dependant initialization blocks will also be disabled.

You can now be sure that any attempted access by using initialization block authentication will no longer be successful. However, you need to check all your initialization blocks.

3.4.2 Troubleshooting

If there is the error:

```
<Critical> <WebLogicServer> <BEA-000386> <Server subsystem failed.
```

Reason: weblogic.security.SecurityInitializationException: User <oidweblogic> is not permitted to boot the server. The server policy may have changed in such a way that the user is no longer able to boot the server. Reboot the server with the administrative user account or contact the system administrator to update the server policy definitions.

Solutions:

When you re-started your system did you start it as the new WebLogic administrator OID user (oidweblogic)?

If you did and become locked out it is because that user (weblogic in OID did not have the correct permission - It needs the Admin global role so ensure it has membership of a group in OID (that is, Administrators) that will have default membership to this role. Also ensure the BIAdministrators group, or its equivalent in OID, is added to the Admin global role.

Note: If you are now locked out. To go back to a previous working configuration all you need to do is to restore the config.xml file. Therefore, to switch your configuration you just need to backup the file before changing the configuration then to switch back, you just restore one file (for more information, see [Task 1, "Backup and Recovery"](#)).

To restore the config.xml file, restart Oracle Business Intelligence as the original WebLogic admin user rather than the OID user.

Enabling SSO Authentication

This chapter provides some general guidelines for configuring single sign-on (SSO) authentication for Oracle Business Intelligence.

Note: For a detailed list of security setup steps, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

This chapter contains the following topics:

- [Section 4.1, "SSO Configuration Tasks for Oracle Business Intelligence"](#)
- [Section 4.2, "Understanding SSO Authentication and Oracle Business Intelligence"](#)
- [Section 4.3, "SSO Implementation Considerations"](#)
- [Section 4.4, "Configuring SSO in an Oracle Access Manager Environment"](#)
- [Section 4.5, "Configuring Custom SSO Environments"](#)
- [Section 4.6, "Using Fusion Middleware Control to Enable SSO Authentication"](#)

Note: Oracle recommends using Oracle Access Manager as an enterprise-level SSO authentication provider with Oracle Fusion Middleware 11g. Sections 4.2, 4.3, and 4.4 assume that Oracle Access Manager is the SSO authentication provider. [Section 4.5](#) references alternative authentication providers in custom SSO environment solutions.

For more information about configuring and managing Oracle Access Manager with Oracle Fusion Middleware, see "Configuring Single Sign-On in Oracle Fusion Middleware" in *Oracle Fusion Middleware Application Security Guide*.

For more information about supported SSO providers, see "[System Requirements and Certification](#)".

4.1 SSO Configuration Tasks for Oracle Business Intelligence

[Table 4-1](#) contains SSO authentication configuration tasks and provides links for obtaining more information.

Table 4–1 Task Map: Configuring SSO Authentication for Oracle Business Intelligence

Task	Description	For More Information
Configure Oracle Access Manager as the SSO authentication provider.	Configure Oracle Access Manager to protect the Oracle Business Intelligence URL entry points.	Section 4.4, "Configuring SSO in an Oracle Access Manager Environment" <i>"Configuring Single Sign-On in Oracle Fusion Middleware" in Oracle Fusion Middleware Application Security Guide</i>
Configure the HTTP proxy.	Configure the Web proxy to forward requests from the Oracle BI Presentation Server to the SSO provider.	<i>"Configuring Single Sign-On in Oracle Fusion Middleware" in Oracle Fusion Middleware Application Security Guide</i>
Configure a new authenticator for Oracle WebLogic Server.	Configure the Oracle WebLogic Server domain in which Oracle Business Intelligence is installed to use the new identity store.	Section 4.4.1, "Configuring a New Authenticator for Oracle WebLogic Server" Section 3.2, "Configuring Alternative Authentication Providers" <i>Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help</i>
Configure a new identity assserter for Oracle WebLogic Server.	Configure the Oracle WebLogic Server domain in which Oracle Business Intelligence is installed to use the SSO provider as an assserter.	Section 4.4.2, "Configuring Oracle Access Manager as a New Identity Assserter for Oracle WebLogic Server" Section 3.2, "Configuring Alternative Authentication Providers" <i>Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help</i>
Configure the new trusted system user to replace the default BISystemUser.	Add the new trusted system user name from Oracle Internet Directory to become a member of the BISystem Application Role.	Section 3.2.6, "Configuring a New Trusted User (BISystemUser)"
Refresh the user and group GUIDs.	Refresh the GUIDs of users and groups which migrated from the original identity store to the new identity store (authentication source).	Section 3.2.7, "Regenerating User GUIDs"
Configure custom SSO solutions.	Configure alternative custom SSO solutions to protect the Oracle Business Intelligence URL entry points.	Section 4.5, "Configuring Custom SSO Environments"
Enable Oracle Business Intelligence to accept SSO authentication.	Enable the SSO provider configured to work with Oracle Business Intelligence using Fusion Middleware Control.	Section 4.6, "Using Fusion Middleware Control to Enable SSO Authentication"

Note: For an example of an Oracle Business Intelligence SSO installation scenario, see *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle Business Intelligence*.

4.2 Understanding SSO Authentication and Oracle Business Intelligence

Integrating a single sign-on (SSO) solution enables a user to log on (sign-on) and be authenticated once. Thereafter, the authenticated user is given access to system components or resources according to the permissions and privileges granted to that user. Oracle Business Intelligence can be configured to trust incoming HTTP requests authenticated by a SSO solution that is configured for use with Oracle Fusion Middleware and Oracle WebLogic Server. For more information about configuring SSO for Oracle Fusion Middleware, see "Configuring Single Sign-On in Oracle Fusion Middleware" in *Oracle Fusion Middleware Application Security Guide*.

When Oracle Business Intelligence is configured to use SSO authentication, it accepts authenticated users from whatever SSO solution Oracle Fusion Middleware is configured to use. If SSO is not enabled, then Oracle Business Intelligence challenges each user for authentication credentials. When Oracle Business Intelligence is configured to use SSO, a user is first redirected to the SSO solution's login page for authentication. After the user is authenticated the SSO solution forwards the user name to Oracle BI Presentation Services where this name is extracted. Next a session with the Oracle BI Server is established using the impersonation feature (a connection string between Oracle BI Presentation Server and Oracle BI Server using credentials that act on behalf of a user being impersonated).

After a successful logon using SSO, users are still required to have the `oracle.bi.server.manageRepositories` permission to log in to the Administration Tool using a valid user name and password combination. After installation, the `oracle.bi.server.manageRepositories` permission is granted by being a member of the default `BIAAdministration Application Role`.

Configuring Oracle Business Intelligence to work with SSO authentication requires minimally that the following be done:

- Oracle Fusion Middleware and Oracle WebLogic Server are configured to accept SSO authentication. Oracle Access Manager is recommended in production environments.
- Oracle BI Presentation Services is configured to trust incoming messages.
- The HTTP header information required for identity propagation with SSO configurations (namely, user identity and SSO cookie) is specified and configured.

4.2.1 How an Identity Asserter Works

This section describes how Oracle Access Manager authentication provider works with Oracle WebLogic Server using Identity Asserter for single sign-on, providing the following features:

- **Identity Asserter for Single Sign-on**

This feature uses the Oracle Access Manager authentication services and validates already-authenticated Oracle Access Manager users through a suitable token and creates a WebLogic-authenticated session. It also provides single sign-on between WebGate and portals. WebGate is a plug-in that intercepts Web resource (HTTP) requests and forwards them to the Access Server for authentication and authorization.

■ **Authenticator**

This feature uses Oracle Access Manager authentication services to authenticate users who access an application deployed in Oracle WebLogic Server. Users are authenticated based on their credentials, for example a user name and password.

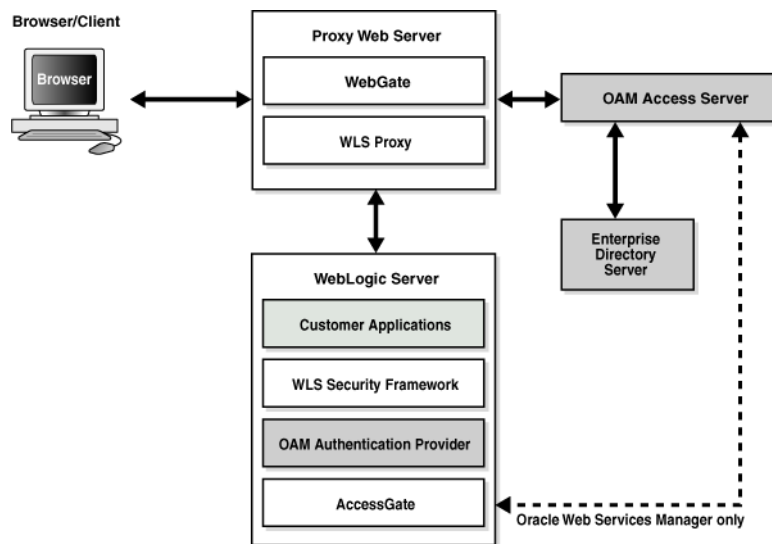
After the authentication provider for Oracle Access Manager is configured as the Identity Asserter for single sign-on, the Web resources are protected. Perimeter authentication is performed by WebGate on the Web tier and by the appropriate token to assert the identity of users who attempt access to the protected WebLogic resources.

All access requests are routed to a reverse proxy Web server. These requests are in turn intercepted by WebGate. The user is challenged for credentials based on the authentication scheme configured within Oracle Access Manager (form-based login recommended).

After successful authentication, WebGate generates a token and the Web server forwards the request to Oracle WebLogic Server, which in turn invokes Oracle Access Manager Identity Asserter for single sign-on validation. The WebLogic Security Service invokes Oracle Access Manager Identity Asserter for single sign-on, which next gets the token from the incoming request and populates the subject with the WLSUserImpl principal. The Identity Asserter for single sign-on adds the WLSGroupImpl principal corresponding to the groups the user is a member of. Oracle Access Manager then validates the cookie.

Figure 4-1 depicts the distribution of components and the flow of information when the Oracle Access Manager Authentication Provider is configured as an Identity Asserter for SSO with Oracle Fusion Middleware.

Figure 4-1 Oracle Access Manager Single Sign-On Solution for Web Resources Only



4.2.2 How Oracle Business Intelligence Operates With SSO Authentication

After SSO authorization has been implemented, Oracle BI Presentation Services operates as if the incoming Web request is from a user authenticated by the SSO solution. Oracle BI Presentation Services next creates a connection to the Oracle BI Server using the impersonation feature and establishes the connection to the Oracle BI Server on behalf of the user. User personalization and access controls such as data-level security are maintained in this environment.

4.3 SSO Implementation Considerations

When implementing a SSO solution with Oracle Business Intelligence you should consider the following:

- When accepting trusted information from the HTTP server or servlet container, it is essential to secure the machines that communicate directly with the Oracle BI Presentation Server. This can be done by setting the Listener\Firewall node in the instanceconfig.xml file with the list of HTTP Server or servlet container IP addresses. Additionally, the Firewall node must include the IP addresses of all Oracle BI Scheduler instances, Oracle BI Presentation Services Plug-in instances, and Oracle BI JavaHost instances. If any of these components are co-located with Oracle BI Presentation Services, then address 127.0.0.1 must be added in this list as well. This setting does not control end-user browser IP addresses.
- When using mutually-authenticated SSL, you must specify the Distinguished Names (DNs) of all trusted hosts in the Listener\TrustedPeers node.

4.4 Configuring SSO in an Oracle Access Manager Environment

For information about how to configure Oracle Access Manager as the SSO authentication provider for Oracle Fusion Middleware with, see "Configuring Single Sign-On in Oracle Fusion Middleware" in *Oracle Fusion Middleware Application Security Guide*. For more information about managing Oracle Access Manager, see *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*.

After the Oracle Fusion Middleware environment is configured, in general the following must be done to configure Oracle Business Intelligence:

- Configure the SSO provider to protect the Oracle Business Intelligence URL entry points.
- Configure the Web server to forward requests from the Oracle BI Presentation Server to the SSO provider.
- Configure the new identity store as the main authentication source for the Oracle WebLogic Server domain in which Oracle Business Intelligence has been installed. For more information, see [Section 4.4.1, "Configuring a New Authenticator for Oracle WebLogic Server"](#).
- Configure the Oracle WebLogic Server domain in which Oracle Business Intelligence is installed to use an Oracle Access Manager asserter. For more information, see [Section 4.4.2, "Configuring Oracle Access Manager as a New Identity Asserter for Oracle WebLogic Server"](#).
- After configuration of the SSO environment is complete, enable SSO authentication for Oracle Business Intelligence. For more information, see [Section 4.6, "Using Fusion Middleware Control to Enable SSO Authentication"](#).

4.4.1 Configuring a New Authenticator for Oracle WebLogic Server

After installing Oracle Business Intelligence, the Oracle WebLogic Server embedded LDAP server is the default authentication source (identity store). To use a new identity store (for example, OID), as the main authentication source, you must configure the Oracle WebLogic Server domain (where Oracle Business Intelligence is installed).

Setting the Control Flag attribute for the authenticator provider determines the ordered execution of the Authentication providers. The possible values for the Control Flag attribute are:

- **REQUIRED** - This LoginModule must succeed. Even if it fails, authentication proceeds down the list of LoginModules for the configured Authentication providers. This setting is the default.
- **REQUISITE** - This LoginModule must succeed. If other Authentication providers are configured and this LoginModule succeeds, authentication proceeds down the list of LoginModules. Otherwise, control is returned to the application.
- **SUFFICIENT** - This LoginModule need not succeed. If it does succeed, return control to the application. If it fails and other Authentication providers are configured, authentication proceeds down the LoginModule list.
- **OPTIONAL** - This LoginModule can succeed or fail. However, if all Authentication providers configured in a security realm have the JAAS Control Flag set to **OPTIONAL**, the user must pass the authentication test of one of the configured providers.

For more information about creating a new default authenticator in Oracle WebLogic Server, see *Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help* or *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

To configure a new authenticator in Oracle WebLogic Server:

1. Log in to Oracle WebLogic Server Administration Console.
 - For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**. Select **Providers**.
3. Click **New**. Complete the fields as follows:
 - **Name:** *OID Provider*, or a name of your choosing.
 - **Type:** OracleInternetDirectoryAuthenticator
 - Click **OK**
4. In the **authentication providers** table, click the newly added authenticator.
5. Navigate to **Settings**, then select **Common**:
 - Set the Control Flag to **SUFFICIENT**.
 - Click **Save**.
6. Click the **Provider Specific** tab and enter the following required settings using values for your environment:
 - **Host:** The LDAP host. For example: *localhost*.
 - **Port:** The LDAP host listening port. For example: *6050*.
 - **Principal:** LDAP administrative user. For example: *cn=orcladmin*.
 - **Credential:** LDAP administrative user password.
 - **User Base DN:** Same as in Oracle Access Manager.
 - **All Users Filter:** For example, *(&(uid=*) (objectclass=person))*. The asterisk (*) filters for all users.
 - **User Name Attribute:** Set as the default attribute for user name in the directory server. For example: *uid*
 - **Group Base DN:** The group searchbase (same as User Base DN)

- Do not set the All Groups filter because the default setting is acceptable.
- 7. Click **Save**.
- 8. Perform the following steps to set up the default authenticator for use with the Identity Asserter:
 - a. Display the Providers tab, select **Authentication**, then select **DefaultAuthenticator** to display its configuration page.
 - b. Select the **Common** tab and set the Control Flag to SUFFICIENT.
 - c. Click **Save**.
- 9. Perform the following steps to reorder Providers:
 - a. Display the **Providers** tab.
 - b. Click **Reorder**.
 - c. On the **Reorder Authentication Providers** page, select a provider name and use the arrows beside the list to order the providers as follows:
 - OID Authenticator (SUFFICIENT)
 - OAM Identity Asserter (REQUIRED)
 - Default Authenticator (SUFFICIENT)
 - d. Click **OK** to save your changes.
- 10. In the Change Center, click **Activate Changes**.
- 11. Restart Oracle WebLogic Server.

For more information, see [Section 3.2.3.1, "Configuring Oracle Business Intelligence to use Oracle Internet Directory as the Authentication Provider"](#).

4.4.2 Configuring Oracle Access Manager as a New Identity Asserter for Oracle WebLogic Server

The Oracle WebLogic Server domain in which Oracle Business Intelligence is installed must be configured to use an Oracle Access Manager asserter.

For more information about creating a new asserter in Oracle WebLogic Server, see *Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help*.

To configure Oracle Access Manager as the new asserter for Oracle WebLogic Server:

1. Log in to Oracle WebLogic Server Administration Console.

For more information, see [Section 2.3.2, "Launching Oracle WebLogic Server Administration Console"](#).
2. In Oracle WebLogic Server Administration Console, select **Security Realms** from the left pane and click the realm you are configuring. For example, **myrealm**. Select **Providers**.
3. Click **New**. Complete the fields as follows:
 - **Name:** *OAM Provider*, or a name of your choosing.
 - **Type:** OAMIdentityAsserter.
4. Click **OK**.
5. Click **Save**.

6. In the **Providers** tab, perform the following steps to reorder **Providers**:
 - a. Click **Reorder**
 - b. In the **Reorder Authentication Providers** page, select a provider name, and use the arrows beside the list to order the providers as follows:
 - OID Authenticator (SUFFICIENT)
 - OAM Identity Asserter (REQUIRED)
 - Default Authenticator (SUFFICIENT)
 - c. Click **OK** to save your changes.
7. In the Change Center, click **Activate Changes**.
8. Restart Oracle WebLogic Server.

You can verify that Oracle Internet Directory is the new identity store (default authenticator) by logging back into Oracle WebLogic Server and verifying the users and groups stored in the LDAP server appear in the console.
9. Use Fusion Middleware Control to enable SSO authentication.

For more information, see [Section 4.6, "Using Fusion Middleware Control to Enable SSO Authentication"](#).

4.5 Configuring Custom SSO Environments

For information about configuring Oracle Business Intelligence to participate in custom SSO environments (for example, 'Configuring authentication and SSO with Active Directory and Windows Native Authentication', and 'Configuring Oracle Business Intelligence Enterprise Edition 11g to work with SiteMinder SSO'), see article ID 1284399.1 on My Oracle Support at:

<https://support.oracle.com>

4.6 Using Fusion Middleware Control to Enable SSO Authentication

After Oracle Business Intelligence has been configured to use the SSO solution configured for use by Oracle Fusion Middleware, you must enable SSO authentication for Oracle Business Intelligence in Fusion Middleware Control from the **Security** tab.

To enable Oracle Business Intelligence to use SSO authentication:

1. Go to the Business Intelligence Overview page.

For information, see "Logging In to Fusion Middleware Control" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.
2. Go to the **Security** page.

Click the **Help** button on the page to access the page-level help for its elements.
3. Click **Lock and Edit Configuration**.
4. Select **Enable SSO**.

When selected, this checkbox enables SSO to be the method of authentication into Oracle Business Intelligence. The appropriate form of SSO is determined by the configuration settings made for the chosen SSO provider.
5. Select the configured SSO provider from the list.

The SSO provider list becomes active when you select the **Enable SSO** checkbox.

6. If required, enter logon and logoff URLs for the configured SSO provider.

The logoff URL (specified by the SSO provider) must be outside the domain and port that the SSO provider protects, because the system does not log users out.

7. Click **Apply**, then **Activate Changes**.

8. Restart the Oracle Business Intelligence components using Fusion Middleware Control.

For more information, see "Starting and Stopping the Oracle Business Intelligence Components" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

SSL Configuration in Oracle Business Intelligence

This chapter describes how to configure Oracle BI components to communicate over the Secure Socket Layer (SSL).

Note: For a detailed list of security setup steps, see [Section 1.8, "Detailed List of Steps for Setting Up Security In Oracle Business Intelligence"](#).

The SSL Everywhere feature of Oracle Business Intelligence enables secure communications between the components. You can configure SSL communication between the Oracle Business Intelligence components and between Oracle WebLogic Server for secure HTTP communication across your deployment. This section does not cover configuring secure communications to external services, such as databases and Web servers. For information about how to configure SSL for Oracle WebLogic Server, see "SSL Configuration in Oracle Fusion Middleware" in *Oracle Fusion Middleware Administrator's Guide*.

This chapter contains the following sections:

- [Section 5.1, "Common SSL Configuration Tasks for Oracle Business Intelligence"](#)
- [Section 5.2, "About SSL"](#)
- [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#)
- [Section 5.4, "Configuring SSL Communication Between Components"](#)
- [Section 5.5, "Additional SSL Configuration Options"](#)
- [Section 5.6, "Advanced SSL Configuration Options"](#)

5.1 Common SSL Configuration Tasks for Oracle Business Intelligence

[Table 5–1](#) contains common SSL configuration tasks and provides links for obtaining more information.

Table 5–1 Task Map: Configuring SSL Communication for Oracle Business Intelligence

Task	Description	Information
Understand SSL communication in Oracle Business Intelligence.	Understand how SSL communication between components and the application server works.	Section 5.2, "About SSL"

Table 5–1 (Cont.) Task Map: Configuring SSL Communication for Oracle Business

Task	Description	Information
Configure SSL communication between the Oracle WebLogic Server Managed servers.	The Web server must be configured to use HTTPS <i>before</i> enabling SSL communication for Oracle Business Intelligence.	Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol" "SSL Configuration in Oracle Fusion Middleware" in <i>Oracle Fusion Middleware Administrator's Guide</i>
Configure SSL communication between components.	Configure SSL communication between Oracle Business Intelligence components.	Section 5.4, "Configuring SSL Communication Between Components"

5.2 About SSL

SSL is a cryptographic protocol that enables secure communication between applications across a network. Enabling SSL communication provides several benefits, including message encryption, data integrity, and authentication. An encrypted message ensures confidentiality in that only authorized users have access to it. Data integrity ensures that a message is received intact without any tampering. Authentication guarantees that the person sending the message is who they claim to be.

For more information about SSL concepts and public key cryptography, see "How SSL Works" in *Oracle Fusion Middleware Administrator's Guide*.

5.2.1 SSL in Oracle Business Intelligence

By default, Oracle Business Intelligence components communicate with each other using TCP/IP. Configuring SSL between the Oracle Business Intelligence components enables secured network communication.

Oracle Business Intelligence components can communicate only through one protocol at a time. It is not possible to use SSL between some components, while using simple TCP/IP communications between others. To enable secure communication, all instances of the following Oracle Business Intelligence components must be configured to communicate over SSL:

- Oracle BI Server
- Oracle BI Presentation Services
- Oracle BI JavaHost
- Oracle BI Scheduler
- Oracle BI Job Manager
- Oracle BI Cluster Controller
- Oracle BI Server Clients, such as Oracle BI ODBC Client

SSL requires that the server possess a public key and a private key for session negotiation. The public key is made available through a server certificate. The certificate also contains information that identifies the server. The private key is protected by the server.

The SSL Everywhere central configuration feature configures SSL throughout the Oracle Business Intelligence installation from a single centralized point. Certificates

are created for you and every Oracle Business Intelligence component is configured to use SSL. The following default security level is configured by the SSL Everywhere feature:

- SSL encryption is enabled.
- Mutual SSL authentication is not enabled. Since mutual SSL authentication is not enabled, clients do not need their own private SSL keys. All security sensitive inter-component communication links are authenticated by the BISystemUser credentials, or a user's credential.
- The default cipher suites are used. For information about how to use a non-default cipher suite, see [Section 5.6, "Advanced SSL Configuration Options"](#).
- When scaling out, the centrally managed SSL configuration is automatically propagated to any new components that are added.

If a higher level of security is required, manual configuration might be used to augment or replace the SSL Everywhere central configuration. This is considerably more complex. For more information about how to configure SSL manually, contact Oracle Support. For more information, see [Access to Oracle Support](#).

5.2.2 Creating Certificates and Keys in Oracle Business Intelligence

Secure communication over SSL requires certificates signed by a certificate authority (CA). For internal communication, the SSL Everywhere feature creates both a private certificate authority and the certificates for you. The internal certificates cannot be used for the outward facing Web server because user Web browsers are not aware of the private certificate authority. The Web server must therefore be provided with a Web server certificate signed by an externally recognized certificate authority. The central SSL configuration must be given the external certificate authority's root certificate so that the Oracle Business Intelligence components can recognize the Web server certificate.

5.2.3 Credential Storage

The Oracle Business Intelligence credential store is used to store the SSL credentials, such as certificates, trusted certificates, certificate requests, and private keys. SSL-related credentials are stored in the oracle.bi.enterprise credential map. The supported certificate file formats are .der and .pem.

5.3 Configuring the Web Server to Use the HTTPS Protocol

The Web server must be configured to use HTTPS before enabling SSL communication for Oracle Business Intelligence. For information about how to configure SSL for Oracle WebLogic Server, see "SSL Configuration in Oracle Fusion Middleware" in *Oracle Fusion Middleware Administrator's Guide*.

Some Oracle Business Intelligence Java components running in Oracle WebLogic Server invoke other Web services running in Oracle WebLogic Server. Therefore, Oracle WebLogic Server must be configured to trust itself by setting the following Java properties:

- javax.net.ssl.trustStore
- javax.net.ssl.trustStorePassword

These properties are set by editing the following files:

For Linux:

`MW_HOME/user/projects/domains/bifoundation_domain/bin/setDomainEnv.sh`

For Windows:

`MW_HOME\user\projects\domains\bifoundation_domain\bin\setDomainEnv.bat`

and adding the properties to the end of the `JAVA_OPTIONS` value. Note that any `\` character in a path must be escaped with another `\` character.

For example, the following edits are made if using the demonstration Oracle WebLogic Server certificate:

For Linux (all on one line):

```
JAVA_OPTIONS="{JAVA_OPTIONS} -Djavax.net.ssl.trustStore=MW_Home/wlserver_10.3/server/lib/DemoTrust.jks -Djavax.net.ssl.trustStorePassword="
```

For Windows (all on one line):

```
set JAVA_OPTIONS=%JAVA_OPTIONS% -Djavax.net.ssl.trustStore="MW_Home/wlserver_10.3/server/lib/DemoTrust.jks" -Djavax.net.ssl.trustStorePassword=" "
```

If this step is omitted then login will fail.

Best practice is to disable the HTTP listener and leave only the HTTPS listener. After disabling the HTTP listener you must restart Oracle WebLogic Server. If Oracle WebLogic Server is not restarted, then any attempts to login to Oracle Business Intelligence fail.

If the trust store location is given incorrectly, then Web Services for SOA display an error message similar to the following:

```
java.security.InvalidAlgorithmParameterException: the trustAnchors parameter must be non-empty
```

5.4 Configuring SSL Communication Between Components

Table 5–2 contains the tasks for setting up SSL communication between components and provides links for obtaining more information.

Note: You must configure SSL for the Web server before enabling SSL for Oracle Business Intelligence. For more information, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#).

Table 5–2 Task Map: Configuring SSL Communication Between Components

Task	Description	For Information
Lock the configuration.	Use the <code>BIDomain</code> MBean to lock the domain configuration before making changes.	Section 5.4.1, "Locking the Configuration"
Generate the SSL certificate.	Use the <code>BIDomain.BIInstance.SecurityConfiguration</code> MBean to generate the SSL certificate.	Section 5.4.2, "Generating the SSL Certificates"
Commit the SSL configuration changes.	Use the <code>BIDomain</code> MBean to commit the SSL configuration changes.	Section 5.4.3, "Commit the SSL Configuration Changes"

Table 5–2 (Cont.) Task Map: Configuring SSL Communication Between Components

Task	Description	For Information
Verify SSL certificates in credential store.	Verify that the SSL certificates are saved in the credential store.	Section 5.4.4, "Verifying the SSL Credentials in the Credential Store"
Enable the SSL configuration and restart Oracle Business Intelligence components.	Use the <code>BIDomain.BIInstance.SecurityConfiguration</code> MBean to enable the SSL configuration between components, then restart the components so the changes take effect.	Section 5.4.5, "Enabling the SSL Configuration"
Confirm that SSL communication is enabled between components.	Run the SSL report to confirm status.	Section 5.4.6, "Confirming SSL Status"
Configure SSL communication for the mail server.	Configure SSL communication for the mail server.	Section 5.4.7, "Configuring the SMTP Server"
Update expired SSL certificates.	Update expired SSL certificates and replace with new ones.	Section 5.4.8, "Updating Expired SSL Certificates"

Internal SSL communication between components is configured using Oracle Business Intelligence managed beans (MBeans). An MBean is a Java object that represents a JMX manageable resource in a distributed environment, such as an application.

Use the Fusion Middleware Control System MBean Browser to configure SSL communication between Oracle Business Intelligence components. The System MBean Browser is accessed from the Oracle WebLogic Server domain where Oracle Business Intelligence is installed in Fusion Middleware Control. For example, `bifoundation_` domain.

For more information about using and navigating within Fusion Middleware Control, see "Navigating Within Fusion Middleware Control" in *Oracle Fusion Middleware Administrator's Guide*.

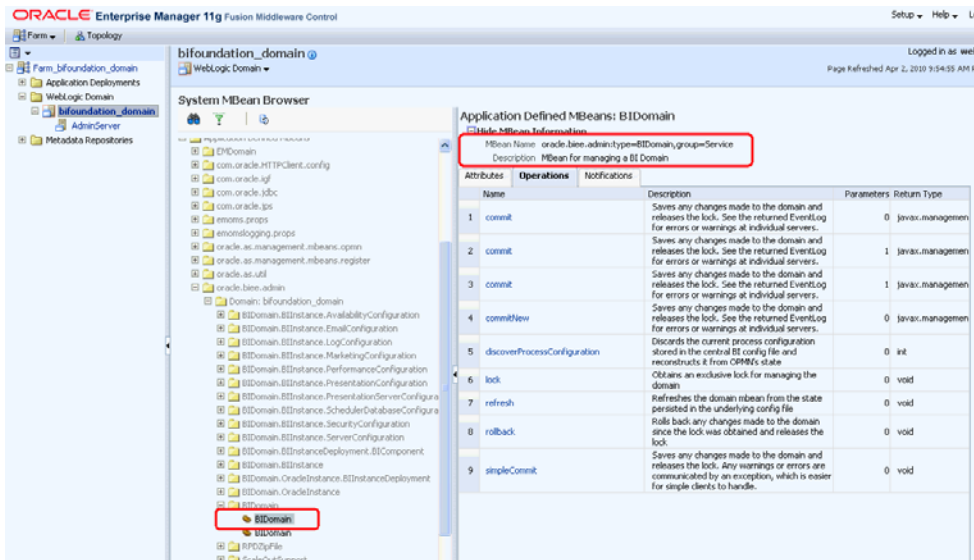
5.4.1 Locking the Configuration

Configuring SSL between components requires that you lock the configuration before making changes. The `BIDomain` MBean is used to lock the configuration.

To lock the configuration:

1. In Fusion Middleware Control target navigation pane, go to the Oracle WebLogic Server domain in which Oracle Business Intelligence is installed. Select this domain. For example, `bifoundation_` domain.
2. From the WebLogic Domain menu, select **System MBean Browser**.
3. Expand the Application Defined MBeans node in the MBean navigation tree, then expand the `oracle.biee.admin` node, then expand the `bifoundation_` domain node.
4. Locate and expand the `BIDomain` node to display two `BIDomain` MBeans. Then either hover your cursor over each MBean or click **Show MBean Information** to display their full names:
 - `oracle.biee.admin:type=BIDomain, group=Service`

- oracle.biee.admin:type=BIDomain, group=Config
5. Select the BIDomain MBean having the full name oracle.biee.admin:type=BIDomain, group=Service from the MBean navigation tree.



6. Select the **Operations** tab, then **Lock**.
7. Click **Invoke**.

A confirmation displays to indicate that the configuration is locked. The next step is to generate the SSL certificates. For more information, see [Section 5.4.2, "Generating the SSL Certificates"](#).

5.4.2 Generating the SSL Certificates

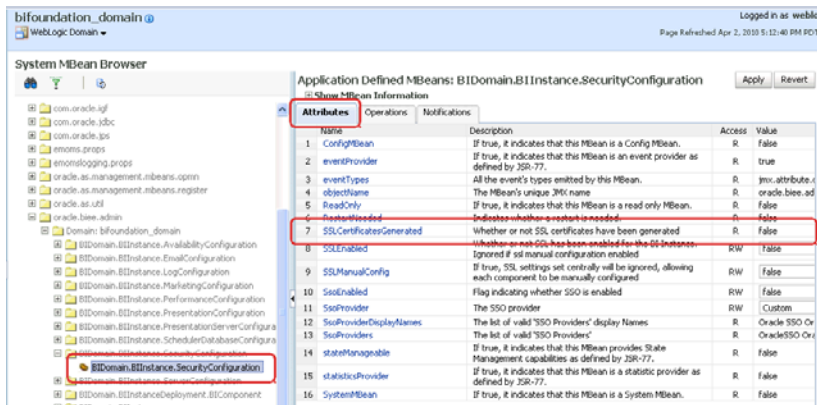
Internal SSL communication requires that server certificates, a server public key, and a private key be generated. Oracle Business Intelligence acts as a private CA (certificate authority) for internal communication only. The BIDomain.BIInstance.SecurityConfiguration MBean is used to generate the SSL certificates.

Note: If you have existing certificates, best practice is to discard them and generate new certificates by following these steps. To use your existing certificates you must manually configure SSL.

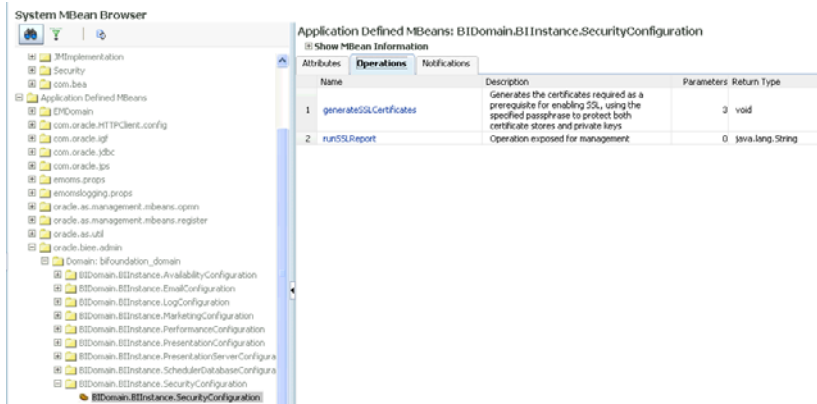
To generate the SSL certificate:

1. Lock the configuration.
For information, see [Section 5.4.1, "Locking the Configuration"](#).
2. In Fusion Middleware Control target navigation pane, expand the farm, then expand **WebLogic Domain**, and select **bifoundation_domain**.
3. Display the WebLogic Domain menu, and select **System MBean Browser**.
The System MBean Browser page is displayed.

4. Expand the Application Defined MBeans node in the MBean navigation tree, then expand the oracle.biee.admin node, then expand the bifoundation_domain node.
5. Locate and expand the BIDomain.BIInstance.SecurityConfiguration node.
The BIDomain.BIInstance.SecurityConfiguration MBean is displayed.
6. Select the BIDomain.BIInstance.SecurityConfiguration MBean.
Configuration options for the MBean display in the right pane.
7. Select the **Attributes** tab, then locate the SSLCertificatesGenerated attribute. A value of false indicates that SSL certificates have not been generated. If certificates have been previously generated, you can continue to replace them with new certificates.



8. Select the **Operations** tab, then select **generateSSLCertificates** operation.
The parameters for the generateSSLCertificates attribute for the BIDomain.BIInstance.SecurityConfiguration MBean displays.



9. Provide values for the following parameters:
 - **passphrase**: Must be more than six characters. The SSL passphrase protects the various certificates and, most importantly, the private key. Remember this passphrase. For example, you need to use it to connect to a BI Server using command line tools that require the tool to verify the BI Server certificate.
 - **webServerCACertificatePath**: Enter the path for the Certificate Authority (CA) root certificate for the CA used to sign the web server's certificate. Do not enter the individual web server certificate. Supported types are .der. and .pem.

For Oracle WebLogic Server default demonstration certificate authority, enter `<MW_HOME>/wlserver_10.3/server/lib/CertGenCA.der`.

Note: The recommended practice is to install a non-demonstration certificate in Oracle WebLogic Server, signed either by a recognized public certificate authority or your organization’s certificate authority. You can obtain the CA root certificate direct from the certificate authority or by exporting it from your Web browser.

- **certificateEncoding:** Supported types are `.der` and `.pem`. For Oracle WebLogic Server default, enter `der`

Operation: generateSSLCertificates Invoke Revert Return

MBean Name `oracle.biee.admin:type=BIDomain,BIInstance.SecurityConfiguration,biInstance=coreapplication,group=Service`

Operation Name `generateSSLCertificates`

Description Generates the certificates required as a prerequisite for enabling SSL, using the specified passphrase to protect both certificate stores and private keys. The certificate authority public certificate of the web server must also be provided. This enables internal https calls to the web server. The certificate type (pem or der) must be explicitly stated.

Return Type `void`

Parameters

Name	Type	Value
passphrase	java.lang.String	<input type="text"/>
webServerCACertifi	java.lang.String	<input type="text"/>
certificateEncoding	java.lang.String	<input type="text"/>

10. Click Invoke.

A confirmation displays if the operation executed successfully. If successful, the input CA certificate has been validated and the certificate generation request is queued. The next step is to commit the changes, which completes certificate creation and distribution throughout the domain. For more information, see [Section 5.4.3, "Commit the SSL Configuration Changes"](#).

5.4.3 Commit the SSL Configuration Changes

You commit the SSL configuration changes using the BIDomain MBean.

Note: You must configure SSL for the Web server before enabling SSL for Oracle Business Intelligence. For more information, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#).

To commit the SSL configuration:

1. From the System MBean Browser, navigate to the BIDomain MBean. You want the MBean with the complete name of `oracle.biee.admin:type=BIDomain,group=Service`.

For more information about navigating to the BIDomain MBean, follow Steps 1 through 5 in [Section 5.4.1, "Locking the Configuration"](#).

2. Select the BIDomain MBean having the complete name `oracle.biee.admin:type=BIDomain,group=Service`.
3. Select the **Operations** tab, then **simpleCommit**.

4. Click Invoke.

Operation: **commit**

MBean Name oracle.biee.admin:type=BIDomain,group=Service

Operation Name commit

Description Saves any changes made to the domain and releases the lock. See the returned EventLog for errors or warnings at individual servers.

Return Type javax.management.openmbean.CompositeData

Return Value

A confirmation displays to indicate if the commit operation was successful.

The next step is to verify the SSL credentials are in the credential store. For more information, see [Section 5.4.4, "Verifying the SSL Credentials in the Credential Store"](#).

5.4.3.1 Troubleshooting Tip

If the commit operation fails you might see the following error message:

```
SEVERE: Element Type: DOMAIN, Element Id: null, Operation Result:
VALIDATION_FAILED, Detail Message: SSL must be enabled on AdminServer before
enabling on BI system; not set on server: AdminServer
```

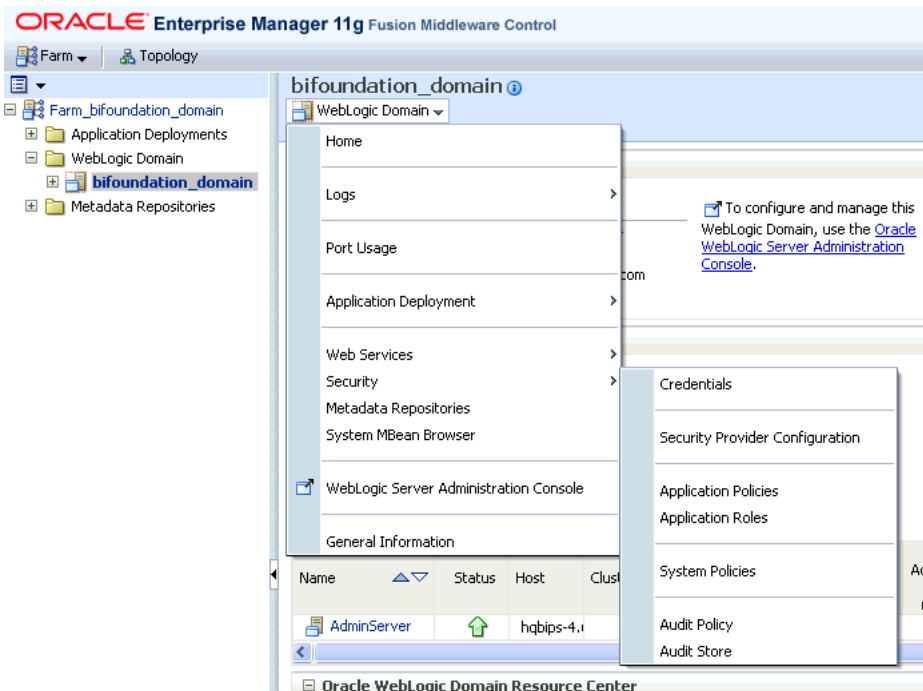
This message indicates that SSL has not been enabled on the Oracle WebLogic Server Managed Servers, which is a pre-requisite step. For more information, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#). After this pre-requisite is completed you can repeat the commit operation.

5.4.4 Verifying the SSL Credentials in the Credential Store

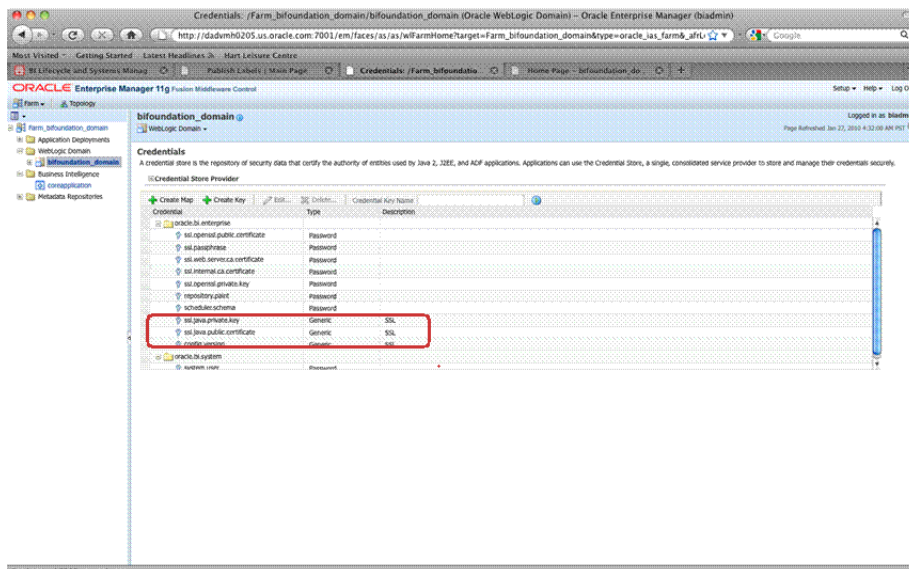
The SSL credentials are stored in the credential store for Oracle Business Intelligence.

To verify the SSL credentials in the credential store:

1. If necessary, from Fusion Middleware Control target navigation pane, expand the farm, then expand **WebLogic Domain**, and select **bifoundation_domain**.
2. From the WebLogic Domain menu, select **Security**, then **Credentials**.



3. Open oracle.bi.enterprise credential map and verify the SSL credentials have been saved to the credential store. If successful, the following SSL credentials display in the oracle.bi.enterprise credential map:
 - **ssl.java.private.key**
 - **ssl.java.public.certificate**
 - **config.version**



- **cacert.pem:** The certificate of the private CA. Command line tools that want to verify the BI Server certificates point to this file.
- **webservercacert.pem:** The certificate of the public CA that signed the Web server certificate. This is a copy of the CA certificate registered in the **generateSSLCertificate** operation, in .pem format.
- **javaserver.keystore:** Contains all the certificates in a format suitable for use by Java clients. Contents include:

Alias	Certificate
javaservercert	Server
javaserverkey	Key
internalcacertificate	Private Key
webservercertificate	Web server CA

- **server-key.pem:** Private key for the openssl servers.

The next step is to enable the SSL configuration changes. For more information, see [Section 5.4.5, "Enabling the SSL Configuration"](#).

5.4.5 Enabling the SSL Configuration

The configuration must be locked before you can enable SSL.

Note: After the SSL configuration is enabled the Oracle Business Intelligence components must be restarted.

1. Verify that the Web server is configured to use HTTPS before enabling the SSL configuration. If necessary, configure the Web server before proceeding.

For information about how to configure SSL for Oracle WebLogic Server, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#).

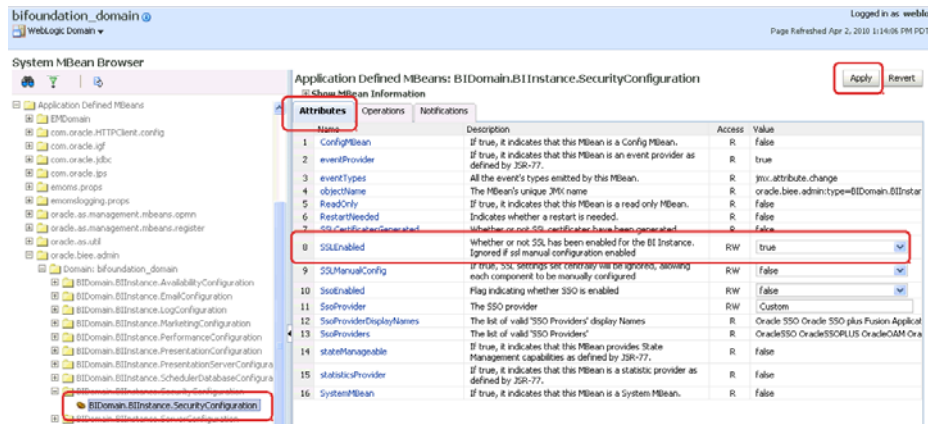
2. Lock the configuration.

For information, see [Section 5.4.1, "Locking the Configuration"](#).

3. From the System MBean Browser, select the BIDomain.BIInstanceSecurityConfiguration MBean.

For information about how to navigate to the MBean, see [Section 5.4.2, "Generating the SSL Certificates"](#).

4. Select the **Attributes** tab, then for the SSLEnabled attribute select **true** from the Value list, then click **Apply**. You must have the SSL listen port on for the Admin Server and Manager Servers. For more information, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#).



5. Navigate to the BIDomain MBean and commit the changes.

For information, see [Section 5.4.3, "Commit the SSL Configuration Changes"](#).

SSL communication is now enabled between the components. You must restart the Oracle Business Intelligence components for the changes to take effect.

6. Restart the Oracle Business Intelligence components from the Oracle Business Intelligence Overview page in Fusion Middleware Control.

For more information, see "Starting and Stopping Oracle Business Intelligence System Components" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

5.4.6 Confirming SSL Status

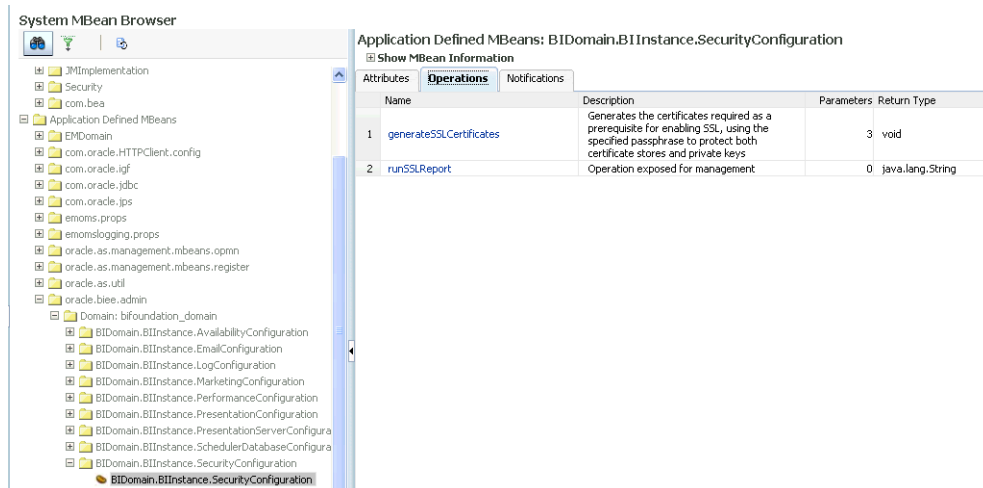
You can run a SSL report using the BIDomain.BIInstance.SecurityConfiguration MBean to verify that SSL communication is operating between components.

To run the SSL report to confirm status:

1. From the System MBean Browser, select the BIDomain.BIInstanceSecurityConfiguration MBean.

For information about how to navigate to the MBean, see [Section 5.4.2, "Generating the SSL Certificates"](#). You do not need to lock the configuration to run the SSL report.

2. Select the **Operations** tab, then select the **runSSLReport** option.



3. To run the report, click **Invoke**.

The report indicating the status of SSL communication between components displays. See [Example 5–1, "Sample SSL Report Output"](#).

If the SSL ping fails, check the following:

- Verify the target component is running.
- Verify that the component has been restarted since SSL was enabled. SSL configuration changes require a restart to take effect.
- Verify that the `SSLEnabled` attribute for the `BIDomain.BIInstanceSecurityConfiguration` MBean is set to `true`. When changing SSL properties, both the `apply` and `commit` steps must be performed.

Example 5–1 Sample SSL Report Output

```
OracleBIPresentationServicesComponent
(1) <machine_name>:9710.  SSL ping OK.  peer: <machine_name> port: 9710 protocol:
SSLv3 cipher suite: SSL_RSA_WITH_RC4_128_MD5
  local certificates: null
peer certificates: #18, expires Tue might 17 15:23:02 BST 2011 for CN=OBIEE
Installer Openssl, OU=Business Intelligence, O=Oracle, C=US#9879704091745165219,
expires Tue might 17 15:23:02 BST 2011 for C=US, O=org, OU=unit, CN=OBIEE
Installer CA

OracleBIClusterControllerComponent
(No instances configured)

OracleBISchedulerComponent
(1) <machine_name>:9705.  SSL ping OK.  peer: <machine_name> port: 9705 protocol:
SSLv3 cipher suite: SSL_RSA_WITH_RC4_128_MD5
  local certificates: null
peer certificates: #18, expires Tue might 17 15:23:02 BST 2011 for CN=OBIEE
Installer Openssl, OU=Business Intelligence, O=Oracle, C=US

OracleBIJavaHostComponent
(1) <machine_name>:9810.  SSL ping OK.  peer: <machine_name> port: 9810 protocol:
SSLv3 cipher suite: SSL_RSA_WITH_RC4_128_MD5
  local certificates: null
peer certificates: #19, expires Tue might 17 15:23:03 BST 2011 for CN=OBIEE
Installer Java, OU=Business Intelligence, O=Oracle, C=US

OracleBIServerComponent
(1) <machine_name>:9703.  SSL ping OK.  peer: <machine_name> port: 9703 protocol:
SSLv3 cipher suite: SSL_RSA_WITH_RC4_128_MD5
  local certificates: null
  peer certificates: #18, expires Tue might 17 15:23:02 BST 2011 for CN=OBIEE
Installer Openssl, OU=Business Intelligence, O=Oracle, C=US

SSL ok on 4 out of 4 components.
```

5.4.7 Configuring the SMTP Server

The server certificate from the SMTP server must be obtained.

To configure SSL for the SMTP server:

1. Go to the **Business Intelligence Overview** page.

For information, see "Logging In to Fusion Middleware Control" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

2. Display the **Mail** tab of the **Deployment** page.
Click the **Help** button on the page to access the page-level help for its elements.
3. Lock the configuring by clicking **Lock and Edit Configuration**.
4. Complete the fields under **Secure Socket Layer (SSL)** as follows:
 - Check **Use SSL to connect to mail server**. The other fields become active afterward.
 - Specify CA certificate source: select **Directory** or **File**.
 - **CA certificate directory**: Specify the directory containing CA certificates.
 - **CA certificate file**: Specify the file name for the CA certificate.
 - **SSL certificate depth**: Specify the verification level applied to the certificate
 - **SSL cipher list**: Specify the list of ciphers matching the cipher suite name that the SMTP server supports. For example, RSA+RC4+SHA.
5. Unlock the configuration.

5.4.8 Updating Expired SSL Certificates

Certificates generated by the SSL Everywhere central configuration expire after one year. The expiration date for a certificate is listed in the SSL status report. For more information about how to run an SSL report, see [Section 5.4.6, "Confirming SSL Status"](#). For an example of the certificate expiration message that is displayed, see [Example 5–1, "Sample SSL Report Output"](#).

To replace a certificate that is about to expire, generate new certificates by following the steps in [Section 5.4.2, "Generating the SSL Certificates"](#) and restart the Oracle Business Intelligence components.

5.5 Additional SSL Configuration Options

Additional configuration options are required for Oracle Business Intelligence components and tools as follows:

- [Section 5.5.1, "Using SASchInvoke When BI Scheduler is SSL-Enabled"](#)
- [Section 5.5.2, "Configuring Oracle BI Job Manager"](#)
- [Section 5.5.3, "Enabling the Online Catalog Manager to Connect"](#)
- [Section 5.5.4, "Configuring the Oracle BI Administration Tool"](#)
- [Section 5.5.5, "Configuring an ODBC DSN for Remote Client Access"](#)
- [Section 5.5.6, "Configuring SSL When Using Multiple Authenticators"](#)

5.5.1 Using SASchInvoke When BI Scheduler is SSL-Enabled

When the BI Scheduler is enabled for communication over SSL, you can invoke the BI Scheduler using the SASchInvoke command line utility.

Use the following syntax to run the SASchInvoke command:

```
SASchInvoke -u <Admin Name> (-j <job id> | -i <iBot path>) [-m <machine
```

```
name>[:<port>]] [(-r <replace parameter filename> | -a <append parameter
filename>)] [-l [ -c SSL certificate filename> -k <SSL certificate private key
filename> [ -w <SSL passphrase> | -q <passphrase file> | -y ]] [-h <SSL cipher
list>] [-v [-e <SSL verification depth>] [-d <CA certificate directory>] [-f <CA
certificate file>] [-t <SSL trusted peer DNS>] ] ]
```

The command will prompt you to enter the administrator password.

5.5.2 Configuring Oracle BI Job Manager

To successfully connect to BI Scheduler that has been enabled for SSL, Oracle BI Job Manager must also be configured to communicate over SSL.

Oracle BI Job Manager is a Java based component and the keys and certificates that it uses must be stored in a java keystore database.

Use this procedure to configure Oracle BI Job Manager to communicate with the BI Scheduler server over SSL.

To configure Oracle BI Job Manager:

1. From the **File** menu, select **Oracle BI Job Manager**, then select **Open Scheduler Connection**.
2. In the Secure Socket Layer section of the dialog box, select the **SSL** check box. If you are using the central SSL configuration, which does not set up mutual authentication, you do not need to provide any additional values in this dialog box. Click **OK** to exit.
3. If BI Scheduler has been set to "Require Client Certificate", then Key Store and Key Store Password must be set as follows:
 - Key Store=*MW_HOME*\user_projects\domains\bifoundation_domain\config\fmwconfig\biinstances\coreapplication\ssl\javaserver.keystore.
 - Key Store Password = passphrase entered in the generateSSLCertificates operation. See Step 9 of [Section 5.4.2, "Generating the SSL Certificates"](#)
4. Select the **Verify Server Certificate** check box. When this is checked, the trust store file must be specified. This trust store contains the CA that verifies the Scheduler server certificate.
5. In the **Trust Store** text box, enter the path and file name of the keystore that contains the Certificate Authority file. In the example provided previously, the CA certificate was stored in the same keystore that contains the certificate and private key, *javaserver.keystore*.
6. In the **Trust Store Password** text box, enter the password of the keystore entered in Step 5.
7. Copy the keystore and trust store files to the locations specified in the parameters above.

5.5.3 Enabling the Online Catalog Manager to Connect

The online Catalog Manager might fail to connect to Oracle BI Presentation Services when the HTTP Web server for Oracle BI is enabled for SSL. You must import the SSL server certificate or CA certificate from the Web server into the Java Keystore of the JVM (for example, JRocket) that is specified by the system *JAVA_HOME* variable.

To import the exported Web server certificate to Java's default truststore:

1. Navigate to Java's default trust store located at *MW_HOME/JAVA_HOME/jre/lib/security*.

For example, *mw_home\jrocket_160_17_R28.0.0-679\jre\lib\security*.

The default trust store is named *cacerts*.

2. Copy the certificate exported from the Web server to the same location as Java's default truststore.
3. Execute the command to import the certificate to the default truststore:

```
keytool -import -trustcacerts -alias bicert -file $WebServerCertFilename  
-keystore cacerts -storetype JKS
```

where the Web server certificate file *\$WebserverCertFilename* is imported into Java's default trust store named *cacerts* under an alias of *bicert*.

For example if using the Oracle WebLogic Server default demonstration certificate, then use the full path to the certificate located in *WLS_HOME/server/lib/CertGenCA.der*.

Note: The default password for the Java trust store is "changeit".

4. Restart Catalog Manager.

Note: You must start Catalog Manager using the secure HTTPS URL.

5.5.4 Configuring the Oracle BI Administration Tool

To successfully connect to Oracle BI Server that has been enabled for SSL, the Administration Tool must also be configured to communicate over SSL. The DSN for the Oracle BI Server data source is required.

To configure the Administration Tool that is part of a cluster:

1. Determine the Oracle BI Server data source DSN being used by logging into the Presentation Services **Administration** page as an administrative user.

For more information, see *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

2. Locate the **Oracle BI Server Data Source** field in the upper left corner. The DSN is listed in the following format: *coreapplication_OH<DSNnumber>*.
3. In the Administration Tool, enter the DSN number by selecting **File**, then **Open**, then **Online**. Select the DSN from the list.
4. Enter the repository user name and password.

The Administration Tool is now connected to BI Server using SSL.

5.5.5 Configuring an ODBC DSN for Remote Client Access

You can create an ODBC DSN for the Oracle BI Server to enable remote client access. For more information about how to enable SSL communication for an ODBC DSN, see "Integrating Other Clients with Oracle Business Intelligence" in *Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition*.

5.5.6 Configuring SSL When Using Multiple Authenticators

If you are configuring multiple authenticators, and have configured an additional LDAP Authenticator to communicate over SSL (one-way SSL only), you need to put the corresponding LDAP server's root certificate in an additional keystore used by the virtualization (libOVD) functionality.

To put an LDAP server root certificate in an additional keystore used by the virtualization (libOVD) functionality:

Note: Before completing this task, you must configure the custom property called `virtualize`, and set its value to `true` (for more information, see [Section 3.2.3.3, "Configuring Oracle Business Intelligence to use Multiple Authentication Providers"](#)).

1. Create the keystore:

- a. Set environment variables `ORACLE_HOME`, `WL_HOME` and `JAVA_HOME`.

For example (on Windows):

```
set ORACLE_HOME=<MW_HOME>\Oracle_BI1
set WL_HOME=<MW_HOME>\wlserver_10.3
set JAVA_HOME=<MW_HOME>\jdk160_24
```

- b. Setup the keystore by running `libovdconfig.sh` (on UNIX), or `libovdconfig.bat` (on Windows), using `-createKeystore` option.

For example, on UNIX, open a shell prompt and change the directory to `<MW_HOME>/oracle_common/bin`. Then, run the following command (which prompts for the Oracle Business Intelligence administrator user name and password), for example:

```
./libovdconfig.sh -host <hostname> -port <Admin_Server_Port>
-username <BI Admin User> -domainPath <MW_HOME>/user_
projects/domains/bifoundation_domain -createKeystore
```

Windows location:

```
<MW_HOME>\oracle_common\bin\libovdconfig.bat
```

- c. When prompted, enter the Oracle Business Intelligence administrator password, and the OVD Keystore password (a new password that will be used to secure a Keystore file), created by the `libovdconfig.sh -createKeystore` command.

Once this command runs, you should see two new credentials in the Credential Store and a new Keystore file called `adapters.jks` under `<MW_HOME>\user_projects\domains\bifoundation_domain\config\fmwconfig\ovd\default\keystores`.

2. Export the root certificate from the LDAP directory (refer to your LDAP documentation on how to do this).

3. Import the root certificate to the libOVD keystore using the `keytool` command:

```
<MW_HOME>/jdk160_24/bin/keytool -import -keystore <MW_
HOME>\user_projects\domains\bifoundation_
domain\config\fmwconfig\ovd\default\keystores/adapters.jks
-storepass <KeyStore password> -alias <alias of your choice> -file
<Certificate filename>
```

4. Restart WebLogic and BI System processes.

For more information, see *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

5.6 Advanced SSL Configuration Options

The default SSL configuration uses default cipher suite negotiation. You can configure the system to use a different cipher suite if your organization's security standards do not allow for the default choice. The default choice can be viewed in the output from the SSL status report.

This advanced option is not configured by the SSL Everywhere central configuration. Instead, individual components must be manually configured. If new components are added by scaling out, each additional component must be manually configured. Manual configuration involves editing of the configuration files (.ini and .xml). Be careful to observe the syntactic conventions of these file types. If the files are incorrect, the corresponding component logs an error in its log file and will not start up.

A manually configured SSL environment can co-exist with a default SSL configuration.

To manually configure SSL cipher suite:

1. Configure SSL Everywhere by following the instructions in [Section 5.4, "Configuring SSL Communication Between Components"](#).

Note: Before making manual changes, invoke the SSLManualConfig MBean under BIDomain.BIInstance.SecurityConfiguration with the usual lock/commit cycle.
2. Select the desired Java Cipher Suite name from the options located at <http://download.oracle.com/javase/1.5.0/docs/guide/security/jsse/JSSERefGuide.html#AppA>.
3. Create an Open SSL Cipher Suite Name that matches the cipher suite chosen, using the list at http://www.openssl.org/docs/apps/ciphers.html#CIPHER_LIST_FORMAT.

For example, Java Cipher Suite name SSL_RSA_WITH_RC4_128_SHA maps to Open SSL: RSA+RC4+SHA.
4. Edit the JavaHost configuration file located at ORACLE_INSTANCE\config\OracleBIJavaHostComponent\coreapplication_obijh1\config.xml and add following sub-element to JavaHost/Listener/SSL element. For example:


```
<EnabledCipherSuites>SSL_RSA_WITH_RC4_128_SHA</EnabledCipherSuites>
```
5. If in a clustered environment, edit the Cluster Controller configuration file located at ORACLE_INSTANCE/config/OracleBIApplication/coreapplication/NQClusterConfig.INI and set the SSL_CIPHER_LIST value, as in the following example:


```
SSL_CIPHER_LIST = "RSA+RC4+SHA";
```
6. Edit the BI Presentation configuration file located at ORACLE_INSTANCE/config/OracleBIPresentationServicesComponent/coreapplication_obips1/instanceconfig.xml and add the attribute cipherSuites="RSA+RC4+SHA" to the sub-elements WebConfig/ServerInstance/ps:Listener and WebConfig/ServerInstance/ps:JavaHostProxy.
7. Edit the BI Scheduler configuration file located at ORACLE_INSTANCE/config/OracleBISchedulerComponent/coreapplication_

obisch1/instanceconfig.xml add following sub-element to scheduler/ServerInstance/SSL. For example:

```
<CipherList>RSA+RC4+SHA</CipherList>
```

8. If in a clustered environment, edit the Cluster Controller configuration file located at ORACLE_INSTANCE/config/OracleBIApplication/coreapplication/NQClusterConfig.INI and set the SSL_CIPHER_LIST value, as in the following example:

```
SSL_CIPHER_LIST = "RSA+RC4+SHA";
```

9. Restart all the Oracle Business Intelligence components.

For more information, see "Starting and Stopping Oracle Business Intelligence System Components" in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

10. Run a SSL status report to confirm SSL is enabled by following the steps in [Section 5.4.6, "Confirming SSL Status"](#).

Alternative Security Administration Options

This appendix describes alternative security administration options included for backward compatibility with upgraded systems and are not considered a best practice. This appendix contains the following sections:

- [Section A.1, "Alternative Authentication Options"](#)
- [Section A.2, "Alternative Authorization Options"](#)

A.1 Alternative Authentication Options

Several Oracle Business Intelligence legacy authentication options are still supported for backward compatibility. The best practice for upgrading systems is to begin implementing authentication using an identity store and authentication provider as provided by the default security model. An embedded directory server is configured as the default identity store and authentication provider during installation or upgrade and is available for immediate use. For more information about the default security model, see [Chapter 1, "Introduction to Security in Oracle Business Intelligence"](#) and [Appendix B, "Understanding the Default Security Configuration"](#).

Authentication is the process by which the user name and password presented during log in is verified to ensure the user has the necessary credentials to log in to the system. Oracle BI Server authenticates each connection request it receives. The following legacy authentication methods are supported by BI Server for backward compatibility in this release:

- External LDAP-based directory server
- External initialization block authentication
- Table-based

This section contains the following topics:

- [Section A.1.1, "Setting Up LDAP Authentication"](#)
- [Section A.1.2, "Setting Up External Table Authentication"](#)
- [Section A.1.3, "About Oracle BI Delivers and External Initialization Block Authentication"](#)
- [Section A.1.4, "Order of Authentication"](#)
- [Section A.1.5, "Authenticating by Using a Custom Authenticator Plug-In"](#)
- [Section A.1.6, "Managing Session Variables"](#)
- [Section A.1.7, "Managing Server Sessions"](#)

A.1.1 Setting Up LDAP Authentication

You can set up BI Server to pass user credentials to an external LDAP server for authentication.

The legacy LDAP authentication method uses Oracle Business Intelligence session variables that you define using the Variable Manager in the Oracle BI Administration Tool. For more information about the session variables, see "Using Variables in the Oracle BI Repository" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

To set up LDAP authentication:

1. Create an LDAP Server as follows:
 - a. Select **Manage** then **Identity** in the Administration Tool to launch the Identity Manager.
 - b. Select **Directory Servers** from the left pane in Identity Manager.
 - c. Right-click in the right pane in Identity Manager and select **New LDAP Server**. The LDAP Server dialog is displayed.
 - d. Create the LDAP server by completing the fields.
2. Create an LDAP initialization block and associate it with an LDAP server. For more information, see "Creating Initialization Blocks" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.
3. Define a system variable named USER and assign the USER variable to an LDAP attribute (for example, uid, sAMAccountName, cn).

Session variables get their values when a user begins a session by logging on. Certain session variables, called system session variables, have special uses. The system session variable USER is used with authentication. For more information about the USER system session variable, see "[Defining a USER Session Variable for LDAP Authentication](#)". For more information about system session variables, see "About System Session Variables" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

4. If applicable, delete users from the repository file.
5. Associate the USER system variable with the LDAP initialization block. For more information, see "[Defining a USER Session Variable for LDAP Authentication](#)" and "Associating Variables with Initialization Blocks" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

Note: When using secure LDAP you must restart the Administration Tool before testing if you have done the following: set the key file name and password, tested the LDAP parameter setting successfully in the Administration Tool, and then changed the key file name and password again.

A.1.1.1 Setting Up an LDAP Server

For instances of Oracle Business Intelligence that use ADSI as the authentication method, the following options should be used when setting up the AD instance:

- In **Log On To**, select **All Computers**, or if you list some computers, include the AD server as a Logon workstation.
- Ensure that **User must change password at next logon** is not selected.

In the Administration Tool, the CN user used for the BIND DN in the LDAP Server section must have both `ldap_bind` and `ldap_search` authority.

Note: BI Server uses cleartext passwords in LDAP authentication. Make sure your LDAP Servers are set up to allow this.

To set up LDAP authentication for the repository:

1. Open a repository in the Administration Tool in either offline or online mode.
2. From **Identity Manager**, select **Action**, then **New**, then **LDAP Server**.
3. In the LDAP Server dialog, in the General tab, complete the necessary fields. The following list of options and descriptions contain additional information to help you set up the LDAP server:
 - **Host name.** The name of your LDAP server.
 - **Port number.** The default LDAP port is 389.
 - **LDAP version.** LDAP 2 or LDAP 3 (versions). The default is LDAP 3.
 - **Base DN.** The base distinguished name (DN) identifies the starting point of the authentication search. For example, if you want to search all of the entries under the `o=Oracle.com` subtree of the directory, `o=Oracle.com` is the base DN.
 - **Bind DN and Bind Password.** The optional DN and its associated user password that are required to bind to the LDAP server.

If these two entries are blank, anonymous binding is assumed. For security reasons, not all LDAP servers allow anonymous binding.

These fields are optional for LDAP V3, but required for LDAP V2, because LDAP V2 does not support anonymous binding.

These fields are required if you select the **ADSI** option. If you leave these fields blank, a warning message appears asking if you want to leave the password empty anyway. If you click **Yes**, anonymous binding is assumed.
 - **Test Connection.** Use this button to verify your parameters by testing the connection to the LDAP server.
4. Click the **Advanced** tab, and enter the required information. BI Server maintains an authentication cache in memory that improves performance when using LDAP to authenticate large numbers of users. Disabling the authentication cache can slow performance when hundreds of sessions are being authenticated.

The following list of fields and descriptions contain additional information to help you set up the LDAP server:

- **Connection timeout.** When BI Server attempts to connect to an LDAP server for user authentication, the connection times out after the specified interval.
- **Domain identifier** (Optional). Typically, the identifier is a single word that uniquely identifies the domain for which the LDAP object is responsible. This is especially useful when you use multiple LDAP objects. If two different users have the same user ID and each is on a different LDAP server, you can designate domain identifiers to differentiate between them. The users log in to the BI Server using the following format:

domain_id/user_name

If a user enters a user name without the domain identifier, then it is authenticated against all available LDAP servers in turn. If there are multiple users with the same name, then only one user can be authenticated.

- **ADSI.** (Active Directory Service Interfaces) A type of directory server. If you select the **ADSI** option, **Bind DN** and **Bind password** are required.
- **SSL.** (Secure Sockets Layer) Select this option to enable SSL.
- **User Name Attribute Type.** This parameter uniquely identifies a user. In many cases, this is the attribute used in the RDN (relative distinguished name). Typically, you accept the default value. For most LDAP servers, you would use the user ID. For ADSI, use sAMAccountName.

A.1.1.2 Defining a USER Session Variable for LDAP Authentication

To set up LDAP authentication, you define a system session variable called `USER` and associate it with an LDAP initialization block that is associated with an LDAP server. When a user logs in to the Oracle BI Server, the user name and password is passed to the LDAP server for authentication. After the user is authenticated successfully, other session variables for the user could also be populated from information returned by the LDAP server.

Note: If the user exists in both an external LDAP server using the legacy method and in an LDAP-based identity store based on Oracle Platform Security Services, the user definition in the identity store takes precedence and LDAP authentication fails.

The information in this section assumes that an LDAP initialization block has been defined.

For users not defined in an LDAP-based identity store, the presence of the defined system variable `USER` determines that external authentication is performed. Associating `USER` with an LDAP initialization block determines that the user is authenticated by LDAP. To provide other forms of authentication, associate the `USER` variable with an initialization block associated with an external database or XML source.

To define the USER session variable for LDAP authentication:

1. Open a repository in the Administration Tool in either offline or online mode.
2. Select **Manage**, then **Variables** from the Administration Tool menu.
3. Select the **Session -> Initialization Blocks** leaf of the tree in the left pane.
4. Right-click in the right pane and select **New Initialization Block**.
5. In the Session Variable - Initialization dialog box, enter `Authentication` in the **Name** field.
6. Click **Edit Data Source**.
7. Select LDAP Server from the **Data Source Type** drop down list.
8. Browse to select the appropriate LDAP server from the list.
9. Click **Edit Data Target**.
10. Click **New**.
11. Enter `User` in the **Name** field.

12. Click **OK** to the message.
13. Click **OK**.
14. Click **OK** to save.
15. Select the **Required for Authentication** checkbox.
16. Click **OK** to create the `USER` variable.

A.1.1.3 Setting the Logging Level

Use the system variable `LOGLEVEL` to set the logging level for users who are authenticated by an LDAP server.

A.1.2 Setting Up External Table Authentication

You can maintain lists of users and their passwords in an external database table and use this table for authentication purposes. The external database table contains user names and passwords, and could contain other information, including group membership and display names used for Oracle BI Presentation Services users. The table could also contain the names of specific database catalogs or schemas to use for each user when querying data.

Note: If a user belongs to multiple groups, the group names should be included in the same column, separated by semicolons.

External table authentication uses session variables that you define using the Variable Manager in the Administration Tool. For more information about the Variable Manager, see "Using Variables in the Oracle BI Repository" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

Session variables get their values when a user begins a session by logging on. Certain session variables, called system variables, have special uses. The variable `USER` is a system variable that is used with external table authentication.

To set up external table authentication, you define a system variable called `USER` and associate it with an initialization block that is associated with an external database table. Whenever a user logs in, the user ID and password are authenticated using SQL that queries this database table for authentication. The initialization block uses the database connection in the physical layer to connect to the database. The connection in the physical layer contains the log in information. After the user is authenticated successfully, other session variables for the user could also be populated from the results of this SQL query.

The presence of the defined system variable `USER` determines that external authentication is performed. Associating `USER` with an external database table initialization block determines that the user is authenticated using the information in this table. To provide other forms of authentication, associate the `USER` system variable with an initialization block associated with a LDAP server or XML source. For more information, see "[Setting Up LDAP Authentication](#)".

To set up external table authentication:

1. Import information about the external table into the Physical layer.
2. Select **Manage**, then **Variables** in the Administration Tool to open the Variable Manager.
3. Select **Initialization Blocks** in the left pane.

4. Right-click in the right pane and select **New Initialization Block**.
5. In the Initialization Block dialog box, enter a name for the initialization block.
6. Select **Database** from the **Data Source Connection** list.
7. Click **Browse** to search for the name of the connection pool this block uses.
8. In the **Initialization String** area, enter the SQL statement that is issued at authentication time.

The values returned by the database in the columns in the SQL statement is assigned to variables. The order of the variables and the order of the columns determines which columns are assigned to which variables. Consider the SQL in the following example:

```
SELECT username, grp_name, SalesRep, 2 FROM securitylogons WHERE username =  
' :USER' and pwd = ' :PASSWORD'
```

This SQL contains two constraints in the WHERE clause:

- :USER (note the colon) equals the name the user entered when logging on.
- :PASSWORD (note the colon) equals the password the user entered.

The query returns data only if the user name and password match values found in the specified table.

You should test the SQL statement outside of the Oracle BI Server, substituting valid values for :USER and :PASSWORD to verify that a row of data returns.

9. If this query returns data, then the user is authenticated and session variables are populated. Because this query returns four columns, four session variables are populated. Create these variables (USER, GROUP, DISPLAYNAME, and LOGLEVEL) by clicking **New** in the Variables tab.

If a variable is not in the desired order, click the variable you want to reorder and use the **Up** and **Down** buttons to move it.
10. Click **OK** to save the initialization block.

A.1.3 About Oracle BI Delivers and External Initialization Block Authentication

Oracle BI Scheduler Server runs Delivers jobs for users without accessing or storing their passwords. Using a process called impersonation, Oracle BI Scheduler uses one user name and password with Oracle Business Intelligence administrative privileges that can act on behalf of other users. Oracle BI Scheduler initiates an Agent by logging on to Oracle BI Presentation Services with the Oracle Business Intelligence administrative name and password.

For Delivers to work, all database authentication must be performed in only one connection pool, and that connection pool can only be selected in an initialization block for the USER system session variable. This is typically called the Authentication Initialization Block. When impersonation is used, this initialization block is skipped. All other initialization blocks must use connection pools that do not use database authentication.

Caution: An authentication initialization block is the only initialization block in which it is acceptable to use a connection pool where :USER and :PASSWORD are passed to a physical database.

For other initialization blocks, SQL statements can use :USER and :PASSWORD. However, because Oracle BI Scheduler Server does not store user passwords, the WHERE clause must be constructed as shown in the following example:

```
SELECT username, groupname, dbname, schemaname FROM users
WHERE username=:USER'
NQS_PASSWORD_CLAUSE (and pwd=:PASSWORD') NQS_PASSWORD_CLAUSE
```

When impersonation is used, everything in the parentheses is extracted from the SQL statement at runtime.

For more information, see the Oracle BI Delivers examples in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

A.1.4 Order of Authentication

The Oracle BI Server populates session variables using the initialization blocks in the desired order that are specified by the dependency rules defined in the initialization blocks. If the server finds the session variable USER, it performs authentication against an LDAP server or an external database table, depending on the configuration of the initialization block with which the USER variable is associated.

Authentication against the identity store configured in Oracle WebLogic Server Administration Console occurs first, and if that fails, then initialization block authentication occurs.

A.1.5 Authenticating by Using a Custom Authenticator Plug-In

You can create a customized authentication module using initialization blocks. An **authenticator** is a dynamic link library (DLL), or shared object on UNIX, written by a customer or developer that conforms to the Oracle BI Authenticator API Specification and can be used by BI Server to perform authentication and other tasks at run time. The dynamically loadable authentication module is a BI Server module with a cache layer that uses the authenticator to perform authentication and related tasks at run time.

Two sample authenticator plug-ins are installed when you install Oracle Business Intelligence. One is available only for the Microsoft Windows platform. The other one uses a text file for user information storage and is available to all platforms. A header file is provided for all types that are used in the dynamically loadable authenticator. You can find the header files at *ORACLE_HOME\server\SDK\CustomAuthenticatorSamples*.

After you create an authentication object (authenticator plug-in) and specify a set of parameters for the authentication module (such as configuration file path, number of cache entries, and cache expiration time), you must associate the authentication object with an initialization block. You can associate the USER variable (required) and other variables with the initialization blocks.

When a user logs in, if the authentication is successful, this populates a list of variables, as specified in the initialization block.

A custom authenticator is an object in the repository that represents a custom C authenticator plug-in. This object is used with an authentication init block to enable the BI Server component to authenticate users against the custom authenticator. The recommended method for authentication is to use Oracle WebLogic Server's embedded LDAP server. However, the practice of using custom authenticators can continue to be used.

To add a custom authenticator:

1. In the Administration Tool, select **Manage**, then **Identity**. Select **Custom Authenticators** from the navigation tree. Select from the following options:
 - To create a new custom authenticator: Right-click in the right pane and select **New Custom Authenticator**.
 - To edit a custom authenticator: Double-click the name.
2. In the **Custom Authenticator** dialog, complete the necessary fields.
 - **Authenticator plug-in**: The path and name of the authenticator plug-in DLL.
 - **Configuration parameters**: Lists any parameters for this custom authenticator that have been explicitly exposed for configuration.
 - **Encrypted parameter**: Lists any parameters for this custom authenticator that have been encrypted, such as passwords.
 - **Cache persistence time**: The interval at which the authentication cache entry for a logged on user is refreshed for this custom authenticator.
 - **Number of cache entries**: 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.
3. Click **OK**.

A.1.6 Managing Session Variables

System session variables obtain their values from initialization blocks and are used to authenticate Oracle Business Intelligence users against external sources such as LDAP servers or database tables. Every active BI Server session generates session variables and initializes them. Each session variable instance can be initialized to a different value. For more information about how session variable and initialization blocks are used by Oracle Business Intelligence, see "Using Variables in the Oracle BI Repository" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

A.1.7 Managing Server Sessions

The Administration Tool Session Manager is used in online mode to monitor activity. The Session Manager shows all users logged in to the session, all current query requests for each user, and variables and their values for a selected session. Additionally, an administrative user can disconnect any users and terminate any query requests with the Session Manager.

How often the Session Manager data is refreshed depends on the amount of activity on the system. To refresh the display at any time, click **Refresh**.

A.1.7.1 Using the Session Manager

The Session Manager contains an upper pane and a lower pane:

- The top pane, the Session pane, shows users currently logged in to BI Server. To control the update speed, from the **Update Speed** list, select **Normal**, **High**, or **Low**. Select **Pause** to keep the display from being refreshed.
- The bottom pane contains two tabs:

- The Request tab shows active query requests for the user selected in the Session pane.
- The Variables tab shows variables and their values for a selected session. You can click the column headers to sort the data.

Table A-1 and Table A-2 describe the columns in the Session Manager dialog.

Table A-1 Fields in the Session Manager Dialog

Column Name	Description
Client Type	The type of client connected to the server.
Last Active Time	The time stamp of the last activity on the session.
Logon Time	The time stamp that shows when the session initially connected to the BI Server.
Repository	The logical name of the repository to which the session is connected.
Session ID	The unique internal identifier that the Oracle BI Server assigns each session when the session is initiated.
User	The name of the user connected.

Table A-2 Some Fields in the Request Tab of the Session Manager Dialog

Column Name	Description
Last Active Time	The time stamp of the last activity on the query.
Request ID	The unique internal identifier that the BI Server assigns each query when the query is initiated.
Session ID	The unique internal identifier that the BI Server assigns each session when the session is initiated.
Start Time	The time of the individual query request.

To view the variables for a session:

1. In the Administration Tool, open a repository in online mode and select **Manage** then **Sessions**.
2. Select a session and click the **Variables** tab.

For more information about variables, see "Using Variables in the Oracle BI Repository" in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

3. To refresh the view, click **Refresh**.
4. To close Session Manager, click **Close**.

To disconnect a user from a session:

1. In the Administration Tool, open a repository in online mode and select **Manage** then **Sessions**.
2. Select the user in the Session Manager top pane.
3. Click **Disconnect**.

The user session receives a message that indicates that the session was terminated by an administrative user. Any currently running queries are immediately terminated, and any outstanding queries to underlying databases are canceled.

4. To close the Session Manager, click **Close**.

To terminate an active query:

1. In the Administration Tool, open a repository in online mode and select **Manage** then **Sessions**.
2. Select the user session that initiated the query in the top pane of the Session Manager.

After the user is highlighted, any active query requests from that user are displayed in the bottom pane.

3. Select the request that you want to terminate.
4. Click **Kill Request** to terminate the selected request.

The user receives a message indicating that the query was terminated by an administrative user. The query is immediately terminated, and any outstanding queries to underlying databases are canceled.

Repeat this process to terminate any other requests.

5. To close the Session Manager, click **Close**.

A.2 Alternative Authorization Options

This release supports for backward compatibility the ability to manage Presentation Services Catalog object privileges using Catalog groups.

A.2.1 Changes Affecting Security in Presentation Services

If you have upgraded from a previous release, the best practice is to begin managing Presentation Services Catalog privileges and catalog objects using Application Roles maintained in the policy store.

Oracle Business Intelligence uses the Oracle Fusion Middleware security model and its resources are protected by a role-based system. This has significance for upgrading users as the following security model changes affect Presentation Services Catalog privileges:

- Authorization is now based on fine-grained JAAS permissions. Users are granted permissions by membership in corresponding Application Roles.
- Users and groups are maintained in the identity store and are no longer maintained in BI Server. Members of BI Server groups are no longer automatically made members of Presentation Services Catalog groups having the same name, as was the practice in earlier releases.
- Presentation Services Catalog privileges continue to be stored on the BI Presentation Server and cannot be accessed from the administrative interfaces used to manage the policy store.
- The Everyone Presentation Services Catalog group is no longer available and has been replaced by the AuthenticatedUser Application Role. Members of the Everyone Catalog group automatically become members of AuthenticatedUser role after upgrade.
- Presentation Services Catalog groups can no longer be password protected. All Catalog groups migrated during upgrade no longer have a password.

A.2.2 Managing Presentation Services Catalog Privileges Using Catalog Groups

Existing Catalog groups are migrated during upgrade and available for your use. You can continue to create new Catalog groups. For information about how to create, edit, or delete Catalog groups, see [Section D.2.2, "Working with Catalog Groups"](#).

You can grant these privileges by assigning other Catalog groups, users, or Application Roles to a Catalog group.

Note: Assigning Catalog groups to become members of an Application Role creates complex group inheritance and maintenance situations, and is not considered a best practice.

To grant privileges using a Catalog group:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Privileges** link to access the **Manage Privileges** dialog.
3. Click the link for the privilege from the Manage Privileges dialog.
4. To assign the privilege to the Catalog group:
 - Click **Add Users/Roles**.
 - Select **Catalog Groups** from the list and click **Search**.
 - Select the Catalog group from the results list.
 - Use the shuttle controls to move the Catalog group to **Selected Members**.
5. Click **OK**.
6. Set the permission for the Catalog group by selecting **Granted** or **Denied** in the Privileges dialog.

Explicitly *denying* a Presentation Services privilege takes precedence over user access rights either granted or inherited as a result of group or Application Role hierarchy.
7. Click **OK**.
8. Repeat Steps 3 through 7 until the privileges have been granted or denied as needed.

Understanding the Default Security Configuration

Controlling access to system resources is achieved by requiring users to authenticate at log in (**authentication**) and by restricting users to only the resources for which they are authorized (**authorization**). The Oracle Business Intelligence default security configuration is automatically configured during installation and is available for use afterwards. The default configuration includes pre configured security providers for managing user identities, credentials, and permission grants.

This chapter contains the following sections:

- [Section B.1, "About Securing Oracle Business Intelligence"](#)
- [Section B.2, "About the Security Framework"](#)
- [Section B.3, "Key Security Elements"](#)
- [Section B.4, "Default Security Configuration"](#)
- [Section B.5, "Common Security Tasks After Installation"](#)
- [Section B.6, "About the Default Security Configuration After Upgrade"](#)

Note: Unless otherwise stated, the permissions discussed in this chapter are those maintained in the policy store provider, such as the Oracle Business Intelligence permissions. Presentation Services Catalog privileges and permissions are distinct because they are maintained in Oracle BI Presentation Server. For more information about Presentation Services Catalog privileges and permissions, see [Chapter 3, "Using Alternative Authentication Providers"](#).

B.1 About Securing Oracle Business Intelligence

Securing Oracle Business Intelligence can be broken down into two broad areas:

- System access security: Controlling access to the components and features that make up Oracle Business Intelligence.
- Data access security: Controlling access to business source data and metadata used by Oracle Business Intelligence.

System access security is discussed in this guide and topics include how to limit system access to authorized users, control software resources based on permission grants, and enable secure communication among components.

Data access security is discussed in *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

B.2 About the Security Framework

The Oracle Fusion Middleware security model is built upon the Oracle Fusion Middleware platform, which incorporates the Java security model. The Java model is a role-based, declarative model that employs container-managed security where resources are protected by roles that are assigned to users. However, extensive knowledge of the Java-based architecture is unnecessary when using the Oracle Fusion Middleware Security model. By being based upon this security model, Oracle Business Intelligence can furnish uniform security and identity management across the enterprise.

Oracle Business Intelligence is installed into a Oracle WebLogic Server domain during installation, which is a logically related group of resources that are managed as a unit. During a Simple installation type, an Oracle WebLogic Server domain named `bifoundation_domain` is created and Oracle Business Intelligence is installed into this domain. This name might vary depending upon the installation type performed. One instance of Oracle WebLogic Server in each domain is configured as an Administration Server. The Administration Server provides a central point for managing an Oracle WebLogic Server domain. The Administration Server hosts the Administration Console, which is a Web application accessible from any supported Web browser with network access to the Administration Server. Oracle Business Intelligence uses the active security realm configured for the Oracle WebLogic Server domain into which it is installed. For more information, see [Section B.2.2, "Oracle WebLogic Server Domain"](#).

For more information about the Oracle Fusion Middleware platform and the common security framework, see *Oracle Fusion Middleware Application Security Guide*. For more information about managing the Oracle WebLogic Server domain and security realm, see *Oracle Fusion Middleware Understanding Security for Oracle WebLogic Server* and *Oracle Fusion Middleware Securing Oracle WebLogic Server*.

B.2.1 Oracle Platform Security Services

Oracle Platform Security Services is the underlying platform on which the Oracle Fusion Middleware security framework is built. Oracle Platform Security Services is standards-based and complies with role-based-access-control (RBAC), Java Enterprise Edition (Java EE), and Java Authorization and Authentication Service (JAAS). Oracle Platform Security Services enables the shared security framework to furnish uniform security and identity management across the enterprise.

For more information about Oracle Platform Security Services, see *Oracle Fusion Middleware Application Security Guide*.

B.2.2 Oracle WebLogic Server Domain

An Oracle WebLogic Server administration domain is a logically related group of Java components. A domain includes a special WebLogic Server instance called the Administration Server, which is the central point from which you configure and manage all resources in the domain. You typically configure a domain to include additional WebLogic Server instances called Managed Servers. You deploy Java components, such as Web applications, EJBs, and Web services, and other resources to the Managed Servers and use the Administration Server for configuration and management purposes only.

Oracle WebLogic Server Administration Console and Oracle Enterprise Manager Fusion Middleware Control run in the Administration Server. Oracle WebLogic Server Administration Console is the Web-based administration console used to manage the resources in an Oracle WebLogic Server domain, including the Administration Server and Managed Servers. Fusion Middleware Control is a Web-based administration console used to manage Oracle Fusion Middleware, including the components that comprise Oracle Business Intelligence. For more information about the Oracle Business Intelligence individual components, see *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

Oracle Business Intelligence authentication is handled by the Oracle WebLogic Server authentication providers. An authentication provider performs the following functions:

- Establishes the identity of users and system processes
- Transmits identity information

Upon installation, Oracle Business Intelligence is configured to use the directory server embedded in Oracle WebLogic Server as both the default authentication provider and the repository for users and groups. Alternate authentication providers can be used if desired, and managed in the Oracle WebLogic Administration Console. For more information, see [System Requirements and Certification](#).

B.3 Key Security Elements

The Oracle Fusion Middleware security platform depends upon the following key elements to provide uniform security and identity management across the enterprise. For more information about the Oracle Fusion Middleware security platform, see *Oracle Fusion Middleware Application Security Guide*.

Oracle Business Intelligence uses these security platform elements as follows:

Application Policy

Oracle Business Intelligence permissions are granted to members of its Application Roles. In the default security configuration, each role conveys a predefined set of permissions. Permission grants are defined and managed in an **Application Policy**. After an Application Role is associated with an Application Policy, that role becomes a **grantee** of the policy. An Application Policy is specific to a particular application.

An **application stripe** defines a subset of policies in the policy store. The Oracle Business Intelligence application stripe is named **obi**.

Application Role

An **Application Role** represents a *role* a user has in Oracle Business Intelligence and gives that user authorization to access system resources accordingly. For example, having the Sales Analyst Application Role can grant a user access to view, edit and create reports relating to a company's sales pipeline. The default security configuration provides four pre configured roles that grant the permissions corresponding to the common types of work performed when using Oracle Business Intelligence. The Application Role is also the *container* used to grant permissions and access to its members. When members are assigned to an Application Role, that Application Role becomes the container used to convey access rights to its members. For example:

- Oracle Business Intelligence Permissions: These permission grants are defined in an Application Policy. After an Application Role is assigned to a policy, the permissions become associated with the Application Role through the relationship between policy and role. If groups of users have been assigned to that Application

Role, the corresponding permissions are in turn granted to all members equally. More than one user or group can be members of the same Application Role.

- **Data Access Rights:** Application Roles can be used to control access rights to view and modify data in the repository file. Data filters can be applied to Application Roles to control object level permissions in the Business Model and Mapping layer and the Presentation layer. For more information about using Application Roles to apply data access security and control repository objects, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.
- **Presentation Services Object-Level Access:** Application Roles can be used to grant access rights to reports and other objects in Oracle BI Presentation Services. For more information about using Application Roles to control access in Presentation Services, see *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

Authentication Provider

User authentication is performed by an authentication provider. The Oracle Business Intelligence default security configuration authenticates against the Oracle WebLogic Server embedded directory server using an authentication provider named DefaultAuthenticator.

B.4 Default Security Configuration

When operating in a development or test environment you might find it convenient to use the default security configuration because it comes pre configured, then add user definitions and credentials specific to your business, and customize the default Application Roles and permission grants to meet your requirements. After the authentication, policy, and credential providers are fully configured and populated with data specific to your business, they provide all user, policy, and credential information needed by the Oracle Business Intelligence components during authentication and authorization.

The default security configuration provides you with three security providers that are integrated to ensure safe, controlled access to system and data resources. These security providers are configured during a Simple or Enterprise installation type as follows:

- The authentication provider is DefaultAuthenticator, which authenticates against Oracle WebLogic Server embedded directory server (identity store). The directory server is pre configured with the default users and groups supplied by Oracle Business Intelligence, as well as a user group needed for the embedded directory server. The default identity store is managed using Oracle WebLogic Server Administration Console.
- The policy store provider is the system-jazn-data.xml file. It contains the default Application Role definitions with their corresponding Oracle Business Intelligence permission grants, and the mapping definitions between default groups and Application Roles. The assigning of a group to an Application Role serves to convey the corresponding permissions to members of the group. The default policy store provider is managed using Oracle Enterprise Manager Fusion Middleware Control.
- The credential store provider is the cwallet.sso file. It contains the passwords and other security-related credentials either supplied or system-generated. The default credential store is managed using Fusion Middleware Control.

Table B-1 summarizes the three default security providers and their initial state after installation.

Table B-1 Default Security Providers

Security Provider Type	Purpose	Default Provider	Options
Authentication provider	Used to control authentication.	<ul style="list-style-type: none"> ▪ DefaultAuthentication or. Authenticates against the users and groups stored in Oracle WebLogic Server embedded directory server (identity store). ▪ Oracle WebLogic Server embedded directory server is managed with Oracle WebLogic Server Administration Console. 	Oracle Business Intelligence can be reconfigured to use different authentication providers and directory servers. For more information, see System Requirements and Certification .
Policy store provider	<ul style="list-style-type: none"> ▪ Used to control authorization. ▪ Contains the definition of Application Roles, Application Policies, and the members assigned to Application Roles. 	<ul style="list-style-type: none"> ▪ system.jazn-data.xml file. ▪ Managed with Fusion Middleware Control. 	Oracle Business Intelligence can be configured to use Oracle Internet Directory.
Credential store provider	Trusted store for holding system passwords and other security-related credentials. The data stored here is used for connecting to external systems, opening repositories, or for SSL.	<ul style="list-style-type: none"> ▪ cwallet.sso. ▪ File is automatically replicated across all machines in the Oracle Business Intelligence installation. ▪ Managed with Fusion Middleware Control. 	Oracle Business Intelligence can be configured to use Oracle Internet Directory.

Figure B-1 shows the relationship between Oracle Business Intelligence and the authentication and policy store providers.

Figure B–1 Relationship with the Default Security Providers



B.4.1 Default Policy Store Provider

The policy store provider contains the Oracle Business Intelligence application-specific policies, Application Roles, permission grants, and membership mappings configured during installation. A policy store can be file-based or LDAP-based, but the installation default provides a policy store that is an XML file.

Presentation Services Catalog privileges and permissions are not maintained in the policy store provider. For more information about them, see [Chapter 3, "Using Alternative Authentication Providers"](#).

B.4.1.1 Default Permissions

All Oracle Business Intelligence permissions are provided; you cannot create additional permissions. In the default configuration, the Application Policies and Application Roles are pre configured to group these permissions according to the access requirements of the Oracle Business Intelligence common user types: administrator, author, and consumer. However, these default permission grants can be changed as needed using Fusion Middleware Control. For more information, see [Section 3.3, "Configuring OID as the Policy Store and Credential Store"](#).

[Table B–2](#) and [Table B–3](#) list the available permissions and resource types that are contained in the obi application stripe.

Table B–2 Default Permissions

Permission Name	Description
oracle.bi.publisher.administerServer	Enables the Administration link to access the Administration page and grants permission to set any of the system settings.
oracle.bi.publisher.developDataModel	Grants permission to create or edit data models.
oracle.bi.publisher.developReport	Grants permission to create or edit reports, style templates, and sub templates. This permission also enables connection to the BI Publisher server from the Template Builder.
oracle.bi.publisher.runReportOnline	Grants permission to open (execute) reports and view the generated document in the report viewer.
oracle.bi.publisher.scheduleReport	Grants permission to create or edit jobs and also to manage and browse jobs.
oracle.bi.publisher.accessReportOutput	Grants permission to browse and manage job history and output.

Table B-2 (Cont.) Default Permissions

Permission Name	Description
oracle.bi.publisher.accessExcelReportAnalyzer	Grants permission to download the Analyzer for Excel and to download data from a report to Excel using the Analyzer for Excel. Note that to enable a user to upload an Analyzer for Excel template back to the report definition, the permission oracle.bi.publisher.developReport must also be granted.
oracle.bi.publisher.accessOnlineReportAnalyzer	Grants permission to launch the Analyzer and manipulate the data. Note that to save an Analyzer template to a report definition, the permission oracle.bi.publisher.developReport must also be granted.
oracle.bi.server.impersonateUsers	This description is not available.
oracle.bi.server.manageRepositories	Grants permission to open, view, and edit repository files using the Administration Tool or the Oracle BI Metadata Web Service.
oracle.bi.server.queryUserPopulation	Internal use only.
oracle.bi.scheduler.manageJobs	Grants permission to use Job Manager to manage scheduled Delivers jobs.
EPM_Calc_Manager_Designer	Grants permissions for EPM Calc Manager Designer.
EPM_Calc_Manager_Administrator	Grants permissions for EPM Calc Manager Administrator.
EPM_Essbase_Filter	Grants permissions for EPM Essbase Filter.
EPM_Essbase_Administrator	Grants permissions for EPM Essbase Administrator.
oracle.epm.financialreporting.accessReporting	Grants permissions for EPM Report Access.
oracle.epm.financialreporting.administerReporting	Grants permissions for EPM Report Administration.
oracle.epm.financialreporting.editBatch	Grants permissions for EPM Batch Edit.
oracle.epm.financialreporting.editBook	Grants permissions for EPM Book Edit.
oracle.epm.financialreporting.editReport	Grants permissions for EPM Report Edit.
oracle.epm.financialreporting.scheduleBatch	Grants permissions for EPM Batch Scheduling.

Oracle RTD controls authorization using *resources* defined in context of a Java class. The Java class oracle.security.jps.ResourcePermission can be used as the permission class within any grant to protect application or system resources. Oracle RTD uses this class to control access to three types of resource:

- Inline Service
- Decision Center Perspective

- Batch Job

Table B-3 lists the Oracle RTD resource types. For more information about Real-Time Decision (RTD) resources, see "Security for Oracle Real-Time Decisions" in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*

Table B-3 Oracle RTD Resource Types and Actions

Type of Resource	Resource Type Name Stored in Application Grants	Action[:Qualifier]	Comments
Inline Service	rtd_ils	choice_editor	might execute any methods of the ExternalChoice Web service for the named Inline Service.
Inline Service	rtd_ils	decision_service:normal	might execute any integration points (advisors and informants) for the named Inline Service. Action qualifier normal allows integration point requests to be executed in the server.
Inline Service	rtd_ils	decision_service:stress	might execute any integration points (Advisors and Informants) for the named Inline Service. Action qualifier stress allows LoadGen to issue integration point calls. To be accepted by the server, the user also needs the normal action.
Inline Service	rtd_ils	open_service:read	Authorizes the use of Decision Center to open the named Inline Service for viewing. Also authorizes the External Rule Editor to access the named Inline Service, since the External Rule Editor does not need to update the content of the Inline Service.
Inline Service	rtd_ils	open_service:write	Authorizes the use of Decision Center to open the named Inline Service for editing.
Inline Service	rtd_ils	deploy_service	Authorizes the deployment of the named Inline Service from Decision Studio.
Inline Service	rtd_ils	download_service	Authorizes the use of Decision Studio to download the named Inline Service from a server.
Decision Center Perspective	rtd_dc_persp	dc_perspective	Open the named Decision Center Perspective, to have Decision Center render its specialized set of UI elements or capabilities.
Registered Batch Job Type	rtd_batch	batch_admin	might execute any methods of the BatchManager Web service to start, stop, or query the status of the registered batch job type name.

B.4.1.2 Default Application Roles

The default Application Roles are grouped into broad categories of functional usage: administrator (BIAdministrator), author (BIAuthor), and consumer (BIConsumer). These categories correspond to the typical roles that users of Oracle Business Intelligence assume: an *administrator*, an *author* who creates reports for others, and a *consumer* who reads (consumes) reports created by others (authors).

The default Oracle Business Intelligence Application Roles are as follows:

BIAdministrator Role

The BIAdministrator role grants administrative permissions necessary to configure and manage the Oracle Business Intelligence installation. Any member of the BIAdministrators group is explicitly granted this role and implicitly granted the BIAuthor and BIConsumer roles. See [Table B-4](#) and [Table B-5](#) for a list of the default role permissions.

Note: The BIAdministrator role must exist (with the BISystem role), for Oracle Business Intelligence to function correctly.

BIAuthor Role

The BIAuthor role grants permissions necessary to create and edit content for other users to use, or to consume. Any member of the BIAuthors group is explicitly granted this role and implicitly granted the BIConsumer role. See [Table B-4](#) and [Table B-5](#) for a list of the default role permissions.

BIConsumer Role

The BIConsumer role grants permissions necessary to use, or to consume, content created by other users. See [Table B-4](#) and [Table B-5](#) for a list of the default role permissions.

BISystem Role

The BISystem role grants the permissions necessary to impersonate other users. This role is required by Oracle Business Intelligence system components for inter-component communication. See [Table B-4](#) and [Table B-5](#) for a list of the default role permissions.

Note: The BISystem Role must exist (with the BIAdministrator role), for Oracle Business Intelligence to function correctly.

Authenticated Role

The Authenticated role is a special Application Role provided by the Oracle Fusion Middleware security model and is made available to any application deploying this security model. Oracle Business Intelligence uses the authenticated Application Role to grant permissions implicitly derived by the role and group hierarchy of which the Authenticated role is a member. The Authenticated role is a member of the BIConsumer role by default and, as such, all Authenticated role members are granted the permissions of the BIConsumer role implicitly.

Every user who successfully logs in to Oracle Business Intelligence becomes a member of the Authenticated role, and it is a replacement for the 10g Everyone Presentation Services Catalog group. The Authenticated role is not part of the obi application stripe and is not searchable in the Oracle Business Intelligence policy store. However, the Authenticated role is displayed in the administrative interface for the policy store, is available in Application Role lists, and can be added as a member of another Application Role.

You can assign the Authenticated role to another User, Group, or Application Role, but you cannot remove the Authenticated role itself. Removal of the Authenticated role would result in the inability to log in to the system and this right would need to be granted explicitly.

For more information about the Oracle Fusion Middleware security model and the Authenticated role, see *Oracle Fusion Middleware Application Security Guide*.

B.4.1.3 Default Application Roles, Permission Grants, and Group Mappings

The default file-based policy store is configured with the Oracle Business Intelligence default Application Roles. Each Application Role is pre configured with a set of permissions grants and one or more members. Members of an Application Role can include Users, Groups, or other Application Roles from the policy store.

Table B-4 and Table B-5 lists the default configuration of Application Roles, permission grants, and members. The default naming convention is that Application Role names are singular and group names are plural.

Table B-4 Default Application Role, Permission Grants, and Members

Role Name	Role Permissions	Members
BIAdministrator	<ul style="list-style-type: none"> ■ oracle.bi.server.manageRepositories ■ oracle.bi.scheduler.manageJobs ■ oracle.bi.publisher.administerServer ■ EPM_Calc_Manager_Administrator ■ oracle.epm.financialreporting.administerReporting 	BIAdministrators group
BIAuthor	<ul style="list-style-type: none"> ■ oracle.bi.publisher.developReport ■ oracle.bi.publisher.developDataModel ■ EPM_Essbase_Administrator ■ EPM_Calc_Manager_Designer ■ oracle.epm.financialreporting.editBatch ■ oracle.epm.financialreporting.editBook ■ oracle.epm.financialreporting.editReport ■ oracle.epm.financialreporting.scheduleBatch 	<ul style="list-style-type: none"> ■ BIAuthors group ■ BIAdministrator Application Role
BIConsumer	<ul style="list-style-type: none"> ■ oracle.bi.publisher.accessExcelReportAnalyzer ■ oracle.bi.publisher.accessOnlineReportAnalyzer ■ oracle.bi.publisher.runReportOnline ■ oracle.bi.publisher.accessReportOutput ■ oracle.bi.publisher.scheduleReport ■ EPM_Essbase_Filter ■ oracle.epm.financialreporting.accessReporting 	<ul style="list-style-type: none"> ■ BIConsumers group ■ BIAuthor Application Role

Table B-4 (Cont.) Default Application Role, Permission Grants, and Members

Role Name	Role Permissions	Members
BISystem	<ul style="list-style-type: none"> ■ oracle.bi.scheduler.manageJobs ■ oracle.bi.server.manageRepositories ■ oracle.bi.server.impersonateUser ■ oracle.bi.server.queryUserPopulation 	BISystemUser

Table B-5 lists the default Application Roles, Oracle RTD resource types, resource names, and actions in the default application grants after installation. For more information about Real-Time Decision (RTD) resource defaults, see "Security for Oracle Real-Time Decisions" in *Oracle Fusion Middleware Administrator's Guide for Oracle Real-Time Decisions*

Note: The resource name `_all_` is a special name that matches any Oracle RTD resource name of the associated resource type.

Table B-5 Default Application Grants for Oracle RTD Users

Application Role	Resource Type	Resource Name	Action[:Qualifier]
BIAAdministrator	rtd_ils	_all_	open_service:read open_service:write deploy_service download_service choice_editor decision_service:normal decision_service:stress dc_perspective batch_admin
BIAuthors	rtd_ils	_all_	open_service:read open_service:write deploy_service download_service decision_service:normal decision_service:stress
BIAuthors	rtd_dc_persp	_all_	dc_perspective
BIConsumer	rtd_ils	_all_	open_service:read choice_editor decision_service:normal
BIConsumer	rtd_dc_persp	Explore	dc_perspective
BIConsumer	rtd_dc_persp	At a Glance	dc_perspective
BIConsumer	rtd_batch	_all_	batch_admin

B.4.2 Default Authentication Provider

An **authentication provider** accesses user and group information and is responsible for authenticating users. An **identity store** contains user name, password, and group membership information and in Oracle Business Intelligence is currently a directory server. The default security configuration authenticates against the Oracle WebLogic Server embedded directory server using an authentication provider named DefaultAuthenticator.

When a user logs in to a system with a user name and password combination, Oracle WebLogic Server validates identity based on the combination provided. During this process, a Java principal is assigned to the user or group that is undergoing authentication. The principal can consist of one or more users or groups and is stored within subjects. A **subject** is a JAAS element used to group and hold identity information.

Upon successful authentication, each principal is signed and stored in a subject. When a program call accesses a principal stored in a subject, the default authenticator provider verifies the principal has not been altered since signing, and the principal is returned to the program making the call. For example, in the Oracle WebLogic Server default authenticator, the subject contains a principal for the user (WLSUserPrincipal) and a principal for the group (WLSGroupsPrincipals) of which the user is a member. If an authentication provider other than the installation default is configured, consult that provider's documentation because how identity information is stored might differ.

B.4.2.1 Default Groups and Members

Groups are logically ordered sets of users. Creating groups of users who have similar system resource access needs enables easier security management. Managing a group is more efficient than managing a large number of users individually. Groups are then assign to Application Roles to grant rights. Oracle recommends that you organize your users into groups for easier maintenance.

The default group names discussed here are provided as a convenience so you can begin using the Oracle Business Intelligence software immediately after installation, but you are not required to maintain the default names.

[Table B-6](#) lists the group names and group members that are created during the installation process. These defaults can be changed to different values and additional group names can be added by an administrative user using Oracle WebLogic Server Administration Console.

Table B–6 Default Groups and Members

Purpose	Group Name and Members	Description
Contains the Oracle Business Intelligence administrative users.	Name: BIAdministrators Members: Any <i>administratror user</i>	<ul style="list-style-type: none"> ▪ Members of the BIAdministrators group are granted administrative permissions because this group is assigned to the BIAdministrator Application Role at installation. ▪ All users requiring administrative permissions should be added to the BIAdministrators group when using the default security configuration.
Contains the Oracle Business Intelligence authors.	Name: BIAuthors Members: BIAdministrators group	Members of the BIAuthors group have the permissions necessary to create content for other users to use, or to consume.
Contains the Oracle Business Intelligence consumers.	Name: BICongsumers Members: BIAuthors group and Oracle WebLogic Server LDAP server users group	<ul style="list-style-type: none"> ▪ Members of the BICongsumers group have the permissions necessary to use, or consume, content created by other users. ▪ The BICongsumers group represents all users that have been authenticated by Oracle Business Intelligence. By default, every authenticated user is automatically added to this group. ▪ Oracle WebLogic Server LDAP server users group members have the permissions necessary to log in to and use Oracle WebLogic Server Administration Console.

B.4.2.2 Default Users and Passwords

Oracle WebLogic Server embedded directory server contains Oracle Business Intelligence user names provided as part of the default security configuration. These default user names are provided as a convenience so you can begin using the Oracle

Business Intelligence software immediately after installation, but you are not required to keep using the default names.

Table B-7 lists the default user names and passwords in the Oracle WebLogic Server embedded directory server after installation.

Table B-7 Default Users and Passwords

Purpose	User Name and Password	Description
Administrative user	Name: <i>administrator user</i> Password: <i>user supplied</i>	<ul style="list-style-type: none"> ■ This user name is entered by the person performing the installation, it can be any desired name, and does not need to be named Administrator. ■ The password entered during installation can be changed later using the administration interface for the identity store provider. ■ An administrative user is a member of the BIAAdministrators group and has all rights granted to the Oracle Business Intelligence Administrator user in earlier releases, except impersonation. The administrator user cannot impersonate other users. ■ The single administrative user is shared by Oracle Business Intelligence and Oracle WebLogic Server. This user is automatically made a member of the Oracle WebLogic Server default Administrators group after installation. This enables this user to perform all Oracle WebLogic Server administration tasks, including the ability to manage Oracle WebLogic Server embedded directory server.

Table B-7 (Cont.) Default Users and Passwords

Purpose	User Name and Password	Description
<ul style="list-style-type: none"> ■ A fixed user created during installation for trusted communication between components. ■ All Oracle Business Intelligence system components run as this user. 	<p>Name: BISystemUser Password: <i>system generated</i></p>	<ul style="list-style-type: none"> ■ This is a highly privileged user whose credentials should be protected from non-administrative users. ■ Using a separate user for secure inter-component communication enables you to change the password for the system administrator account without affecting communication between components. ■ The name of this user can be changed or a different user can be created for inter-component communication.

B.4.3 Default Credential Store Provider

A **credential store** is a repository of security data (credentials) that validates the authority of users, Java components, and system components. Oracle Business Intelligence system processes use these credentials to establish trusted communication.

B.4.3.1 Default Credentials

The Oracle Business Intelligence default credential store is file-based, also known as being *wallet-based*, and is represented by the file `cwallet.sso`. The default credential store is managed in Fusion Middleware Control.

Credentials are grouped into logical collections called maps. The default security configuration contains the following maps: `oracle.bi.system` and `oracle.bi.enterprise`. Each credential is accessed from a map using a key, such as `system.user` or `repository.paint`. A key is case sensitive. Each repository file has its own entry in the credential map.

The `oracle.bi.actions` credential map is created manually. For information about creating the `oracle.bi.actions` credential map, see "Adding and Maintaining Credentials for Use with Action Framework" in *Oracle Fusion Middleware Integrator's Guide for Oracle Business Intelligence Enterprise Edition*.

[Table B-8](#) lists the credentials contained in the default credential store after installation.

Table B-8 Default Credentials

Description	Map and Key	User Name and Password
RPD password	map: oracle.bi.enterprise key: repository.RPD name	Name: Not Applicable Password: user supplied
BISystem user	map: oracle.bi.system key: system.user	Name: BISystemUser Password: system generated
Oracle Business Intelligence Scheduler Schema user	map: oracle.bi.enterprise key: scheduler.schema	Name: Name of Scheduler schema Password: system generated

B.4.4 How Permissions Are Granted Using Application Roles

Oracle Business Intelligence permissions are typically granted by becoming a member in an Application Role. LDAP groups become members by being assigned to Application Roles. In the default security configuration, each Application Role is pre configured to grant a predefined set of permissions. The assigning of a group to a role conveys the role's permissions to all members of the group. In short, permissions are granted by Oracle Business Intelligence Application Roles by establishing the following relationships:

- A group defines a set of users having similar system access requirements. Users are added as members to one or more groups according to the level of access required.
- Application Roles are defined to represent the role a user typically performs when using Oracle Business Intelligence. The default security configuration provides the following role types: administrator (BIAdministrator), author (BIAuthor), and consumer (BIConsumer).
- The groups of users are assigned to one or more Application Roles that match the type of access required by each group.
- Application policies are created with Oracle Business Intelligence permissions that grant a set of access rights corresponding to each role type.
- An Application Role is assigned to the corresponding Application Policy that grants the set of permissions required by the role type (administrator, author, consumer). Once done, the Application Role is the Grantee of the Application Policy.
- Group membership can be inherited by nature of the group hierarchy. Application Roles assigned to inherited groups are also inherited, and those permissions are likewise conveyed.

How a user's permissions are determined by the system is as follows:

1. A user enters credentials into a Web browser at login. The user credentials are authenticated by the authentication provider against data contained the identity store.
2. After successful authentication, a Java subject and principal combination is issued, which is populated with the user name and a user's groups.

3. A list of the user's groups is generated and checked against the Application Roles. A list is created of the Application Roles that are assigned to each of the user's groups.
4. A user's permission grants are determined from knowing which Application Roles the user is a member of. The list of groups is generated only to determine what roles a user has, and is not used for any other purpose.

For example, the ability to open a repository file in online mode from the Oracle BI Administration Tool requires the manage repository permission (`oracle.bi.server.manageRepositories`). In the default security configuration, this permission is granted by membership in the BIAdministrator Application Role. The BIAdministrator Application Policy contains the actual permission grant definitions, and in this example, the BIAdministrator Application Policy contains the manage repository permission definition. The default security configuration includes a pre configured association between the BIAdministrator Application Role and the BIAdministrators group. To convey the manage repository permission to a user in your environment, add that user to the BIAdministrators group. Every user who needs to manage a repository in online mode should be added to the BIAdministrators group instead of granting the required permission to each user individually. If a user no longer requires the manage repository permission, you then remove the user from the BIAdministrators group. After removal from the BIAdministrators group, the user no longer has the BIAdministrator Application Role or the manage repository permission granted by role membership.

Users can also obtain permissions by inheriting group membership and Application Roles. For more information and an example of how this is accomplished, see [Section B.4.4.1, "Permission Inheritance and Role Hierarchy"](#).

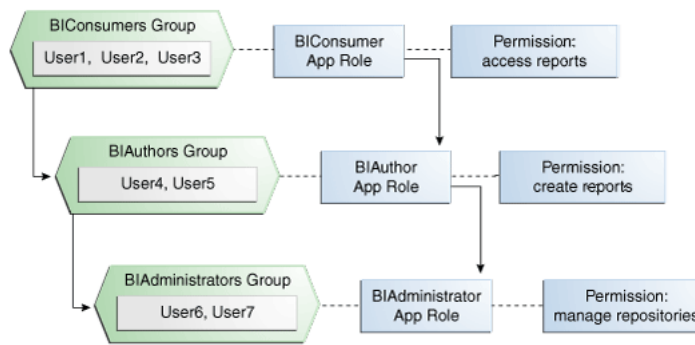
B.4.4.1 Permission Inheritance and Role Hierarchy

In Oracle Business Intelligence, the members of a default Application Role includes both groups and other Application Roles. The result is a hierarchical role structure where permissions can be inherited in addition to being explicitly granted. A group that is a member of a role is granted both the permissions of the role and the permissions for all roles descended from that role. It is important when constructing a role hierarchy that circular dependencies are not introduced.

The following figure provides an example of how the role hierarchy grants permissions using several of the Oracle Business Intelligence default groups and Application Roles. The default BIAdministrator role is a member the BIAuthor role, and BIAuthor role is a member of BICustomer role. The result is members of the BIAdministrators group are granted *all* the permissions of the BIAdministrator role, the BIAuthor role, and the BICustomer role. In this example only one of the permissions granted by each role is used for demonstration purposes.

[Figure B-2](#) shows these relationship between the default Application Roles and how permissions are granted to members.

Figure B–2 Default Application Role Hierarchy Example



The result is that, by nature of the role hierarchy, the user who is a member of a particular group is granted both *explicit* permissions and any additional *inherited* permissions.

Note: By themselves, groups and group hierarchies do not provide access rights to application resources. Privileges are conveyed by the permission grants defined in an Application Policy. A user, group, or Application Role becomes a Grantee of the Application Policy. The Application Policy grantee conveys the permissions and this is done by direct association (such as a user) or by becoming a member of the Grantee (such as a group or Application Role).

Table B–9 details the role and permissions granted to all group members (users) shown in Figure B–2.

Table B–9 Permissions Granted by The Role Hierarchy Example

User Name	Group Membership: Explicit/Inherited	Application Role Membership: Explicit/Inherited	Permission Grants: Explicit/Inherited
User1, User2, User3	BIConsumers: Explicit	BIConsumer: Explicit	Access reports: Explicit
User4, User5	BIAuthors: Explicit BIConsumers: Inherited	BIAuthor: Explicit BIConsumer: Inherited	Create reports: Explicit Access reports: Inherited
User6, User7	BIAdministrators: Explicit BIAuthors: Inherited BIConsumers: Inherited	BIAdministrator: Explicit BIAuthor: Inherited BIConsumer: Inherited	Manage repository: Explicit Create reports: Inherited Access Reports: Inherited

B.4.4.2 Presentation Services Catalog Groups and Precedence

If *Catalog groups* and Application Roles are used in combination to manage Presentation Services Catalog permissions or privileges, the Catalog groups take precedence. For example, if a user is a member of a Catalog group that grants access to a Presentation Services object or feature and is also a member of an Application Role that denies access to the same object or feature, then this user has access. A Presentation Services Catalog group takes precedence over an Application Role. For

more information about Presentation Services permissions and privileges, see [Chapter 3, "Using Alternative Authentication Providers"](#).

B.5 Common Security Tasks After Installation

The common security tasks performed after a successful Oracle Business Intelligence software installation are different according to purpose. Common reasons to install Oracle Business Intelligence are:

- Evaluate the product
- Implement the product

Implementation typically involves moving through the product lifecycle of using the product in one or more of the following environments:

- Development
- Test
- Production

B.5.1 Common Security Tasks to Evaluate Oracle Business Intelligence

[Table B–10](#) contains common security tasks performed to evaluate Oracle Business Intelligence and provides links for more information.

Table B–10 Task Map: Common Security Tasks to Evaluate Oracle Business Intelligence

Task	Description	For Information
Understand the Oracle Fusion Middleware security model and the Oracle Business Intelligence default security configuration.	Familiarize yourself with the key elements of the Oracle Fusion Middleware security model and the Oracle Business Intelligence default security configuration after a successful installation.	Chapter 1, "Introduction to Security in Oracle Business Intelligence" Section B.4, "Default Security Configuration" <i>Oracle Fusion Middleware Application Security Guide</i>
Add users and groups to the default identity store.	Create new User and group definitions for the embedded directory server using Oracle WebLogic Server Administration Console.	Section 2.3.3, "Creating a New User in the Embedded WebLogic LDAP Server" <i>Oracle Fusion Middleware Oracle WebLogic Server Administration Console Online Help</i>
Add a new member to a default Application Role.	Add a new user or group as a member to a default Application Role, such as BIConsumer.	Section 2.4.4, "Modifying Application Roles Using Oracle Fusion Middleware Control" Section B.4.1.3, "Default Application Roles, Permission Grants, and Group Mappings" <i>Oracle Fusion Middleware Application Security Guide</i>
Create a new Application Role based on an existing default Application Role.	Create a new Application Role based on an existing default Application Role by copying it and naming the copy.	Section 2.4.2, "Creating Application Roles Using Fusion Middleware Control" <i>Oracle Fusion Middleware Application Security Guide</i>

B.5.2 Common Security Tasks to Implement Oracle Business Intelligence

Table B–11 contains common security tasks performed when you implement Oracle Business Intelligence and provides links for more information. The following tasks are performed in addition to the tasks listed in Section B.5.1, "Common Security Tasks to Evaluate Oracle Business Intelligence".

Table B–11 Task Map: Common Security Tasks to Implement Oracle Business Intelligence

Task	Description	For Information
Transition to using your enterprise directory server as the authentication provider and identity store.	Configure your enterprise directory server to become the authentication provider and identity store.	Section 3.2, "Configuring Alternative Authentication Providers" Appendix A, "Alternative Security Administration Options"
Create a new Application Role.	Create a new Application Role and make the role a Grantee of an Application Policy.	Section 2.4.2, "Creating Application Roles Using Fusion Middleware Control"
Assign a group to a newly created Application Role.	Assign a group to a newly created Application Role to convey the permission grants to group members.	Section 2.4.4, "Modifying Application Roles Using Oracle Fusion Middleware Control"
Decide whether to use SSL.	Decide whether to use SSL communication and devise a plan to implement.	Chapter 5, "SSL Configuration in Oracle Business Intelligence"
Decide whether to use an SSO provider in your deployment.	Decide whether to use SSO authentication and devise a plan to implement.	Chapter 4, "Enabling SSO Authentication"

B.6 About the Default Security Configuration After Upgrade

The Upgrade Assistant is a unified graphical user interface that enables you to selectively upgrade your Oracle Business Intelligence installation. For complete upgrade information, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

Significant changes have been made to the security model regarding how and where users, groups, and credentials are defined and stored. The following is a summary of some of the changes that are made during the upgrade process by the Upgrade Assistant:

- Users, passwords, and groups are moved from the default Release 10g repository file to the Release 11g default identity store (Oracle WebLogic Server embedded LDAP server).
- Passwords for other repository objects, such as connection pools and LDAP servers, remain in the repository and are encrypted. The repository itself is encrypted as well.
- The Administrator user is migrated from the default Release 10g repository file to the default identity store and becomes a member of the BIAdministrators group. The BIAdministrators group is granted the BIAdministrator role and by that association has system administrative rights.
- Presentation Services Catalog references to old groups and users are updated.

- The variable names ROLES, PERMISSIONS, USERGUID and ROLEGUIDS are reserved Release 11g system variable names. Before upgrading a Release 10g repository file, these variables must be renamed if they exist. Other references to these variable names, as in reports, also must be renamed for consistency.

Caution: Before upgrading, create a backup of the repository file and the Presentation Services Catalog to ensure that you can restore the originals if needed.

B.6.1 Security-Related Changes After Upgrading

The following is an overview of the security-related changes initiated by the Upgrade Assistant when upgrading an Oracle Business Intelligence installation. For information about upgrading a system, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

In general, the standard upgrade process is as follows. The Upgrade Assistant is run on a system that has the Oracle Business Intelligence Release 11g software installed. During this process the metadata from the Release 10g repository file and Presentation Services Catalog is imported to the Release 11g system. The Release 10g system is left unchanged after the upgrade process completes. The imported metadata is upgraded as needed to function in the Release 11g environment, such as moving users and groups defined in the repository to the Oracle WebLogic Server embedded LDAP server, and so on. However, configuration settings such as SSL settings are not carried over from the upgrade source.

Before running the Upgrade Assistant you must have the following available:

- The Oracle Business Intelligence Release 10g installation, which is used as the upgrade source. This installation can be configured to use any combination of security mechanisms supported in the Release 10g, including: repository users and groups, authentication initialization blocks, Catalog groups, and SA System Subject Area.
- A default installation of Oracle Business Intelligence Release 11g to be used as the target for the upgrade. This installation must not have been customized in any way.

The Upgrade Assistant prompts for details of the Release 10g installation. The Upgrade Assistant migrates the existing security-related entries to the Release 11g system, as explained in the following sections.

B.6.1.1 Changes Affecting the Identity Store

The Upgrade Assistant automatically creates the following entries in the Oracle WebLogic Server embedded LDAP server for the target system:

- An LDAP group corresponding to each group found in the repository. This does not include the Administrators group found in prior releases. Any users that were in this Administrators group are added to the BIAdministrators LDAP group.
- LDAP group hierarchies that match the repository group hierarchies.
- The Administrator user is migrated and made a part of the BIAdministrators group.

All users, other than the Administrator user, who are members of the Administrators group in the default repository are added to the BIAdministrators group in the embedded LDAP server. The Release 11g Administrator user that is created from

information provided during installation is also added to the BIAdministrators group in the embedded LDAP server.

B.6.1.2 Changes Affecting the Policy Store

The Upgrade Assistant automatically creates the following entries in the file-based policy store for the target system:

- An Application Role that corresponds to each group in the default repository. This does not include the Administrators group found in prior releases. The Application Role is granted to the group with the same name.
- Application Role hierarchies that match the repository group hierarchies.

B.6.1.3 Changes Affecting the Default Repository File

The upgrade assistant automatically upgrades the default repository in the source system and makes the following changes:

- All groups in the default Release 10g repository are converted to Application Role references (placeholders) to Application Roles created in the policy store during upgrade.
- All users are removed from the default repository during upgrade and replaced with references (name and GUID) to LDAP users created in the embedded LDAP server on the target system.
- A numerical suffix is added to the name of an upgraded repository file. A number is added to indicate the number of times that file has been upgraded.

B.6.1.4 Changes Affecting the Oracle BI Presentation Catalog

The Upgrade Assistant automatically makes the following changes to the Presentation Services Catalog:

- The Presentation Services Catalog is scanned and the old security representations are converted to the new ones. Permissions and privileges that existed in 10g are migrated. Updates the internal representation of each user to the standard GUID being used across the environment. Users not found in the LDAP server are placed in the initialization block users folder until they have been added to the LDAP server, after which they are moved to the standard user folder. All references to old user and group representation are replaced by the GUID. The entire Presentation Services Catalog is reviewed.
- Leaves the Release 10g Catalog groups in the upgraded Presentation Services Catalog and assigns the same privileges, access, and membership.

B.6.2 Planning to Upgrade a 10g Repository

A Release 10g repository can be opened and upgraded using the Upgrade Assistant. The following security-related changes are made to the repository upon upgrade:

- The upgraded repository is now protected and encrypted by the password entered during the upgrade.
- The repository file is upgraded to contain references to users it expects to be present in the identity store and references to Application Roles it expects to be present in the policy store.

The upgraded repository can be opened in the Oracle BI Administration Tool in offline mode as usual, and can be deployed to a server to be opened in online mode.

For more information about upgrading a Release 10g repository, see *Oracle Fusion Middleware Upgrade Guide for Oracle Business Intelligence Enterprise Edition*.

B.6.3 Upgrading an Existing SSL Environment

Configuration settings such as SSL settings are not carried over from the upgrade source. For information regarding configuring SSL, see [Chapter 5, "SSL Configuration in Oracle Business Intelligence"](#).

B.6.4 Upgrading an Existing SSO Environment

Configuration settings such as single sign-on (SSO) settings are not carried over from the upgrade source. For information regarding configuring SSO, see [Chapter 4, "Enabling SSO Authentication"](#).

Troubleshooting Security in Oracle Business Intelligence

This appendix describes common problems that you might encounter when configuring and using Oracle Business Intelligence security, and explains how to solve them. It contains the following sections

- [Section C.1, "Resolving Inconsistencies With the Identity Store"](#)
- [Section C.2, "Resolving Inconsistencies With the Policy Store"](#)
- [Section C.3, "Resolving SSL Communication Problems"](#)
- [Section C.4, "Resolving Issues with BISystemUser Credentials"](#)
- [Section C.5, "Resolving Custom SSO Environment Issues"](#)
- [Section C.6, "Resolving IBM LDAP Init Block Based Authentication on Linux x86 \(64-Bit\)"](#)

C.1 Resolving Inconsistencies With the Identity Store

A number of inconsistencies can develop between a repository, the Oracle BI Presentation Catalog, and an identity store. The following sections describe the usual ways this can occur and how to resolve the inconsistencies.

C.1.1 User is Deleted From the Identity Store

Behavior

If a user is deleted from the identity store then that user can no longer log in to Oracle Business Intelligence. However, references to the deleted user remain in the repository until an administrator removes them.

Cause

References to the deleted user still remain in the repository but that user cannot log in to Oracle Business Intelligence. This behavior ensures that if a user was deleted by accident and re-created in the identity store, then the user's access control rules do not need to be entered again.

Action

An administrator can run the Consistency Checker in the Oracle BI Administration Tool in online mode identify inconsistencies.

C.1.2 User is Renamed in the Identity Store

Behavior

A user is renamed in the identity store and then cannot log in to the repository with the new name.

Cause

This can occur if a reference to the user under the original name still exists in the repository.

Action

An administrator must either restart the Oracle BI Server or run the Consistency Checker in the Oracle BI Administration Tool to update the repository with a reference to the user under the new name. Once this has been resolved the Oracle BI Presentation Server updates the Presentation Catalog to refer to the new user name the next time this user logs in.

C.1.3 User Name is Reused in the Identity Store

Behavior

If a user name is added that is identical to one previously used in the identity stored, the new user with the same name cannot log in.

Cause

This can occur if references to the user name exist in the repository.

Action

An administrator must remove existing references to the user name contained in the repository by either running Consistency Checker in the Oracle BI Administration Tool or by changing the existing user references to use the new user's GUID. When the new user logs in with the reused name, a new home directory is created for them in the Presentation Services Catalog.

C.2 Resolving Inconsistencies With the Policy Store

A number of inconsistencies can develop between the Presentation Services Catalog and the policy store. The following sections describe the usual ways this can occur and how to resolve the inconsistencies.

C.2.1 Application Role Was Deleted From the Policy Store

Behavior

After an Application Role is deleted from the policy store the role name continues to appear in the Oracle BI Administration Tool when working in offline mode. But the role name no longer appears in Presentation Services and users are no longer granted the permissions associated with the deleted role.

Cause

References to the deleted role name persist in the repository enabling the role name to appear in the Administration Tool when working in offline mode.

Action

An administrator runs the Consistency Checker in the Oracle BI Administration Tool in online mode to remove references in the repository to the deleted Application Role name.

C.2.2 Application Role is Renamed in the Policy Store**Behavior**

After an Application Role is renamed in the policy store the new name does not appear in the Administration Tool in offline mode. But the new name immediately appears in lists in Presentation Services and the Administration Tool. Users continue to see the permissions the role grants them

Cause

References to the original role name persist in the repository enabling the role name to appear in the Administration Tool when working in offline mode.

Action

An administrator either restarts the BI Server or runs the Consistency Checker in the Administration Tool to update the repository with the new role name.

C.2.3 Application Role Name is Reused in the Policy Store**Behavior**

An Application Role is added to the policy store reusing a name used for a previous Application Role. Users are unable to access Oracle Business Intelligence resources according to the permissions granted by the original role and are not granted permissions afforded by the new role.

Cause

The name conflict must be resolved between the original role and new role with the same name.

Action

An administrator resolves the naming conflict by either deleting references to the original role from the repository or by updating the repository references to use the new GUID.

C.2.4 Application Role Reference is Added to a Repository in Offline Mode**Behavior**

An Application Role has a blank GUID. This can occur after an Application Role reference is added to the repository in offline mode.

Cause

The Administration Tool in offline mode does not have access to the policy store and cannot fill in the GUID when a reference to the Application Role is added to the repository.

Action

After start up, the Oracle BI Server fills in any blank GUIDs for Application Role references with the actual GUID.

C.3 Resolving SSL Communication Problems

Behavior

Communication error. A process (the client) cannot communicate with another process (the server).

Action

When there is an SSL communication problem the client typically displays a communication error. The error can state only "client refused" with no further information. Check the server log file for the corresponding failure error message which typically provides more information about the issue.

Behavior

The following error message is displayed after the commit operation is performed using the BIDomain MBean (oracle.biee.admin:type=BIDomain, group=Service).

```
SEVERE: Element Type: DOMAIN, Element Id: null, Operation
Result: VALIDATION_FAILED, Detail Message: SSL must be enabled
on AdminServer before enabling on BI system; not set on server:
AdminServer
```

Action

This message indicates that SSL has not been enabled on the Oracle WebLogic Server Managed Servers, which is a prerequisite step. For more information, see [Section 5.3, "Configuring the Web Server to Use the HTTPS Protocol"](#) and [Section 5.4.3, "Commit the SSL Configuration Changes"](#).

C.4 Resolving Issues with BISystemUser Credentials

Issue: Users are unable to log in with their valid user names and passwords. Error message: Invalid user name or Password.

Example C-1 Example bifoundation_domain.log Output When BISystemUser Credentials Become Out of Sync

```
####<DATE> <Error> <oracle.wsm.resources.enforcement> <Machine_Name> <bi_server1>
<[ACTIVE] ExecuteThread: '2' for queue: 'weblogic.kernel.Default (self-tuning)'\>
<<anonymous>> <> <> <1273244079442> <WSM-07607> <Failure in execution of assertion
{http://schemas.oracle.com/ws/2006/01/securitypolicy}wss-username-token executor
class
oracle.wsm.security.policy.scenario.executor.WssUsernameTokenScenarioExecutor.>
####<DATE> <Error> <oracle.wsm.resources.enforcement> <Machine_Name> <bi_server1>
<[ACTIVE] ExecuteThread: '2' for queue: 'weblogic.kernel.Default (self-tuning)'\>
<<anonymous>> <> <> <1273244079442> <WSM-07602> <Failure in WS-Policy Execution
due to exception.>
####<07-might-2010 15:54:39 o'clock BST> <Error>
<oracle.wsm.resources.enforcement> <ukp79330> <bi_server1> <[ACTIVE]
ExecuteThread: '2' for queue: 'weblogic.kernel.Default (self-tuning)'\>
<<anonymous>> <> <> <1273244079442> <WSM-07501> <Failure in Oracle WSM Agent
processRequest, category=security, function=agent.function.service,
application=bimiddleware#11.1.1.2.0, composite=null, modelObj=SecurityService,
```



```

policy=oracle/wss_username_token_service_policy, policyVersion=null,
assertionName={http://schemas.oracle.com/ws/2006/01/securitypolicy}wss-username-to
ken.>
####<DATE> <Error> <oracle.wsm.agent.handler.wls.WSMAgentHook> <Machine_Name> <bi_
server1> <[ACTIVE] ExecuteThread: '2' for queue: 'weblogic.kernel.Default
(self-tuning)''> <<anonymous>> <> <> <1273244079442> <BEA-000000> <WSMAgentHook: An
Exception is thrown: FailedAuthentication : The security token cannot be
authenticated.>
####<DATE> <Error> <oracle.wsm.resources.security> <Machine_Name> <bi_server1>
<[ACTIVE] ExecuteThread: '5' for queue: 'weblogic.kernel.Default (self-tuning)''>
<<anonymous>> <> <> <1273244091113> <WSM-00008> <Web service authentication
failed.>
####<DATE> <Error> <oracle.wsm.resources.security> <Machine_Name> <bi_server1>
<[ACTIVE] ExecuteThread: '5' for queue: 'weblogic.kernel.Default (self-tuning)''>
<<anonymous>> <> <> <1273244091113> <WSM-00006> <Error in receiving the request:
oracle.wsm.security.SecurityException: WSM-00008 : Web service authentication
failed

```

C.5 Resolving Custom SSO Environment Issues

You might encounter issues when setting up custom SSO environments. For example, when setting up SSO with Windows Native Authentication and Active Directory, or with SiteMinder.

For more information, see article ID 1284399.1 on My Oracle Support at:

<https://support.oracle.com>

C.6 Resolving IBM LDAP Init Block Based Authentication on Linux x86 (64-Bit)

IBM LDAP based authentication using Init blocks from the RPD is not supported for Oracle Business Intelligence on Linux x86 (64-Bit).

To work around this issue, users must use Oracle WebLogic based authentication.

Managing Security for Dashboards and Analyses

This appendix explains how to manage security for dashboards and analyses such that users have only:

- Access to objects in the Oracle BI Presentation Catalog that are appropriate to them.
- Access to features and tasks that are appropriate to them.
- Access to saved customizations that are appropriate to them.

This appendix contains the following sections:

- [Section D.1, "Managing Security for Users of Oracle BI Presentation Services"](#)
- [Section D.2, "Managing Users Using Administration Pages"](#)
- [Section D.3, "Inheritance of Permissions and Privileges for Oracle BI Presentation Services"](#)
- [Section D.4, "Providing Shared Dashboards for Users"](#)
- [Section D.5, "Controlling Access to Saved Customization Options in Dashboards"](#)
- [Section D.6, "Enabling Users to Act for Others"](#)

D.1 Managing Security for Users of Oracle BI Presentation Services

System administrators must configure a business intelligence system to ensure that all functionality (including administrative functionality) is secured so that only authorized users can access the system to perform appropriate operations. Administrators also must be able to configure the system to secure all middle-tier communications.

This overview section contains the following topics:

- [Section D.1.1, "Where Are Oracle BI Presentation Services Security Settings Made?"](#)
- [Section D.1.2, "What are the Security Goals in Oracle BI Presentation Services?"](#)
- [Section D.1.3, "How Are Permissions and Privileges Assigned to Users?"](#)

D.1.1 Where Are Oracle BI Presentation Services Security Settings Made?

Security settings that affect users of Presentation Services are made in the following Oracle Business Intelligence components:

- **Oracle BI Administration Tool** — Enables you to perform the following tasks:

- Set permissions for business models, tables, columns, and subject areas.
- Specify database access for each user.
- Specify filters to limit the data accessible by users.
- Set authentication options.

For information, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

- **Oracle BI Presentation Services Administration** — Enables you to set privileges for users to access features and functions such as editing views and creating agents and prompts.
- **Oracle BI Presentation Services** — Enables you to assign permissions for objects in the Oracle BI Presentation Catalog.

In previous releases, you could assign permissions to objects from the Presentation Services Administration pages. In this release, you set permissions either in the Catalog Manager or the Catalog page of Presentation Services. See *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition* for information on assigning permissions in Presentation Services.

- **Catalog Manager** — Enables you to set permissions for Oracle BI Presentation Catalog objects. For information on Catalog Manager, see 'Configuring and Managing the Oracle BI Presentation Catalog' in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

D.1.2 What are the Security Goals in Oracle BI Presentation Services?

When maintaining security in Presentation Services, you must ensure the following:

- Only the appropriate users can sign in and access Presentation Services. You must assign sign-in rights and authenticate users through the Oracle BI Server.

Authentication is the process of using a user name and password to identify someone who is logging on. Authenticated users are then given appropriate authorization to access a system, in this case Presentation Services. Presentation Services does not have its own authentication system; it relies on the authentication system that it inherits from the Oracle BI Server.

All users who sign in to Presentation Services are granted the AuthenticatedUser Role and any other roles that they were assigned in Fusion Middleware Control.

For information about authentication, see [Section 1.3, "About Authentication"](#).

- Users can access only the objects that are appropriate to them. You apply access control in the form of permissions, as described in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.
- Users have the ability to access features and functions that are appropriate to them. You apply user rights in the form of privileges. Example privileges are "Edit systemwide column formats" and "Create agents."

Users are either granted or denied a specific privilege. These associations are created in a privilege assignment table, as described in [Section D.2.3, "Managing Presentation Services Privileges."](#)

You can configure Oracle Business Intelligence to use the single sign-on feature from the Web server. Presentation Services can use this feature when obtaining information for end users. For complete information on single sign-on, see [Chapter 4, "Enabling SSO Authentication"](#).

D.1.3 How Are Permissions and Privileges Assigned to Users?

When you assign permissions and privileges in Presentation Services, you can assign them in one of the following ways:

- To Application Roles — This is the recommended way of assigning permissions and privileges. Application Roles provide much easier maintenance of users and their assignments. An Application Role defines a set of permissions granted to a user or group that has that role in the system's identity store. An Application Role is assigned in accordance with specific conditions. As such, Application Roles are granted dynamically based on the conditions present at the time authentication occurs.

See [Section 1.4.1, "About Application Roles"](#) for information on Application Roles.

- To individual users — You can assign permissions and privileges to specific users, but such assignments can be more difficult to maintain and so this approach is not recommended.
- To Catalog groups — This approach is maintained for backward compatibility with previous releases only.

See [Section D.2.2, "Working with Catalog Groups"](#) for information on Catalog groups.

D.2 Managing Users Using Administration Pages

You can use the Administration pages in Oracle BI Presentation Services to perform the tasks that are described in the following sections:

- [Section D.2.1, "Understanding the Administration Pages"](#)
- [Section D.2.2, "Working with Catalog Groups"](#)
- [Section D.2.3, "Managing Presentation Services Privileges"](#)
- [Section D.2.4, "Managing Sessions in Oracle BI Presentation Services"](#)

D.2.1 Understanding the Administration Pages

The main Administration page contains links that allow you to display other administration pages for performing various functions, including those related to users in Presentation Services. You can obtain information about all these pages by clicking the Help button in the upper-right corner.

Note: Use care if multiple users have access to the Administration pages, because they can overwrite each other's changes. Suppose UserA and UserB are both accessing and modifying the Manage Privileges page. If UserA saves updates to privileges while UserB is also editing them, then UserB's changes are overwritten by those that UserA saved.

D.2.2 Working with Catalog Groups

In previous releases, Presentation Services groups were used for organizing users. Presentation Services group membership was used to determine the permissions and privileges that are associated with a user, either by explicit assignment or inheritance. In this release, Presentation Services groups have the following characteristics:

- Are referred to as Catalog groups.
- Can contain users, Application Roles, or other Catalog groups.
- Exist only for the purposes of compatibility with previous releases and only with Presentation Services.
- No longer have their own passwords.

While you can continue to use Catalog groups, it is recommended that you move to the use of Application Roles rather than Catalog groups for organizing users.

Presentation Services administrators must ensure that the names of Catalog groups are different from any user IDs that are used to log in to Oracle BI Presentation Services. If a user and a Catalog group share the same name, then the user receives an Invalid Account message when attempting to log in to Oracle BI Presentation Services.

On the Administration page in Presentation Services, you can perform the tasks that are described in the following sections:

- [Section D.2.2.1, "Creating Catalog Groups"](#)
- [Section D.2.2.2, "Deleting Catalog Groups"](#)
- [Section D.2.2.3, "Editing Catalog Groups"](#)

D.2.2.1 Creating Catalog Groups

To create Catalog groups:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Catalog Groups** link.
3. Click **Create a New Catalog Group**.
4. In the Add Group dialog, enter a name for the group.
5. Use the shuttle control to select the Catalog groups, users, and Application Roles to include in this group.

Tip: It is best practice to not include Application Roles in Catalog groups, to avoid complex group inheritance and maintenance situations. In particular do not add the AuthenticatedUser Role to any other Catalog groups that you create. This ensures that only the desired Catalog groups (and users) have the specified permissions and privileges, by preventing users or authenticated users from unintentionally inheriting permissions and privileges from another Catalog group.

6. Click **OK**.

D.2.2.2 Deleting Catalog Groups

To delete Catalog groups:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Catalog Groups** link.
3. On the Manage Catalog Groups page, select the one or more groups to delete.
To help you locate the group that you want, enter text in the **Name** field and click **Search**.
4. Click **Delete Selected Groups**.

5. Click **OK** to confirm the deletion.

D.2.2.3 Editing Catalog Groups

To edit Catalog groups:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Catalog Groups** link.
3. On the Manage Catalog Groups page, select the group to edit.
To help you locate the group that you want, enter text in the **Name** field and click **Search**.
You can click the **More Groups** button to display the next 25 groups in the list.
4. In the Edit Group dialog, change the name or add or remove Application Roles, Catalog groups, and users.
5. Click **OK**.

D.2.3 Managing Presentation Services Privileges

This section contains the following topics about privileges in Presentation Services:

- [Section D.2.3.1, "What are Privileges?"](#)
- [Section D.2.3.2, "Setting Privileges in Oracle BI Presentation Services Administration."](#)
- [Section D.2.3.3, "Default Oracle BI Presentation Services Privilege Assignments."](#)

D.2.3.1 What are Privileges?

Privileges control the rights that users have to access the features and functionality of Oracle BI Presentation Services. Privileges are granted or denied to specific Application Roles, individual users, and Catalog groups using a privilege assignment table.

Like permissions, privileges are either explicitly set or are inherited through role or group membership. Explicitly denying a privilege takes precedence over any granted, inherited privilege. For example, if a user is explicitly denied access to the privilege to edit column formulas, but is a member of an Application Role that has inherited the privilege, then the user cannot edit column formulas.

Privileges are most commonly granted to the BIAuthor or BICustomer roles. This allows users access to common features and functions of Presentation Services. While you can continue to grant privileges to Catalog groups, it is recommended that you switch the grants to Application Roles.

D.2.3.2 Setting Privileges in Oracle BI Presentation Services Administration

On the Manage Privileges Administration page in Presentation Services, you can view and administer privileges for Application Roles, individual users, and Catalog groups.

To administer privileges:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Privileges** link.
3. Click the link associated with the privilege to administer.
4. In the Privileges dialog, perform the following tasks:

- To change the setting for an Application Role, individual user, or Catalog group that is listed in the dialog, select either **Granted** or **Denied** in the Permission column.
 - To add Application Roles, individual users, or Catalog groups for the privilege, click the **Add Users/Roles** button and complete the Add Application Roles, Catalog Groups, and Users dialog.
5. Click **OK**.
 6. Click **Back**.

D.2.3.3 Default Oracle BI Presentation Services Privilege Assignments

Table D–1 lists the privileges that you can manage, along with the Application Role that is granted access to that privilege by default.

These privileges apply to the Oracle Business Intelligence infrastructure. If your organization uses prebuilt applications, then some privileges might be pre configured. For more information, see the documentation for the application.

Table D–1 Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Access	Access to Dashboards	Allows users to view dashboards.	BIConsumer
Access	Access to Answers	Allows users to access the basic features of the Analysis editor.	BIAuthor
Access	Access to Delivers	Allows users to create and edit agents.	BIAuthor
Access	Access to Briefing Books	Allows users to view and download briefing books.	BIConsumer
Access	Access to Administration	Allows users to access the Administration pages in Presentation Services,	BIAdministrator
Access	Access to Segments	Allows users to access segments in Oracle's Siebel Marketing.	BIConsumer
Access	Access to Segment Trees	Allows users to access segment trees in Oracle's Siebel Marketing.	BIAuthor
Access	Access to List Formats	Allows users to access list formats in Oracle's Siebel Marketing.	BIAuthor
Access	Access to Metadata Dictionary	Allows users to access the metadata dictionary information for subject areas, folders, columns, and levels. For more information, see 'Providing Access to Metadata Dictionary Information' <i>Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition</i> .	BIAdministrator
Access	Access to Oracle BI for Microsoft Office	See Section D.2.3.3.2, "Access to Oracle BI for Microsoft Office Privilege."	BIConsumer
Access	Access to KPI Builder	Allows users to create KPIs.	BIAuthor
Access	Access to Scorecard	Allows users access to Oracle BI Scorecard.	BIConsumer
Actions	Create Navigate Actions	See Section D.2.3.3.1, "Access to Oracle BI Enterprise Edition Actions."	BIAuthor

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Actions	Create Invoke Actions	See Section D.2.3.3.1, "Access to Oracle BI Enterprise Edition Actions."	BIAuthor
Actions	Save Actions Containing Embedded HTML	See Section D.2.3.3.1, "Access to Oracle BI Enterprise Edition Actions."	BIAdministrator
Admin: Catalog	Change Permissions	Allows users to modify permissions for catalog objects.	BIAuthor
Admin: Catalog	Toggle Maintenance Mode	Shows the Toggle Maintenance Mode link on the Presentation Services Administration page, which allows users to turn maintenance mode on and off. In maintenance mode, the catalog is read-only; no one can write to it.	BIAdministrator
Admin: General	Manage Sessions	Shows the Manage Sessions link on the Presentation Services Administration page, which displays the Manage Sessions page in which users manage sessions.	BIAdministrator
Admin: General	Manage Dashboards	Allows users to create and edit dashboards, including editing their properties.	BIAdministrator
Admin: General	See Session IDs	Allows users to see session IDs on the Manage Sessions page.	BIAdministrator
Admin: General	Issue SQL Directly	Shows the Issue SQL link on the Presentation Services Administration page, which displays the Issue SQL page in which users enter SQL statements.	BIAdministrator
Admin: General	View System Information	Allows users to view information about the system at the top of the Administration page in Presentation Services.	BIAdministrator
Admin: General	Performance Monitor	Allows users to monitor performance.	BIAdministrator
Admin: General	Manage Agent Sessions	Shows the Manage Agent Sessions link on the Presentation Services Administration page, which displays the Manage Agent Sessions page in which users manage agent sessions.	BIAdministrator
Admin: General	Manage Device Types	Shows the Manage Device Types link on the Presentation Services Administration page, which displays the Manage Device Types page in which users manage device types for agents.	BIAdministrator
Admin: General	Manage Map Data	Shows the Manage Map Data link on the Presentation Services Administration page, which displays the Manage Map Data page in which users edit layers, background maps, and images for map views.	BIAdministrator
Admin: General	See Privileged Errors	Allows users to see privileged error messages. Users can see detailed error messages about database connections or other details when lower level components fail.	BIAdministrator
Admin: General	See SQL Issued in Errors	Allows users to see SQL statements that are returned by the BI Server in error messages.	BIConsumer

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Admin: General	Manage Marketing Jobs	Shows the Manage Marketing Jobs link on the Presentation Services Administration page, which displays the Marketing Job Management page in which users manage marketing jobs.	BIAuthor
Admin: General	Manage Marketing Defaults	Shows the Manage Marketing Defaults link on the Presentation Services Administration page, which displays the Manage Marketing Defaults page in which users manage defaults for Oracle's Siebel Marketing application.	BIAdministrator
Admin: Security	Manage Catalog Groups	Shows the Manage Catalog Groups link on the Presentation Services Administration page, which displays the Manage Catalog Groups page in which users edit Catalog groups.	BIAdministrator
Admin: Security	Manage Privileges	Shows the Manage Privileges link on the Presentation Services Administration page, which displays the Manage Privileges page in which users manage the privileges that are described in this table.	BIAdministrator
Admin: Security	Set Ownership of Catalog Objects	Allows users to take ownership of catalog items that they did not create and do not own. Shows the "Set ownership of this item" link for individual objects and the "Set ownership of this item and all subitems" link for folders on the Properties page.	BIAdministrator
Admin: Security	User Population - Can List Users	Allows users to see the list of users for which they can perform tasks such as assigning privileges and permissions.	BIConsumer, BISystem
Admin: Security	User Population - Can List Groups	Allows users to see the list of groups for which they can perform tasks such as assigning privileges and permissions.	BIConsumer, BISystem
Briefing Book	Add To or Edit a Briefing Book	Allows users to see the Add to Briefing Book link on dashboard pages and analyses and the Edit link in briefing books.	BIAuthor
Briefing Book	Download Briefing Book	Allows users to download briefing books.	BIConsumer
Catalog	Personal Storage	Allows users to have write access to their own My Folders folders and can create content there. If users do not have this privilege, then they can receive email alerts but cannot receive dashboard alerts.	BIConsumer
Catalog	Reload Metadata	Allows users to click the Reload Server Metadata link from the Refresh menu in the toolbar of the Subject Areas pane.	BIAdministrator
Catalog	See Hidden Items	Allows users to see hidden items in catalog folders. Users can also select the Show Hidden Items box on the Catalog page.	BIAuthor
Catalog	Create Folders	Allows users to create folders in the catalog.	BIAuthor
Catalog	Archive Catalog	Allows users to archive the folders and objects in the catalog.	BIAdministrator

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Catalog	Unarchive Catalog	Allows users to unarchive catalog objects that have been archived previously.	BIAdministrator
Catalog	Upload Files	Allows users to upload files into an existing catalog.	BIAdministrator
Conditions	Create Conditions	Allows users to create or edit named conditions.	BIAuthor
Dashboards	Save Customizations	See Section D.5, "Controlling Access to Saved Customization Options in Dashboards."	BIConsumer
Dashboards	Assign Default Customizations	See Section D.5, "Controlling Access to Saved Customization Options in Dashboards."	BIAuthor
Formatting	Save SystemWide Column Formats	Allows users to save systemwide defaults when specifying formats for columns.	BIAdministrator
My Account	Access to My Account	Allows users to access the My Account dialog.	BIConsumer
My Account	Change Preferences	Allows users to access the Preferences tab of the My Account dialog.	BIConsumer
My Account	Change Delivery Options	Allows users to access the Delivery Options tab of the My Account dialog.	BIConsumer
Answers	Create Views	Allows users to create views.	BIAuthor
Answers	Create Prompts	Allows users to create prompts.	BIAuthor
Answers	Access Advanced Tab	Allows users to access the Advanced tab in the Analysis editor.	BIAuthor
Answers	Edit Column Formulas	Allows users to edit column formulas.	BIAuthor
Answers	Save Content with HTML Markup	See Section D.2.3.3.3, "Save Content with HTML Markup Privilege."	BIAdministrator
Answers	Enter XML and Logical SQL	Allows users to use the Advanced SQL tab.	BIAuthor
Answers	Edit Direct Database Analysis	Allows users to create and edit requests that are sent directly to the back-end data source.	BIAdministrator
Answers	Create Analysis from Simple SQL	Allows users to select the Create Analysis from Simple SQL option in the Select Subject Area list.	BIAdministrator
Answers	Create Advanced Filters and Set Operations	Allows users to click the Combine results based on union, intersection, and difference operations button from the Criteria tab in the Analysis editor.	BIAuthor
Answers	Save Filters	Allows users to save filters	BIAuthor
Answers	Execute Direct Database Analysis	Allows users to issue requests directly to the back-end data source.	BIAdministrator
Delivers	Create Agents	Allows users to create agents.	BIAuthor
Delivers	Publish Agents for Subscription	Allows users to publish agents for subscription.	BIAuthor

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Delivers	Deliver Agents to Specific or Dynamically Determined Users	Allows users to deliver agents to other users.	BIAdministrator
Delivers	Chain Agents	Allows users to chain agents.	BIAuthor
Delivers	Modify Current Subscriptions for Agents	Allows users to modify the current subscriptions for agents, including unsubscribing users.	BIAdministrator
Proxy	Act As Proxy	Allows users to act as proxy users for other users, as described in Section D.6, "Enabling Users to Act for Others."	Denied: BIConsumer
RSS Feeds	Access to RSS Feeds	Allows users to subscribe to and receive RSS feeds with alerts and contents of folders. If Presentation Services uses the HTTPS protocol, then the RSS Reader that you use must also support the HTTPS protocol.	BIAuthor
Scorecard	Create/Edit Scorecards	Allows users to create and edit scorecards.	BIAuthor
Scorecard	View Scorecards	Allows users to view scorecards.	BIConsumer
Scorecard	Create/Edit Objectives	Allows users to create and edit objectives.	BIAuthor
Scorecard	Create/Edit Initiatives	Allows users to create and edit initiatives.	BIAuthor
Scorecard	Create Views	Allows users to create and edit scorecard views, such as strategy trees.	BIAuthor
Scorecard	Create/Edit Causes and Effects Linkages	Allows users to create and edit cause and effect relationships.	BIAuthor
Scorecard	Create/Edit Perspectives	Allows users to create and edit perspectives.	BIAdministrator
Scorecard	Add Annotations	Allows users to add comments to KPIs and scorecard components.	BIConsumer
Scorecard	Override Status	Allows users to override statuses of KPIs and scorecard components.	BIConsumer
Scorecard	Create/Edit KPIs	Allows users to create and edit KPIs.	BIAuthor
Scorecard	Add Scorecard Views to Dashboards	Allows users to add scorecard views (such as strategy trees) to dashboards.	BIConsumer
List Formats	Create List Formats	Allows users to create list formats in Oracle's Siebel Marketing.	BIAuthor
List Formats	Create Headers and Footers	Allows users to create headers and footers for list formats in Oracle's Siebel Marketing.	BIAuthor
List Formats	Access Options Tab	Allows users to access the Options tab for list formats in Oracle's Siebel Marketing.	BIAuthor
List Formats	Add/Remove List Format Columns	Allows users to add and remove columns for list formats in Oracle's Siebel Marketing.	BIAdministrator
Segmentation	Create Segments	Allows users to create segments in Oracle's Siebel Marketing.	BIAuthor
Segmentation	Create Segment Trees	Allows users to create segment trees in Oracle's Siebel Marketing.	BIAuthor
Segmentation	Create/Purge Saved Result Sets	Allows users to create and purge saved result sets in Oracle's Siebel Marketing.	BIAdministrator

Table D–1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
Segmentation	Access Segment Advanced Options Tab	Allows users to access the Segment Advanced Options tab in Oracle's Siebel Marketing.	BIAdministrator
Segmentation	Access Segment Tree Advanced Options Tab	Allows users to access the Segment Tree Advanced Options tab in Oracle's Siebel Marketing.	BIAdministrator
Segmentation	Change Target Levels within Segment Designer	Allows users to change target levels within the Segment Designer in Oracle's Siebel Marketing.	BIAdministrator
SOAP	Access SOAP	Allows users to access various Web services.	BIConsumer, BISystem
SOAP	Impersonate as System User	Allows users to impersonate a system user using a Web service.	BISystem
SOAP	Access MetadataService Service	Allows users to access the MetadataService Web service.	BIConsumer, BISystem
SOAP	Access AnalysisExportViewsService Service	Allows users to access the ReportingEditingService Web service.	BIConsumer
SOAP	Access ReportingEditingService Service	Allows users to access the ReportingEditingService Web service.	BIConsumer, BISystem
SOAP	Access ConditionEvaluationService Service	Allows users to access the ConditionEvaluationService Web service.	BIConsumer, BISystem
SOAP	Access ReplicationService Service	Allows users to access the ReplicationService Web service to replicate the Oracle BI Presentation Catalog.	BISystem
SOAP	Access CatalogIndexingService Service	Allows users to access the CatalogIndexingService Web service to index the Oracle BI Presentation Catalog for use with full-text search.	BISystem
SOAP	Access DashboardService Service	Allows users to access the DashboardService Web service.	BIConsumer, BISystem
SOAP	Access SecurityService Service	Allows users to access the SecurityService Web service.	BIConsumer, BISystem
SOAP	Access ScorecardMetadataService Service	Allows users to access the ScorecardMetadataService Web service.	BIConsumer, BISystem
SOAP	Access ScorecardAssessmentService Service	Allows users to access the ScorecardAssessmentService Web service.	BIConsumer, BISystem
SOAP	Access HtmlViewService Service	Allows users to access the HtmlViewServiceService Web service.	BIConsumer, BISystem
SOAP	Access CatalogService Service	Allows users to access the CatalogService Web service.	BIConsumer, BISystem
SOAP	Access IBotService Service	Allows users to access the IBotService Web service.	BIConsumer, BISystem

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
SOAP	Access XmlGenerationService Service	Allows users to access the XmlGenerationService Web service.	BIConsumer, BISystem
SOAP	Access JobManagementService Service	Allows users to access the JobManagementService Web service.	BIConsumer, BISystem
SOAP	Access KPIAssessmentService Service	Allows users to access the JKPIAssessmentService Web service.	BIConsumer, BISystem
Subject Area (<i>by its name</i>)	Access within Oracle BI Answers	Allows users to access the specified subject area within the Answers editor.	BIAuthor
View Analyzer	Add/Edit AnalyzerView	Allows users to access the Analyzer view.	BIAdministrator
View Column Selector	Add/Edit Column SelectorView	Allows users to create and edit column selector views.	BIAuthor
View Compound	Add/Edit CompoundView	Allows users to create and edit compound layouts.	BIAuthor
View Graph	Add/Edit GraphView	Allows users to create and edit graph views.	BIAdministrator
View Funnel	Add/Edit FunnelView	Allows users to create and edit funnel graph views.	BIAuthor
View Gauge	Add/Edit GaugeView	Allows users to create and edit gauge views.	BIAuthor
View Filters	Add/Edit FiltersView	Allows users to create and edit filters.	BIAuthor
View Dashboard Prompt	Add/Edit Dashboard PromptView	Allows users to create and edit dashboard prompts.	BIAuthor
View Static Text	Add/Edit Static TextView	Allows users to create and edit static text views.	BIAuthor
View Legend	Add/Edit Legend View	Allows users to create and edit legend views.	BIAuthor
View Map	Add/Edit MapView	Allows users to create and edit map views.	BIAuthor
View Narrative	Add/Edit NarrativeView	Allows users to create and edit narrative views.	BIAuthor
View Nested Request	Add/Edit Nested RequestView	Allows users to create and edit nested analyses.	BIAuthor
View No Results	Add/Edit No ResultsView	Allows users to create and edit no result views.	BIAuthor
View Pivot Table	Add/Edit Pivot TableView	Allows users to create and edit pivot table views.	BIAuthor
View Report Prompt	Add/Edit Report PromptView	Allows users to create and edit prompts.	BIAuthor
View Create Segment	Add/Edit Create SegmentView	Allows users to create and edit segment views.	BIAuthor
View Logical SQL	Add/Edit Logical SQLView	Allows users to create and edit logical SQL views.	BIAuthor
View Table	Add/Edit TableView	Allows users to create and edit table views.	BIAuthor

Table D-1 (Cont.) Privileges and Default Settings for the Oracle Business Intelligence Infrastructure

Component	Privilege	Description	Default Role Granted
View Create Target List	Add/Edit Create Target ListView	Allows users to create and edit target list views.	BIAuthor
View Ticker	Add/Edit TickerView	Allows users to create and edit ticker views.	BIAuthor
View Title	Add/Edit TitleView	Allows users to create and edit title views.	BIAuthor
View View Selector	Add/Edit View SelectorView	Allows users to create and edit view selector views.	BIAuthor
Write Back	Write Back to Database	Grants the right to write data into the data source.	Denied: BIConsumer
Write Back	Manage Write Back	Grants the right to manage write back requests.	BIAdministrator

D.2.3.3.1 Access to Oracle BI Enterprise Edition Actions You must set the Action privileges, which determine whether the Actions functionality is available to users and specify which user types can create Actions. The following list describes these privileges:

- **Create Navigate Actions** — Determines which users can create a Navigate action type. The sessions of users who are denied this privilege do not contain any of the user interface components that allow them to create Navigate Actions. For example, if a user is denied this privilege and chooses to create an action from the Oracle BI Enterprise Edition global header, the dialog where the user selects an action type does not include the Navigate Actions options (Go to BI Content, Go to a Web Page, and so on). However, users who are denied this privilege can add saved actions to analyses and dashboards. And, users who are denied this privilege can execute an action from an analysis or dashboard that contains an action.
- **Create Invoke Actions** — Determines which users can create an Invoke action type. The sessions of user who are denied this privilege do not contain any of the user interface components that allow them to create Invoke Actions. For example, if a user is denied this privilege and chooses to access the agent editor's Actions tab and clicks the **Add New Action** button, the dialog where the user selects the action type does not include the Invoke Actions options (Invoke a Web Service, Invoke an HTTP Request, and so on). However, users who are denied this privilege can add saved actions to analyses and dashboards. And, users who are denied this privilege can execute an action from an analysis or dashboard that contains an action.
- **Save Actions Containing Embedded HTML** — Determines which users can embed HTML code in the customization of Web service action results. Use care in assigning this privilege, because it poses a security risk to allow users to run HTML code.

D.2.3.3.2 Access to Oracle BI for Microsoft Office Privilege The Access to Oracle BI for Microsoft Office privilege shows the following options for the **Download BI Desktop Tools** link in the Get Started area of the Oracle BI EE Home page:

- **Oracle BI for MS Office:** Downloads the installation file for the Oracle BI Add-in for Microsoft Office.
- **Smart View:** Downloads the installation file for Oracle Hyperion Smart View.

The Access to Oracle BI for Microsoft Office privilege does not affect the display of the **Copy** link for analyses. The link is always available there.

The location of the installation file to download for the Oracle BI Add-in for Microsoft Office is specified by default in the `BIforOfficeURL` element in the `instanceconfig.xml` file. For more information on using the Oracle BI Add-in for Microsoft Office and the **Copy** option, see *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

D.2.3.3.3 Save Content with HTML Markup Privilege By default, Presentation Services is secured against cross-site scripting (XSS). Securing against XSS escapes input in fields in Presentation Services and renders it as plain text. For example, an unscrupulous user can use an HTML field to enter a script that steals data from a page.

By default, end users cannot save content that is flagged as HTML; instead only administrators who have the Save Content with HTML Markup privilege can save content that contains HTML code. Users that have the Save Content with HTML Markup privilege can save an image with the "fmap" prefix. If users try to save an image with the "fmap" prefix when they do not have this privilege assigned, then they see an error message.

D.2.4 Managing Sessions in Oracle BI Presentation Services

Using the Session Management page in Presentation Services Administration, you can view information about active users and running analyses, cancel requests, and clear the cache.

To manage sessions in Presentation Services:

1. From the Home page in Presentation Services, select **Administration**.
2. Click the **Manage Sessions** link.

The Session Management screen is displayed with the following tables:

- The Sessions table, which gives information about sessions that have been created for users who have logged in:
- The Cursor Cache table, which shows the status of analyses:

To cancel all running requests:

1. Click **Cancel Running Requests**.
2. Click **Finished**.

To cancel one running analysis:

- In the Cursor Cache table, identify the analysis and click the **Cancel** link in the **Action** column.

The user receives a message indicating that the analysis was canceled by an administrator.

To clear the Web cache:

1. In the Cursor Cache table, identify the analysis and click **Close All Cursors**.
2. Click **Finished**.

To clear the cache entry associated with an analysis:

- In the Cursor Cache table, identify the analysis and click the **Close** link in the **Action** column.

To view the query file for information about an analysis:

- In the Cursor Cache table, identify the analysis and click the **View Log** link.

Note: Query logging must be turned on for data to be saved in this log file.

D.3 Inheritance of Permissions and Privileges for Oracle BI Presentation Services

Permissions and privileges can be assigned to users directly or through membership in Application Roles or Catalog groups. From another perspective, permissions and privileges can be assigned explicitly or effectively. Effective permissions and privileges are assigned indirectly through inheritance from Application Roles or Catalog groups, which is the recommended approach for assignments.

This section contains the following topics:

- [Section D.3.1, "Rules for Inheritance for Permissions and Privileges"](#)
- [Section D.3.2, "Example of Inherited Privileges for Application Roles"](#)
- [Section D.3.3, "Example of Inherited Privileges for Catalog Groups"](#)

D.3.1 Rules for Inheritance for Permissions and Privileges

The following list describes the rules of inheritance for permissions and privileges:

- Any permissions or privileges granted explicitly to a user override any permissions or privileges inherited from the Application Roles or Catalog groups to which the user belongs.
- If a user belongs to two Application Roles or Catalog groups and both are granted permissions, then the least restrictive permissions are given to the user.

For example, if one Application Role allows Open access and another allows Modify access, then the least restrictive access would be granted; in this example, Open access.

Note: The exception to this is if one of the two Application Roles or Catalog groups is explicitly denied the permissions, in which case the user is denied.

- If a user belongs to Application Role X, and Application Role X is a member of Application Role Y, then any permissions assigned to Application Role X override any permissions assigned to Application Role Y. The same holds true if X and Y are Catalog groups.

For example, if Marketing has Open permissions, Marketing Administrators, which is a member of Marketing, can have Full Control permission.

- If a Catalog group is specified along with an Application Role in the Permissions dialog in Presentation Services, then the Catalog group takes precedence.

For example, suppose that for a certain object, the BIAdministrator role has Read-Only permission and the Admin Catalog Group has Full Control permission.

If a user signs in who is a member of both the BIAdministrator role and the Admin Catalog Group, then he is granted full access to the object.

- Explicitly denying access takes precedence over any other permissions or privileges.

D.3.2 Example of Inherited Privileges for Application Roles

Figure D-1 shows an example of how privileges are inherited through Application Roles. At the top of the diagram is a rectangle labeled User1, which specifies that User1 is a member of Role1 and Role2. Attached beneath the User1 rectangle are two more rectangles — one on the left that represents Role1 and one on the right that represents Role2.

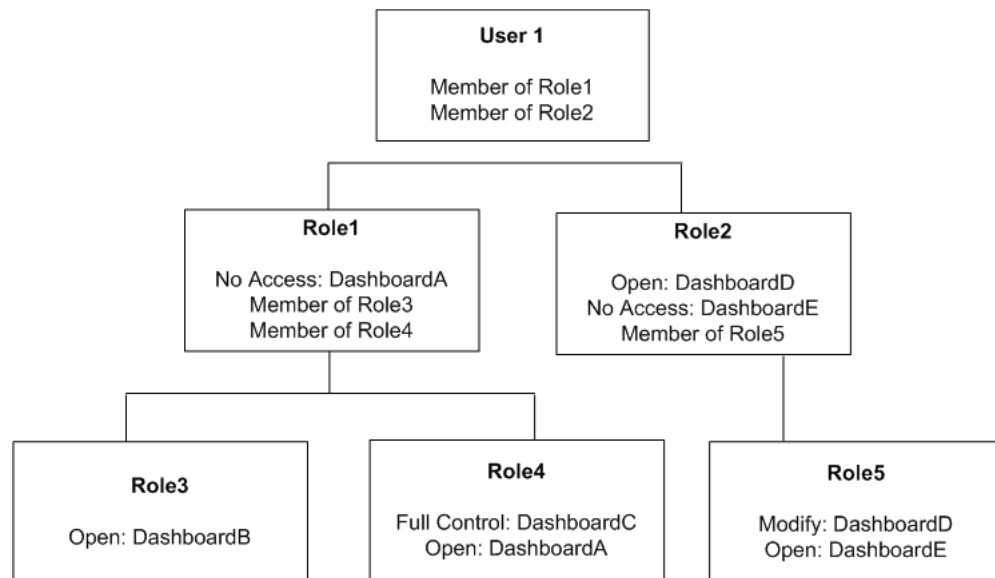
- The Role1 rectangle specifies that Role1 has no access to DashboardA and is a member of Role3 and Role4.
- The Role2 rectangle specifies that Role2 has Open access to DashboardD, is a member of Role5, and has no access to DashboardE.

Attached beneath the Role1 rectangle are two more rectangles — one on the left that represents Role3 and one on the right that represents Role4:

- The Role3 rectangle specifies that Role3 has Open access to DashboardB.
- The Role4 rectangle specifies that Role4 has Full Access to DashboardC and Open access to DashboardA.

And finally, attached beneath the Role2 rectangle is a rectangle that represents Role5. The Role5 rectangle specifies that Role5 has Modify access to Dashboard D and Open access to DashboardE.

Figure D-1 Example of Inheritance of Permissions Using Roles



In this example:

- User1 is a direct member of Role1 and Role2, and is an indirect member of Role3, Role4, and Role5.
- The permissions and privileges from Role1 are no access to DashboardA, Open access to DashboardB, and Full Control for DashboardC.

- If one Application Role is a member of a second Application Role, then any permissions assigned to the first Application Role override any permissions assigned to the first role. Therefore, the inherited permissions and privileges from Role2 include Modify access to DashboardD from Role5.
- Specifically denying access always takes precedence over any other settings. Therefore, Role1's denial of access to DashboardA overrides Role4's Open access. The result is that Role1 has no access to DashboardA. Likewise, Role5 has no access to DashboardE, because access to that dashboard is explicitly denied for Role2.

The total permissions and privileges granted to User1 are as follows:

- No access to DashboardA and DashboardE, because access is specifically denied.
- Open access to DashboardB.
- Full Control for DashboardC.
- Modify access to DashboardD.

D.3.3 Example of Inherited Privileges for Catalog Groups

Any permissions or privileges granted explicitly to a Catalog group take precedence over permissions or privileges granted to an Application Role. For example, suppose that have an Application Role called Marketing_US that has Full Access to the Marketing Dashboard. You want to restrict a small set of the users in the Marketing_US role to not have access to that dashboard. To do so, you create a Catalog group called Marketing_SanJose and add the appropriate users as members of that group. You then deny the Marketing_SanJose Catalog group access to the Marketing Dashboard. Even though those users belong to the Marketing_US role, they are denied access to the Marketing Dashboard.

D.4 Providing Shared Dashboards for Users

This section contains the following topics on providing shared dashboards for users:

- [Section D.4.1, "Understanding the Catalog Structure for Shared Dashboards"](#)
- [Section D.4.2, "Creating Shared Dashboards"](#)
- [Section D.4.3, "Testing the Dashboards"](#)
- [Section D.4.4, "Releasing Dashboards to the User Community"](#)

D.4.1 Understanding the Catalog Structure for Shared Dashboards

The Oracle BI Presentation Catalog has two main folders:

- **My Folders** — Contains the personal storage for individual users. Includes a Subject Area Contents folder where you save objects such as calculated items and groups.
- **Shared Folders** — Contains objects and folders that are shared across users. Dashboards that are shared across users are saved in a Dashboards subfolder under a common subfolder under the /Shared Folders folder

Note: If a user is given permission to an analysis in the Oracle BI Presentation Catalog that references a subject area to which the user does not have permission, then the Oracle BI Server still prevents the user from executing the analysis.

D.4.2 Creating Shared Dashboards

After setting up the Oracle BI Presentation Catalog structure and setting permissions, you can create shared dashboards and content for use by others.

One advantage to creating shared dashboards is that pages that you create in the shared dashboard are available for reuse. Users can create their own dashboards using the pages from your shared dashboards and any new pages that they create. You can add pages and content as described in *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

If you plan to allow multiple users to modify a shared default dashboard, then consider putting these users into an Application Role. For example, suppose that you create an Application Role called Sales and create a default dashboard called SalesHome. Of the 40 users that have been assigned the Sales Application Role, suppose that there are three who must have the ability to create and modify content for the SalesHome dashboard. Create a SalesAdmin Application Role, with the same permissions as the primary Sales Application Role. Add the three users who are allowed to make changes to the SalesHome dashboard and content to this new SalesAdmin Application Role, and give this role the appropriate permissions in the Oracle BI Presentation Catalog. This allows those three users to create and modify content for the SalesHome dashboard. If a user no longer requires the ability to modify dashboard content, then you can change the user's role assignment to Sales. If an existing Sales role user must have the ability to create dashboard content, then the user's role assignment can be changed to SalesAdmin.

For more information about creating shared dashboards, see 'Managing Dashboards' in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

D.4.3 Testing the Dashboards

Before releasing dashboards and content to the user community, perform some tests.

To test the dashboard:

1. Verify that users with appropriate permissions can correctly access it and view the intended content.
2. Verify that users without appropriate permissions cannot access the dashboard.
3. Verify that styles and skins are displayed as expected, and that other visual elements are as expected.
4. Correct any problems you find and test again, repeating this process until you are satisfied with the results.

D.4.4 Releasing Dashboards to the User Community

After testing is complete, notify the user community that the dashboard is available, ensuring that you provide the relevant network address.

D.5 Controlling Access to Saved Customization Options in Dashboards

This section provides an overview of saved customizations and information about administering saved customizations. It contains the following topics:

- [Section D.5.1, "Overview of Saved Customizations in Dashboards"](#)
- [Section D.5.2, "Administering Saved Customizations"](#)
- [Section D.5.3, "Permission and Privilege Settings for Creating Saved Customizations"](#)
- [Section D.5.4, "Example Usage Scenario for Saved Customization Administration"](#)

D.5.1 Overview of Saved Customizations in Dashboards

Saved customizations allow users to save and view later dashboard pages in their current state with their most frequently used or favorite choices for items such as filters, prompts, column sorts, drills in analyses, and section expansion and collapse. By saving customizations, users need not make these choices manually each time that they access the dashboard page.

Users and groups with the appropriate permissions and dashboard access rights can perform the following activities:

- Save various combinations of choices as saved customizations, for their personal use or use by others.
- Specify a saved customization as the default customization for a dashboard page, for their personal use or use by others.
- Switch between their saved customizations.

You can restrict this behavior in the following ways:

- Users can view only the saved customizations that are assigned to them.
- Users can save customizations for personal use only.
- Users can save customizations for personal use and for use by others.

For information about end users and saved customizations with dashboards, see *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

D.5.2 Administering Saved Customizations

This section describes the privileges and permissions that are required to administer saved customizations. It also describes the relevant portions of the Oracle BI Presentation Catalog that relate to storing and administering saved customizations.

D.5.2.1 Privileges for Saved Customizations

In Oracle BI Presentation Services Administration, the following privileges in the Dashboards area, along with permission settings for key dashboard elements, control whether users or groups can save or assign customizations:

- Save Customizations
- Assign Default Customizations

You can set neither privilege, one privilege, or both privileges for a user or group, depending on the level of access desired. For example, a user who has neither privilege can view only the saved customization that is assigned as his or her default customization.

D.5.2.2 Permissions for Saved Customizations

This section describes the permissions that are required for users to administer saved customizations of dashboard pages, and the relevant portions of the Oracle BI Presentation Catalog structure for setting permissions on shared and personal saved customizations.

D.5.2.2.1 Assigning Permissions to Dashboards You set permissions for dashboards and pages, such as Full Control or No Access, in the Permission dialog in Oracle BI EE. You assign these permissions in the same manner as for other objects in the catalog.

D.5.2.2.2 Assigning Permissions for Customizations on a Dashboard Page You set permissions for working with saved customizations on a particular dashboard page in the Dashboard Properties dialog, which is available in the Dashboard Builder. After selecting a page in the list in the dialog, click one of the following buttons:

- **Specify Who Can Save Shared Customizations** displays the Permission dialog in which you specify who can save shared customizations for that dashboard page.
- **Specify Who Can Assign Default Customizations** displays the Permission dialog in which you specify who can assign default customizations for that dashboard page.

Catalog objects and permissions scenarios are described in the following sections.

D.5.2.2.3 Catalog Folder Structure for Saved Customizations In addition to the privileges that you set in Oracle BI Presentation Services Administration, the level of control that users and groups have over saved customizations depends on their access rights to key elements. For example, users and groups that can create and edit underlying dashboards, save dashboard view preferences as customizations, and assign customizations to other users as default customizations require Full Control permission to the key elements in shared storage, while users and groups that can view only their assigned default saved customizations need only View access to the key elements in shared storage.

Key elements in the catalog include the following folders:

- Shared Storage Folders.

Shared storage folders for dashboards are typically located within the Dashboards sub-folder of a parent shared folder. Dashboards are identified by their assigned names. You can save a dashboard anywhere in the Oracle BI Presentation Catalog. If you save a dashboard within a subfolder called "Dashboards", then that dashboard's name is displayed in the list of dashboards that is displayed from the Dashboards link in the global header.

Permission settings control access to a specific dashboard for editing. Typically, if permissions are inherited down to the `_selections` and Dashboards sub-folders, then users who can edit dashboards can also save customizations and set defaults. Access to a specific dashboard folder controls whether a user or group can edit the dashboard.

The `_selections` folder contains a page identifier folder for each dashboard page. Shared saved customizations are located within this folder. Access to the page identifier folder controls whether a user or group can display, save, or edit customizations for that page.

The `_defaults` folder within a `_selections` folder contains assigned default customizations. Each group that has an assigned default is displayed here. Access to this folder controls whether a user or group can assign defaults.

- Personal Storage Folders.

Within a user's personal folder, the `_selections` folder contains an individual user's saved customizations. Like the shared `_selections` folder, a personal `_selections` folder contains a page identifier folder for each dashboard page. The page identifier folder contains personal saved customizations and a `_defaultlink` file that specifies a user's preference for the personal defaulted customization.

A personal saved customization default overrides an assigned shared customization default.

Note: If a dashboard page with saved customizations is deleted, then the saved customizations are also deleted from the catalog. If the underlying dashboard structure changes such that a saved customization is no longer valid when a user accesses it, then the default content is displayed on the dashboard.

D.5.3 Permission and Privilege Settings for Creating Saved Customizations

Table D-2 describes typical user roles and specific permission settings that can be granted to users for creating saved customizations. The folder names listed in the Permission and Privilege Settings column are described in the preceding section.

Table D-2 User Roles and Permission Settings for Saved Customizations

User Role	Permission and Privilege Settings
Power users such as IT users who must perform the following tasks: <ul style="list-style-type: none"> ■ Create and edit underlying dashboards. ■ Save dashboard view preferences as customizations. ■ Assign customizations to other users as default customizations. 	In the Shared section of the catalog, requires Full Control permission to the following folders: <ul style="list-style-type: none"> ■ <code>dashboard_name</code> ■ <code>_selection</code> ■ <code>_defaults</code> Typically, no additional privileges must be assigned.
Technical users such as managers who must perform the following tasks: <ul style="list-style-type: none"> ■ Save customizations as customizations for personal use. ■ Save customizations for use by others. Users cannot create or edit underlying dashboards, or assign view customizations to others as default customizations.	In the Shared section of the catalog, requires View permission to the following folders: <ul style="list-style-type: none"> ■ <code>dashboard_name</code> In the Shared section of the catalog, requires Modify permission to the following folders: <ul style="list-style-type: none"> ■ <code>_selections</code> ■ <code>_defaults</code> Typically, no additional privileges must be assigned.
Everyday users who must save customizations for personal use only.	In Oracle BI Presentation Services Administration, requires the following privilege to be set: <ul style="list-style-type: none"> ■ Save Customizations In the dashboard page, requires that the following option is set: <ul style="list-style-type: none"> ■ Allow Saving Personal Customizations In the catalog, no additional permission settings are typically required.

Table D–2 (Cont.) User Roles and Permission Settings for Saved Customizations

User Role	Permission and Privilege Settings
Casual users who must view only their assigned default customization.	<p>In the Shared section of the catalog, the user needs View permission to the following folders:</p> <ul style="list-style-type: none"> ■ dashboard_name ■ _selections ■ _defaults <p>In the catalog, no additional permission settings are typically required.</p>

D.5.4 Example Usage Scenario for Saved Customization Administration

Depending on the privileges set and the permissions granted, you can achieve various combinations of user and group rights for creating, assigning, and using saved customizations.

For example, suppose a group of power users cannot change dashboards in a production environment, but they are allowed to create saved customizations and assign them to other users as default customizations. The following permission settings for the group are required:

- Open access to the dashboard, using the Catalog page.
- Modify access to the _selections and _defaults subfolders within the dashboard folder in the Oracle BI Presentation Catalog, which you assign using the Dashboard Properties dialog in the Dashboard Builder. After selecting a page in the list in the dialog, click **Specify Who Can Save Shared Customizations** and **Specify Who Can Assign Default Customizations**.

D.6 Enabling Users to Act for Others

This section contains the following topics on enabling users to act for others:

- [Section D.6.1, "Why Enable Users to Act for Others?"](#)
- [Section D.6.2, "What are the Proxy Levels?"](#)
- [Section D.6.3, "Process of Enabling Users to Act for Others"](#)

D.6.1 Why Enable Users to Act for Others?

You can enable one user to act for another user in Oracle BI Presentation Services. When a user (called the proxy user) acts as another (called the target user), the proxy user can access the objects in the catalog for which the target user has permission.

Enabling a user to act for another is useful, for example, when a manager wants to delegate some of his work to one of his direct reports or when IT support staff wants to troubleshoot problems with another user's objects.

See *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition* for information on how users enable others to act for them.

D.6.2 What are the Proxy Levels?

When you enable a user to be a proxy user, you also assign an authority level (called the proxy level). The proxy level determines the privileges and permissions granted to

the proxy user when accessing the catalog objects of the target user. The following list describes the proxy levels:

- **Restricted** — Permissions are read-only to the objects to which the target user has access. Privileges are determined by the proxy user's account (not the target user's account).

For example, suppose a proxy user *has not* been assigned the Access to Answers privilege, and the target user *has*. When the proxy user is acting as the target user, the target user *cannot* access Answers.

- **Full** — Permissions and privileges are inherited from the target user's account.

For example, suppose a proxy user *has not* been assigned the Access to Answers privilege, and the target user *has*. When the proxy user is acting as the target user, the target user *can* access Answers.

When you have enabled a user to act as a proxy user, that user can display the **Act As** option in the global header of Presentation Services to select the target user to act as, provided the Act As Proxy privilege has been set.

Tip: Before a proxy user can act as a target user, the target user must have signed into Presentation Services at least once and accessed a dashboard.

Note: If you are a user who can be impersonated by a proxy user, you can see the users with the permission to proxy (Act As) you. To see these users, login to Analytics, go to the My Account dialog box and display the extra tab called Delegate Users. This tab displays the users who can connect as you, and the permission they have when they connect as you (Restricted or Full).

D.6.3 Process of Enabling Users to Act for Others

To enable users to act for others, perform the following tasks:

- [Section D.6.3.1, "Defining the Association Between Proxy Users and Target Users"](#)
- [Section D.6.3.2, "Creating Session Variables for Proxy Functionality"](#)
- [Section D.6.3.3, "Modifying the Configuration File Settings for Proxy Functionality"](#)
- [Section D.6.3.4, "Creating a Custom Message Template for Proxy Functionality"](#)
- [Section D.6.3.5, "Assigning the Proxy Privilege"](#)
- [Section D.6.3.6, "Assigning the manageRepositories Permission"](#)

D.6.3.1 Defining the Association Between Proxy Users and Target Users

You define the association between proxy users and target users in the database by identifying, for each proxy user/target user association, the following:

- ID of the proxy user
- ID of the target user
- Proxy level (either full or restricted)

For example, you might create a table called Proxies in the database that looks like this:

proxyId	targetId	proxyLevel
Ronald	Eduardo	full
Timothy	Tracy	restricted
Pavel	Natalie	full
William	Sonal	restricted
Maria	Imran	restricted

After you define the association between proxy users and target users, you must import the schema to the physical layer of the Oracle BI Server. For information on importing a schema, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

D.6.3.2 Creating Session Variables for Proxy Functionality

To authenticate proxy users, you must create the following two session variables along with their associated initialization blocks. For both variables, you must modify the sample SQL statement according to the schema of the database.

- **PROXY** — Use this variable to store the name of the proxy user.

Use the initialization block named ProxyBlock and include code such as the following:

```
select targetId
from Proxies
where 'VALUEOF(NQ_SESSION.RUNAS)'=targetId and ':USER'=proxyId
```

- **PROXYLEVEL** — Use this optional variable to store the proxy level, either Restricted or Full. If you do not create the PROXYLEVEL variable, then the Restricted level is assumed.

Use the initialization block named ProxyLevel and include code such as the following:

```
select proxyLevel
from Proxies
where 'VALUEOF(NQ_SESSION.RUNAS)'=targetId and ':USER'=proxyId
```

For more information on creating session variables, see *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

D.6.3.3 Modifying the Configuration File Settings for Proxy Functionality

Use various elements in the instanceconfig.xml file to configure the proxy functionality.

Before you begin this procedure, ensure that you are familiar with the information in 'Using a Text Editor to Update Oracle Business Intelligence Configuration Settings' in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

To manually configure for proxy functionality:

1. Open the instanceconfig.xml file for editing, as described in 'Where are Configuration Files Located' in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.
2. Locate the section in which you must add the elements that are described in the following list:
 - LogonParam: Serves as the parent element for the TemplateMessageName and MaxValues elements.
 - TemplateMessageName: Specifies the name of the custom message template in the Custom Messages folder that contains the SQL statement to perform tasks related to displaying proxy and target users. The default name is LogonParamSQLTemplate.

The name that you specify in the TemplateMessageName element must match the name that you specify in the WebMessage element in the custom message file. For more information, see [Section D.6.3.4, "Creating a Custom Message Template for Proxy Functionality."](#)

 - MaxValues: Specifies the maximum number of target users to be listed in the **User** box in the Act As dialog box. If the number of target users for a proxy user exceeds this value, then an edit box, where the proxy user can enter the ID of a target user, is shown rather than a list of target users. The default is 200.
3. Include the elements and their ancestor elements as appropriate, as shown in the following example:

```
<LogonParam>
  <TemplateMessageName>LogonParamSQLTemplate</TemplateMessageName>
  <MaxValues>100</MaxValues>
</LogonParam>
```

4. Save your changes and close the file.
5. Restart Oracle Business Intelligence.

D.6.3.4 Creating a Custom Message Template for Proxy Functionality

You must create a custom message template for the proxy functionality that contains the SQL statement to perform the following tasks:

- Obtain the list of target users that a proxy user can act as. This list is displayed in the User box in the Act As dialog box.
- Verify whether the proxy user can act as the target user.
- Obtain the list of proxy users that can act as the target user. This list is displayed on the target user's My Account screen.

In the custom message template, you place the SQL statement to retrieve this information in the following XML elements:

Element	Description
getValues	<p>Specifies the SQL statement to return the list of target users and corresponding proxy levels.</p> <p>The SQL statement must return either one or two columns, where the:</p> <ul style="list-style-type: none"> ■ First column returns the IDs of the target users ■ (Optional) Second column returns the names of the target users
verifyValue	<p>Specifies the SQL statement to verify if the current user can act as the specified target user.</p> <p>The SQL statement must return at least one row if the target user is valid or an empty table if the target user is invalid.</p>
getDelegateUsers	<p>Specifies the SQL statement to obtain the list of proxy users that can act as the current user and their corresponding proxy levels.</p> <p>The SQL statement must return either one or two columns, where the:</p> <ul style="list-style-type: none"> ■ First column returns the names of the proxy users ■ (Optional) Second column returns the corresponding proxy levels

For information on the directory for storing custom message templates, see 'Customizing XML Messages' in *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*. You can create the custom message template in one of the following files:

- The original custom message file in the directory
- A separate XML file in the directory

To create the custom message template:

1. To create the custom message template in the original custom message file:
 - a. Make a backup of the original custom message file in a separate directory.
 - b. Make a development copy in a different directory and open it in a text or XML editor.
2. To create the custom message template in a separate XML file, create and open the file in the `ORACLE_INSTANCE\bifoundation\OracleBIPresentationServicesComponent\coreapplication_obipsn\analyticsRes\customMessages` directory.
3. Start the custom message template by adding the WebMessage element's begin and end tags. For example:

```
<WebMessage name="LogonParamSQLTemplate">
</WebMessage>
```

Note: The name that you specify in the WebMessage element must match the name that you specify in the TemplateMessageName element in the instanceconfig.xml file. For information, see [Section D.6.3.3, "Modifying the Configuration File Settings for Proxy Functionality."](#)

4. After the `</WebMessage>` tag:
 - a. Add the `<XML>` and `</XML>` tags
 - b. Between the `<XML>` and `</XML>` tags, add the `<logonParam name="RUNAS">` and `</logonParam>` tags.
 - c. Between the `<logonParam name="RUNAS">` and `</logonParam>` tags, add each of the following tags along with its corresponding SQL statements:
 - * `<getValues>` and `</getValues>`
 - * `<verifyValue>` and `</verifyValue>`
 - * `<getDelegateUsers>` and `</getDelegateUsers>`

The following entry is an example:

```
<XML>
  <logonParam name="RUNAS">
    <getValues> EXECUTE PHYSICAL CONNECTION POOL Proxy.Proxy
      select TARGET from Proxy where PROXYER='@{USERID}'
    </getValues>
    <verifyValue> EXECUTE PHYSICAL CONNECTION POOL Proxy.Proxy
      select TARGET from Proxy where PROXYER = '@{USERID}'
      and TARGET='@{VALUE}'
    </verifyValue>
    <getDelegateUsers>EXECUTE PHYSICAL CONNECTION POOL Proxy.Proxy
      select PROXYER, PROXY_LEVEL from Proxy where TARGET='@{USERID}'
    </getDelegateUsers>
  </logonParam>
</XML>
```

Note that you must modify the example SQL statement according to the schema of the database. In the above example, the database and connection pool are both named Proxy, the proxyId is PROXYER, and the targetId is TARGET.

5. If you created the custom message template in the development copy of the original file, then replace the original file in the customMessages directory with the newly edited file.
6. Test the new file.
7. (Optional) If you created the custom message template in the development copy of the original file, then delete the backup and development copies.
8. Load the custom message template by either restarting the server or by clicking the **Reload Files and Metadata** link on the Presentation Services Administration screen. For information on the Administration page, see [Section D.2.1, "Understanding the Administration Pages."](#)

D.6.3.5 Assigning the Proxy Privilege

For each user whom you want to enable as a proxy user or for each Application Role or Catalog group whose members you want to enable as proxy users, you must grant the Act As Proxy privilege. For information on how to assign privileges, see [Section D.2.3.2, "Setting Privileges in Oracle BI Presentation Services Administration."](#)

D.6.3.6 Assigning the manageRepositories Permission

You must assign the manageRepositories permission to each user you want to allow to act as a proxy user. This is typically achieved by creating a 'Proxy' group and associating it with a 'Proxy' Application Role and Application Policy (granted the

manageRepositories permission), and then adding each user (who you want to be a proxy user), to the 'Proxy' group. To achieve this aim, the following must be true:

- a group must exist, or must be created (for example, named 'Proxy')
For more information, see [Section 2.3.4, "Creating a Group in the Embedded WebLogic LDAP Server."](#)
- an Application Role must exist, or must be created (for example, named 'Proxy'), and be mapped to the 'Proxy' group
For more information, see [Section 2.4.2.2, "Creating an Application Role."](#)
- an Application Policy must exist, or must be created (for example, named 'Proxy'), and the 'Proxy' Application Role must be made a **Grantee** of the manageRepositories permission, where:
 - Permission Class
`oracle.security.jps.ResourcePermission`
 - Resource Name
`resourceType=oracle.bi.server.permission,resourceName=oracle.bi.server.manageRepositories`
 - Permission Actions
`_all_`

For more information, see [Section 2.4.3, "Creating Application Policies Using Fusion Middleware Control."](#)

- for each user you want to enable as a proxy user, you must add that user to the 'Proxy' group
For more information, see [Section 2.3.5, "Assigning a User to a Group in the Embedded WebLogic LDAP Server."](#)

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