

BIP Web Service Reports
Oracle FLEXCUBE Investor Servicing
Release 12.1.0.0.0
[October] [2015]



Table of Contents

1. SETTING UP BIP WEB SERVICES REPORTS SERVER.....	1-1
1.1 INTRODUCTION	1-1
1.2 PREREQUISITES	1-1
1.2.1 <i>Applying Patch for BI Publisher (Latest Qualified Version)</i>	1-1
2. DEPLOYING REPORTS	2-1
2.1 INTRODUCTION	2-1
2.2 DEPLOYING BIP REPORTS	2-1
2.3 CREATING DATA SOURCES	2-5
3. CREATING ROLES AND USERS IN ORACLE BI PUBLISHER	3-1
3.1 INTRODUCTION	3-1
3.2 CREATING ROLES	3-1
3.3 CREATING USERS	3-4
4. SERVER SETUP FOR WEB SERVICE BASED BIP REPORTS	4-1
4.1 INTRODUCTION	4-1
4.2 PREREQUISITES	4-1
4.3 DEPLOYING BIP REPORTS	4-1
4.3.1 <i>Setting up BIP Server</i>	4-1
4.3.2 <i>Setting Up BIP Data Sources</i>	4-4
4.3.3 <i>Creating BI Publisher 'FCReports' Folder</i>	4-6
4.3.4 <i>Configuring BIP Currency</i>	4-9

1. Setting up BIP Web Services Reports Server

1.1 Introduction

This document explains the steps to setup the BIP Web Services based reports server on Oracle BI Publisher.

1.2 Prerequisites

Install Oracle BI Publisher in the server machine. Oracle FLEXCUBE IS 12.0.2.0.0 supports Oracle BI Publisher versions 10g and 11g (Latest Qualified Version).

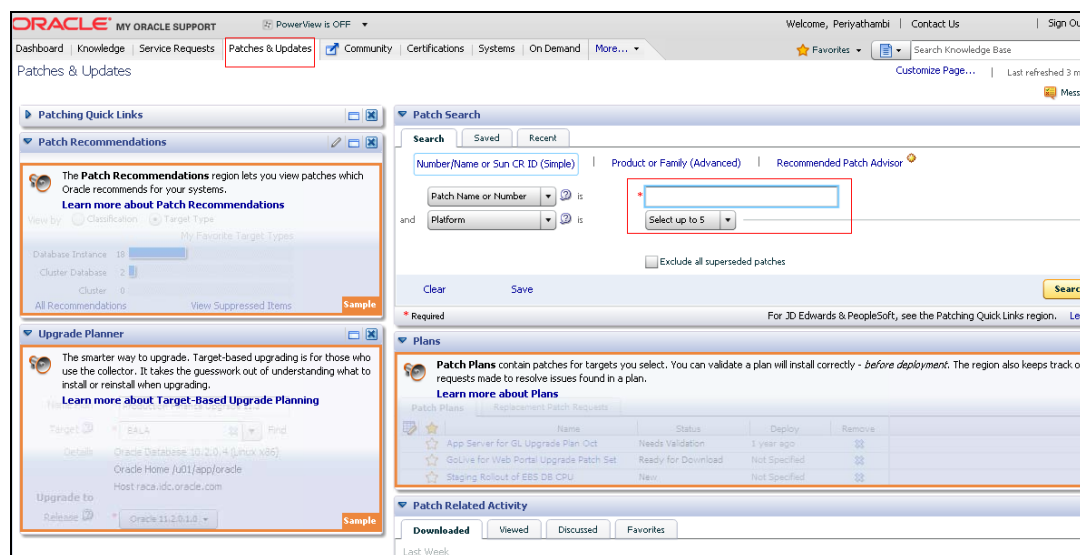
For details on latest version of the software qualified with Oracle FLEXCUBE, refer to the release certificate.

1.2.1 Applying Patch for BI Publisher (Latest Qualified Version)

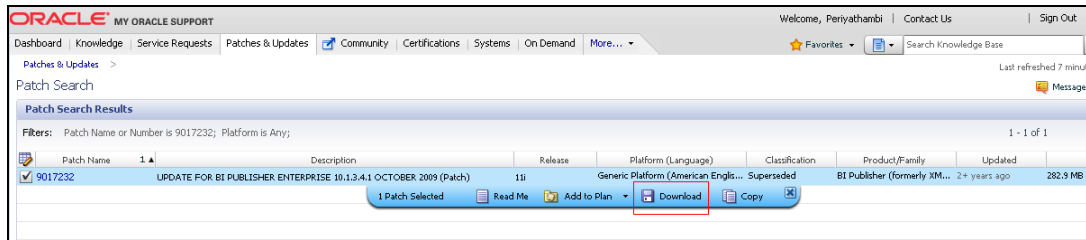
In case you are using Oracle BI Publisher 10g, the patch for Latest Qualified Version needs to be applied. This patch is available in Metalink under the 'Patch ID 9017232(UPDATE FOR BI PUBLISHER ENTERPRISE Latest Qualified Version To apply this patch for BI Publisher, follow the steps given below:

For details on latest version of the software qualified with Oracle FLEXCUBE, refer to the release certificate.

1. Download the patch 9017232. This patch is available in Oracle Metalink as a ZIP file.
2. Login to Oracle Metalink (<https://support.oracle.com/CSP/ui/flash.html>) with your registered user ID and password. If you do not have a registered account, create one.



3. Click 'Patches & Updates' tab. Specify the patch number and click 'Search' button. You will get the results.



4. Click 'Download' button. You will get a zip file.
5. Create a folder by name 'xmlpserver' in the local machine.
6. Extract the ZIP file to a local folder. Go to the folder 'non-oc4j' and copy the file 'xmlpserver.war' to the folder 'xmlpserver', which you have just created.
7. Unpack the WAR file 'xmlpserver.war' using a command. Suppose that you have extracted the patch ZIP file to the folder 'D:\BIP\xmlpserver '. In that case, you need to run the following command in command prompt (CMD).

```
cd D:/BIP/xmlpserver
jar -xvf xmlpserver.war
```
8. Ensure that the unpacking is complete. Delete the file 'xmlpserver.war'.
9. On unpacking the file, an application structure is created. Go to the folder 'WEB-INF' and open the file 'xmlp-server-config.xml'. In this XML file, you need to find the tag '<resource>'. Under this, you will find a file path tag. Modify the path with the location of the repository folder in '<BIP_HOME>', as shown below.

```
<?xml version="1.0" encoding="UTF-8"?>

<xmlpConfig xmlns="http://xmlns.oracle.com/oxp/xmlp">

    <resource>

        <file path="<BIP_HOME>/xmlp/XMLP" />

    </resource>

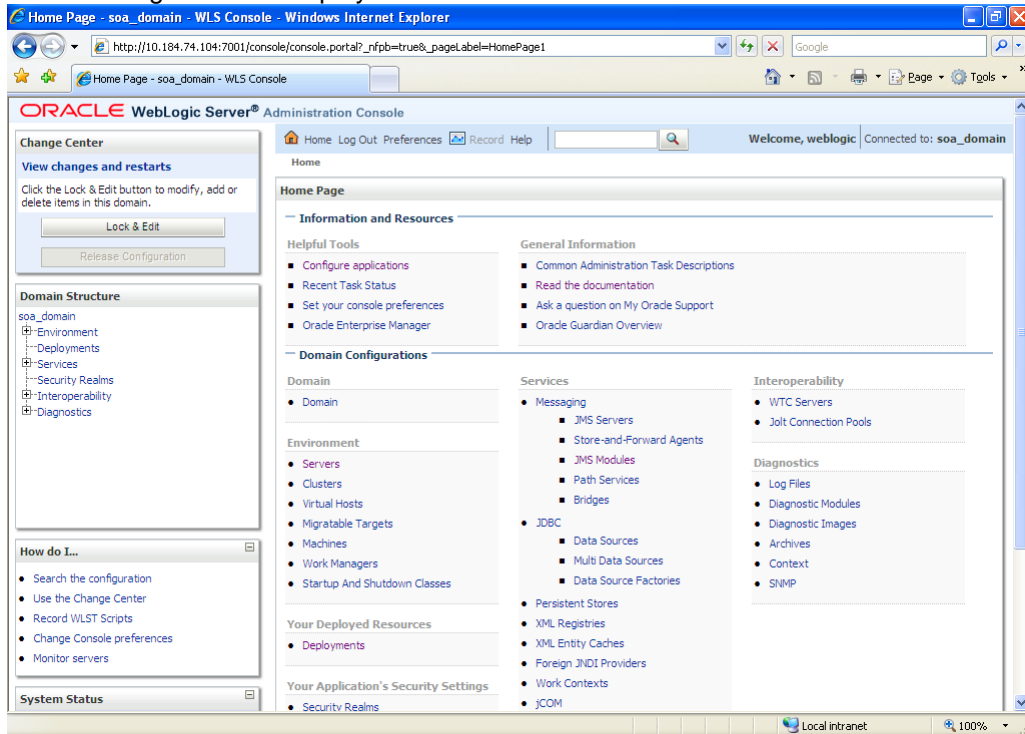
</xmlpConfig>
```

10. Once the above steps are completed, login to Admin Console of Oracle WebLogic for deployment.



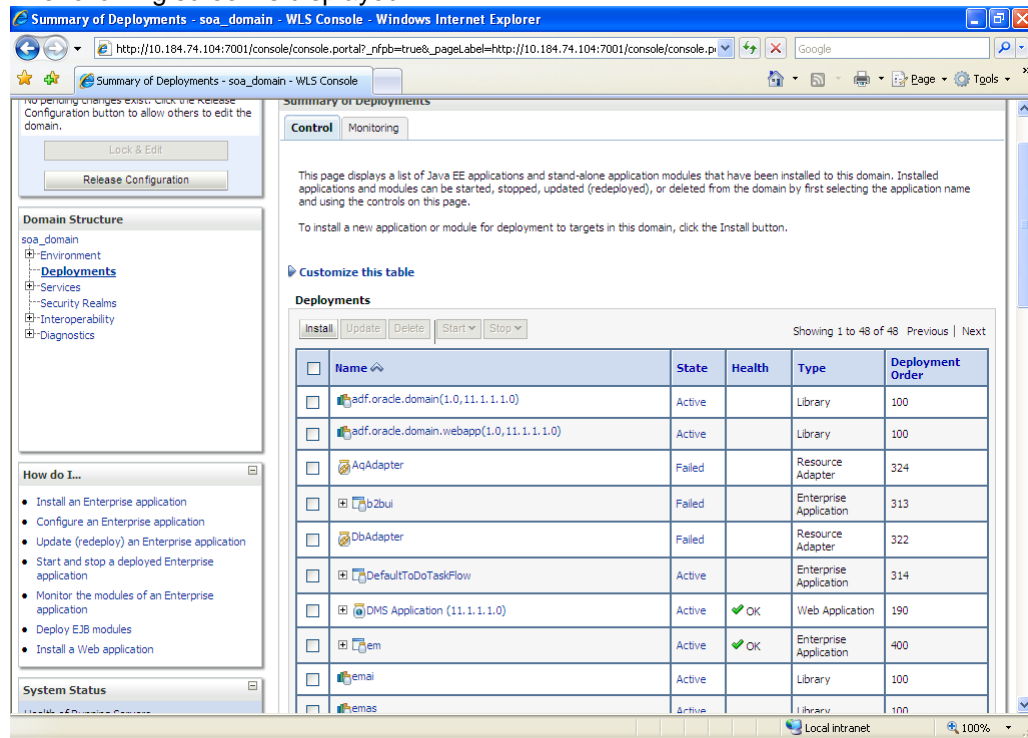
11. Specify the user name and password. Click 'Log In'.

The following screen is displayed:



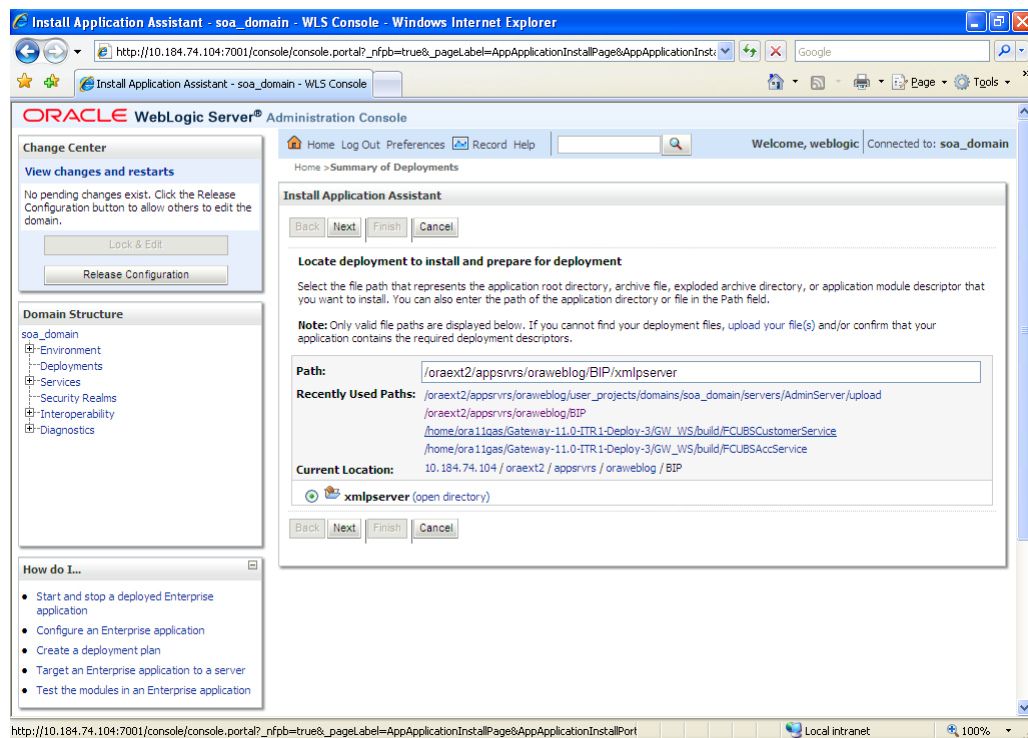
12. Click 'Deployments' under Domain Structure.

The following screen is displayed:



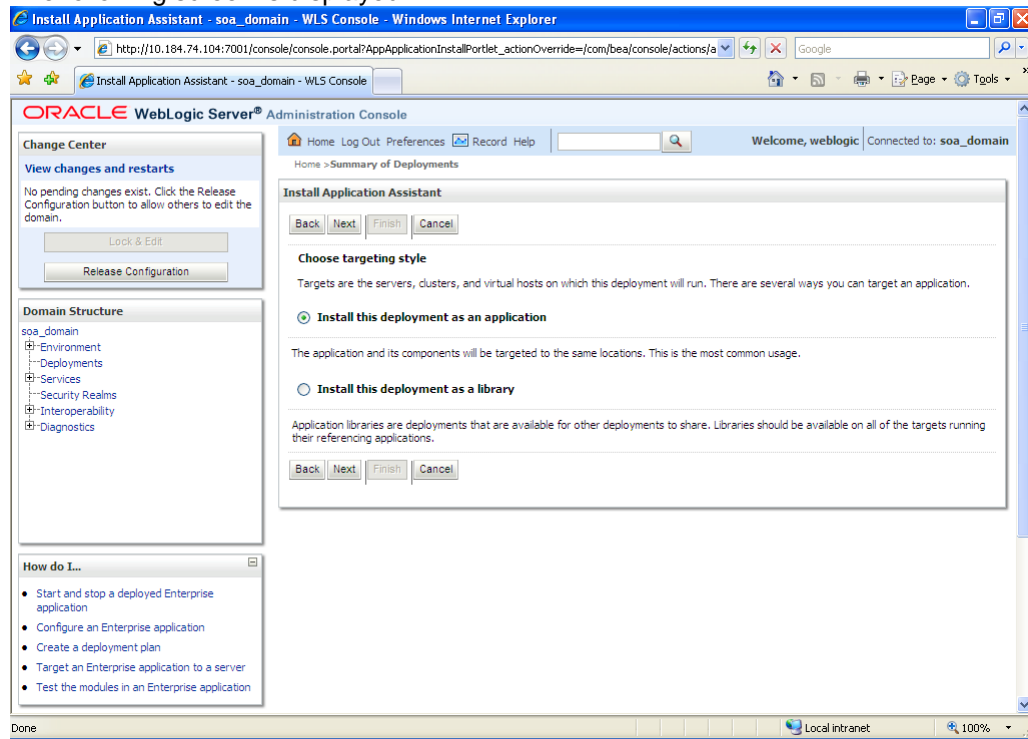
13. Click the 'Lock & Edit' button on the left. Further, click 'Install' button under Deployments in the Control tab.

The following screen is displayed:



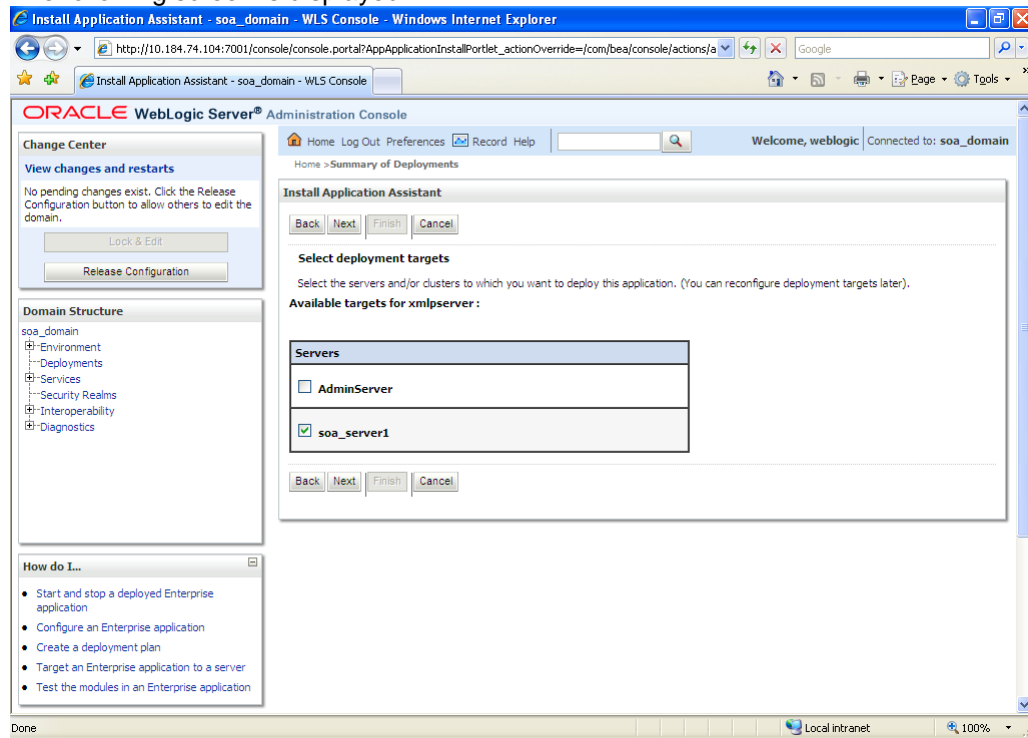
14. Against 'Path' specify the location of the folder 'xmlpserver'. Check the radio button 'xmlpserver (open directory)'. Click 'Next'.

The following screen is displayed:



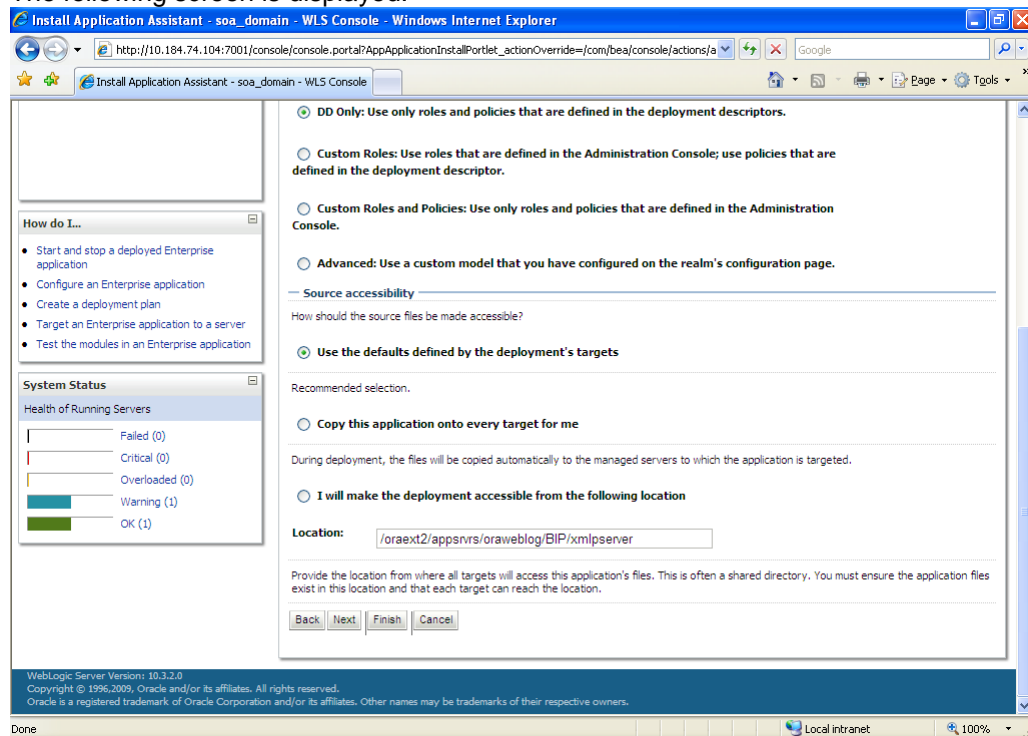
15. Select the targeting style 'Install this deployment as an application'. Click 'Next'.

The following screen is displayed:



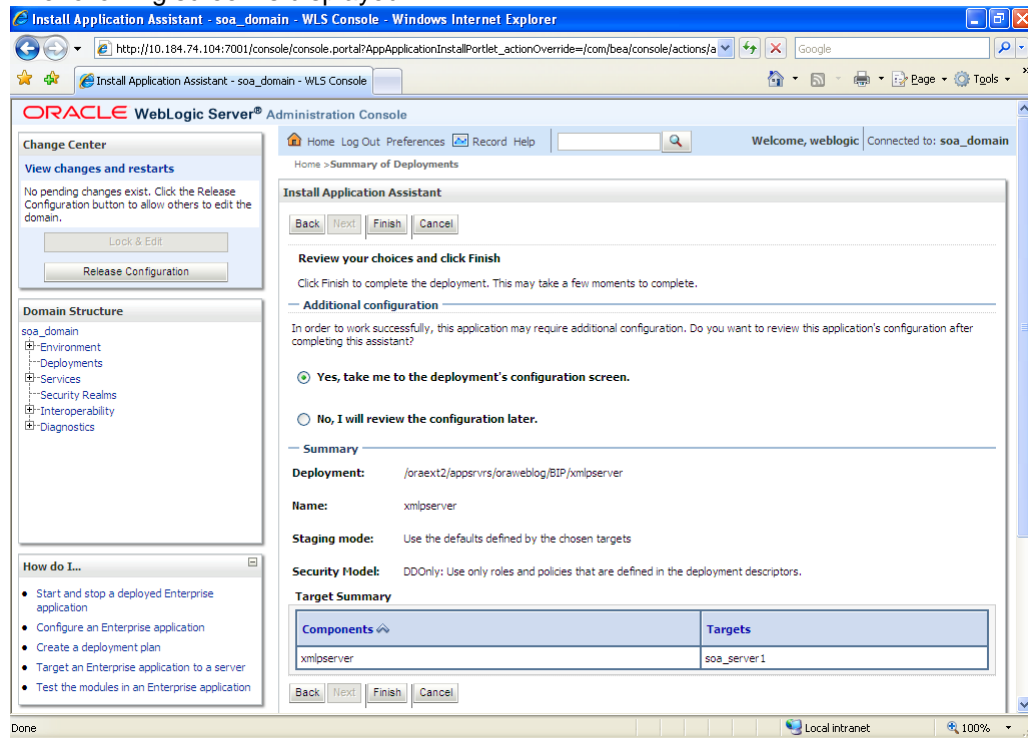
16. Select the Managed Server and click 'Next'.

The following screen is displayed:



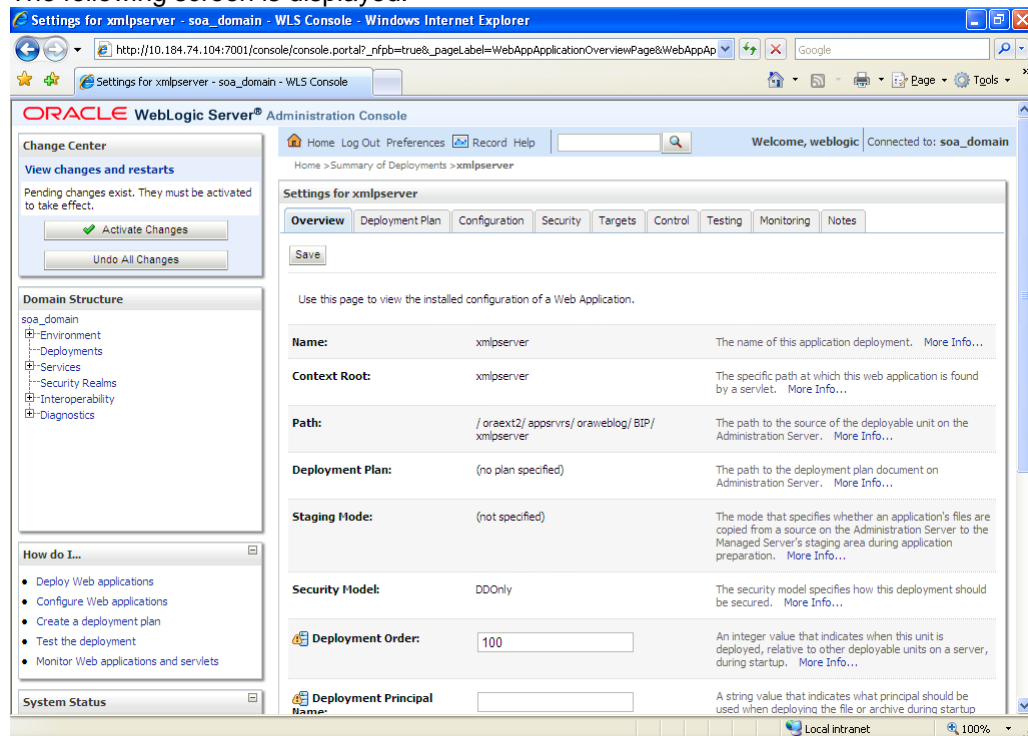
17. Retain the default settings and click 'Next'.

The following screen is displayed:



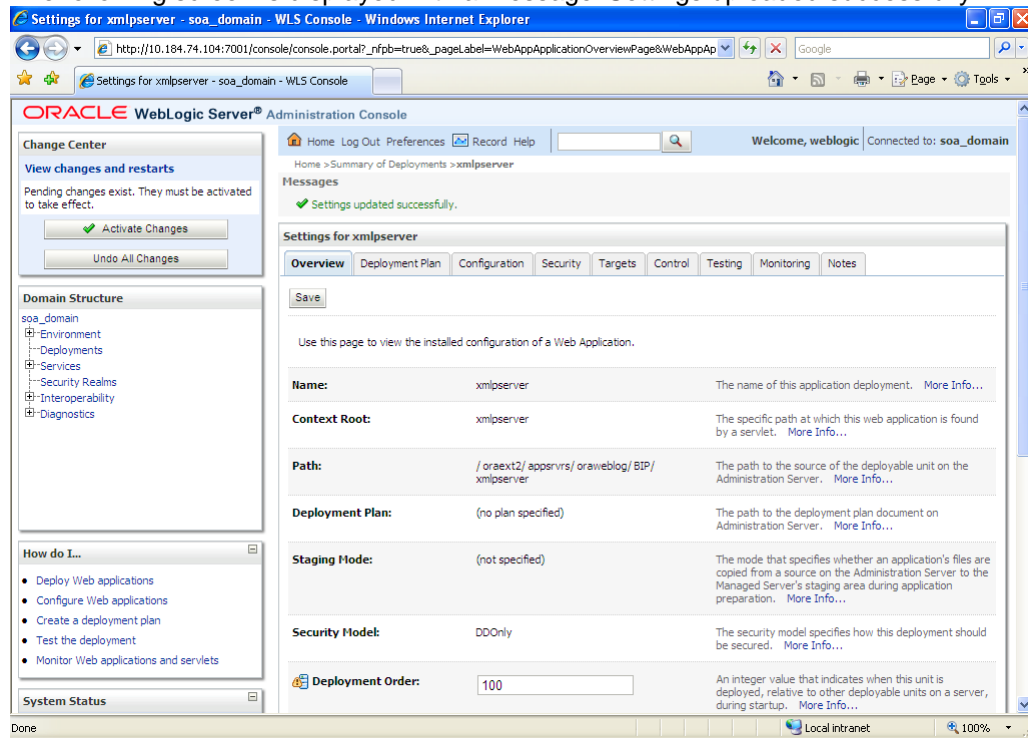
18. Retain the default settings. Click 'Finish'.

The following screen is displayed:



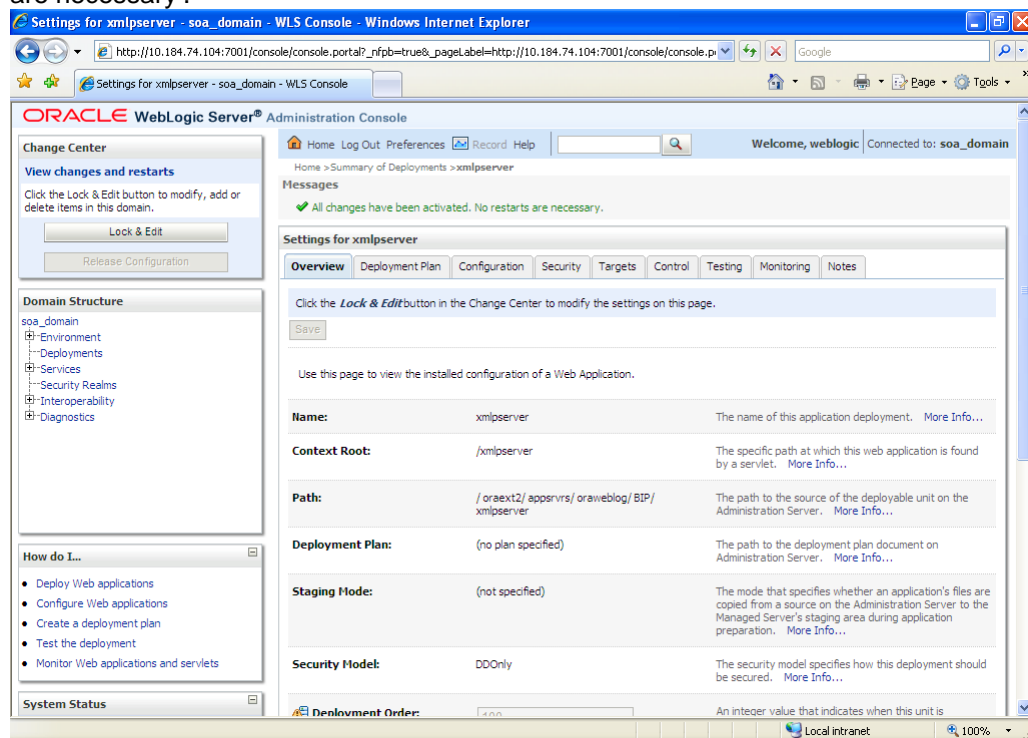
19. Retain the default settings. Click 'Save'.

The following screen is displayed with a message 'Settings uploaded successfully'.



20. Click 'Activate Changes'.

The following screen is displayed with a message 'All changes have been activated. No restarts are necessary'.



21. Click 'Deployments' under Domain Structure.

Summary of Deployments - soa_domain - WLS Console - Windows Internet Explorer

http://10.184.74.104:7001/console/console.portal?_nfpb=true&_pageLabel=AppDeploymentsControlPage

Summary of Deployments - soa_domain - WLS Console

Name	State	Health	Type	Deployment Order
oracle.webcenter.composer(11.1.1.11.1.1)	Active		Library	300
oracle.wsm.seedpolicies(11.1.1.11.1.1)	Active		Library	100
OracleAppsAdapter	Failed		Resource Adapter	328
OracleBamAdapter	Failed		Resource Adapter	329
soa-infra	Prepared		Enterprise Application	311
SocketAdapter	Failed		Resource Adapter	326
UDX(11.1.1.1.1.0)	Active		Library	100
usermessagingdriver-email	Active	OK	Enterprise Application	200
usermessagingdriver-emp	Installed		Enterprise Application	203
usermessagingdriver-voicexml	Installed		Enterprise Application	204
usermessagingdriver-xmpp	Installed		Enterprise Application	202
usermessagingserver	Active	OK	Enterprise Application	100
worklistapp	Active	OK	Enterprise Application	312
wsl-wls	Active	OK	Enterprise Application	150
wsm-pm	Active	OK	Enterprise Application	195
xmlpsrserver	Prepared	OK	Web Application	100

Showing 1 to 49 of 49 Previous Next

The following screen is displayed:

Summary of Deployments - soa_domain - WLS Console - Windows Internet Explorer

http://10.184.74.104:7001/console/console.portal?_nfpb=true&_pageLabel=http://10.184.74.104:7001/console/console.p

Summary of Deployments - soa_domain - WLS Console

ORACLE WebLogic Server® Administration Console

Home Log Out Preferences Record Help Welcome, weblogic Connected to: soa_domain

Change Center

View changes and restarts

No pending changes exist. Click the Release Configuration button to allow others to edit the domain.

Lock & Edit

Release Configuration

Domain Structure

soa_domain

- Environment
- Deployments
- Services
- Security Realms
- Interoperability
- Diagnostics

How do I...

- Install an Enterprise application
- Configure an Enterprise application
- Update (redeploy) an Enterprise application
- Start and stop a deployed Enterprise application
- Monitor the modules of an Enterprise application

Summary of Deployments

Control Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Customize this table

Deployments

Install Update Delete Start Stop

Showing 1 to 49 of 49 Previous Next

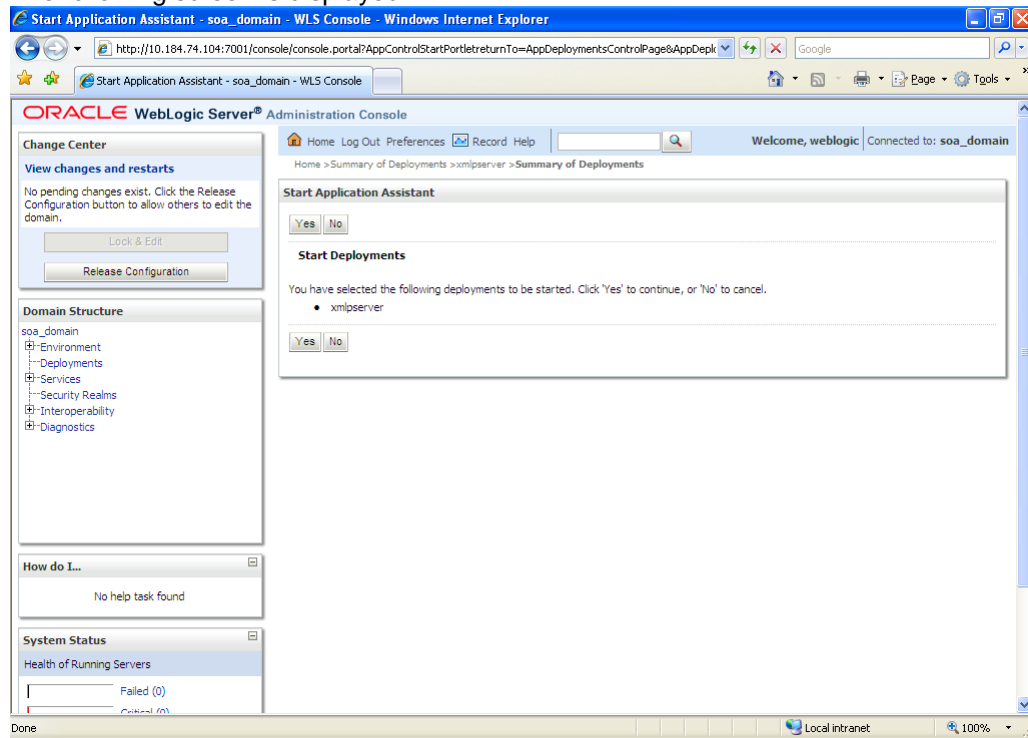
Name	State	Health	Type	Deployment Order
adf.oracle.domain(1.0,11.1.1.1.0)	Active		Library	100
adf.oracle.domain.webapp(1.0,11.1.1.1.0)	Active		Library	100
AqAdapter	Failed		Resource Adapter	324
b2bui	Failed		Enterprise Application	313
DbAdapter	Failed		Resource Adapter	322
DefaultToDoTaskFlow	Active		Enterprise Application	314
DMS Application (11.1.1.1.0)	Active	OK	Web Application	190

http://10.184.74.104:7001/console/console.portal?_nfpb=true&_pageLabel=http://10.184.74.104:7001/console/console.portal?

Local intranet 100%

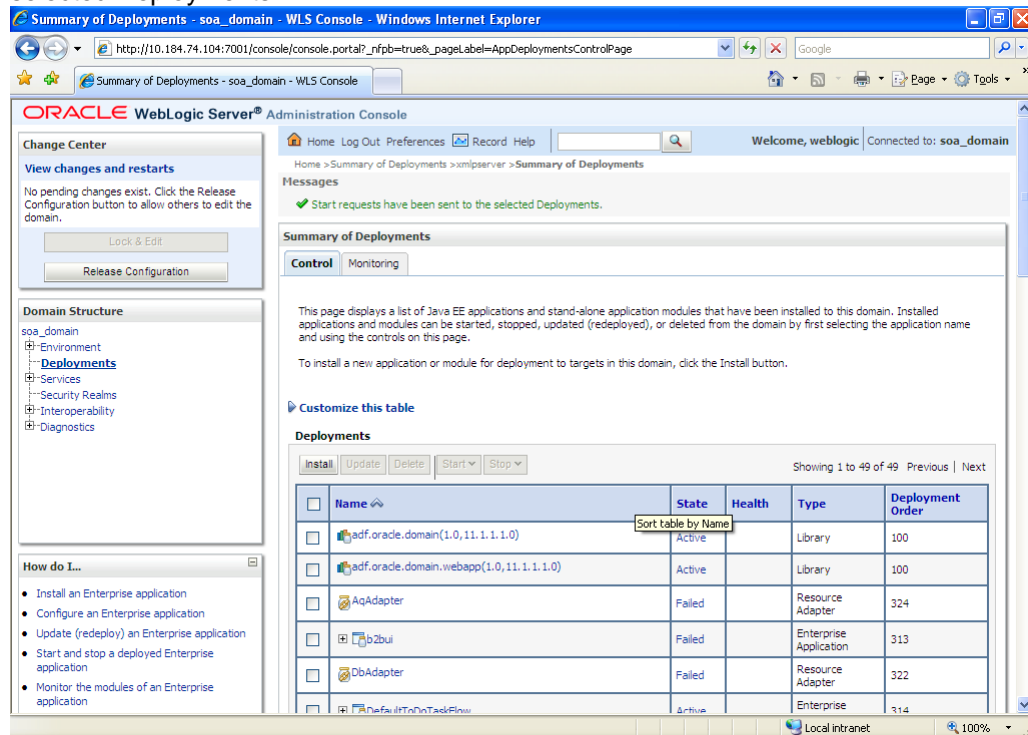
22. Click 'Lock & Edit'. Select the application 'xmlpsrserver'. Click 'Start' and select 'Servicing all requests'.

The following screen is displayed:



23. Click 'Yes'.

The following screen is displayed with the message 'Start requests have been sent to the selected Deployments.'



24. The bottom of the screen is given below:

Summary of Deployments - soa_domain - WLS Console - Windows Internet Explorer

http://10.184.74.104:7001/console/console.portal?_nfpb=true&_pageLabel=AppDeploymentsControlPage

Summary of Deployments - soa_domain - WLS Console

<input type="checkbox"/>	OracleAppsAdapter	Failed		Resource Adapter	328
<input type="checkbox"/>	OracleBamAdapter	Failed		Resource Adapter	329
<input type="checkbox"/>	soa-infra	Prepared		Enterprise Application	311
<input type="checkbox"/>	SocketAdapter	Failed		Resource Adapter	326
<input type="checkbox"/>	UDX(11,11.1.1.1:0)	Active		Library	100
<input type="checkbox"/>	usermessagingdriver-email	Active	✓ OK	Enterprise Application	200
<input type="checkbox"/>	usermessagingdriver-smpp	Installed		Enterprise Application	203
<input type="checkbox"/>	usermessagingdriver-voicexml	Installed		Enterprise Application	204
<input type="checkbox"/>	usermessagingdriver-xmpp	Installed		Enterprise Application	202
<input type="checkbox"/>	usermessagingserver	Active	✓ OK	Enterprise Application	100
<input type="checkbox"/>	worklistapp	Active	✓ OK	Enterprise Application	312
<input type="checkbox"/>	wsil-vils	Active	✓ OK	Enterprise Application	150
<input type="checkbox"/>	wsm-pm	Active	✓ OK	Enterprise Application	195
<input type="checkbox"/>	xmlpsrver	Active	✓ OK	Web Application	100

Showing 1 to 49 of 49 Previous | Next

WebLogic Server Version: 10.3.2.0
 Copyright © 1996,2009, Oracle and/or its affiliates. All rights reserved.
 Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Local intranet 100%

Now, you can access the BIP Application using a URL as follows:

http://<IP_address>:<port_no>/xmlpsrver

2. Deploying Reports

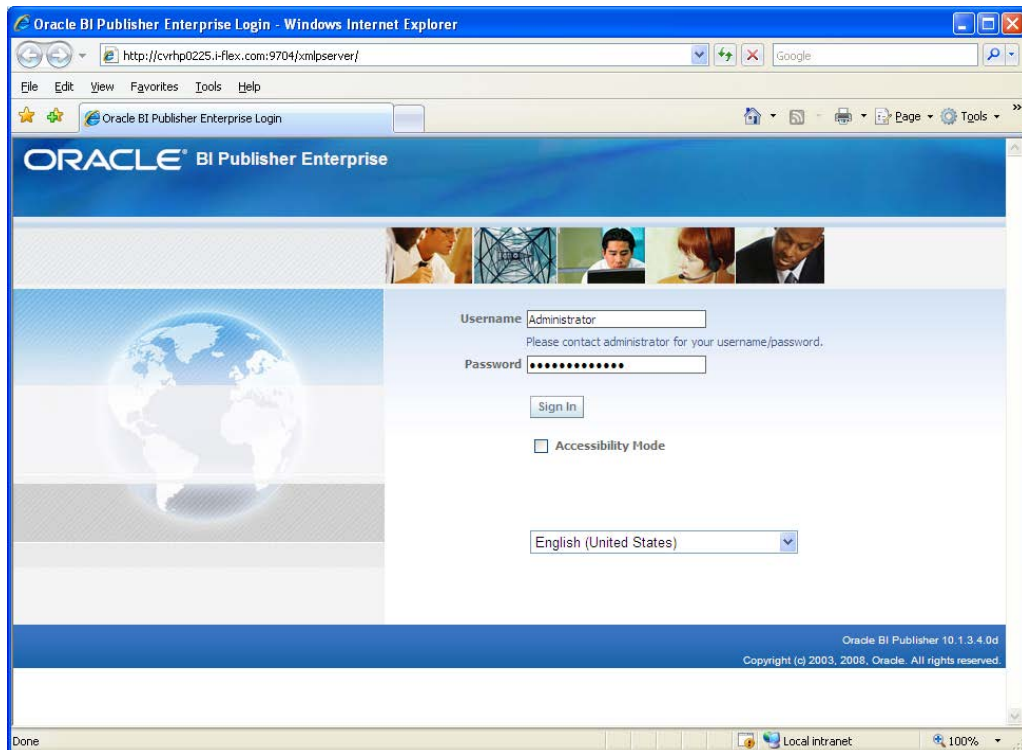
2.1 Introduction

This chapter explains the steps to deploy the BIP reports.

2.2 Deploying BIP Reports

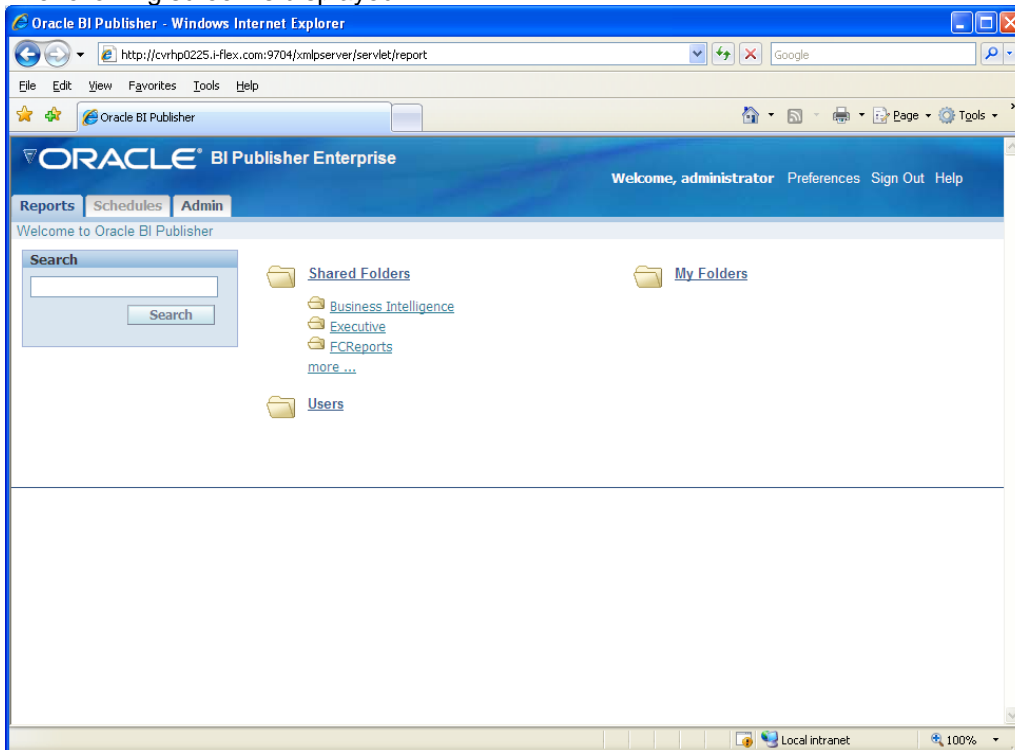
To deploy the BIP reports, follow the steps given below:

1. Start Oracle BI Publisher Enterprise.

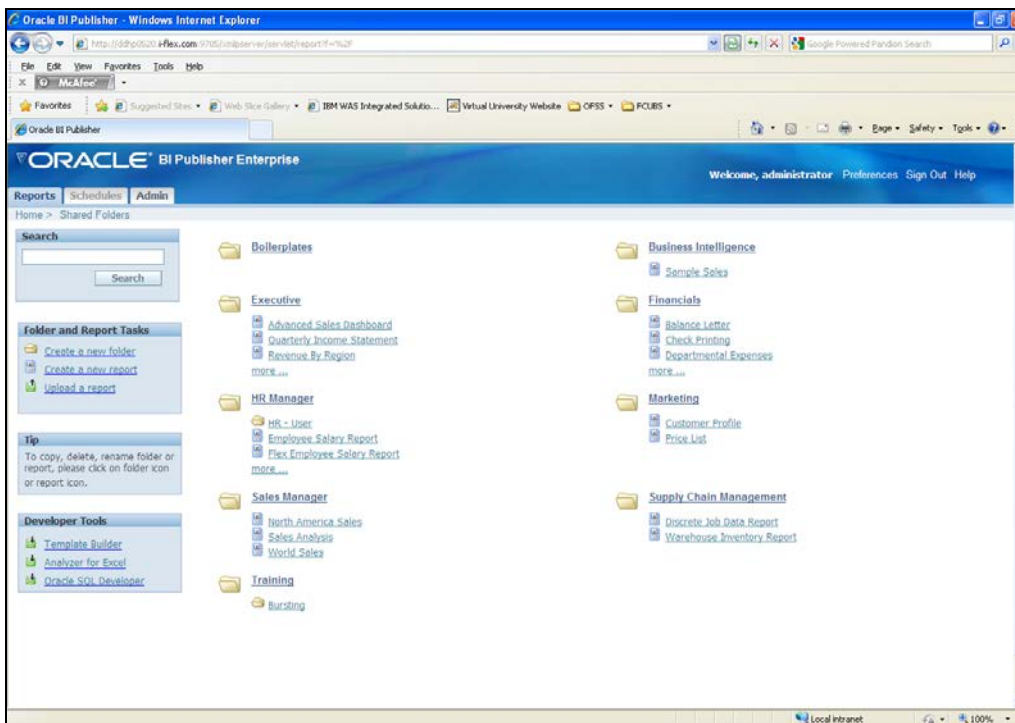


2. Specify the user name and password. Click 'Sign In' button to sign in to BIP Web Server's Administration Console.

The following screen is displayed:



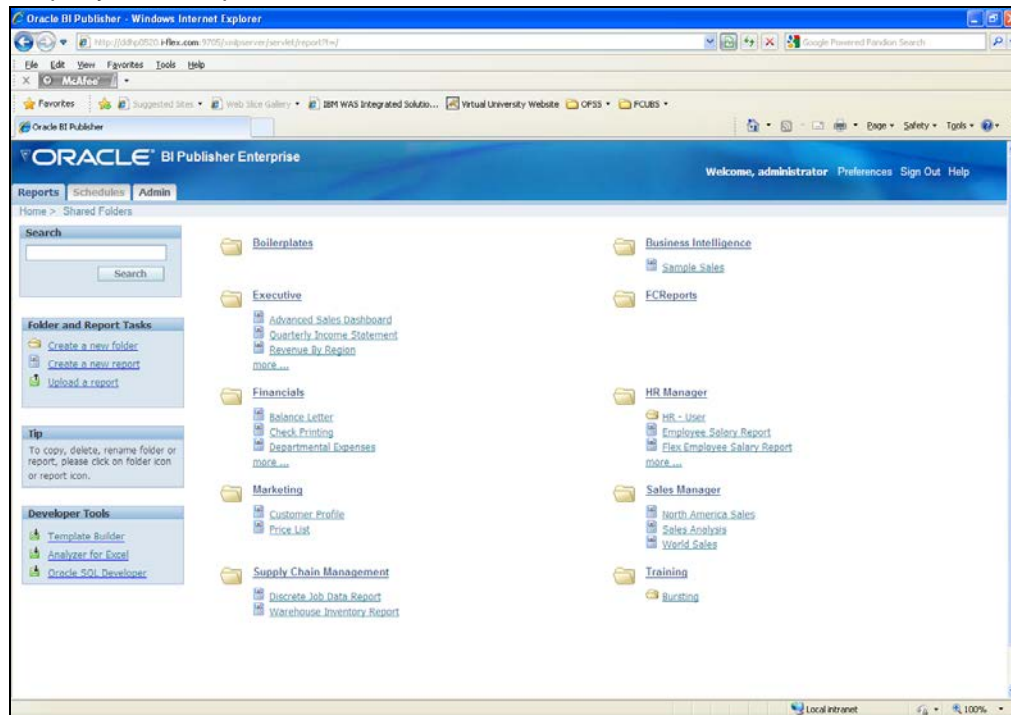
3. Select the 'Reports' tab.



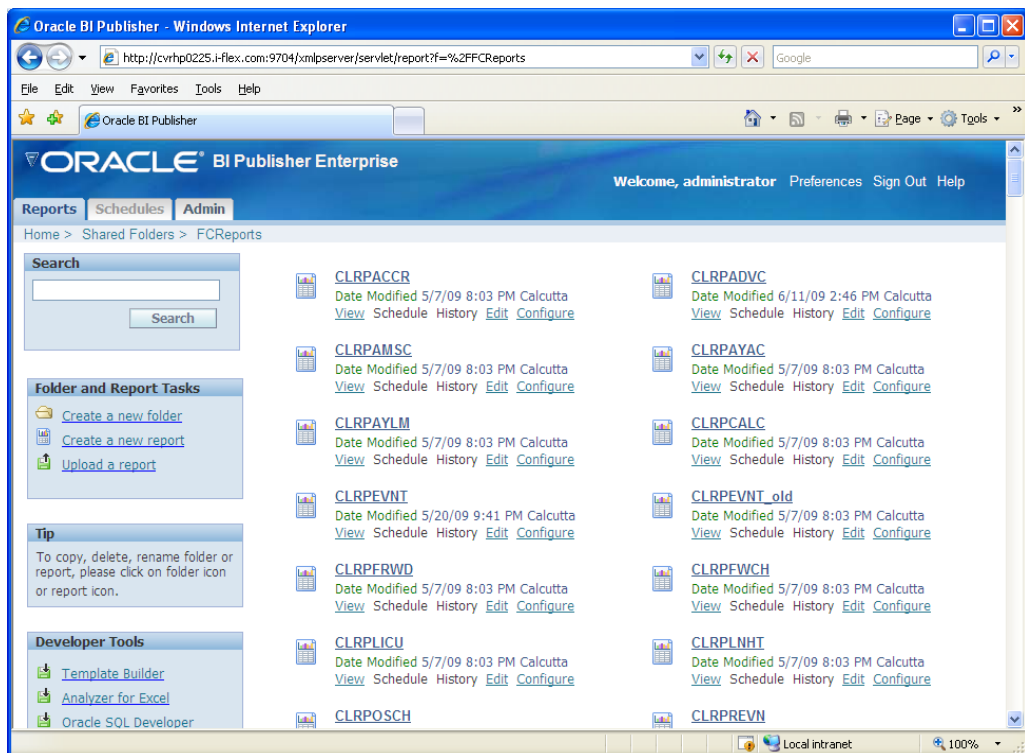
4. Click 'Create a new folder'.

The following screen is displayed:

5. Specify the folder name in the field 'Enter Folder Name'. The folder name should match 'Reports Folder Name' specified as mentioned in the 'BIP Reports Properties' step in the '04-PropertyFile_Setup'.



6. Create a folder 'FCReports' in the BI Publisher Setup Directory at the following location:
<BIP_HOME>\xmlp\XMLP\Reports\FCReports
7. Copy all the files from 'MAIN\<Module>\Repxdo' and 'MAIN\<Module>\RepRTF' to the folder '<BIP_HOME>\xmlp\XMLP\Reports\FCReports' in the destination directory.
8. Click 'FCReports' folder. You can view the list of reports available in this folder.
9. This folder contains a list of the reports available under it. To execute a specific report, click the 'View' link given under the respective report details.



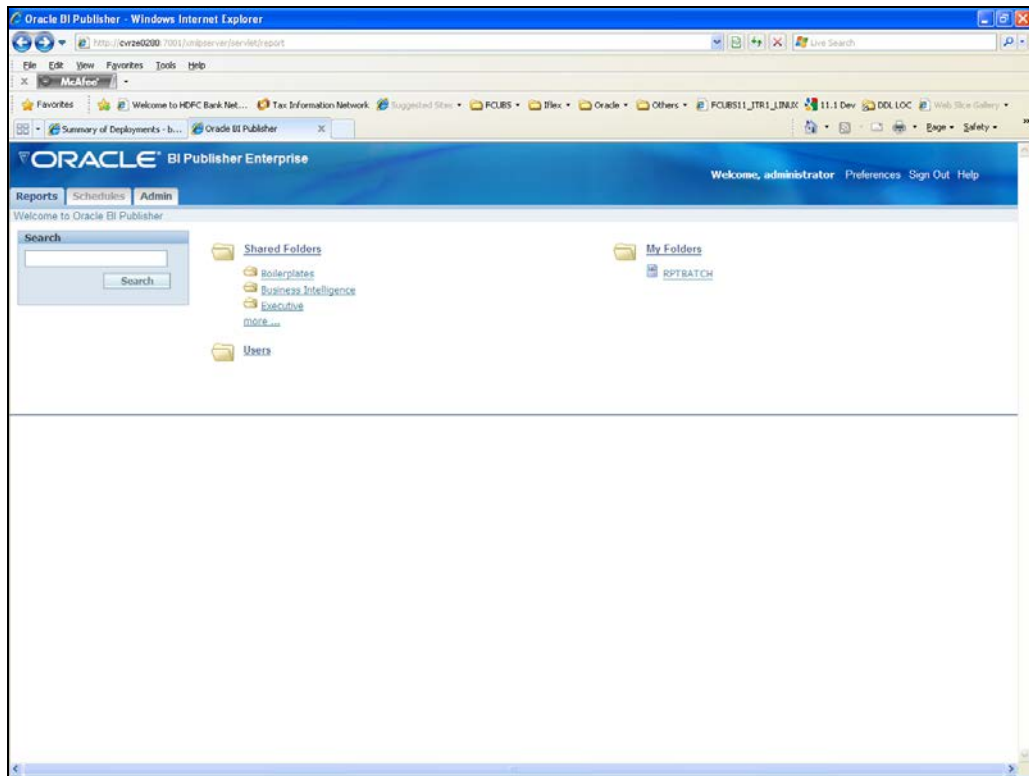
2.3 Creating Data Sources

In order to create a data source in Oracle BI Publisher, you need to follow the steps given below:

1. Start Oracle BI Publisher Application.

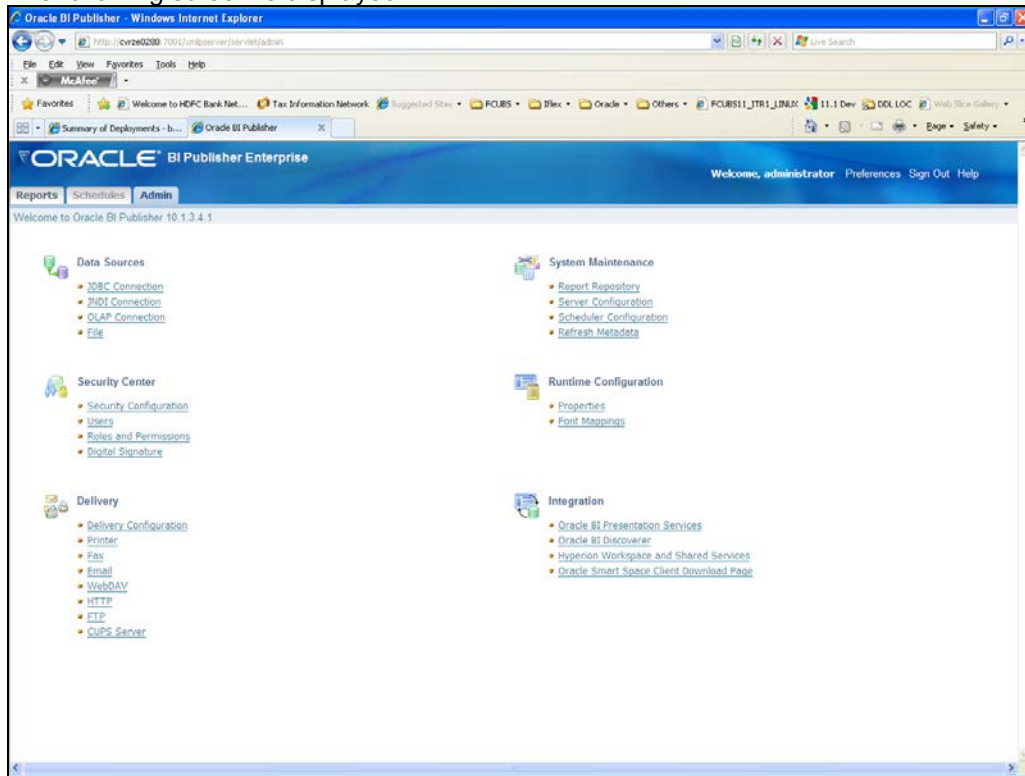


2. Specify the Administrator user name and password and sign in. The following screen is displayed:



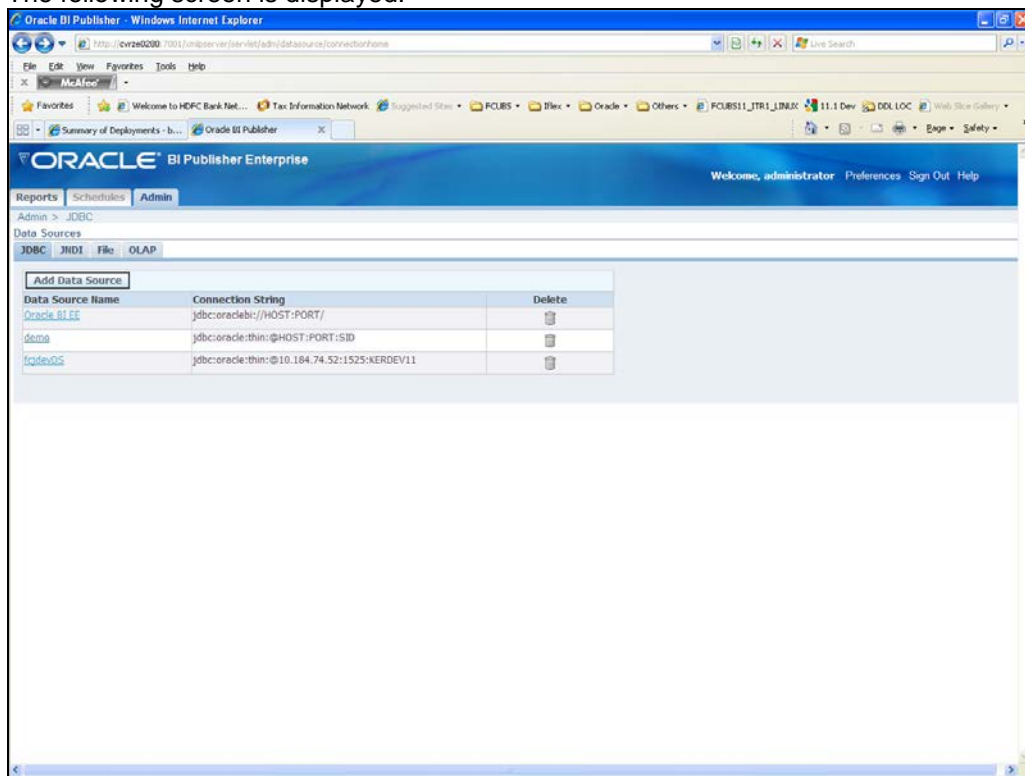
3. Click 'Admin' tab.

The following screen is displayed:



4. Select 'JDBC Connection' under Core Services.

The following screen is displayed:



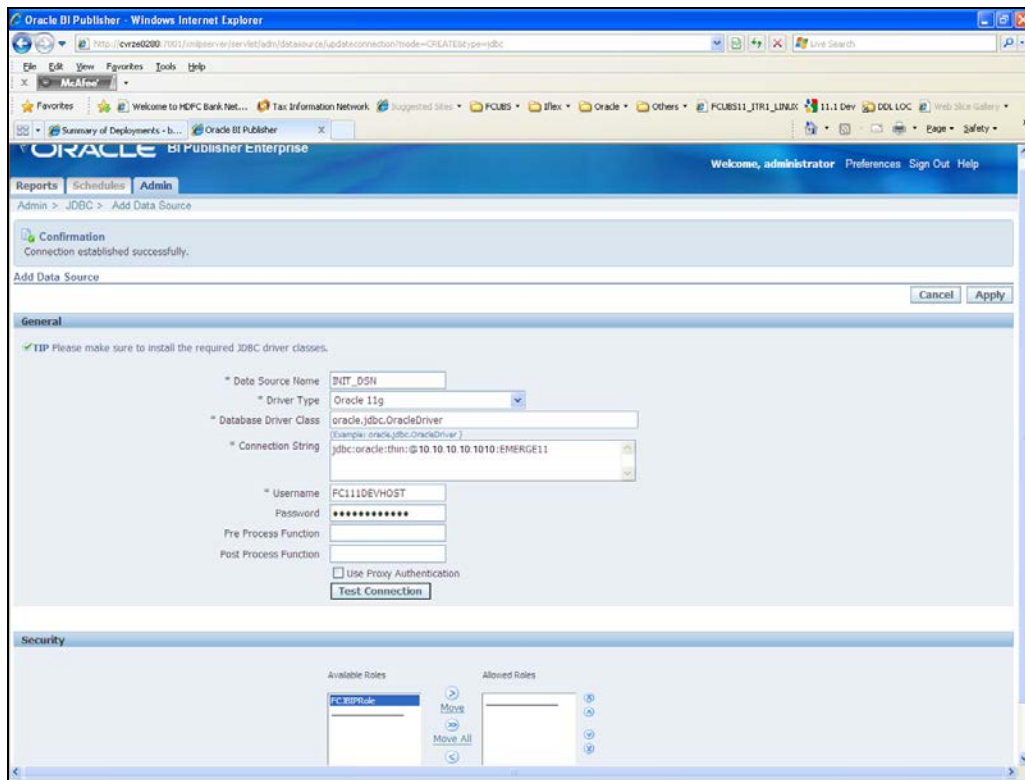
- Click 'Add Data Source' button.

The following screen is displayed:

- Specify the following details:

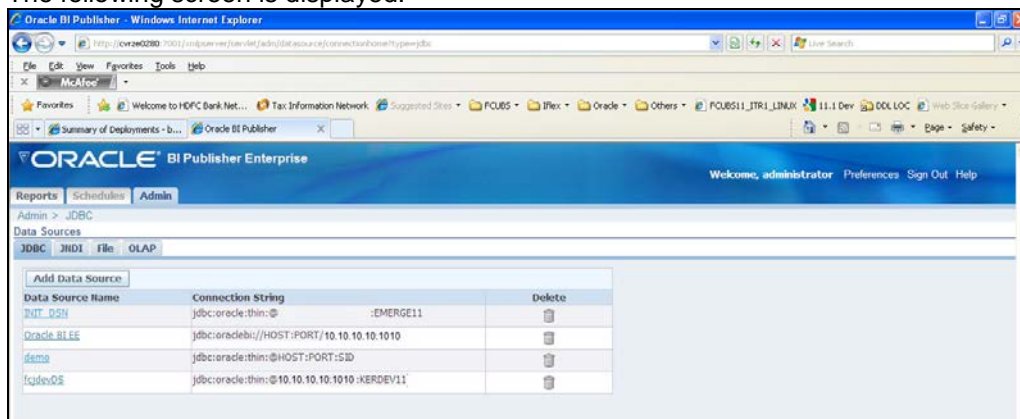
Field	Description
Data Source Name	INIT_DSN
Driver Type	Oracle 11g
Connection String	Specify the connection string for the schema
User Name	Specify the user name
Password	Specify the password
Use Proxy Authentication	Uncheck this box

- Click 'Test Connection'. If the connection is successfully tested, the following screen is displayed with the message 'Connection established successfully'.



8. Click 'Apply' button.

The following screen is displayed:



9. The new data source will be available in the list of data sources.

3. Creating Roles and Users in Oracle BI Publisher

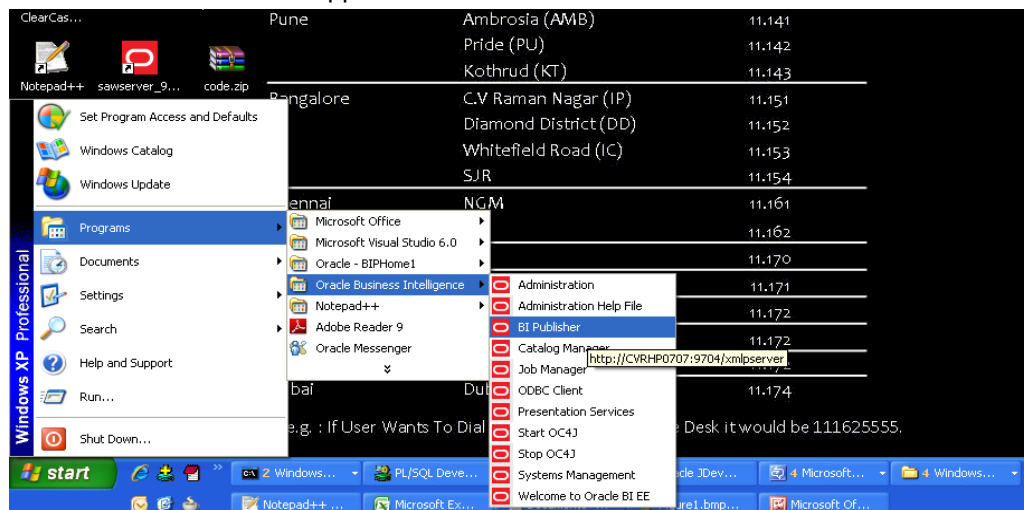
3.1 Introduction

This chapter explains the steps to create roles in Oracle BI Publisher. It also guides you through the methods to assign new users to such roles.

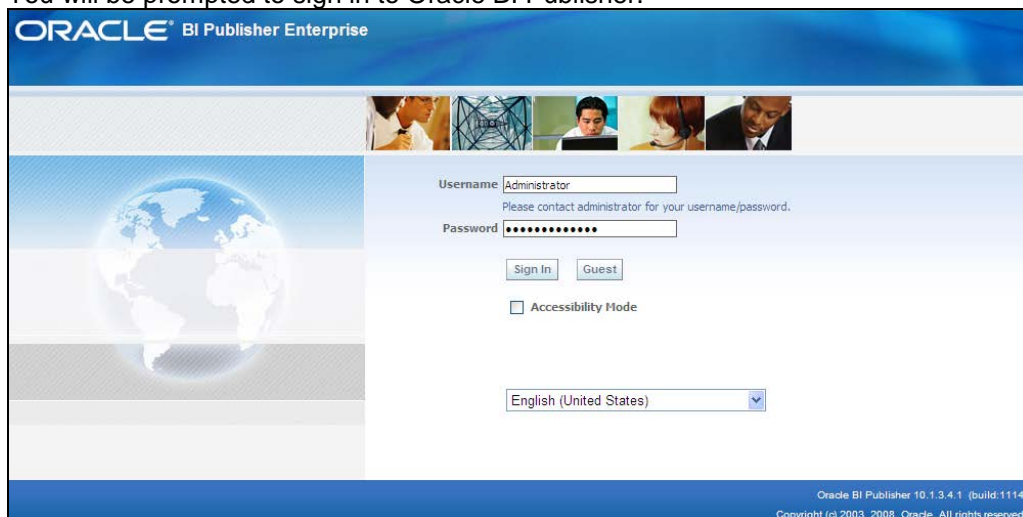
3.2 Creating Roles

To create new roles in Oracle BI Publisher, follow the steps given below:

1. Start Oracle BI Publisher Application.

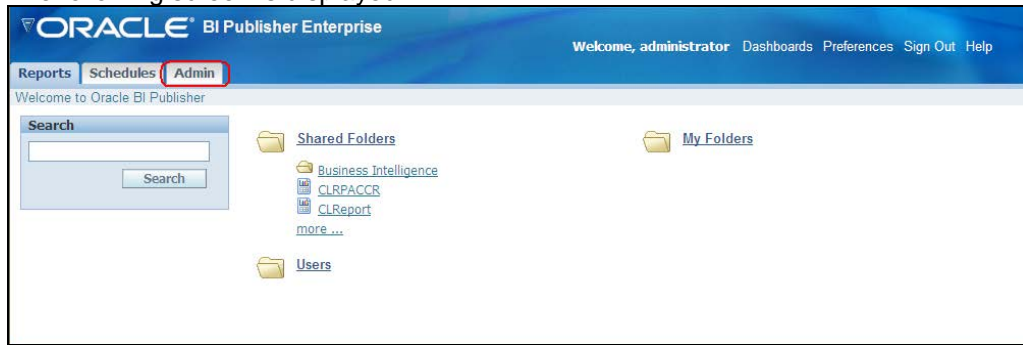


You will be prompted to sign in to Oracle BI Publisher.



2. Specify the Administrator user name and password and sign in.

The following screen is displayed:

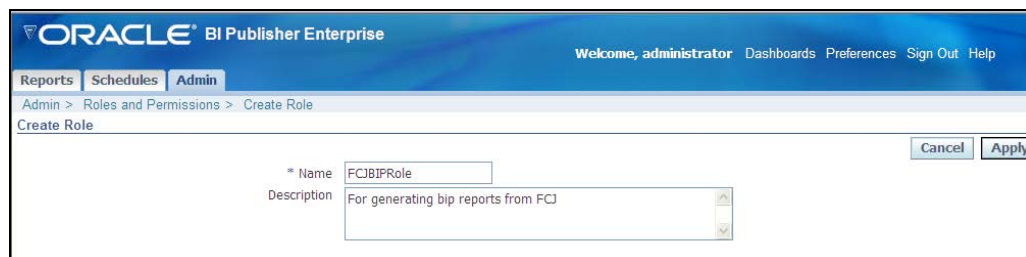


3. Click 'Admin' tab.

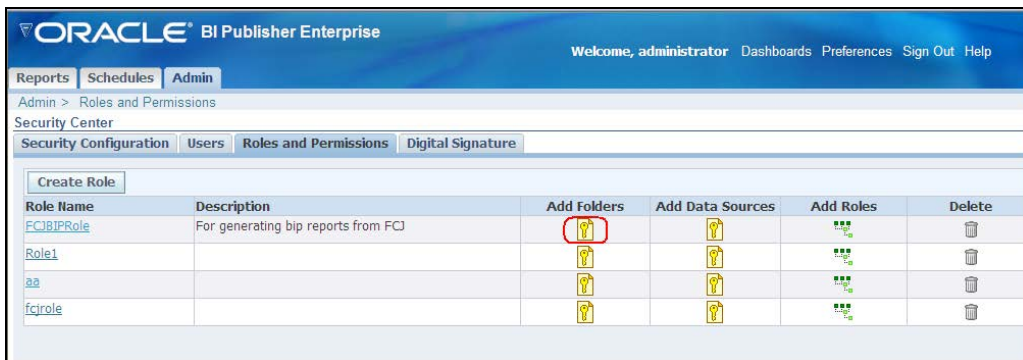
The following screen is displayed:



4. Select 'Roles and Permissions' under Security Center. Click 'Create Role' button to create a new role for a new user.

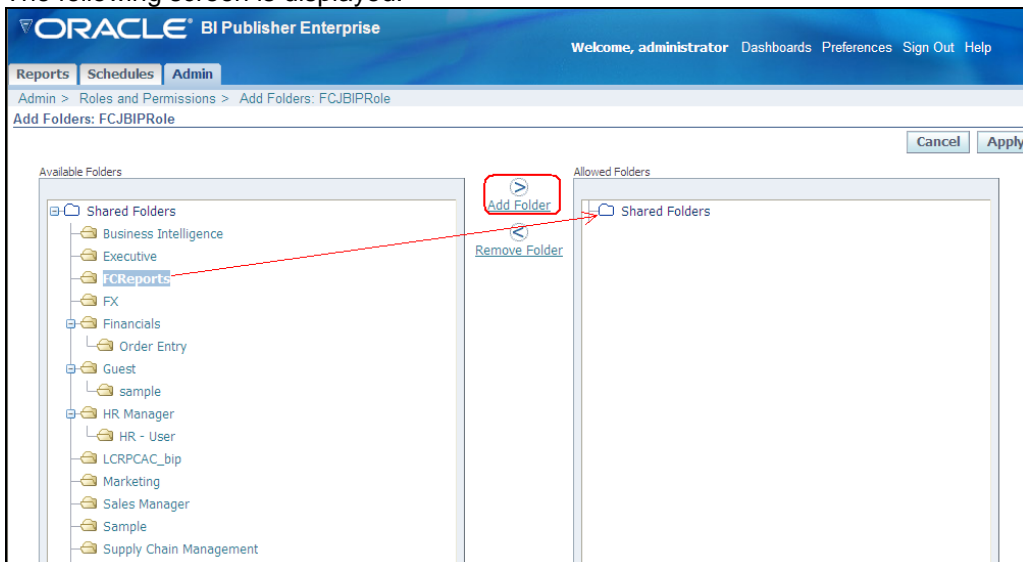


5. Specify the role name and a brief description on the nature of the role. Click 'Apply' to save the role. The new role will be available in the list of roles.

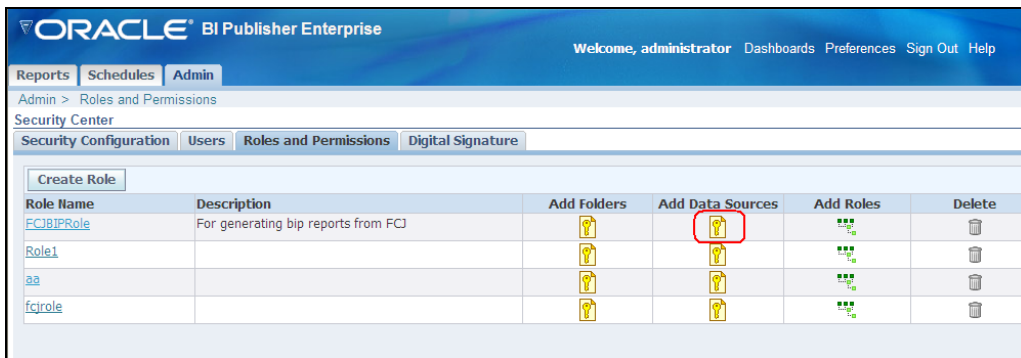


- Against the new role, you will find a number of options. Click the icon under 'Add Folders' to set the folder permissions for the new role.

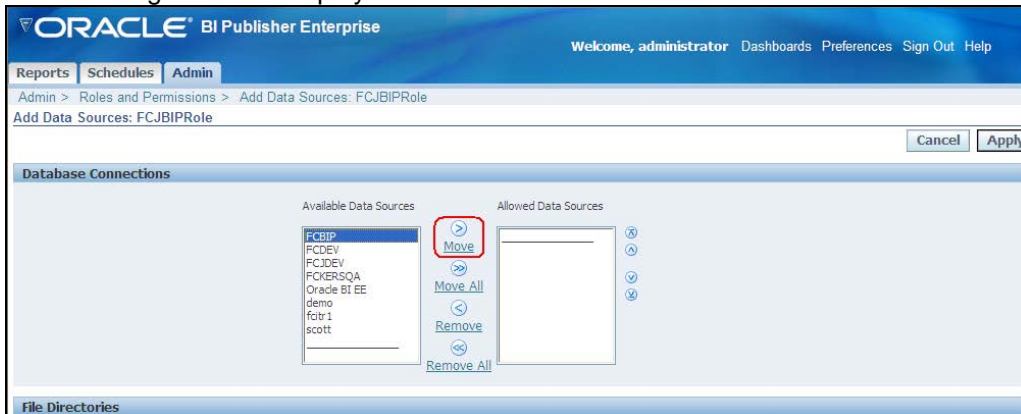
The following screen is displayed:



- A list of available folders is displayed. Suppose that the users associated with the new role require access rights on the folder 'FCReports'. To give access, select the folder 'FCReports' and click 'Add Folder' button. Click 'Apply' to save.
- You can also add data sources to the new role. For this, click the icon under 'Add Data Source' against the new role.



The following screen is displayed:



- This screen contains a list of available data sources. Suppose that the new role requires the data source 'FCBIP'. Select the data source 'FCBIP' from the list of data sources and click 'Move' button. The selected data source will be moved to the 'Allowed Data Sources' list.



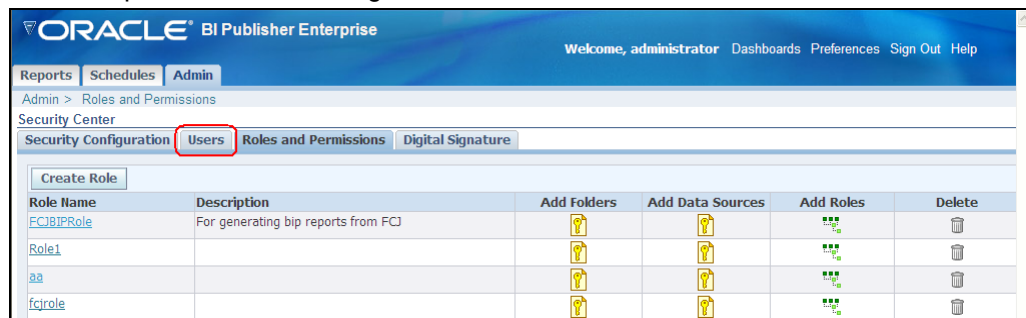
- Click 'Apply' to save.

3.3 Creating Users

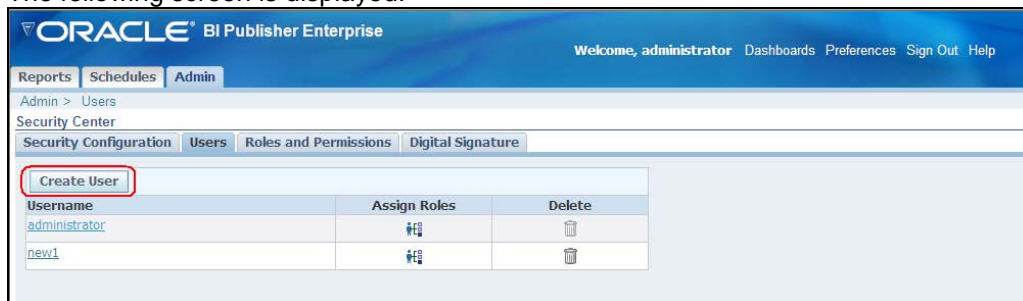
Once you have created the roles, you may create new users in Oracle BI Publisher. To create new users, follow the steps given below:

- Create the roles and set the permission levels as described above.

2. Once the permissions are assigned, click 'Users' tab.

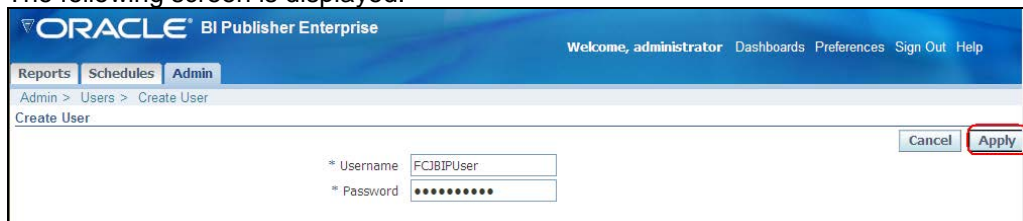


The following screen is displayed:



3. Click 'Create User' button.

The following screen is displayed:

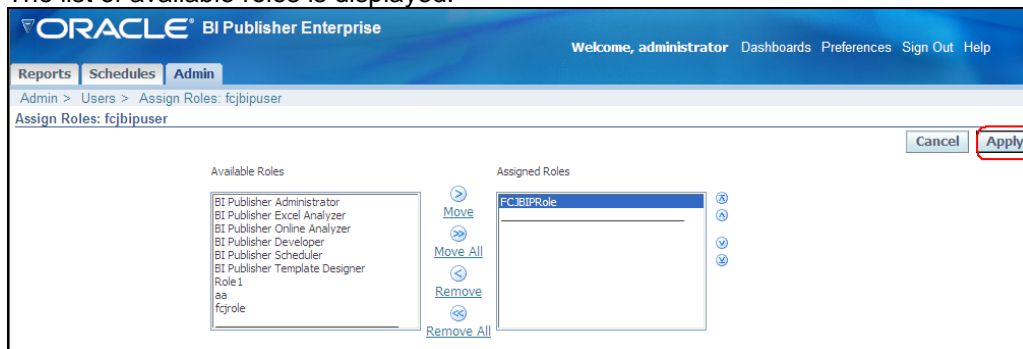


4. Specify the user name and password for the new user. Click 'Apply' to save. The new user details are now available in the list of users.

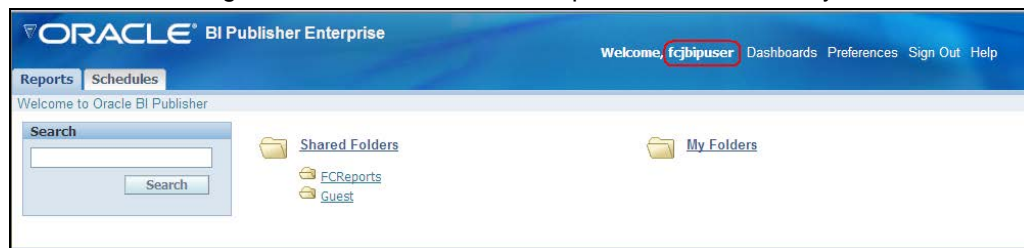


5. To assign a specific role to the user, click the icon under Assign Roles against the user name.

The list of available roles is displayed.



6. Select the role to be assigned to the new user. For example, suppose that the user role is 'FCJBIPRole'. Select the particular role from the list of available roles and click 'Move' button. The role is assigned to the user.
7. You can now test whether the user and role are created or not. Sign out of Oracle BI Publisher. Now, sign in with the user name and password of the newly created user.



You will be able to see the folders that are available for the role assigned to the new user.

4. Server Setup for Web Service Based BIP Reports

4.1 Introduction

This chapter explains the method to setup the web services based BI Publisher reports server on BIP 11g.

4.2 Prerequisites

Before you continue, ensure that Oracle BI Publisher 11g on the server machine.

4.3 Deploying BIP Reports

This section guides you through the deployment of BI Publisher reports. BIP reports deployment involves the following steps:

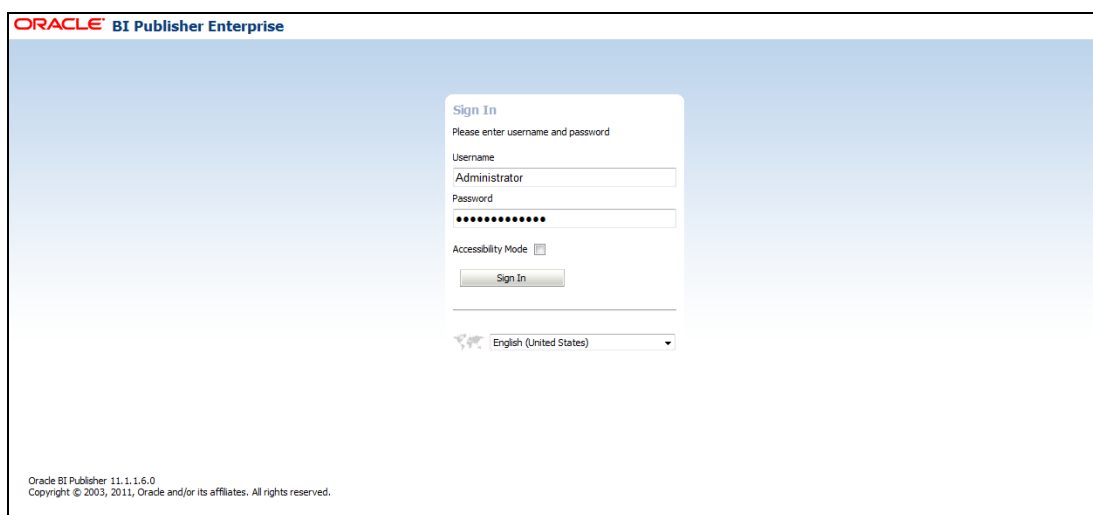
- Setup BI Publisher Server
- Setup BI Publisher Data Source
- Create BI Publisher FC Reports folder
- Configure BI Publisher Currency

These steps are explained under the following headings.

4.3.1 Setting up BIP Server

For setting up BI Publisher server, follow the steps below.

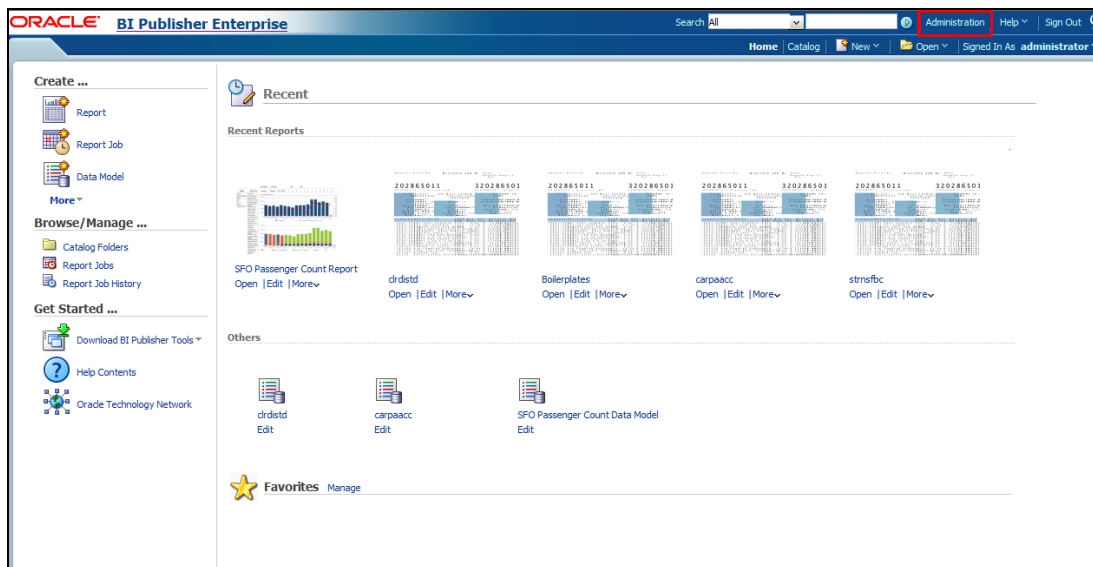
1. Go to Oracle BI Publisher Web Server's Administration Console.



The screenshot shows the Oracle BI Publisher Enterprise Administration Console. At the top, the text "ORACLE BI Publisher Enterprise" is displayed. The main area is a light blue background with a white "Sign In" box in the center. Inside the box, it says "Please enter username and password". There are two input fields: "Username" with the text "Administrator" and "Password" with masked characters. Below these fields is a checkbox for "Accessibility Mode" and a "Sign In" button. At the bottom of the box is a language dropdown menu showing "English (United States)". In the bottom left corner of the page, there is small text: "Oracle BI Publisher 11.1.1.6.0 Copyright © 2003, 2011, Oracle and/or its affiliates. All rights reserved."

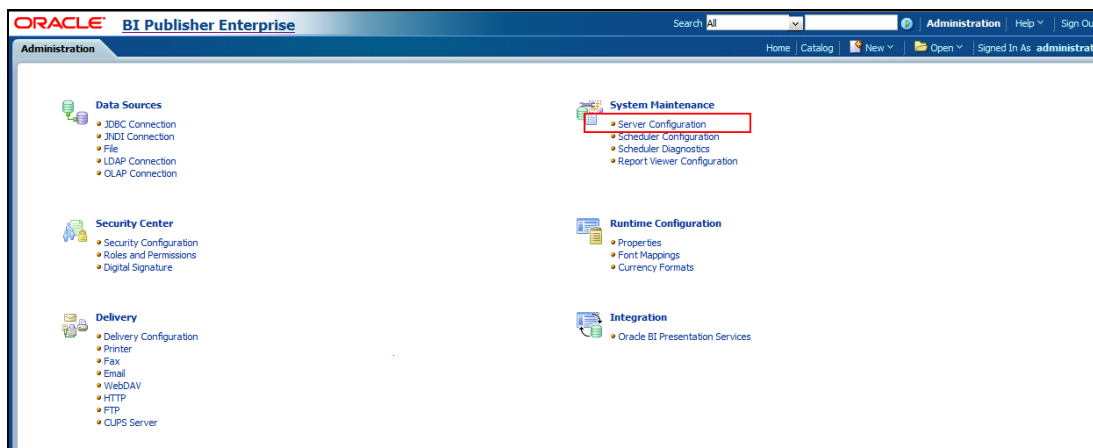
2. Specify the user name and password and click 'Sign In' button to sign in.

On successful login, the following screen is displayed.



3. Click the link 'Administration' on the top right of the screen.

The following screen is displayed.



4. Click 'Server Configuration' under 'System Maintenance'.

The following screen is displayed.

ORACLE BI Publisher Enterprise

Administration > Server Configuration

System Maintenance

Server Configuration | Scheduler Configuration | Scheduler Diagnostics | Report Viewer Configuration

✓TIP Any changes will only take effect after the application is restarted.

Configuration Folder

The Configuration Repository contains all configurations, security, datasources, etc that you setup with BI Publisher.

Path:

Catalog

The Catalog contains all content such as reports and data models.

Catalog Type: **Oracle BI Publisher - File System**

Path:

General Properties

System Temporary Directory:

Report Scalable Threshold:

Database Fetch Size:

Caching

Cache Expiration (minutes):

Cache Size Limit:

Maximum Cached Report Definitions:

Database Failover

Number of Retries:

Retry Interval (seconds):

Monitor and Audit

Enable Monitor and Audit: ☐

Apply **Cancel**

5. Specify the following details:

Catalogue Type

Select 'Oracle BI Publisher – File System' from the drop-down list.

Cache Expiration (Minutes)

Specify the duration for which the data need to be stored in the cache. You need to specify the duration in terms of minutes.

Cache Size Limit

Specify the maximum size allowed for cache.

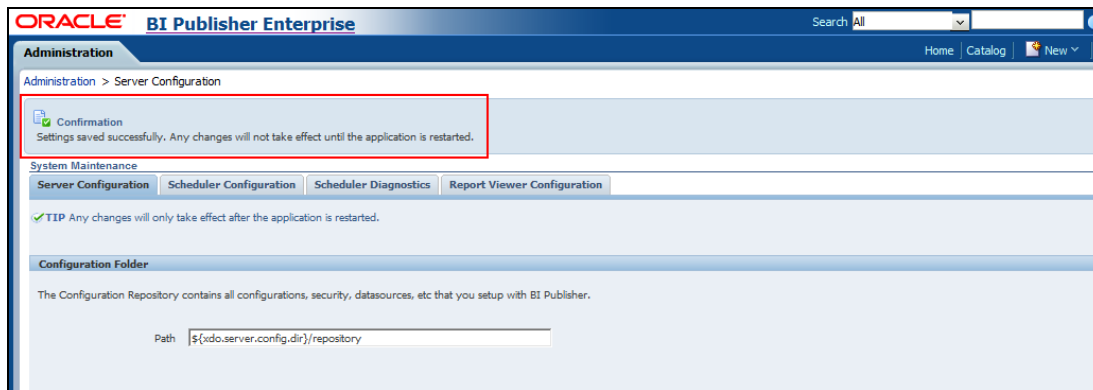
Maximum Cached Report Definition

Specify the maximum number of reports that can be stored in cache.



Cache related settings are optional.

6. Once you have specified the above details, click 'Apply'. You will get a confirmation as shown below.



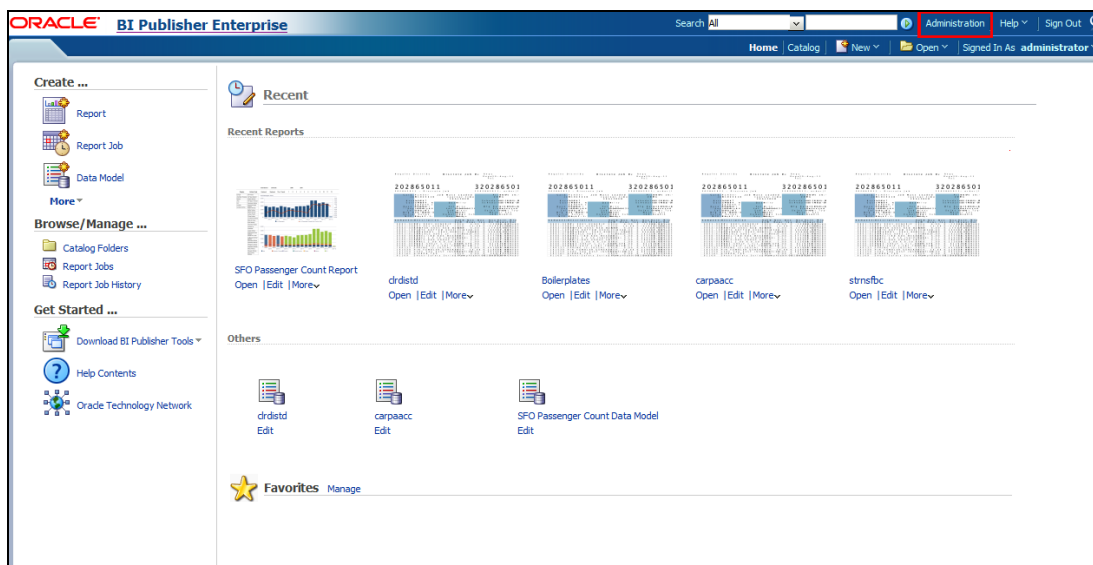
7. This completes the process of BIP service setup.

4.3.2 Setting Up BIP Data Sources

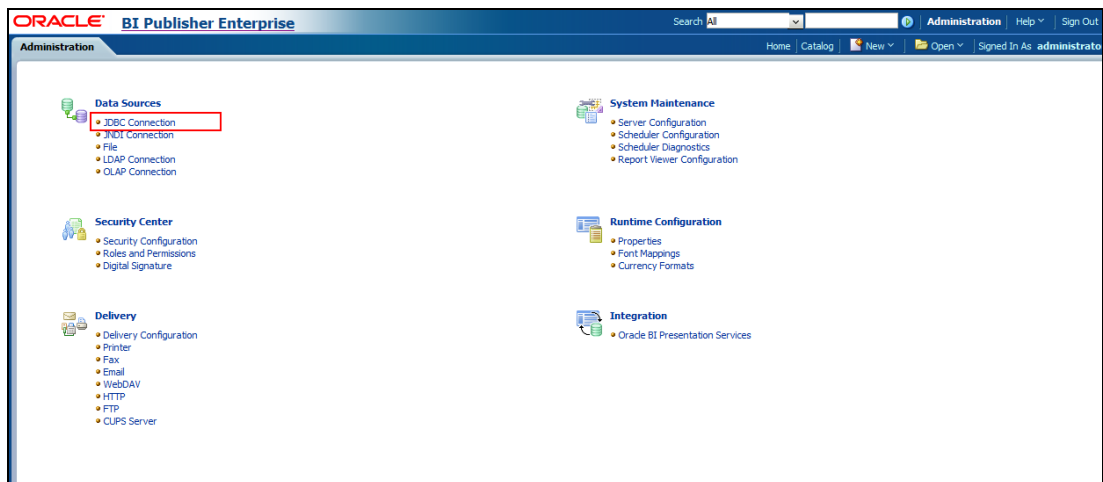
For setting up BI Publisher data sources, follow the steps below.

1. Go to Oracle BI Publisher Web Server's Administration Console. Specify the user name and password and click 'Sign In' button to sign in.

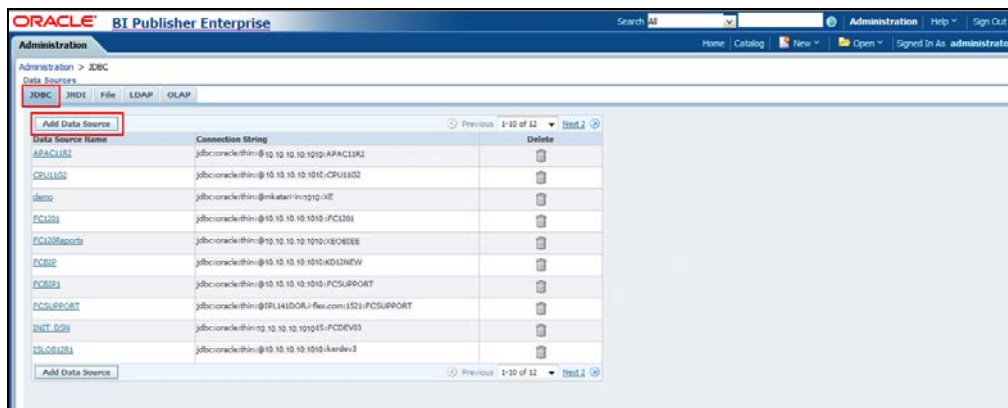
On successful login, the following screen is displayed.



2. Click the link 'Administration' on the top right of the screen. The following screen is displayed.



3. Click 'JDBC Connection' under 'Data Sources'. The following screen is displayed.



4. Click 'Add Data Source' button under 'JDBC' tab. The following screen is displayed.

5. Specify the JDBC connection details as shown in the screen.

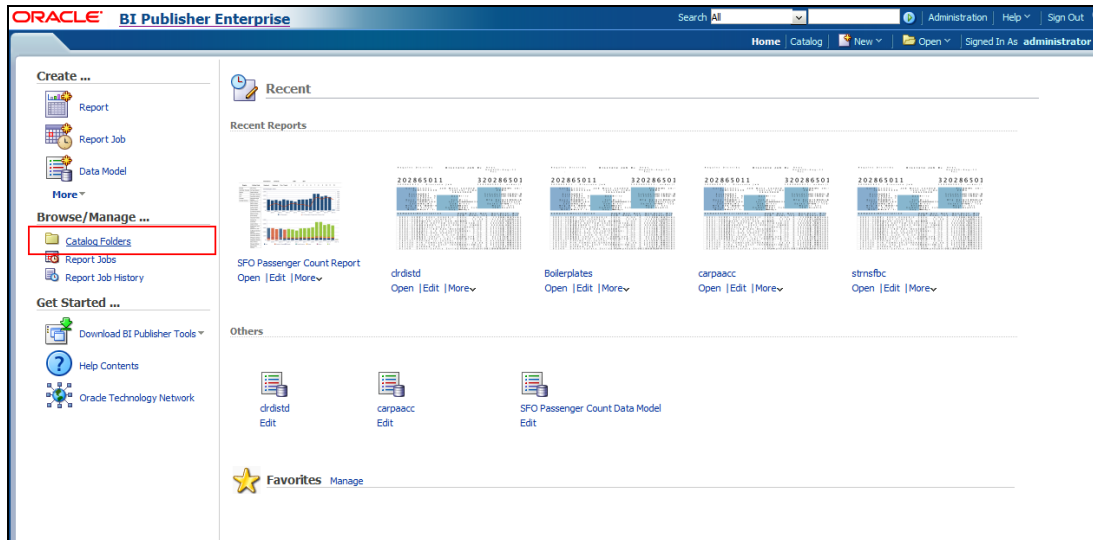
STOP Ensure that the data source name displayed on the screen is the same as the one provided for 'defaultDataSourceRef' in the function ID specific report xdm files. All the xdm files should have the same defaultDataSourceRef.

6. Enter the user ID and password and click 'Test Connection' button. On successful connection, you will see a confirmation message on the screen.
7. Once the connection testing is successful, Click 'Apply' button. This completes the process of BIP data source setup.

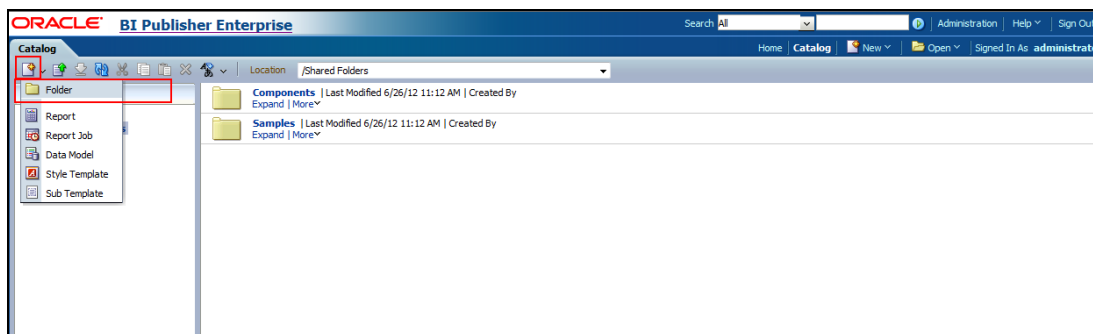
4.3.3 Creating BI Publisher 'FCReports' Folder

For creating BI Publisher FC reports folder, follow the steps below.

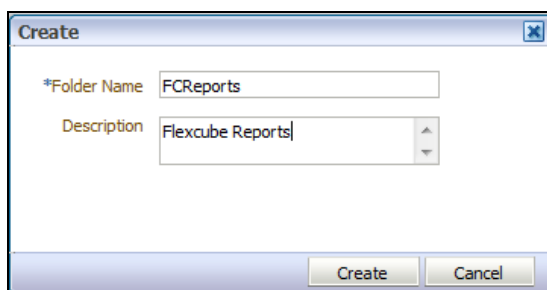
1. Go to Oracle BI Publisher Web Server's Administration Console. Specify the user name and password and click 'Sign In' button to sign in. On successful login, the following screen is displayed.



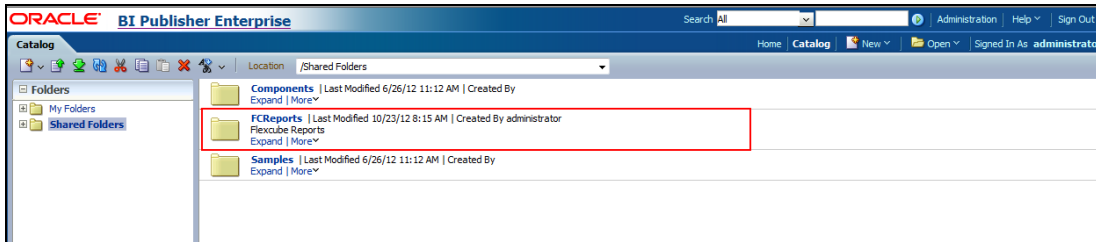
2. On the left pane, click 'Catalog Folders' under 'Browse/Manage...'. The following screen is displayed.



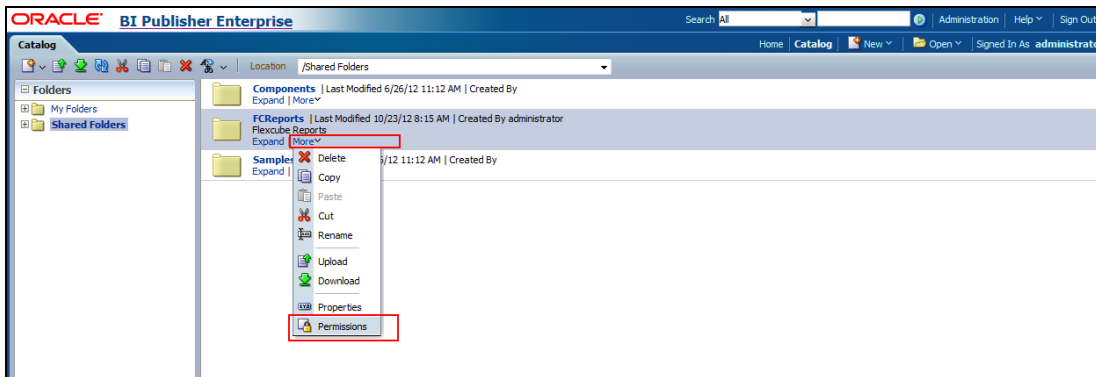
3. Click the new icon and select 'Folder' from the drop-down menu. You will get a prompt to enter the folder name and description.



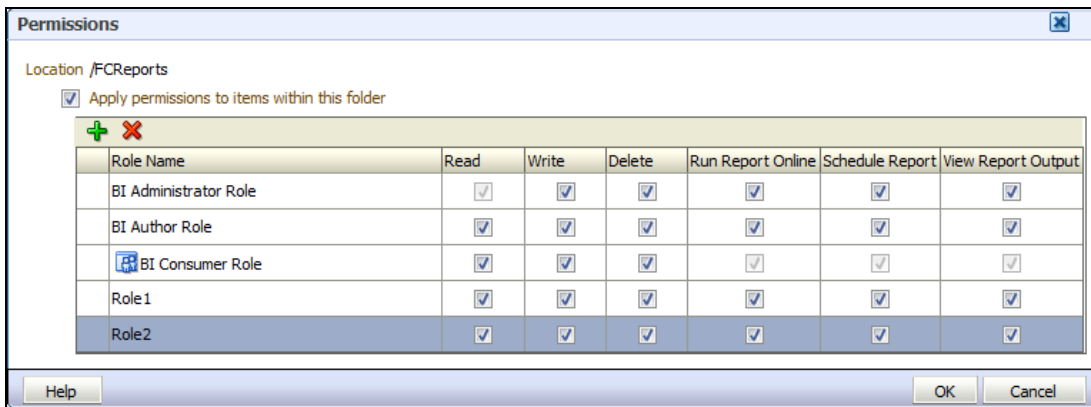
4. Specify the folder name and enter a brief description of the folder.
5. Click 'Create' button. This action completes the creation of folder. You can find the newly created folder under 'Shared Folders'.



6. You can now edit the permissions for the newly created folder. Click the link 'More'. You will get a drop-down menu.



7. Click 'Permissions'. The 'Permissions' window pops up.



8. Apply all the permissions for the newly created folder. Click 'OK' button.

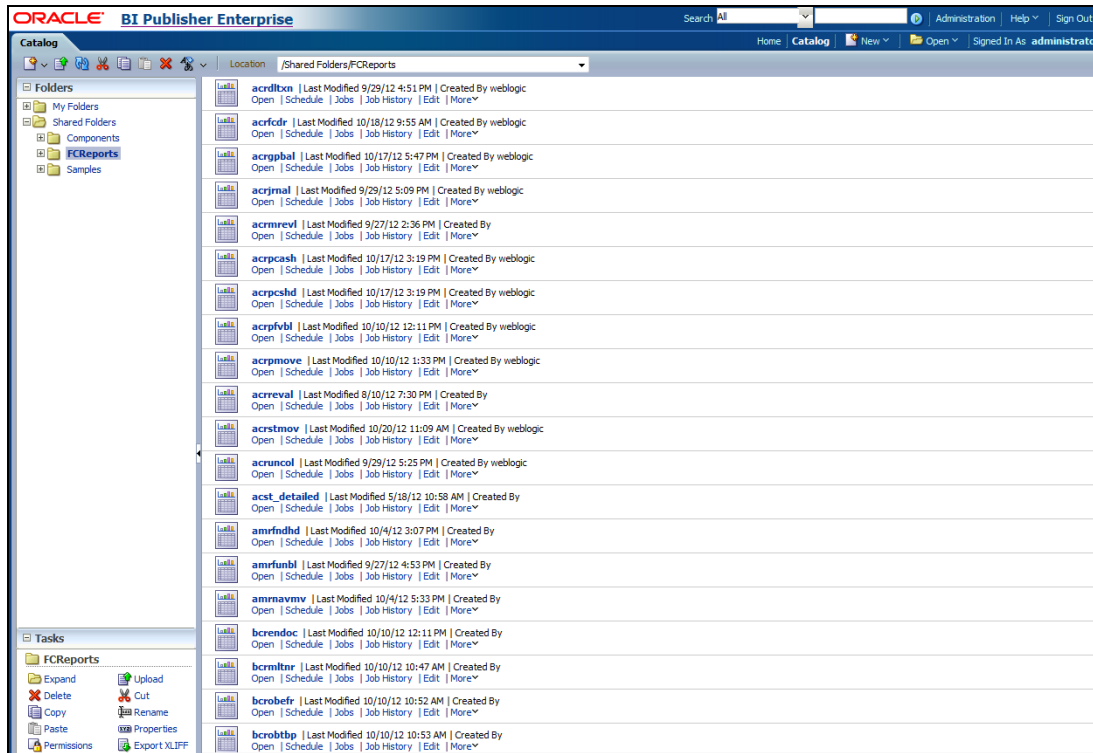



The new folder 'FCReports' is available in the path '<BIPublisher Repository path>/Reports'. For example, the folder path may be '<BIP_HOME>/FCReports/scratch/app/obi115/user_projects/domains/120BIREP/config/bipublisher/repository/Reports'

9. In the shipment media, copy all the files from the following folders:

- MAIN/<Module>/Datamodels
- MAIN/<Module>/Reports
- MAIN/<Module>/Advice_11g/Datamodels
- MAIN/<Module>/Advice_11g/Reports (except Branch Module)

- MAIN/<Module>/Advice_11g/XSD
- Go to the folder '<BI Publisher repository>/FCReports' in the destination directory and paste the copied files.
 - In Oracle BI Publisher Enterprise, navigate to 'Shared Folders' and then to 'FCReports' folder. The screen will display the list of all available reports.



- This screen displays both the data model (xdm) files and report (xdo, rtf) files. You can click the link 'Open' under the files and view the report.
 - Similar to FCReports folder, create a folder by name 'Adv' under FCReports and move Branch Advice Files to it.
 - MAIN/Branch/Advice_11g/Reports
-  In FCIS properties Advice Type should be set to 'BIP' for displaying Branch Advice in PDF format
- This completes the process of 'FCReports' folder creation.

4.3.4 **Configuring BIP Currency**

You can set configuration for each currency by using one of the following methods.

- Configure using xdo.cfg file
- Configure from BIP server

4.3.4.1 Configuring Currency using 'xdo.cfg' file

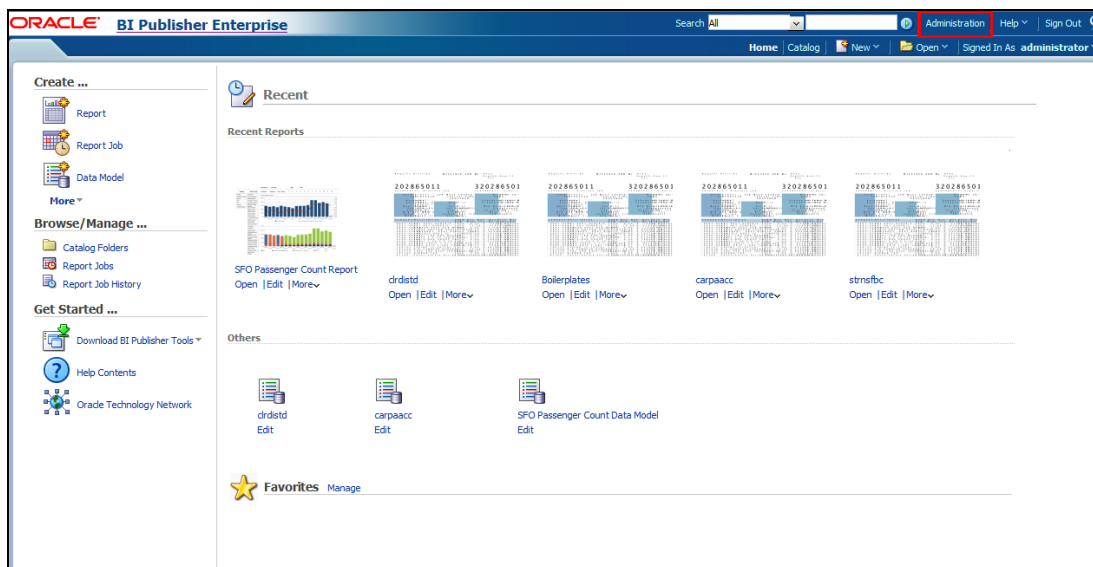
In this method, you need to define the mask for each currency in the 'xdo.cfg' file. Further, place the 'xdo.cfg' file in the folder '<BI Publisher Repository>\Admin\Configuration'.

[Click to view the 'xdo.cfg' file.](#)

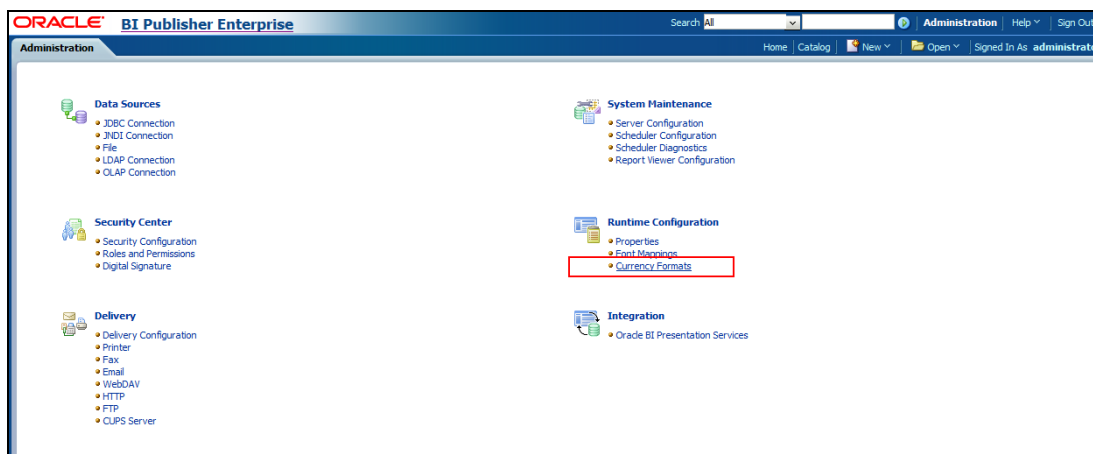
4.3.4.2 Configuring Currency from BIP Server

In order to configure the currency from BI Publisher server, follow the steps given below.

1. Go to Oracle BI Publisher Web Server's Administration Console. Specify the user name and password and click 'Sign In' button to sign in. On successful login, the following screen is displayed.



2. Click the link 'Administration' on the top right of the screen. The following screen is displayed.



3. Click 'Currency Format' under 'Runtime Configuration'. The following screen is displayed.



BIP Web Service Reports
[October] [2015]
Version 12.1.0.0.0

Oracle Financial Services Software Limited
Oracle Park
Off Western Express Highway
Goregaon (East)
Mumbai, Maharashtra 400 063
India

Worldwide Inquiries:
Phone: +91 22 6718 3000
Fax: +91 22 6718 3001
www.oracle.com/financialservices/

Copyright © [2007], [2015], Oracle and/or its affiliates. All rights reserved.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate failsafe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.