

Application Installation Guide

Oracle Financial Services Lending and Leasing

Release 14.3.0.1.0

Part No. E79024-01

September 2016

Application Installation Guide
September 2016
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Table of Contents

1. Preface	1-1
1.1 Prerequisites.....	1-1
1.2 Audience.....	1-2
1.3 Conventions Used	1-2
2. Installing Software	2-1
2.1 Installing Oracle WebLogic Server 12c	2-1
3. Creating Domains, Repositories, Data Sources	3-1
3.1 Creating Schemas using Repository Creation Utility	3-1
3.2 Creating Domain and Servers	3-9
3.3 Creating Metadata Repository	3-19
3.4 Creating Data Source	3-22
3.5 Creating SQL Authentication Provider.....	3-27
3.6 Creating User Groups and Users	3-34
3.6.1 <i>Creating Users</i>	3-34
3.6.2 <i>Creating User Groups</i>	3-35
3.6.3 <i>Assigning Users to Groups</i>	3-36
3.6.4 <i>Resetting password via weblogic console</i>	3-36
3.7 Implementing JMX Policy for Change Password.....	3-37
4. Configuring Policies	4-1
4.1 Configuring Password Policy for SQL Authenticator	4-1
4.2 Configuring User Lockout Policy	4-2
5. Deploying Application	5-1
5.1 Deploying Application	5-1
6. Enabling SSL	6-1
7. Mapping Enterprise Group with Application Role	7-1
8. Configuring JNDI name for HTTP Listener	8-1
9. Configuring Oracle BI Publisher for Application	9-1
10. Launching Application	10-1
11. Installing Upgrade	11-1

1. Preface

This document contains notes and installation steps needed to install and setup Oracle Financial Services Lending and Leasing. Oracle Financial Services Lending and Leasing relies on several pieces of Oracle software in order to run and this document is in no way meant to replace Oracle documentation supplied with these Oracle products or available via Oracle technical support. The purpose of this document is only meant to supplement the Oracle documentation and to provide Oracle Financial Services Lending and Leasing specific installation instructions.

For recommendations on security configuration, refer Security Configuration Guide.

It is assumed that anyone installing Oracle Financial Services Lending and Leasing will have a thorough knowledge and understanding of Oracle Weblogic Server 12c, Oracle BI Publisher 12c.

Application installation is a nine step process.

1. [Installing Software](#)
2. [Creating Domains, Repositories, Data Sources](#)
3. [Configuring Policies](#)
4. [Deploying Application](#)
5. [Enabling SSL](#)
6. [Launching Application](#)
7. [Mapping Enterprise Group with Application Role](#)
8. [Configuring Oracle BI Publisher for Application](#)
9. [Configuring JNDI name for HTTP Listener](#)

1.1 Prerequisites

The following software are required to install Oracle Financial Services Lending and Leasing application and they are available from the following sources:

- Oracle Software Delivery Cloud (<http://edelivery.oracle.com/>)
 - Oracle Technology Network (OTN)
1. Sun JDK Version 1.8.0_66 or above <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
 2. Oracle WebLogic Server 12c Version 12.2.1.0.0 (<http://www.oracle.com/technetwork/middleware/weblogic/downloads/index.html>)
Navigate to Fusion Middleware Infrastructure Installer.
 3. JVM/JDK are to be downloaded and installed prior to installing the Weblogic Server.

Note

Please use all 64-bit software's for machine hosted with 64-bit O/S.

1.2 **Audience**

This document is intended for system administrators or application developers who are installing Oracle Financial Services Lending and Leasing Application.

1.3 **Conventions Used**

Term	Refers to
Application	Oracle Financial Services Lending and Leasing

2. Installing Software

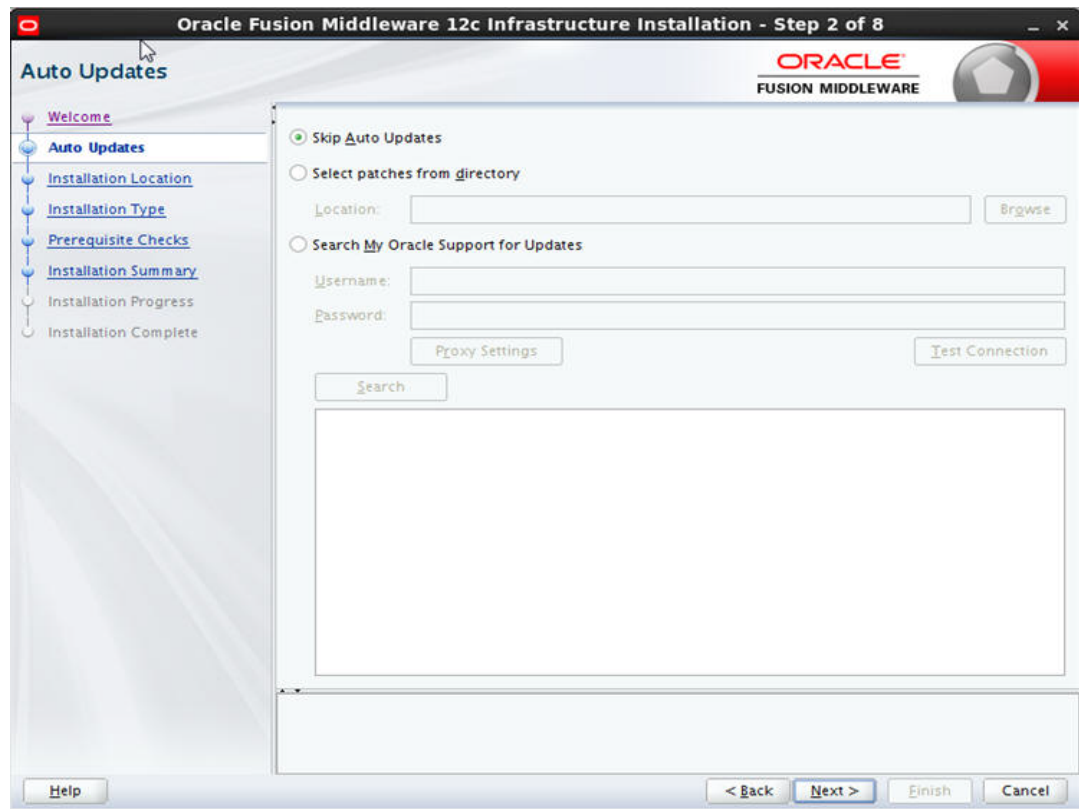
2.1 Installing Oracle WebLogic Server 12c

To install using generic Weblogic installer

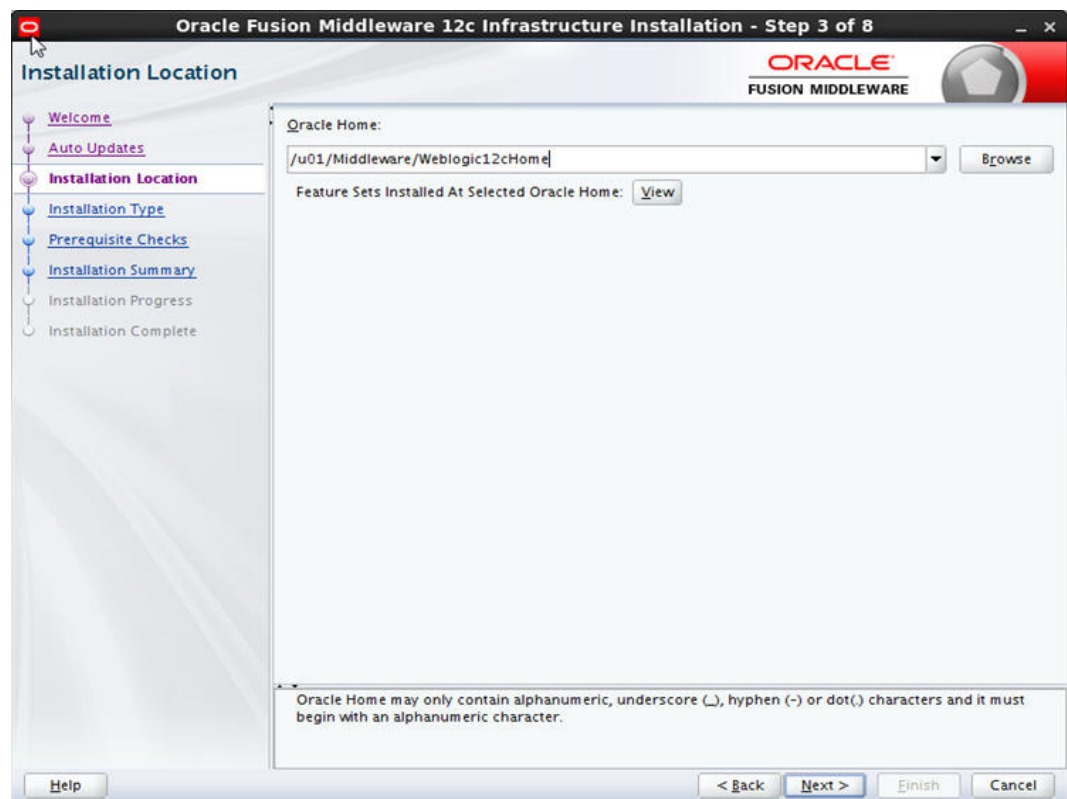
1. Run the command > `java -jar fmw_12.2.1.0.0_infrastructure.jar`
2. Welcome screen is displayed as shown below. Click Next.



3. The following window is displayed.

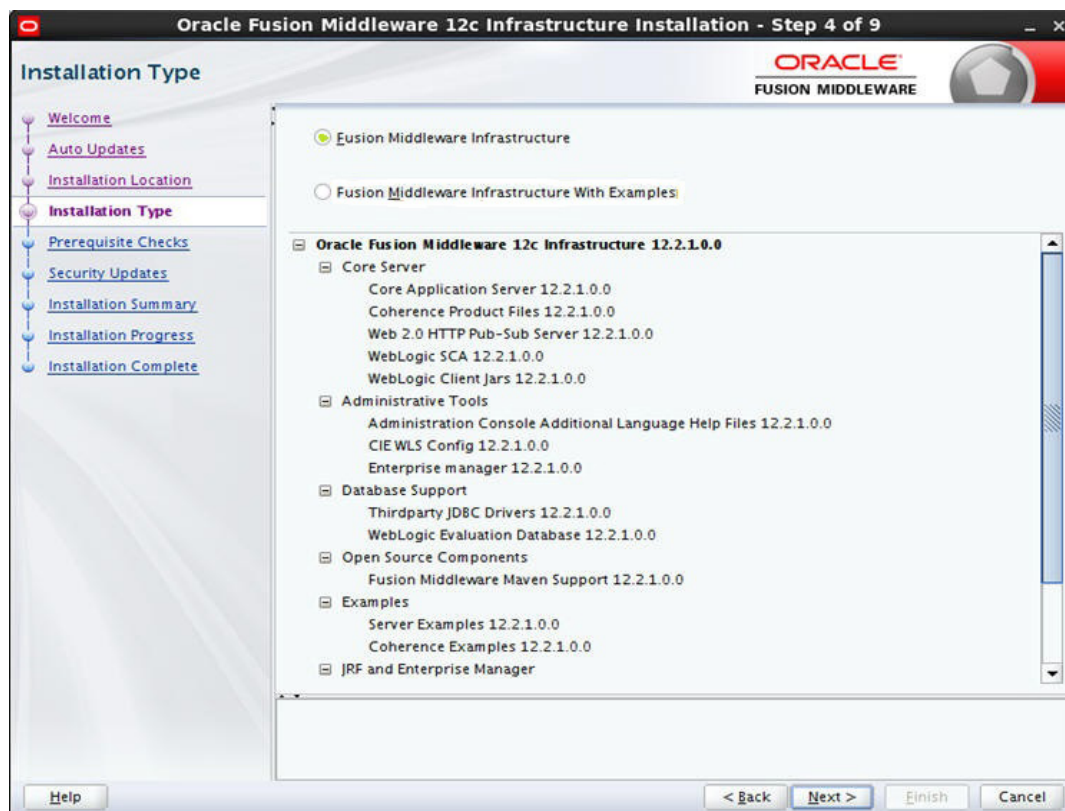


4. Select 'Skip Auto Updates' and Click 'Next'.

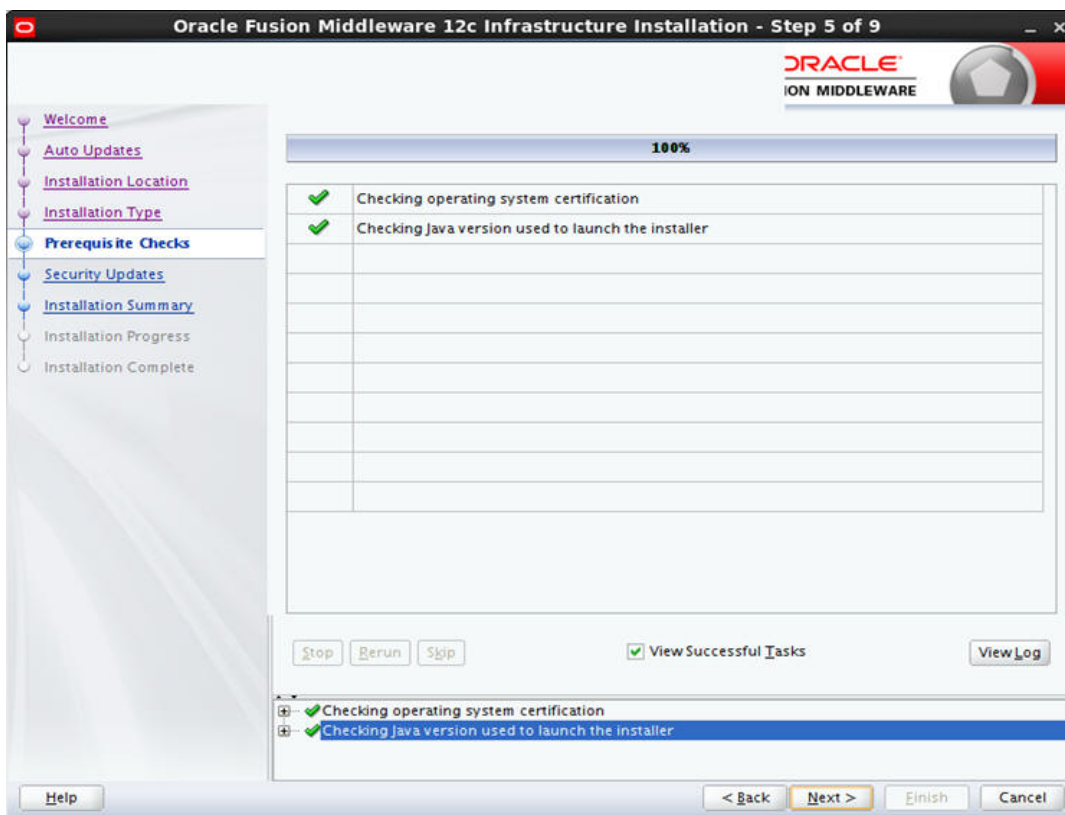


5. Specify the path for Middleware Home Directory.

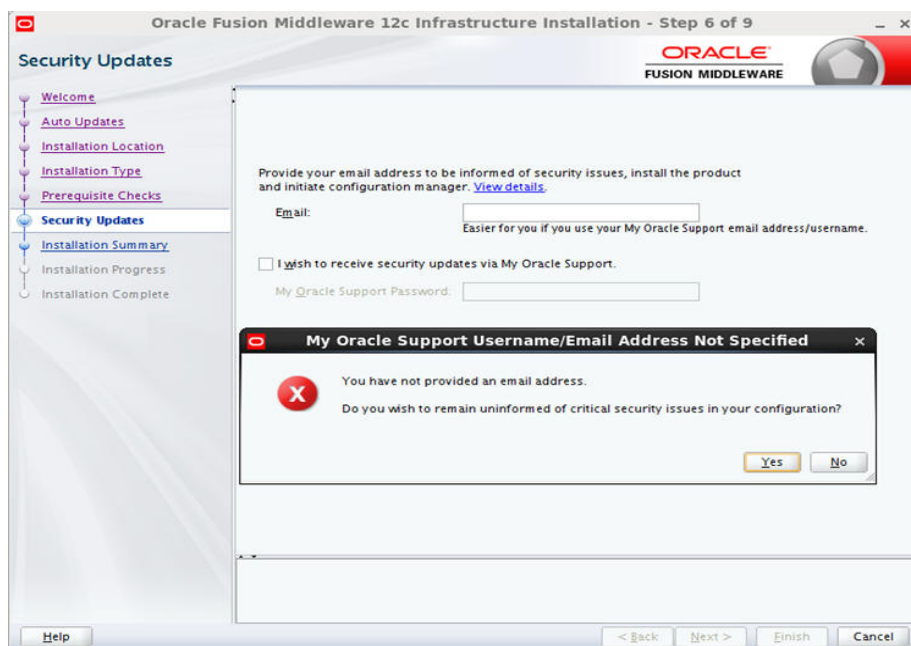
6. Click 'Next'. The following window is displayed.



7. Select the option 'Fusion Middleware Infrastructure'. Click 'Next'.

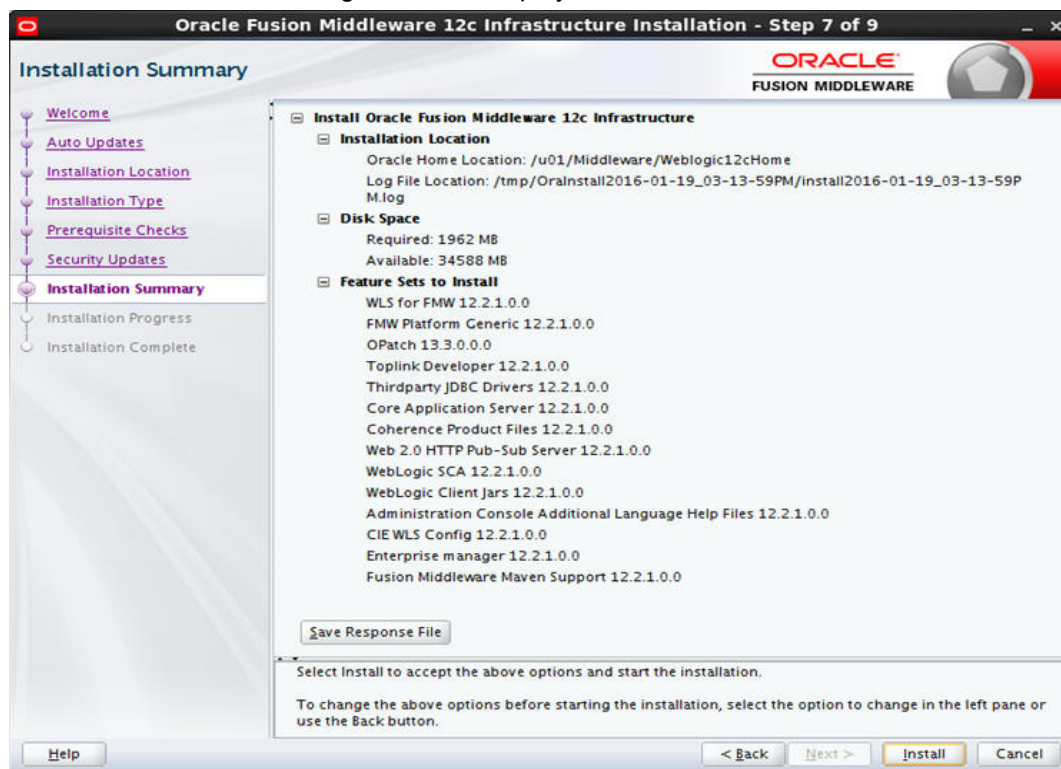


8. Click 'Next'. The following window is displayed.

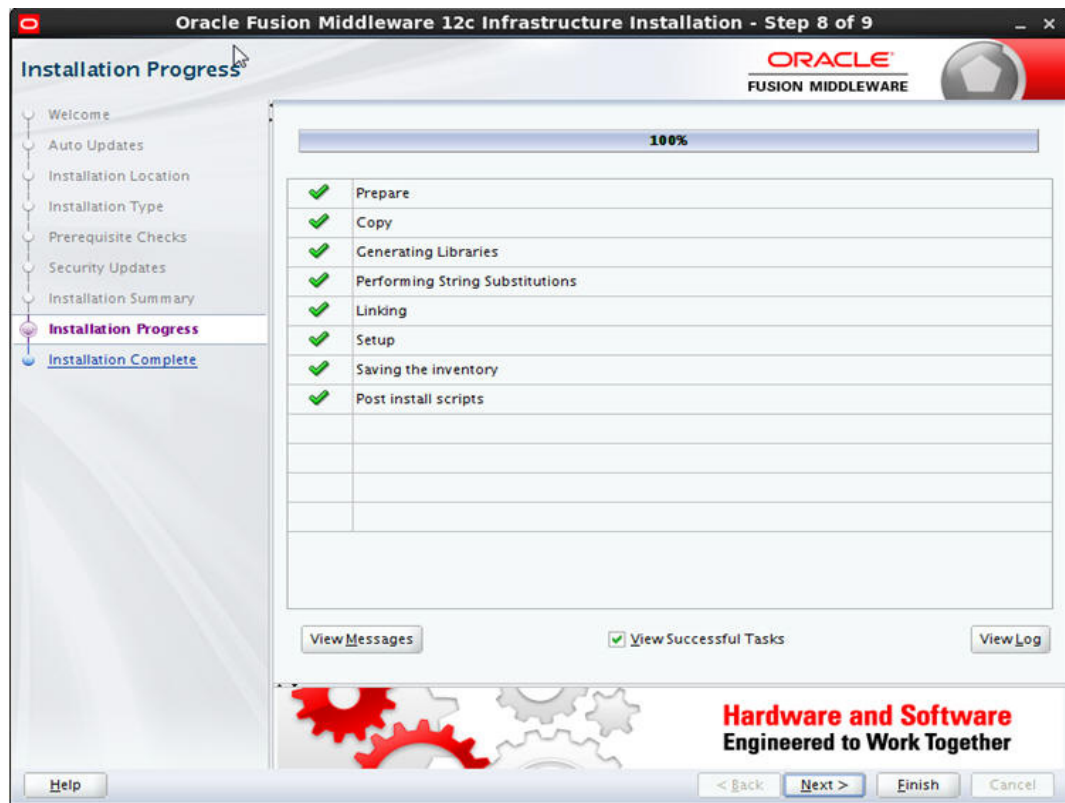


9. Deselect the check box as in the above screen and click 'Next'. Click on 'Yes' in the confirmation dialog displayed.

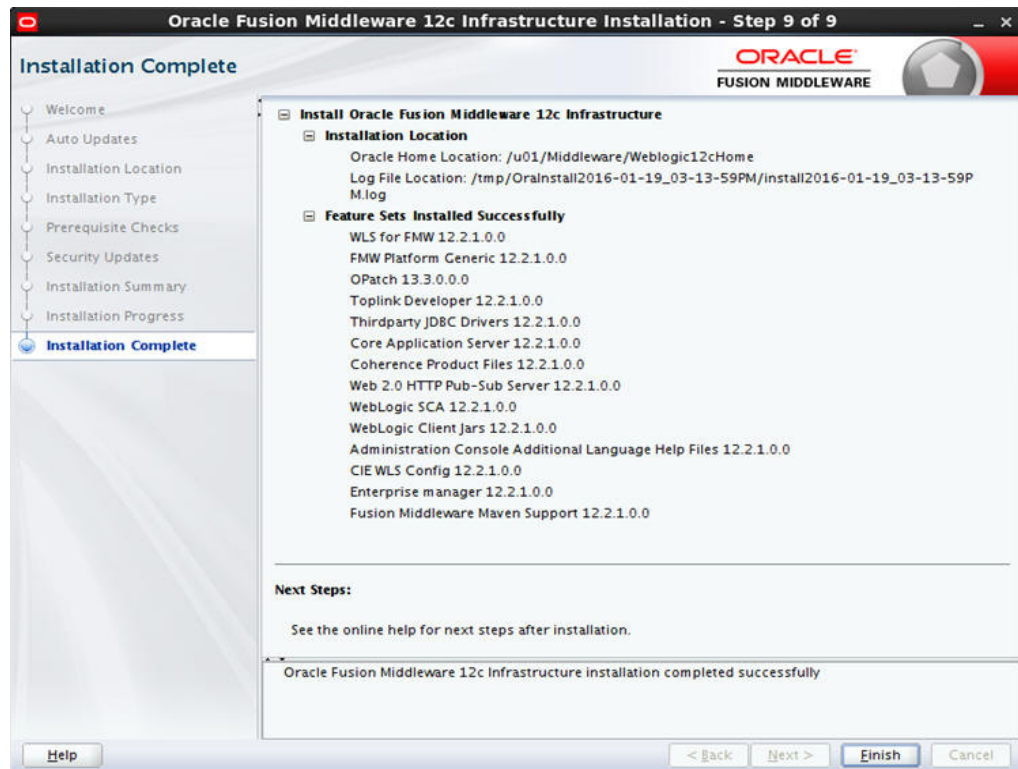
10. Click 'Next'. The following window is displayed.



11. Click 'Install'. The weblogic installation starts. Once done, the following window is displayed.



12. Click 'Next'. The following window is displayed.

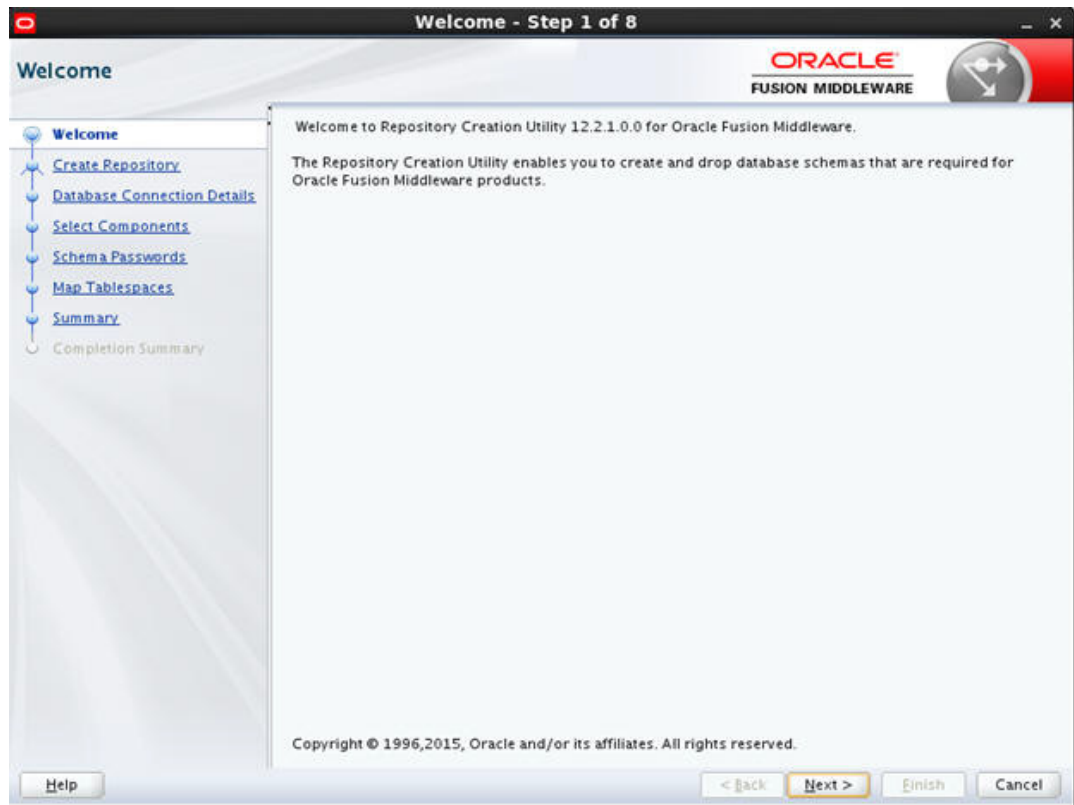


13. Click 'Finish' to close the window.

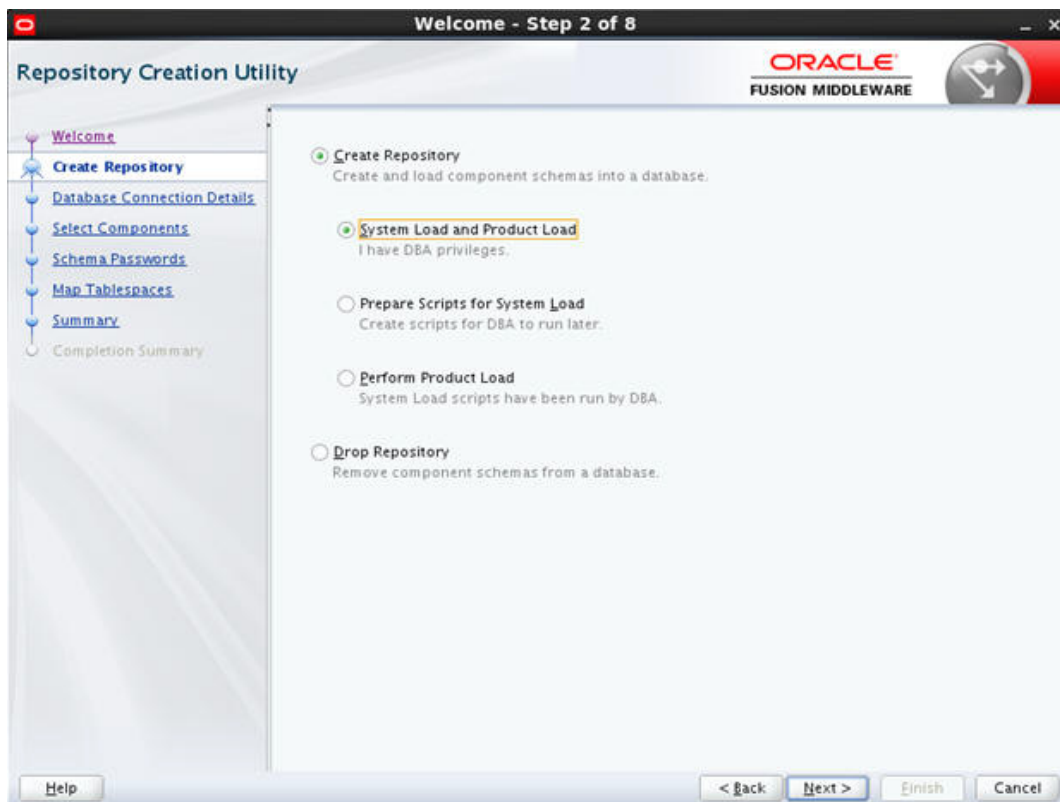
3. Creating Domains, Repositories, Data Sources

3.1 Creating Schemas using Repository Creation Utility

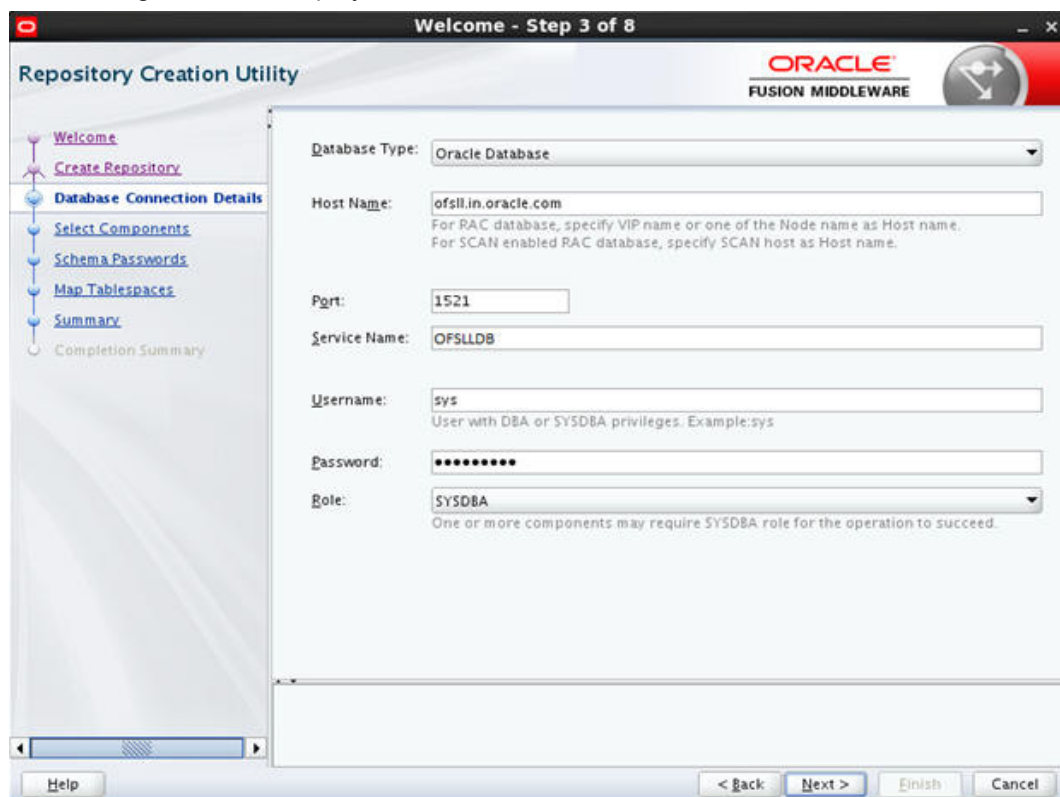
1. Open command prompt on Unix and browse to <WL_HOME>/oracle_common/bin and run ./rcu. The following window is displayed.



2. Click 'Next'. The following window is displayed.



3. Select 'Create Repository' and select 'System Load and Product Load'. Click 'Next'. The following window is displayed.

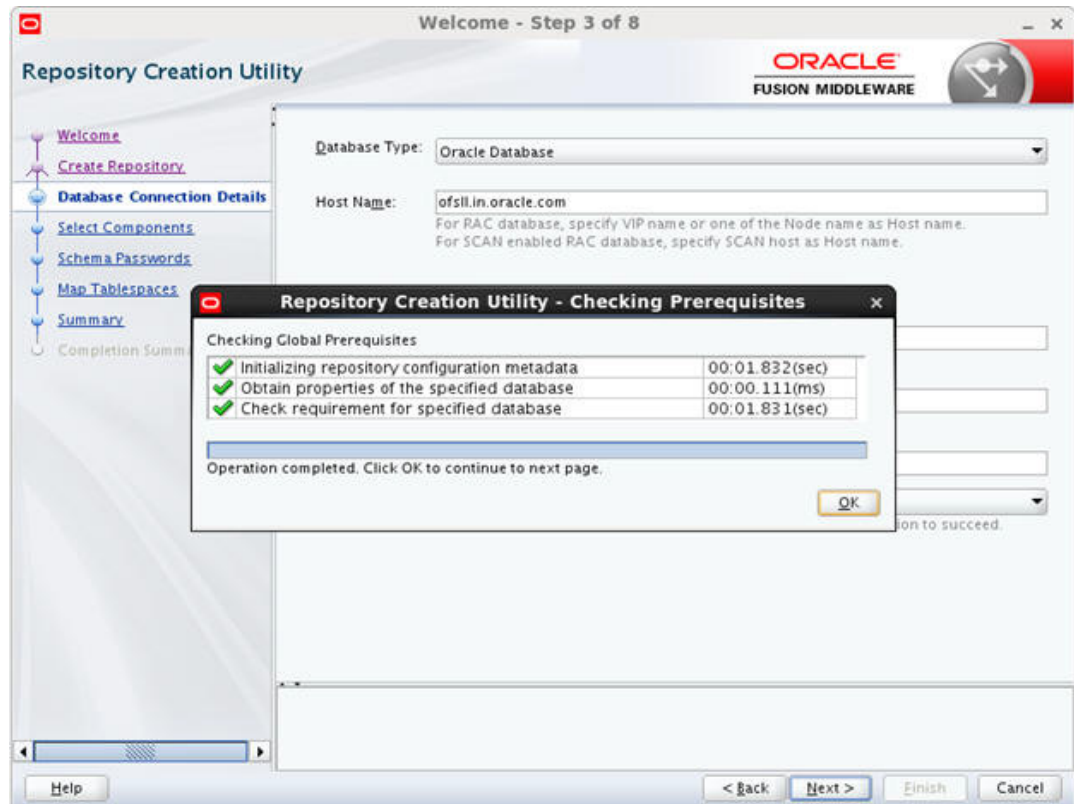


4. Provide database details where you want to create schemas, as shown in the above screen.

Note

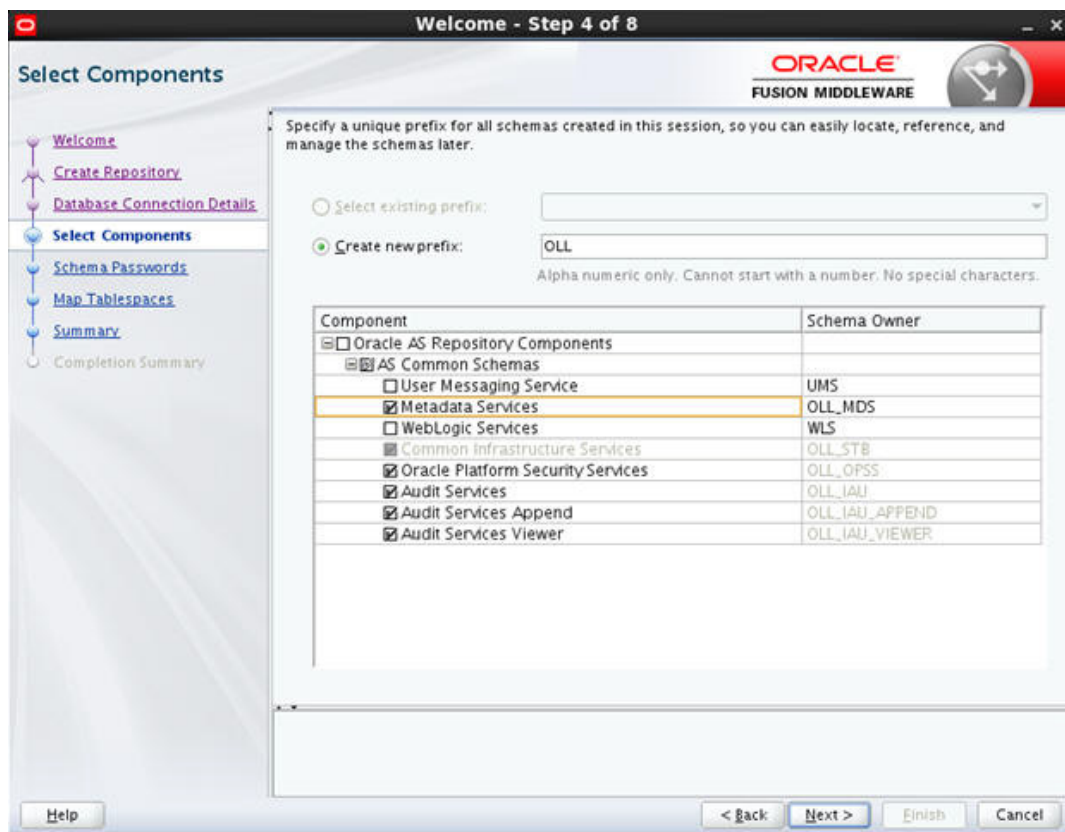
You will require a user with SYSDBA role to create schemas.

5. Click 'Next'. The following window is displayed.

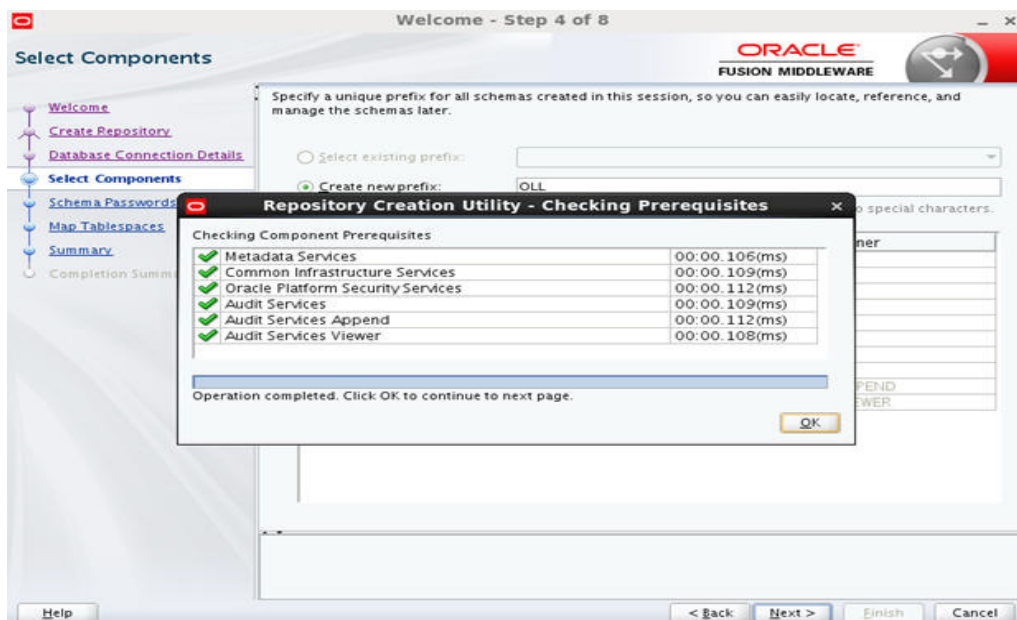


6. Click 'OK' in the confirmation dialog.

7. Click 'Next' the following window is displayed.



8. Select 'Create new Prefix' option and specify the value. For example, OLL.
9. Select the options 'Metadata Services' and 'Oracle Platform Security Services' as shown in the above screen. Click 'Next'. The following window is displayed.



10. Click 'Next'. The following window is displayed.

Welcome - Step 5 of 8

Repository Creation Utility

ORACLE
FUSION MIDDLEWARE

Define passwords for main and auxiliary schema users.

☒ Use same passwords for all schemas

Password: [masked]

Alpha numeric only. Cannot start with a number.
No special characters except: \$, #, _

Confirm Password: [masked]

☐ Use main schema passwords for auxiliary schemas

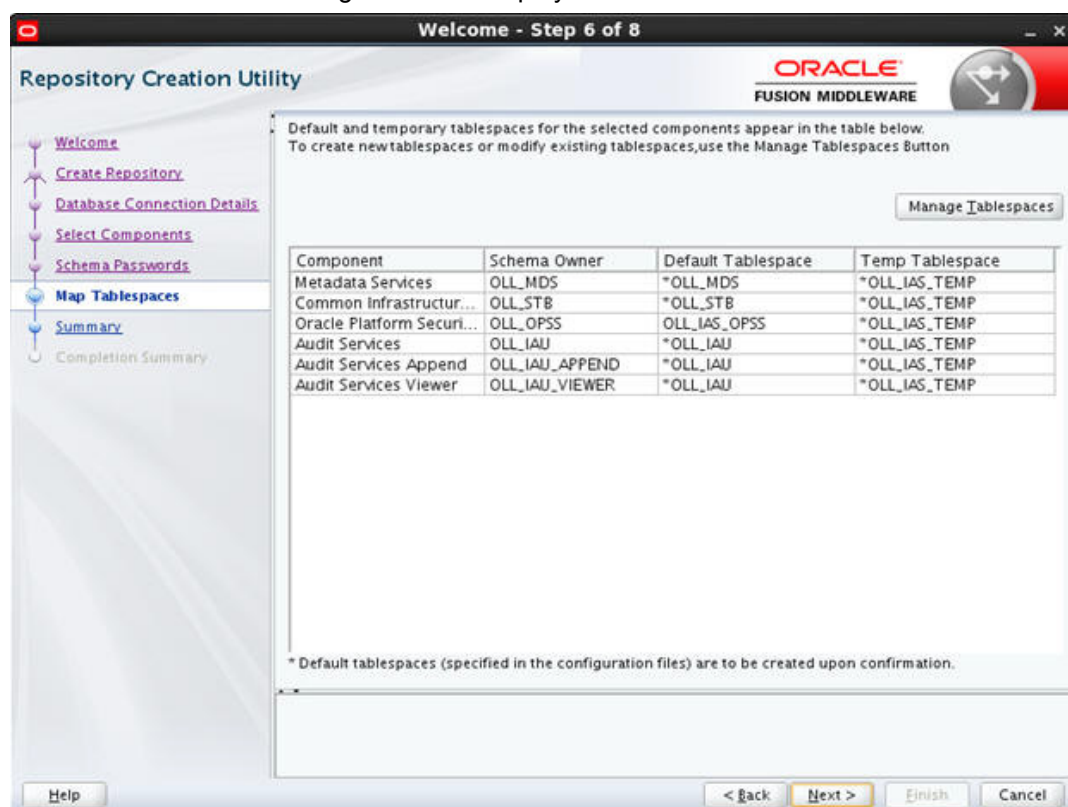
☐ Specify different passwords for all schemas

< Back Next > Finish Cancel

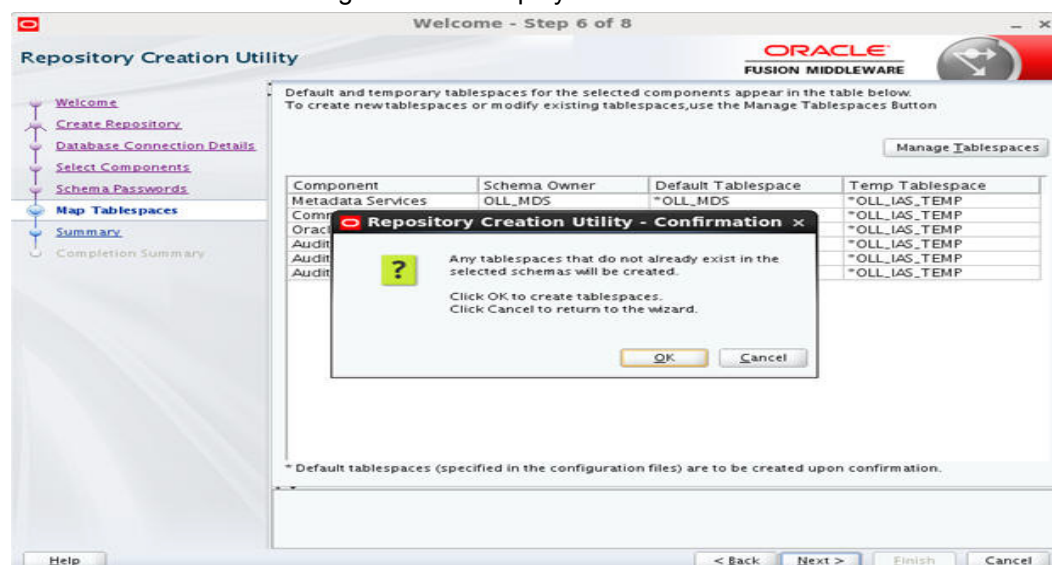
11. You can select one of the following:

- Select 'Use same password for all schemas' and specify the password.
- Select 'Specify different passwords for all schemas' and specify Schema Passwords for each server.

12. Click 'Next'. The following window is displayed.

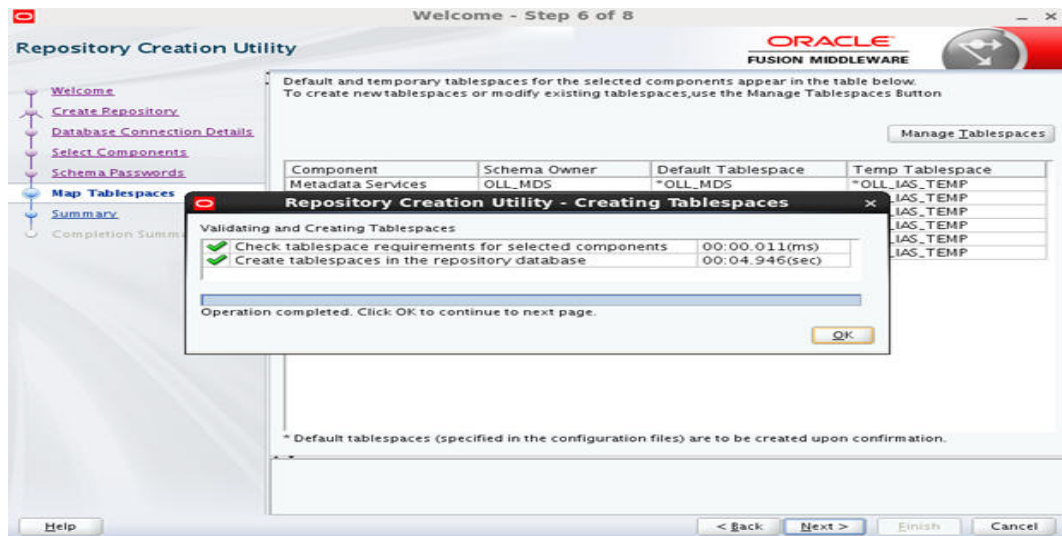


13. Click 'Next'. The following window is displayed.

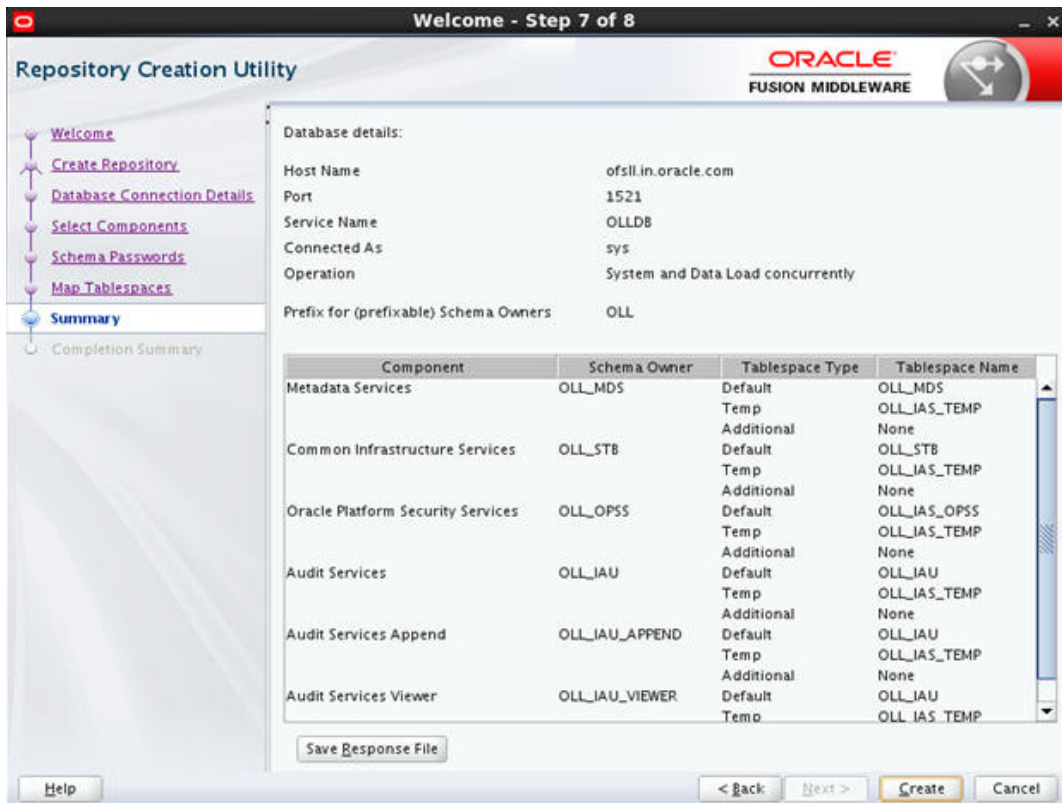


14. Click 'OK' in the confirmation dialog.

15. Click 'Next'. The following window is displayed.



16. Click 'OK' in the confirmation dialog. The following window is displayed.



Repository Creation Utility - System Load

Repository System Load in progress.

Execute pre create operations	00:03.325(sec)
Metadata Services	00:07.652(sec)
Common Infrastructure Services	0
Audit Services Append	0
Audit Services Viewer	0
Audit Services	0
Oracle Platform Security Services	0
Execute post create operations	0

Stop

Database details:

Host Name: ofsil.in.oracle.com

Port: 1521

Service Name: OLDB

Summary

Completion Summary

Tablespace Name

LL_MDS

LL_IAS_TEMP

one

LL_STB

LL_IAS_TEMP

one

LL_IAS_OPSS

LL_IAS_TEMP

one

LL_IAS

OLL_IAS_TEMP

Additional

None

OLL_IAS

Temp

OLL_IAS_TEMP

Additional

None

OLL_IAS

Default

OLL_IAS_TEMP

Temp

OLL_IAS_TEMP

Save Response File

Help

< Back

Next >

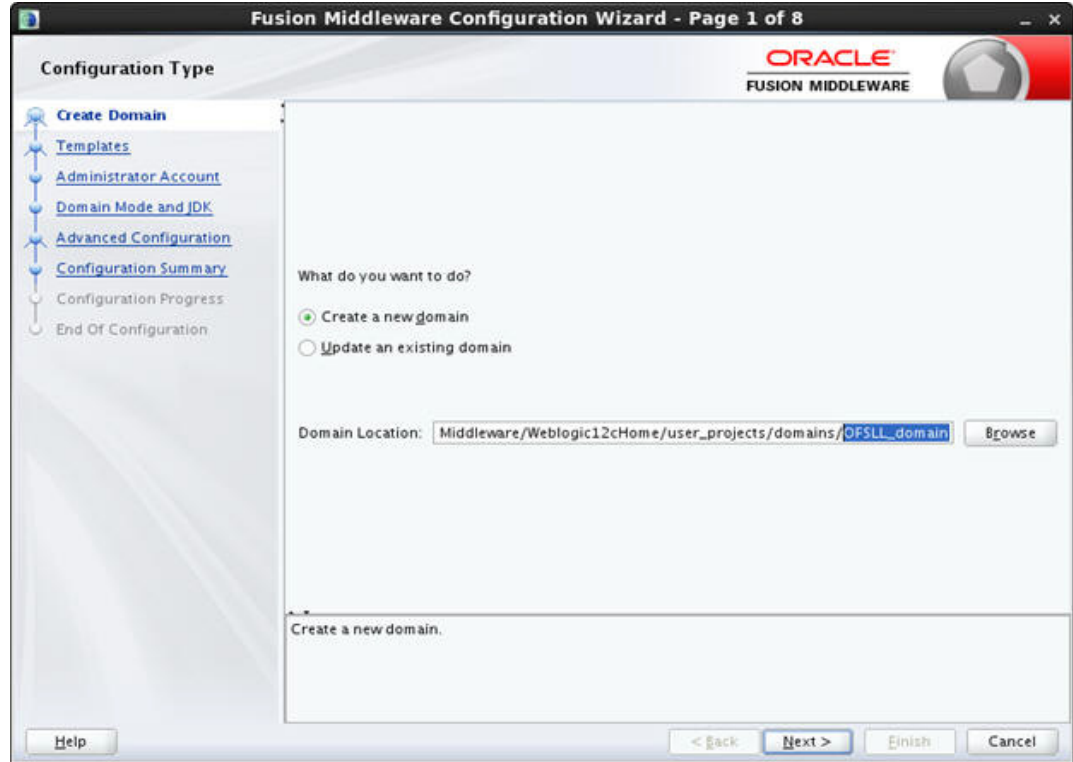
Create

Cancel

18. Click 'Close' to close the window.

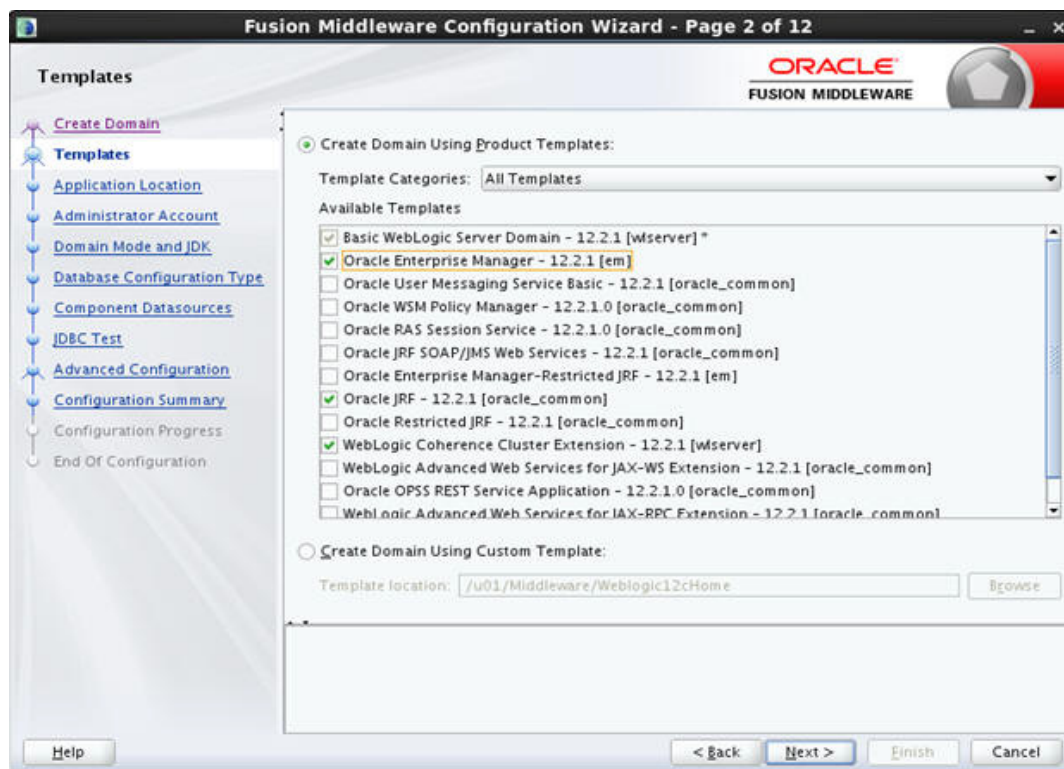
3.2 Creating Domain and Servers

1. In Unix/Linux machine, once the Oracle WebLogic Server is installed, navigate to the following path - <WL_HOME>/wlserver/common/bin (Here, WL_HOME is /home/Oracle/Middleware).
2. In Unix, run 'config.sh'



3. Select 'Create a new domain' and specify the Domain Location.

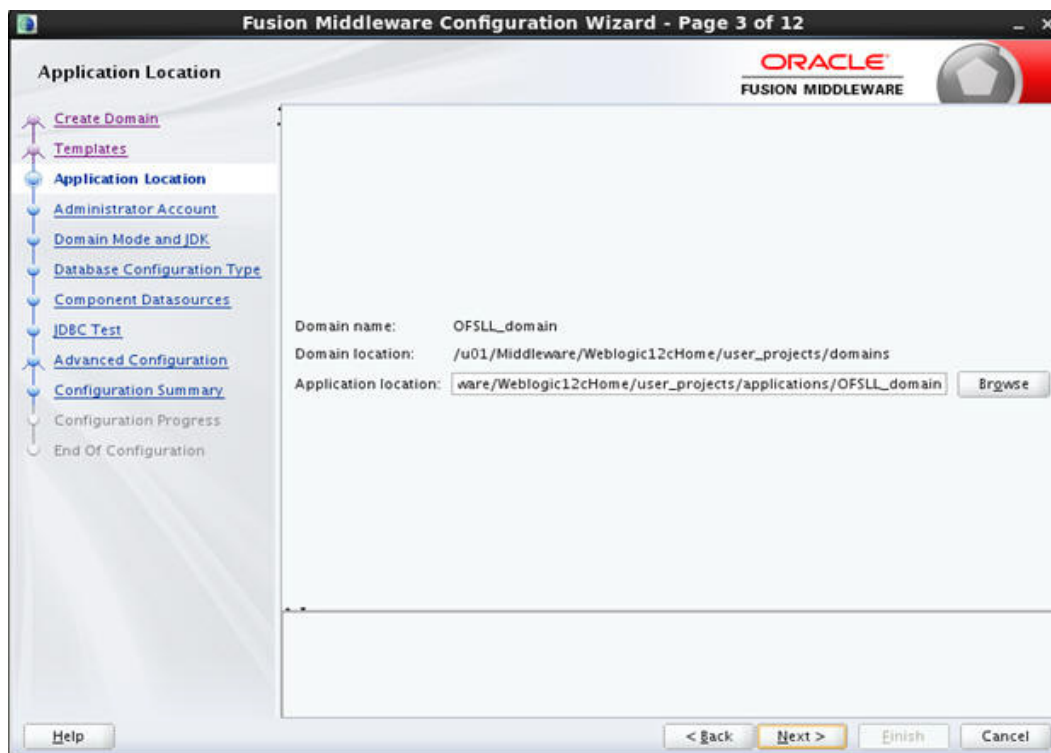
4. Click 'Next'. The following window is displayed.



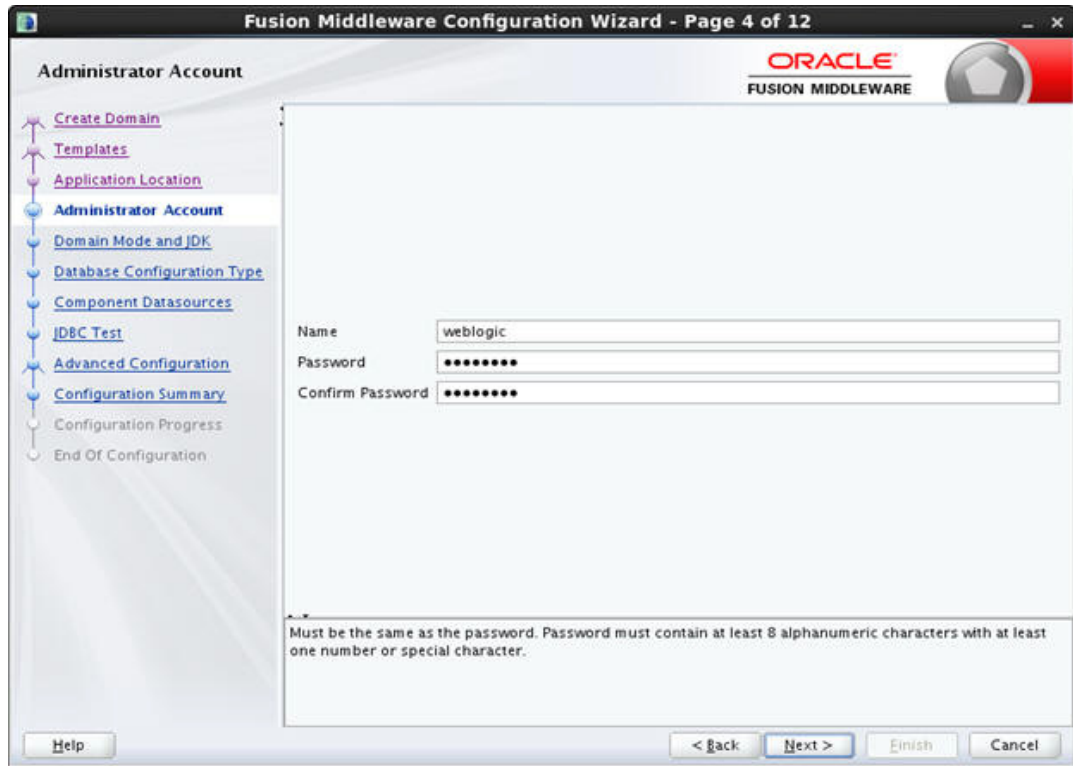
5. Select the option 'Create Domain Using Product Templates' and select the following options in the list of available templates:

- Oracle Enterprise Manager - 12.2.1 [em]
- Oracle JRF - 12.2.1 [oracle_common]

6. Click 'Next'. The following window is displayed.

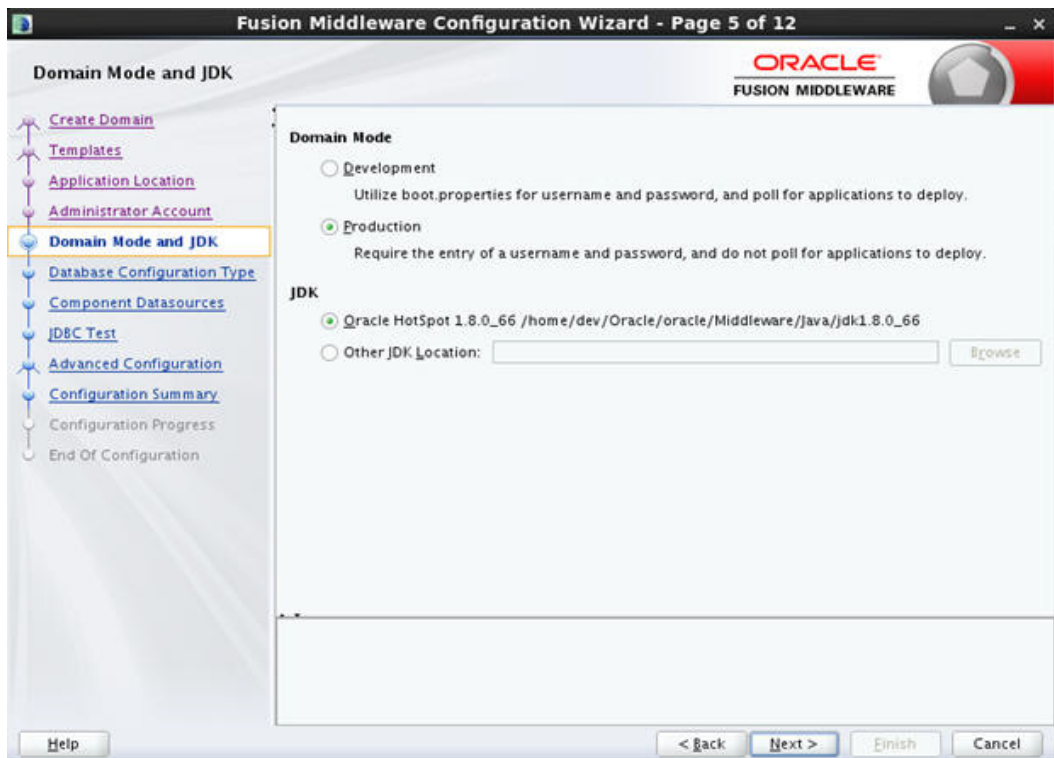


7. Enter 'Domain' Name. Edit Domain Location, if needed and click 'Next'. The following window is displayed.



The screenshot shows the 'Administrator Account' step of the Fusion Middleware Configuration Wizard. The left sidebar contains a tree view with the following items: Create Domain, Templates, Application Location, Administrator Account (highlighted), Domain Mode and JDK, Database Configuration Type, Component Datasources, JDBC Test, Advanced Configuration, Configuration Summary, Configuration Progress, and End Of Configuration. The main area has three input fields: 'Name' with the value 'weblogic', 'Password' with masked characters, and 'Confirm Password' with masked characters. Below these fields is a note: 'Must be the same as the password. Password must contain at least 8 alphanumeric characters with at least one number or special character.' At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

8. Enter credentials for the following:
- Name
 - Password
 - Confirm Password
9. Click 'Next'. The following window is displayed.



The screenshot shows the 'Domain Mode and JDK' step of the Fusion Middleware Configuration Wizard. The left sidebar is the same as in the previous window, but 'Domain Mode and JDK' is now highlighted. The main area is divided into two sections. The 'Domain Mode' section has two radio buttons: 'Development' (unselected) and 'Production' (selected). Below 'Production' is a note: 'Require the entry of a username and password, and do not poll for applications to deploy.' The 'JDK' section has two radio buttons: 'Oracle HotSpot 1.8.0_66 /home/dev/Oracle/oracle/Middleware/java/jdk1.8.0_66' (selected) and 'Other JDK Location:' (unselected). The 'Other JDK Location' has a text input field and a 'Browse' button. At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

10. Select the Domain Mode as 'Production' and 'JDK' from Available JDKs. You can also select any other JDK by selecting 'Other JDK Location' option.
11. Click 'Next'. The following window is displayed.

Fusion Middleware Configuration Wizard - Page 6 of 12

Database Configuration Type

Specify AutoConfiguration Options Using:

☒ RCU Data ☐ Manual Configuration

Enter the database connection details using the Repository Creation Utility service table (STB) schema credentials. The Wizard uses this connection to automatically configure the datasources required for components in this domain.

Vendor: Oracle Driver: "Oracle's Driver (Thin) for Service connections; Vers..."

DBMS/Service: OLDB Host Name: ofsl.in.oracle.com Port: 1521

Schema Owner: OLL_STB Schema Password:

Connection Result Log

Click "Get RCU Configuration" button to test the connection and activate the "Next" button.

12. Specify the RCU data and click on 'Get RCU Configuration'. The following window is displayed.

Fusion Middleware Configuration Wizard - Page 6 of 12

Database Configuration Type

Specify AutoConfiguration Options Using:

☒ RCU Data ☐ Manual Configuration

Enter the database connection details using the Repository Creation Utility service table (STB) schema credentials. The Wizard uses this connection to automatically configure the datasources required for components in this domain.

Vendor: Oracle Driver: "Oracle's Driver (Thin) for Service connections; Vers..."

DBMS/Service: OLDB Host Name: ofsl.in.oracle.com Port: 1521

Schema Owner: OLL_STB Schema Password:

Connection Result Log

Connecting to the database server...OK
Retrieving schema data from database server...OK
Binding local schema components with retrieved data...OK
Successfully Done.

Click "Next" button to continue.

13. Click 'Next'. The following window is displayed.

Fusion Middleware Configuration Wizard - Page 7 of 12

JDBC Component Schema

Vendor: Driver:

DBMS/Service: Host Name: Port:

Schema Owner: Schema Password:

Oracle RAC configuration for component schemas:

☐ Convert to GridLink ☐ Convert to RAC multi data source ☐ Don't convert

Edits to the data above will affect all checked rows in the table below:

☐	Component Schema	DBMS/Service	Host Name	Port	Schema Owner	Schema Password
☐	LocalSvcTbl Schema	OLLDB	ofssl.in.oracle.coi	1521	OLL_STB	*****
☐	OPSS Audit Schema	OLLDB	ofssl.in.oracle.coi	1521	OLL_IJU_APPE	*****
☐	OPSS Audit Viewer Sch	OLLDB	ofssl.in.oracle.coi	1521	OLL_IJU_VIEW	*****
☐	OPSS Schema	OLLDB	ofssl.in.oracle.coi	1521	OLL_OPSS	*****

Help < Back Next > Finish Cancel

14. . Click 'Next'. The following window is displayed.

Fusion Middleware Configuration Wizard - Page 8 of 12

JDBC Component Schema Test

☒	Status	Component Schema	JDBC Connection URL
☒	✓	LocalSvcTbl Schema	jdbc:oracle:thin:@//ofssl.in.oracle.com:1521/OLLDB
☒	✓	OPSS Audit Schema	jdbc:oracle:thin:@//ofssl.in.oracle.com:1521/OLLDB
☒	✓	OPSS Audit Viewer S	jdbc:oracle:thin:@//ofssl.in.oracle.com:1521/OLLDB
☒	✓	OPSS Schema	jdbc:oracle:thin:@//ofssl.in.oracle.com:1521/OLLDB

Test Selected Connections Cancel Testing

Connection Result Log

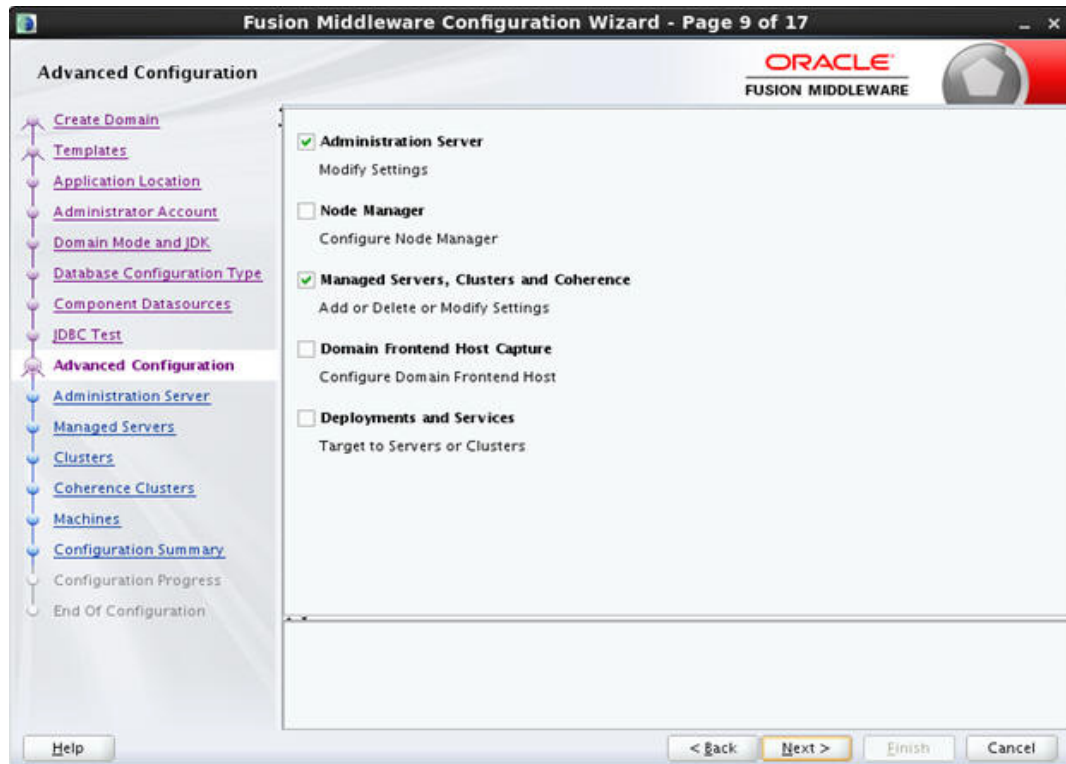
```

Component Schema=LocalSvcTbl Schema
Driver=oracle.jdbc.OracleDriver
URL=jdbc:oracle:thin:@//ofssl.in.oracle.com:1521/OLLDB
User=OLL_STB
Password=*****
SQL Test=SELECT 1 FROM DUAL

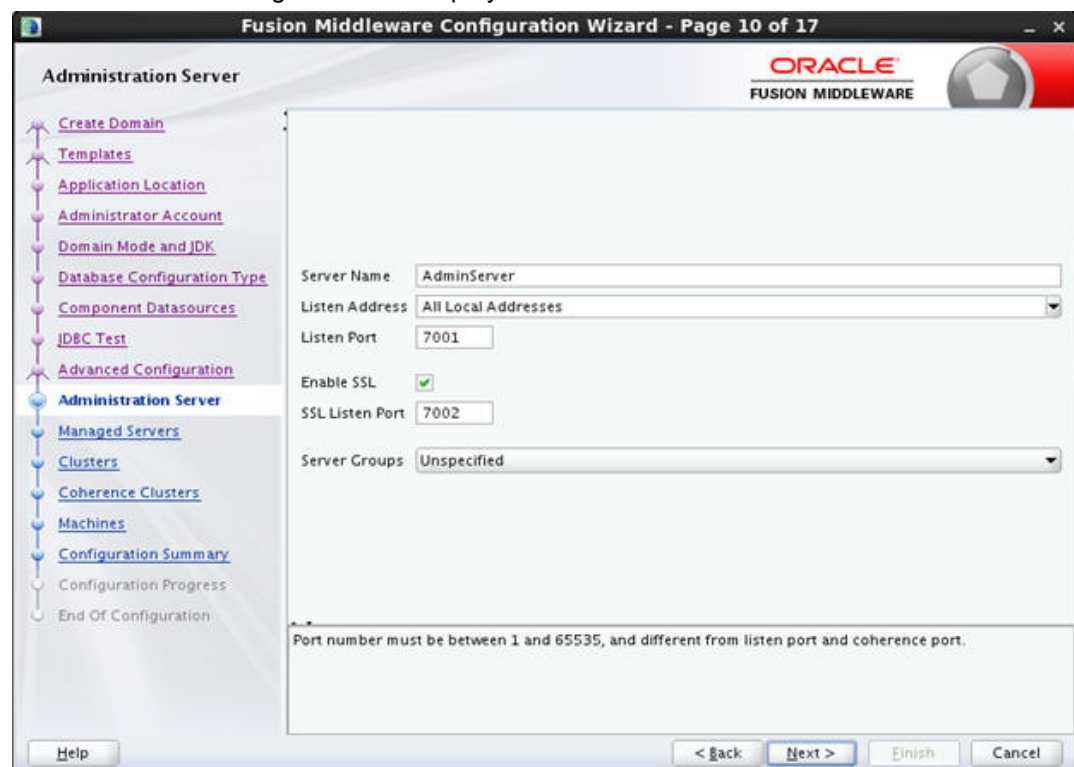
CFGFWK-64213: Test Successful!
CFGFWK-64213: JDBC connection test was successful
  
```

Help < Back Next > Finish Cancel

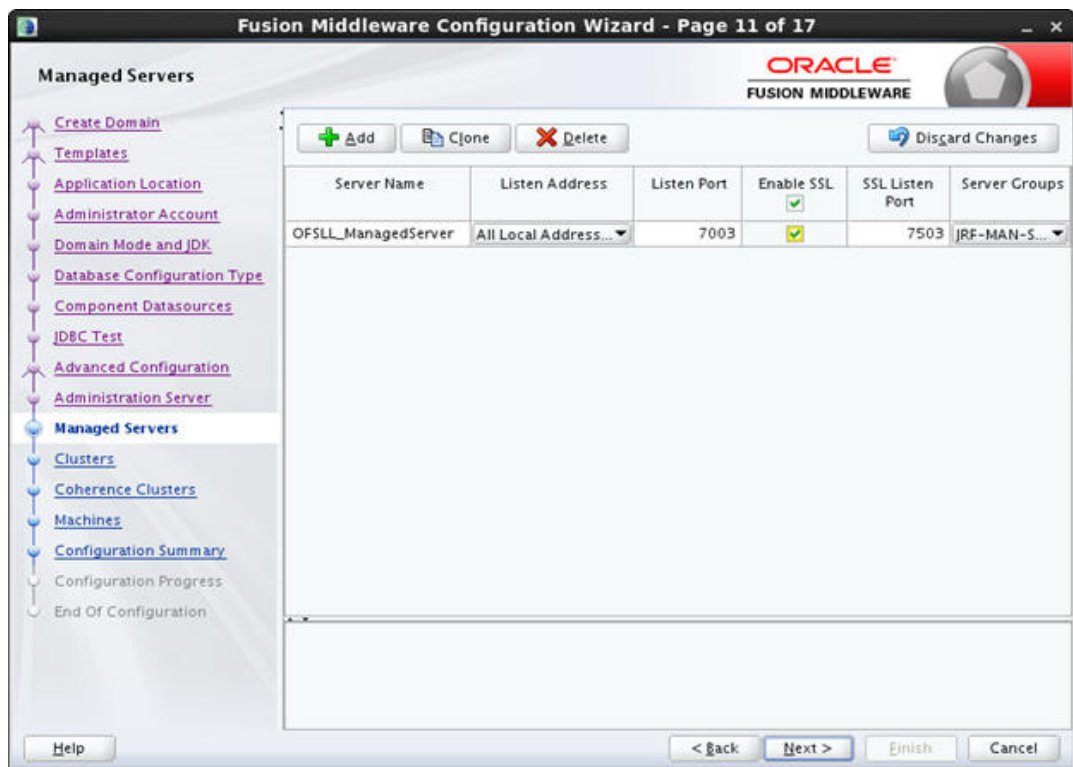
15. Click 'Next'. The following window is displayed.



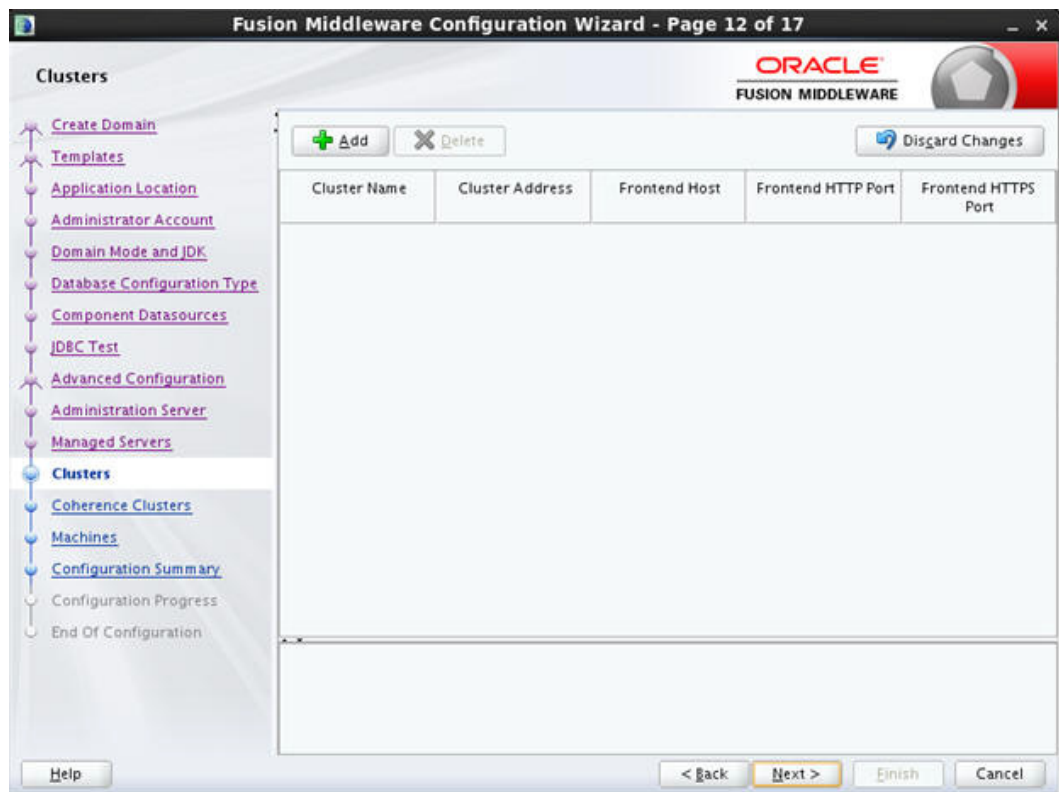
16. Select 'Administration Server' and 'Managed Servers, Clusters and Machines' and click 'Next'. The following window is displayed.



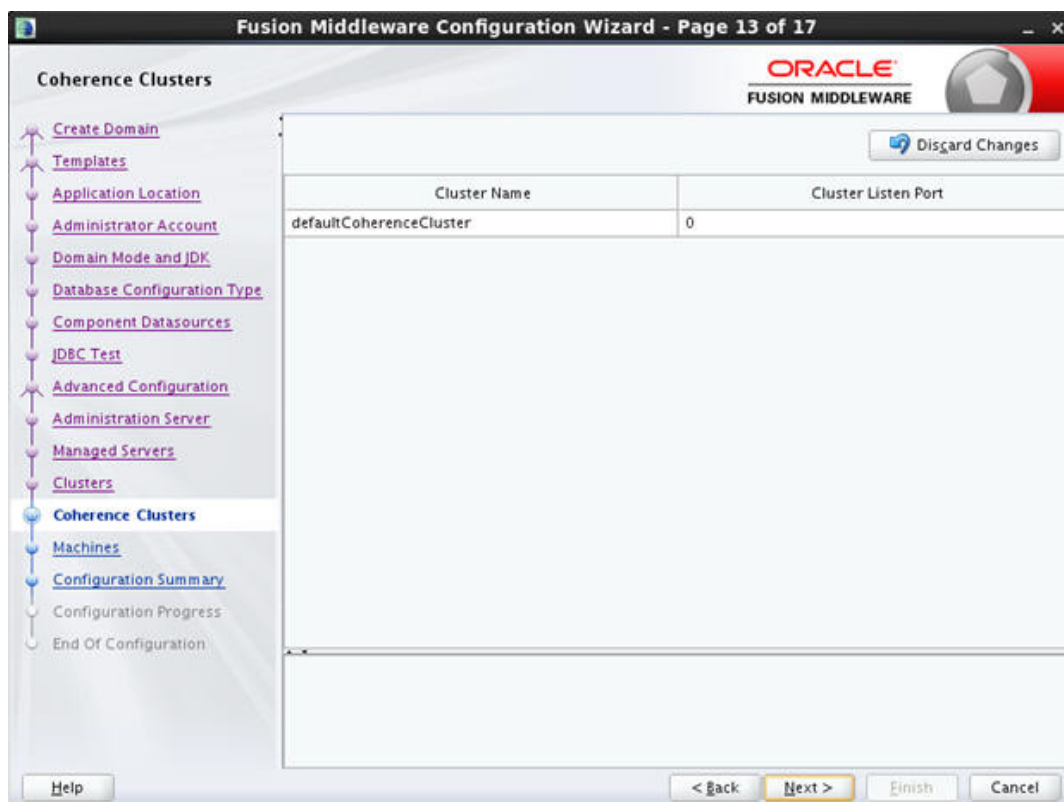
17. Enter Administration 'Server Name' and 'Listen Port' details. Check the SSL port and click 'Next'. The following window is displayed.



18. Click Add button. In the Configure Managed Servers window, enter 'Name' and 'Listen Port' details. Check the SSL port and click 'Next'. The following window is displayed.



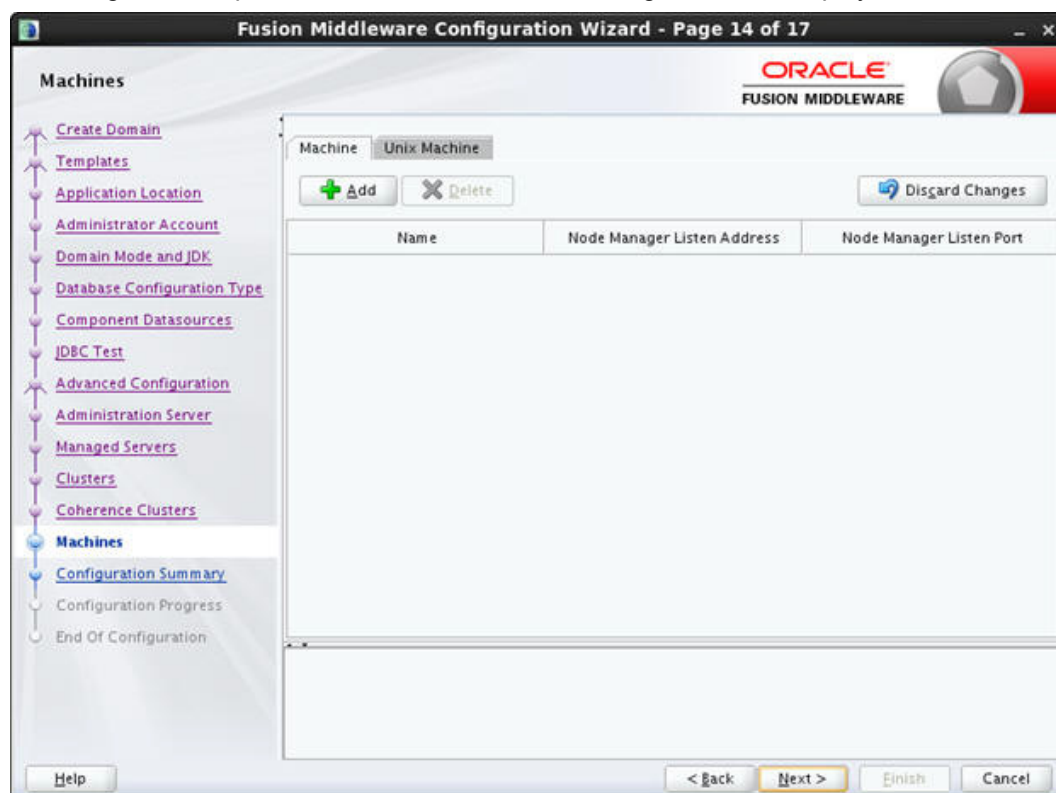
19. Configure as required and click 'Next'. The following window is displayed.



The screenshot shows the 'Coherence Clusters' page of the Fusion Middleware Configuration Wizard. The left sidebar contains a list of steps, with 'Coherence Clusters' highlighted. The main area features a table with two columns: 'Cluster Name' and 'Cluster Listen Port'. A single row is visible with the values 'defaultCoherenceCluster' and '0'. Above the table is a 'Disard Changes' button. At the bottom, there are navigation buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Cluster Name	Cluster Listen Port
defaultCoherenceCluster	0

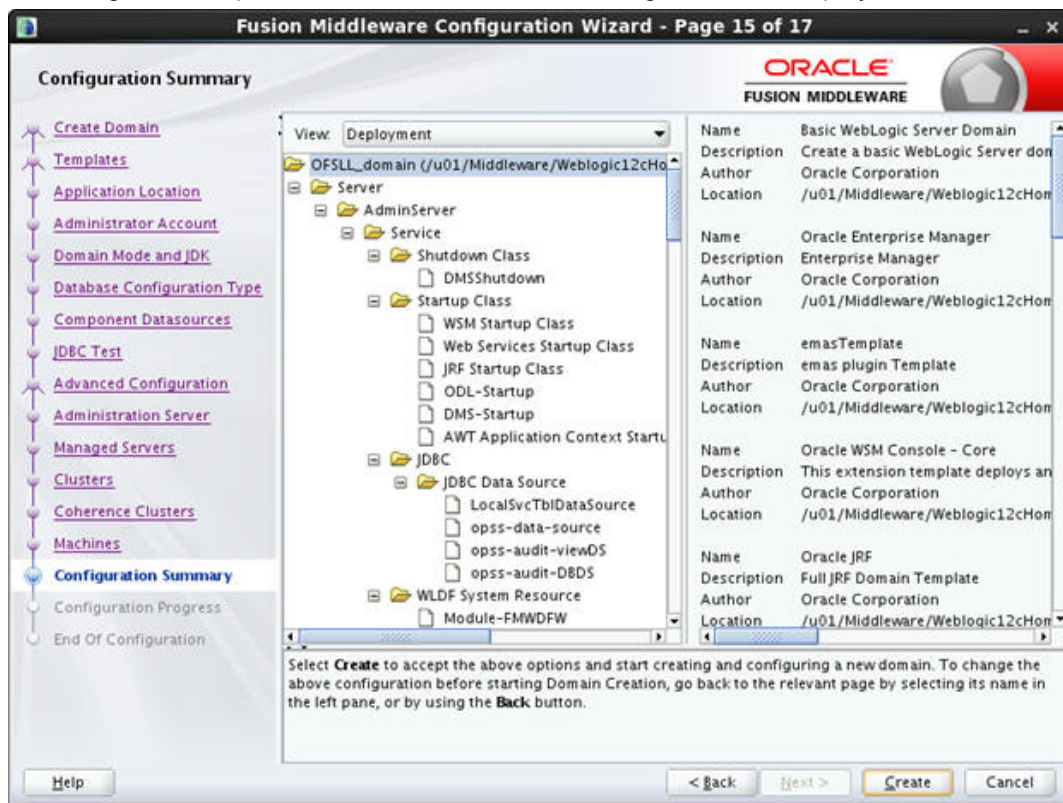
20. Configure as required and click 'Next'. The following window is displayed.



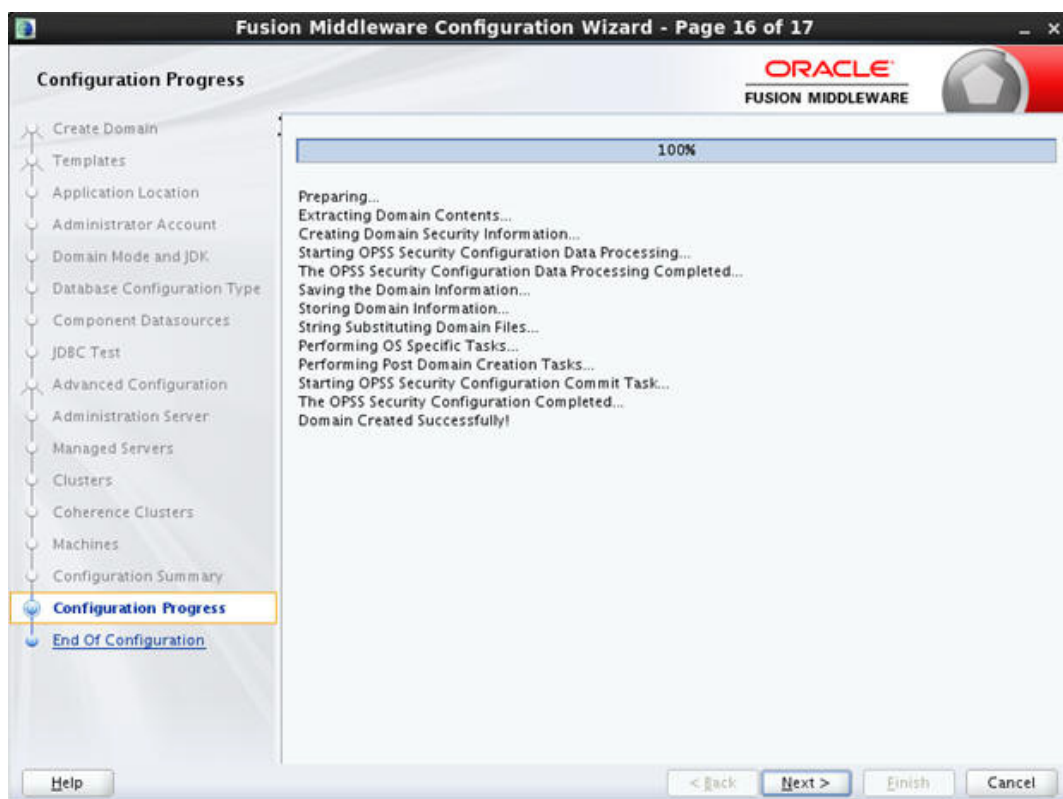
The screenshot shows the 'Machines' page of the Fusion Middleware Configuration Wizard. The left sidebar shows 'Machines' highlighted. The main area has a tab labeled 'Machine' with a sub-tab 'Unix Machine'. Below this are '+ Add' and 'X Delete' buttons, followed by a 'Disard Changes' button. A table with three columns is present: 'Name', 'Node Manager Listen Address', and 'Node Manager Listen Port'. The table is currently empty. Navigation buttons at the bottom include '< Back', 'Next >', 'Finish', and 'Cancel'.

Name	Node Manager Listen Address	Node Manager Listen Port
------	-----------------------------	--------------------------

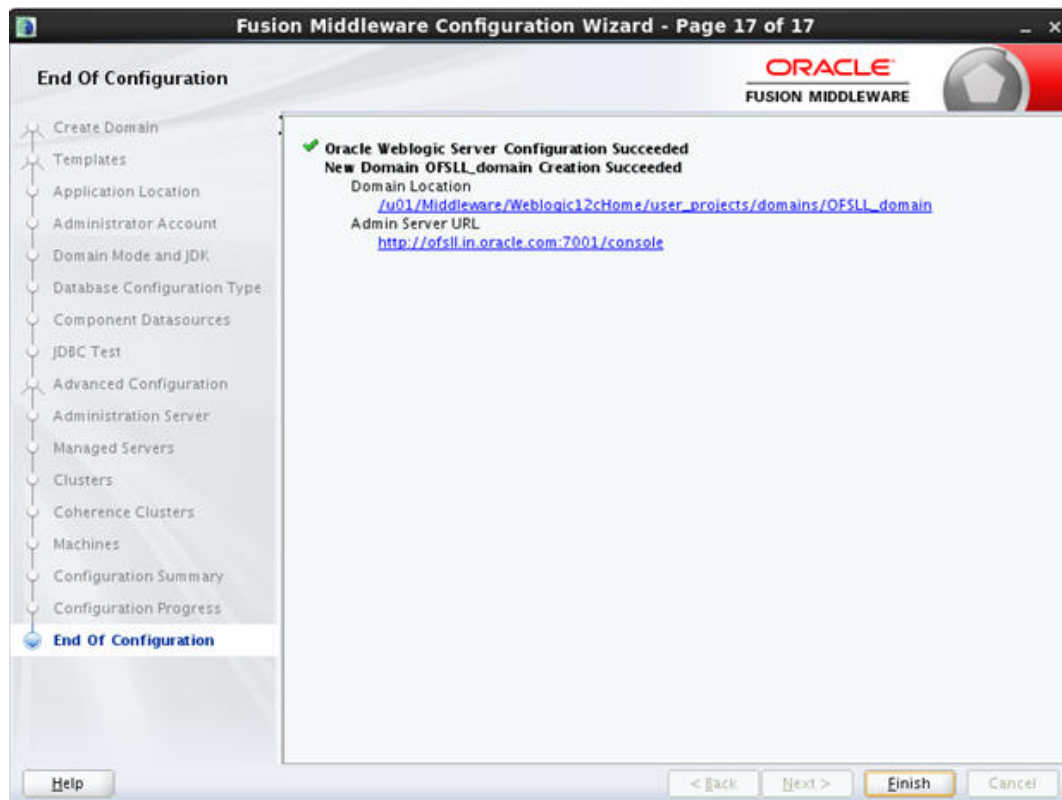
21. Configure as required and click 'Next'. The following window is displayed.



22. Click 'Create'. The following window is displayed.



23. Click 'Next'. The following window is displayed.



24. Once the creation of the Domain is complete, click 'Finish' to close the window.

Note

The default Weblogic installation will be running JVM with 512MB, this has to be increased for the ADF managed server. Say, for a 2 CPU Quad Core with 16 GB it could have the JVM running at 8 GB as:

```
USER_MEM_ARGS="-Xms8192m -Xmx8192m -XX:PermSize=2048m -XX:Max-PermSize=2048m"
```

25. The "\$MW_HOME/user_projects/domains/<mydomain>" directory contains a script that can be used to start the Admin server.

- \$ cd \$MW_HOME/user_projects/domains/<mydomain>/bin
- \$./startWebLogic.sh

If the server is required to be running and access to command line needs to be returned use "nohup" and "&"

```
$ nohup ./startWebLogic.sh &
```

26. To Start Managed Server

- \$ cd \$MW_HOME/user_projects/domains/<mydomain>/bin
- \$./startManagedWebLogic.sh {ManagedServer_name} {AdminServer URL}

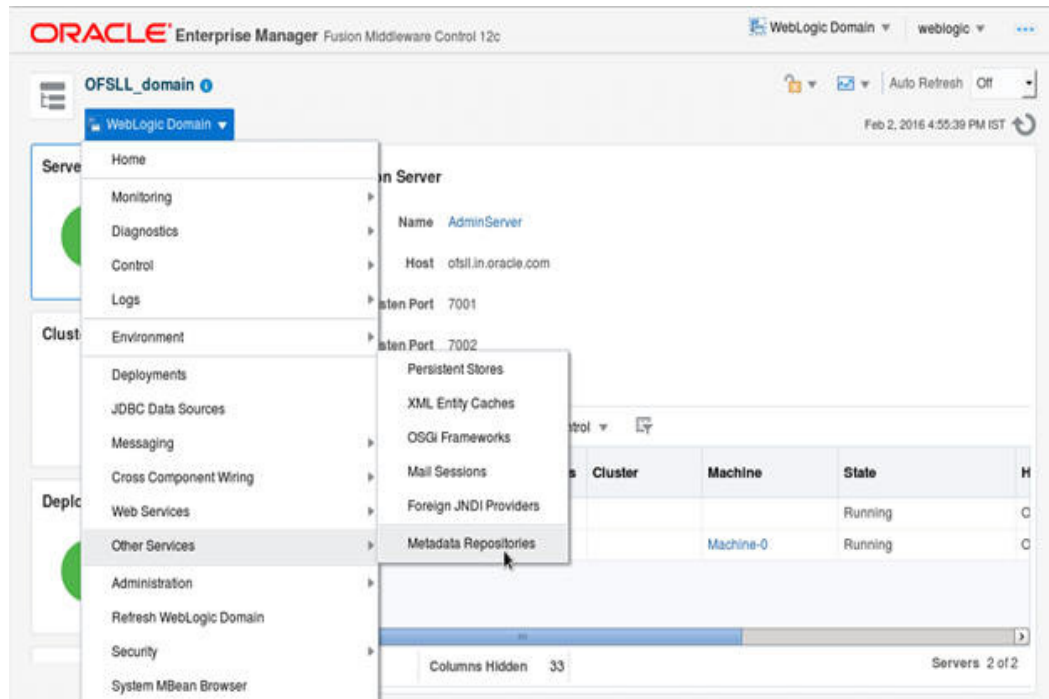
If the server is required to be running and access to command line needs to be returned use "nohup" and "&".

```
$ nohup ./startManagedWebLogic.sh {ManagedServer_name} {AdminServer URL} &
```

3.3 Creating Metadata Repository

Assuming that **OLL_MDS** schema is created using Oracle Repository Creation Utility (RCU) as mentioned in [Creating Schemas using Repository Creation Utility](#) section, follow the below steps to create the repository.

1. Login to Oracle Enterprise Manager 12c console (<http://hostname:port/em>).



2. Click on domain name OFSLL_domain on the left side panel.
3. Expand Weblogic domain OFSLL_domain and click 'Metadata Repositories' option, as shown in the above screen.

4. The following window is displayed.

ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain ▾ weblogic ▾

OFSLL_domain ⓘ

WebLogic Domain ▾

Feb 2, 2016 4:56:23 PM IST

Metadata Repositories

You create most Fusion Middleware component schema repositories in a database using the Repository Creation Utility. Metadata Services (MDS) repositories can be created in a database with the Repository Creation Utility or created on disk as file-based repositories. You must register an MDS repository before you can deploy application metadata to the repository.

Database-Based Repositories

Register... Deregister...

Repository Name	Database Type	Database Name	Schema Name	JNDI Location	Partition	Scope
No Repository						

File-Based Repositories

Register... Deregister...

Repository Name	Directory	Partition	Scope
No Repository			

5. Click 'Register' button. The following window is displayed.

OFSLL_domain ⓘ

WebLogic Domain ▾

Feb 2, 2016 4:56:56 PM IST

repository is created using the Repository Creation Utility. To register, input database connection information and click Query, then select one of the Metadata Repository and click OK button.

OK Cancel

Database Connection Information

Database Type ☒ Oracle ☐ SQL Server ☐ IBM DB2 ☐ MySQL

* Host Name

* Port

* Service Name

* User Name

* Password

Role

Query

Metadata Repository	Is Registered?	Schema Name	Version	Status	Modified Time
No Repository					

Selected Repository

The selected schema can be registered only if it has not already been registered.

Repository Name

Schema Password

6. Enter database instance details under Database Connection Information section and click 'Query'. All available schemas in the given database instance are listed.
7. Select the schema you require and in the Selected Repository – Schema OLL_MDS section, enter 'Repository Name' (adf) and the password.

8. Click 'OK'. The following window is displayed.

ORACLE® Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic

Feb 2, 2016 4:56:56 PM IST

OFSLL_domain

WebLogic Domain

repository is created using the Repository Creation Utility. To register, input database connection information and click Query, then select one of the Metadata Repository and click OK button.

OK Cancel

Database Connection Information

Database Type ☒ Oracle ☐ SQL Server ☐ IBM DB2 ☐ MySQL

* Host Name otzil.in.oracle.com

* Port 1521

* Service Name OFSLLDB

Query

Metadata Repository	Is Registered?	Schema Name	Version	Status	Modified Time
MDS	false	OLL_MDS	12.2.1.0.0	VALID	Jan 22, 2016 6:53:57 PM IST

Selected Repository - Schema: OLL_MDS

The selected schema can be registered only if it has not already been registered.

* Repository Name adf

* Schema Password

9. Click Repository name 'mds-adf' on left panel. You can even select it from right panel.

OFSLL_domain

WebLogic Domain

Feb 2, 2016 5:01:40 PM IST

Information

Metadata Repository mds-adf has been successfully registered. If it is not visible in the table after refresh the page, it may be because Admin Server need to be restarted. Restart Admin Server to see the newly registered Repository.

Metadata Repositories

You create most Fusion Middleware component schema repositories in a database using the Repository Creation Utility. Metadata Services (MDS) repositories can be created in a database with the Repository Creation Utility or created on disk as file-based repositories. You must register an MDS repository before you can deploy application metadata to the repository.

Database-Based Repositories

Register... Deregister...

Repository Name	Database Type	Database Name	Schema Name	JNDI Location	Partition	Scope
mds-adf	Oracle	OLLDB	OLL_MDS	jdbc/mds/adf	Global	Global

File-Based Repositories

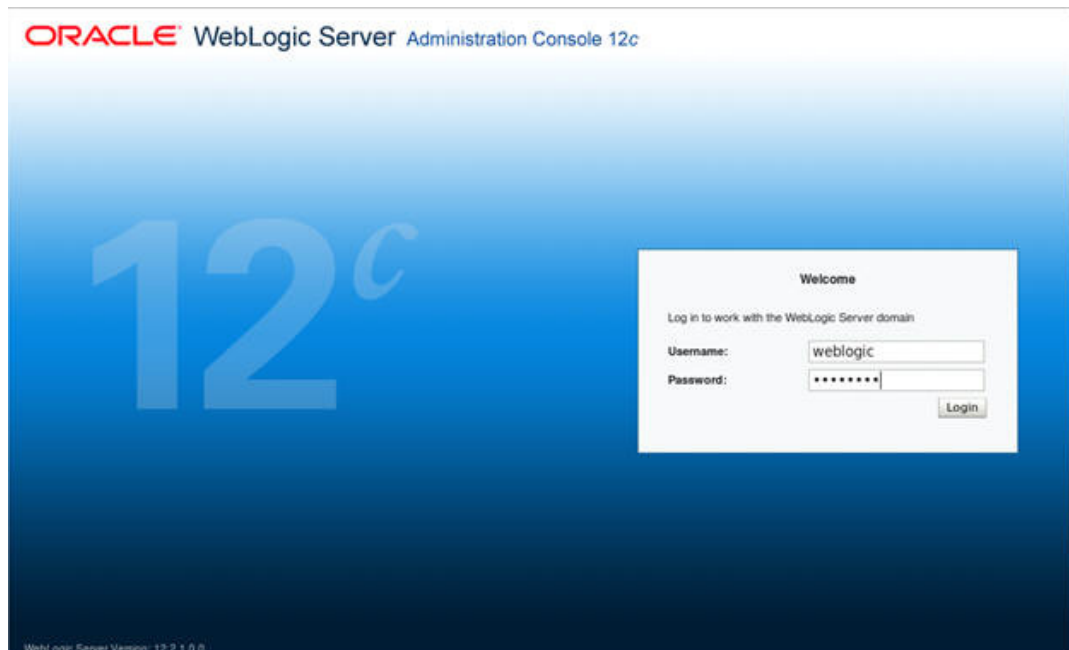
Register... Deregister...

Repository Name	Directory	Partition	Scope
-----------------	-----------	-----------	-------

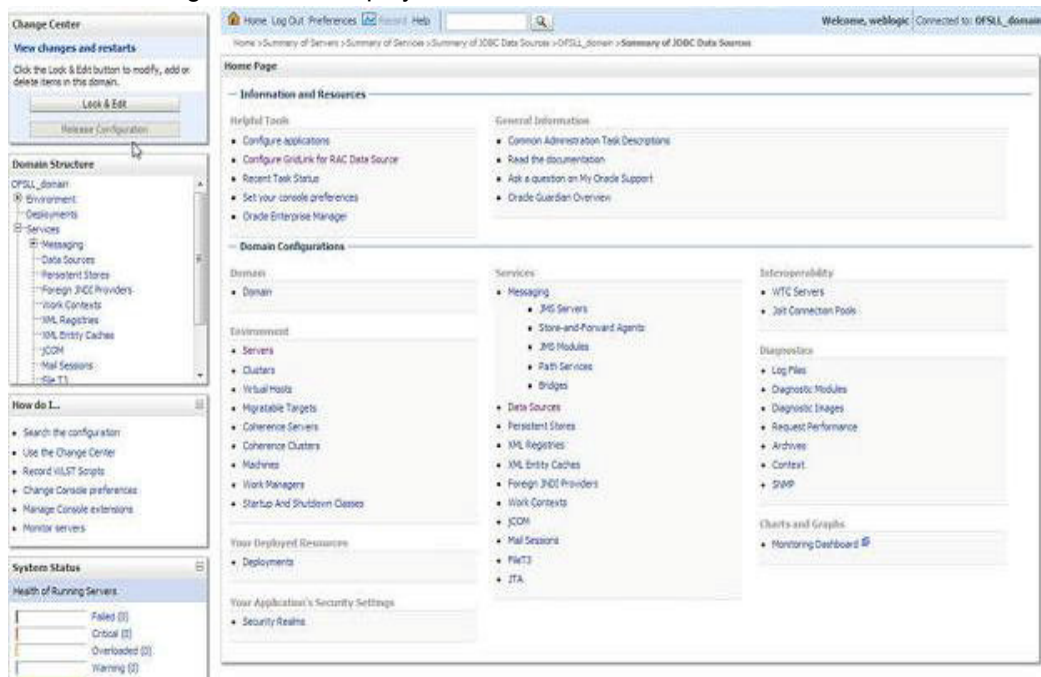
10. Click 'Add' and target to OFSLL_AdminSever and OFSLL_ManagedServer as on right panel.

3.4 Creating Data Source

1. Login to WebLogic Server 12c console (<http://hostname:port/console>).



2. The following window is displayed.



3. Click Domain Name > Services > Data Sources.

4. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of JDBC Data Sources

Summary of JDBC Data Sources

Configuration Monitoring

A JDBC data source is an object bound to the JNDI tree that provides database connectivity through a pool of JDBC connections. Applications can look up a data source on the JNDI tree and then borrow a database connection from a data source.

This page summarizes the JDBC data source objects that have been created in this domain.

Customize this table

Data Sources (Filtered - More Columns Exist)

Click the Lock & Edit button in the Change Center to activate all the buttons on this page.

New Delete Showing 1 to 4 of 4 Previous Next

☐	Name	Type	JNDI Name	Targets	Scope	Domain Partitions
☐	LocalSvcToDataSource	Generic	jdbc:LocalSvcToDataSource	AdminServer	Global	
☐	opss-audit-DBDS	Generic	jdbc/AuditAppendDataSource	AdminServer, OFSLL_ManagedServer	Global	
☐	opss-audit-viewDS	Generic	jdbc/AuditViewDataSource	AdminServer, OFSLL_ManagedServer	Global	
☐	opss-data-source	Generic	jdbc/OpssDataSource	AdminServer, OFSLL_ManagedServer	Global	

5. Click 'Lock & Edit' button on the left panel. Click 'New' on right panel and select Generic Data Source.

Configuration button to allow others to edit the domain.

Lock & Edit Release Configuration

Domain Structure

OFSLL_domain

- Domain Partitions
- Environment
- Deployments
- Services
 - Messaging
 - Data Sources
 - Persistent Stores
 - Foreign JNDI Providers
 - Work Contexts
 - XML Registries
 - XML Entity Caches
 - JCOM
 - Mail Sessions

How do I...

- Create JDBC generic data sources
- Create JDBC GridLink data sources
- Create JDBC multi data sources
- Create UCP data sources

System Status

Health of Running Servers

Failed (0)

Critical (0)

Overloaded (0)

Microservices (0)

Back Next Finish Cancel

JDBC Data Source Properties

The following properties will be used to identify your new JDBC data source.

* Indicates required fields

What would you like to name your new JDBC data source?

Name: OFSLL

What scope do you want to create your data source in?

Scope: Global

What JNDI name would you like to assign to your new JDBC Data Source?

JNDI Name: jdbc/ofsl\lDBConnDS

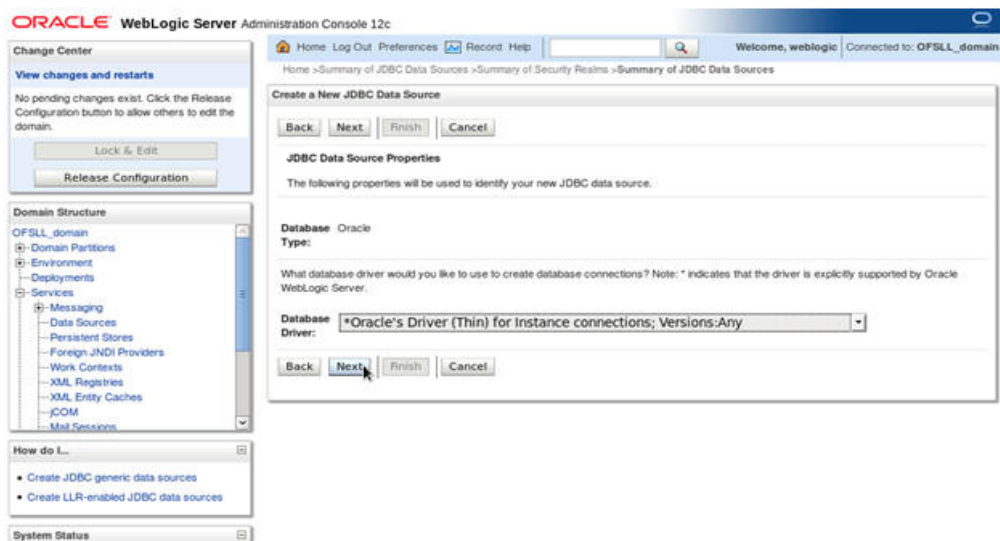
What database type would you like to select?

Database Type: Oracle

Back Next Finish Cancel

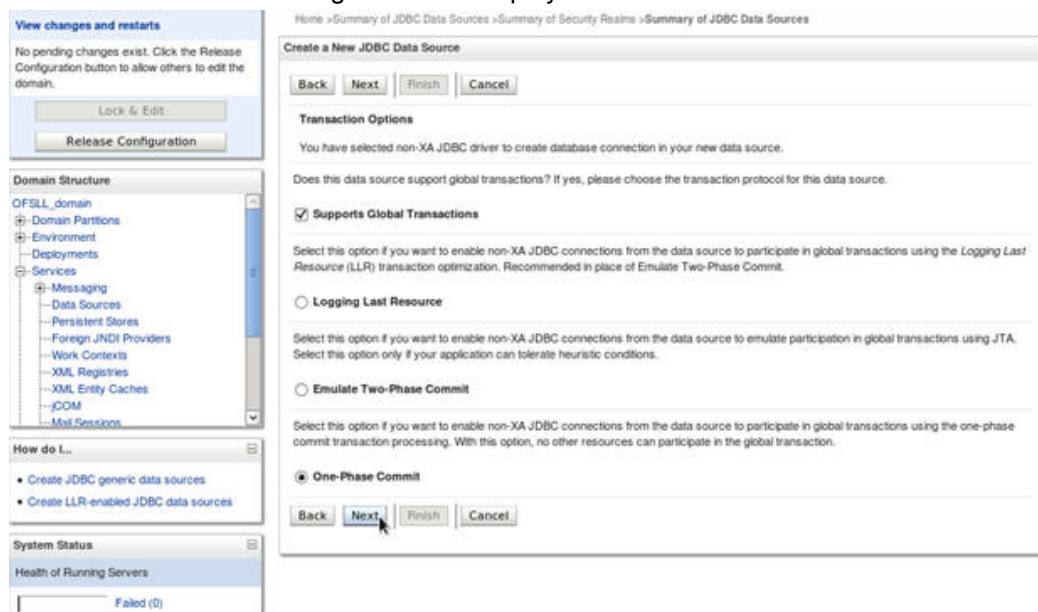
6. Enter Data source 'Name', JNDI Name as 'jdbc/ofsl\lDBConnDS' and select 'Oracle' as Database Type.

7. Click 'Next'. The following window is displayed.



8. Select the Database Driver 'Oracle's Driver(Thin) for Instance connections; Versions:Any' as shown above.

9. Click 'Next'. The following window is displayed.



10. Click 'Next'. The following window is displayed.

Define Connection Properties.

What is the name of the database you would like to connect to?

Database Name:

What is the name or IP address of the database server?

Host Name:

What is the port on the database server used to connect to the database?

Port:

What database account user name do you want to use to create database connections?

Database User Name:

What is the database account password to use to create database connections?

Password:

Confirm Password:

Additional Connection Properties:

oracle.jdbc.DRCPConnectionClass:

Back Next Finish Cancel

11. Enter Database details click 'Next'. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of JDBC Data Sources > Summary of Security Realms > Summary of JDBC Data Sources

Create a New JDBC Data Source

Test Configuration Back Next Finish Cancel

Test Database Connection

Test the database availability and the connection properties you provided.

What is the full package name of JDBC driver class used to create database connections in the connection pool?

(Note that this driver class must be in the classpath of any server to which it is deployed.)

Driver Class Name:

What is the URL of the database to connect to? The format of the URL varies by JDBC driver.

URL:

What database account user name do you want to use to create database connections?

Database User Name:

What is the database account password to use to create database connections?

(Note: for secure password management, enter the password in the Password field instead of the Properties field below)

Password:

12. Click 'Test Configuration'. The following window is displayed.

Messages
✔ Connection test succeeded.

Create a New JDBC Data Source

Test Configuration | Back | Next | Finish | Cancel

Test Database Connection
Test the database availability and the connection properties you provided.

What is the full package name of JDBC driver class used to create database connections in the connection pool?
(Note that this driver class must be in the classpath of any server to which it is deployed.)

Driver Class Name: oracle.jdbc.OracleDriver

What is the URL of the database to connect to? The format of the URL varies by JDBC driver.

URL: jdbc:oracle:thin:@ofssl.in.oracle.com:1521:OFSLDDB

What database account user name do you want to use to create database connections?

Database User Name: OFSSL143

What is the database account password to use to create database connections?
(Note: for secure password management, enter the password in the Password field instead of the Properties field below)

Password:

Confirm Password:

What are the properties to pass to the JDBC driver when creating database connections?

Properties:
user=OFSSL143

13. Displays confirmation message as 'Connection test succeeded'. Click 'Next'. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of JDBC Data Sources > Summary of Security Realms > Summary of JDBC Data Sources

Create a New JDBC Data Source

Back | Next | Finish | Cancel

Select Targets
You can select one or more targets to deploy your new JDBC data source. If you don't select a target, the data source will be created but not deployed. You will need to deploy the data source at a later time.

Servers
☒ AdminServer
☒ OFSSL_ManagedServer

Back | Next | Finish | Cancel

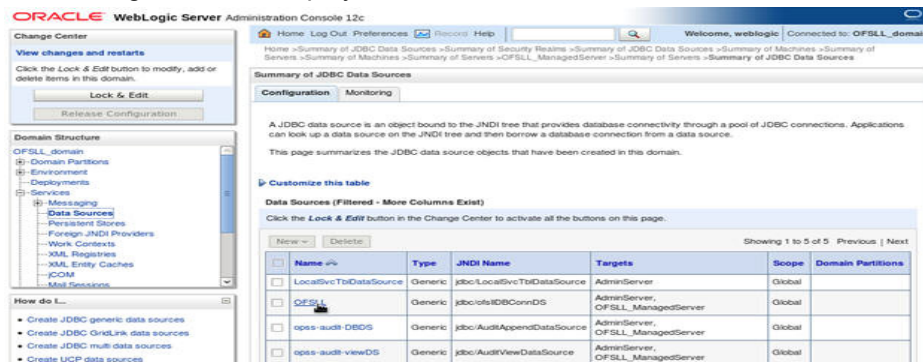
Change Center
View changes and restarts
No pending changes exist. Click the Release Configuration button to allow others to edit the domain.
Lock & Edit
Release Configuration

Domain Structure
OFSSL_domain
- Domain Partitions
- Environment
- Deployments
- Services
- Messaging
- Data Sources
- Persistent Stores
- Foreign JNDI Providers
- Work Contexts
- XML Registries
- XML Entity Caches
- JCOM
- Mail Sessions

How do I...
• Create JDBC generic data sources
• Create LLR-enabled JDBC data sources

System Status

14. Select target Servers 'AdminServer' and 'ManagedServer' and click 'Finish'. The following window is displayed.



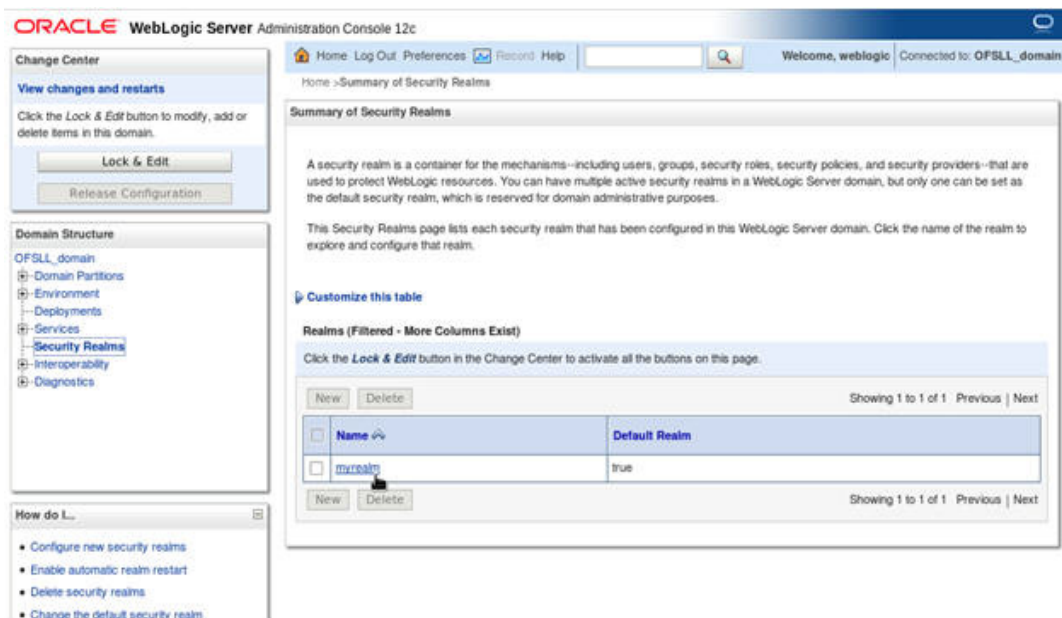
15. Click 'Activate Changes' on the left panel.

Update the following parameters in JDBC data source connection pool:

1. Select Services > Data Sources > select the OFSLL data source > Connection Pool.
2. Initial capacity and Maximum capacity is defaulted to 15, if the number of concurrent users are more this needs to be increased.
3. Click Advanced button and update the following:
 - Inactive Connection Timeout=900
 - Uncheck the 'Wrap Data Types' parameter for better performance.
4. Click 'Save'.

3.5 Creating SQL Authentication Provider

1. Login to WebLogic server administration console and click 'Security Realms' in left panel. The following window is displayed.



2. Click 'myrealm' on right panel. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Security Realms > myrealm

Settings for myrealm

Configuration Users and Groups Roles and Policies Credential Mappings Providers Migration

General RDBMS Security Store User Lockout Performance

Click the **Lock & Edit** button in the Change Center to modify the settings on this page.

Save

Use this page to configure the general behavior of this security realm.

Note:
If you are implementing security using JACC (Java Authorization Contract for Containers as defined in JSR 115), you must use the DD Only security model. Other WebLogic Server models are not available and the security functions for Web applications and EJBs in the Administration Console are disabled.

Name: myrealm The name of this security realm. [More Info...](#)

Security Model Default: DD Only Specifies the default security model for Web applications or EJBs that are secured by this security realm. You can override this default during deployment. [More Info...](#)

☒ Combined Role Mapping Enabled Determines how the role mappings in the Enterprise Application, Web application, and EJB containers interact. This setting is valid only for Web applications and EJBs that use the Advanced security model and that initialize roles from deployment descriptors. [More Info...](#)

3. Click on Providers tab. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Security Realms > myrealm > Providers

Settings for myrealm

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

Authentication Password Validation Authorization Adjudication Role Mapping Auditing Credential Mapping Certification Path

An Authentication provider allows WebLogic Server to establish trust by validating a user. You must have one Authentication provider in a security realm, and you can configure multiple Authentication providers in a security realm. Different types of Authentication providers are designed to access different data stores, such as LDAP servers or DBMS.

[Customize this table](#)

Authentication Providers

New Delete Reorder Showing 1 to 3 of 3 Previous Next

☐	Name	Description	Version
☐	Trust Service Identity Asserter	Trust Service Identity Assertion Provider	1.0
☐	DefaultAuthenticator	WebLogic Authentication Provider	1.0
☐	DefaultIdentityAsserter	WebLogic Identity Assertion provider	1.0

New Delete Reorder Showing 1 to 3 of 3 Previous Next

4. Click 'Lock & Edit' to unlock the screen and click 'New' button in Authentication Providers sub tab. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Change Center' panel has 'Lock & Edit' and 'Release Configuration' buttons. The 'Domain Structure' panel shows a tree view with 'OFSLL_domain' selected. The 'How do I...' panel lists tasks like 'Manage security providers'. The main area displays the 'Create a New Authentication Provider' dialog box. It has 'OK' and 'Cancel' buttons at the top. The 'Name' field is set to 'OFSLLDBAuthenticator' and the 'Type' dropdown is set to 'SQLAuthenticator'.

5. Create Authentication provider with following values:

- Name: OFSLLDBAuthenticator
- Type: SQLAuthenticator

6. Click 'OK'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The 'Change Center' panel on the left has 'Activate Changes' and 'Undo All Changes' buttons. The 'Domain Structure' panel shows the same tree view. The 'How do I...' panel lists tasks like 'Configure Authentication and Identity Assertion providers'. The main area displays the 'Settings for myrealm' page. It has tabs for 'Configuration', 'Users and Groups', 'Roles and Policies', 'Credential Mappings', 'Providers', and 'Migration'. The 'Providers' tab is active, showing a sub-tab for 'Authentication'. Below the sub-tabs, there is a text block explaining authentication providers. Below that, there is a table titled 'Authentication Providers' with columns 'Name', 'Description', and 'Version'. The table lists four providers: 'Trust Service Identity Asserter', 'DefaultAuthenticator', 'DefaultIdentityAsserter', and 'OFSLLDBAuthenticator'. The 'OFSLLDBAuthenticator' provider is highlighted. Below the table, there are 'New', 'Delete', and 'Reorder' buttons.

Name	Description	Version
Trust Service Identity Asserter	Trust Service Identity Assertion Provider	1.0
DefaultAuthenticator	WebLogic Authentication Provider	1.0
DefaultIdentityAsserter	WebLogic Identity Assertion provider	1.0
OFSLLDBAuthenticator	Provider that performs DBMS authentication	1.0

7. Click on 'Activate Changes'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console 12c. On the left, the 'Change Center' panel displays 'View changes and restarts' and 'Pending changes exist. They must be activated to take effect.' with an 'Activate Changes' button. Below it is the 'Domain Structure' tree showing 'OFSSL_domain' and its sub-nodes. At the bottom left is the 'How do I...' section. The main content area shows 'Settings for myrealm' with tabs for Configuration, Users and Groups, Roles and Policies, Credential Mappings, Providers, and Migration. The 'Providers' tab is active, showing a table of Authentication Providers. The table has columns for Name, Description, and Version. The providers listed are OFSLDDBAuthenticator, DefaultAuthenticator, DefaultIdentityAsserter, and Trust Service Identity Asserter. The 'Activate Changes' button is highlighted with a mouse cursor.

Authentication order should be maintained as mentioned in the above screen.
'OFSLDDBAuthenticator' will be displayed as above.

8. Click on 'OFSLDDBAuthenticator'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console 12c with the 'Settings for OFSLDDBAuthenticator' page. The left sidebar shows the 'Change Center' with 'Lock & Edit' and 'Release Configuration' buttons. The 'Domain Structure' tree is also visible. The main content area has tabs for 'Configuration' and 'Performance', with 'Configuration' being active. Under 'Configuration', there are 'Common' and 'Provider Specific' tabs. The 'Common' tab is selected, showing fields for Name, Description, Version, and Control Flag. The 'Control Flag' is set to 'SUFFICIENT'. A 'Save' button is at the bottom left of the configuration area. The 'How do I...' section at the bottom left provides links to configuration guides.

9. Select 'SUFFICIENT' as the Control Flag and click 'Save'.

10. Click Provider Specific sub tab under Configuration tab. The following window is displayed.

11. Specify the following values in corresponding fields:

- Data Source Name: OFSLL
- Password Style Retained: Uncheck
- Password Algorithm: SHA-512
- Password Style: SALTEDHASHED
- Provide the SQL Queries from the column Corresponding SQL Queries as per OFSLL Tables as given below.

Operation	Default SQL Query from Weblogic	Corresponding SQL Queries as per our Tables
SQL Get Users Password:	SELECT U_PASS- WORD FROM USERS WHERE U_NAME = ?	SELECT UAU_USR_PASSWORD FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE = ?
SQL Set User Password:	UPDATE USERS SET U_PASSWORD = ? WHERE U_NAME = ?	UPDATE USER_AUTHORISATIONS SET UAU_USR_PASSWORD = ? WHERE UAU_USR_CODE = ?
SQL User Exists:	SELECT U_NAME FROM USERS WHERE U_NAME = ?	SELECT UAU_USR_CODE FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE = ?
SQL List Users:	SELECT U_NAME FROM USERS WHERE U_NAME LIKE ?	SELECT UAU_USR_CODE FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE LIKE ?
SQL Create User:	INSERT INTO USERS VALUES (? , ? , ?)	INSERT INTO USER_AUTHORISA- TIONS(UAU_USR_CODE, UAU_USR_ PASSWORD,UAU_DESC) VALUES(?,?,?)

Operation	Default SQL Query from Weblogic	Corresponding SQL Queries as per our Tables
SQL Remove User:	DELETE FROM USERS WHERE U_NAME = ?	DELETE FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE= ?
SQL List Groups:	SELECT G_NAME FROM GROUPS WHERE G_NAME LIKE ?	SELECT UGR_GROUP_CODE FROM USER_GROUPS WHERE UGR_GROUP_CODE LIKE ?
SQL Group Exists:	SELECT G_NAME FROM GROUPS WHERE G_NAME = ?	SELECT UGR_GROUP_CODE FROM USER_GROUPS WHERE UGR_GROUP_CODE = ?
SQL Create Group:	INSERT INTO GROUPS VALUES (?, ?)	INSERT INTO USER_GROUPS(UGR_GROUP_CODE,UGR_GROUP_DESC) VALUES(?,?)
SQL Remove Group:	DELETE FROM GROUPS WHERE G_NAME = ?	DELETE FROM USER_GROUPS WHERE UGR_GROUP_CODE = ?
SQL Is Member:	SELECT G_MEMBER FROM GROUPMEMBERS WHERE G_NAME = ? AND G_MEMBER = ?	SELECT UGM_MEMBER_USR_CODE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_GROUP_CODE= ? AND UGM_MEMBER_USR_CODE = ?
SQL List Member Groups:	SELECT G_NAME FROM GROUPMEMBERS WHERE G_MEMBER = ?	SELECT UGM_MEMBER_GROUP_CODE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_USR_CODE= ?
SQL List Group Members:	SELECT G_MEMBER FROM GROUPMEMBERS WHERE G_NAME = ? AND G_MEMBER LIKE ?	SELECT UGM_MEMBER_USR_CODE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_GROUP_CODE= ? AND UGM_MEMBER_USR_CODE LIKE ?
SQL Remove Group Memberships:	DELETE FROM GROUPMEMBERS WHERE G_MEMBER = ? OR G_NAME = ?	DELETE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_USR_CODE= ? OR UGM_MEMBER_GROUP_CODE= ?
SQL Add Member To Group:	INSERT INTO GROUPMEMBERS VALUES(?, ?)	INSERT INTO USER_GROUP_MEMBERS (UGM_MEMBER_GROUP_CODE,UGM_MEMBER_USR_CODE) VALUES(?,?)
SQL Remove Member From Group:	DELETE FROM GROUPMEMBERS WHERE G_NAME = ? AND G_MEMBER = ?	DELETE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_GROUP_CODE= ? AND UGM_MEMBER_USR_CODE= ?
SQL Remove Group Member:	DELETE FROM GROUPMEMBERS WHERE G_NAME = ?	DELETE FROM USER_GROUP_MEMBERS WHERE UGM_MEMBER_GROUP_CODE= ?

Operation	Default SQL Query from Weblogic	Corresponding SQL Queries as per our Tables
SQL Get User Description:	SELECT U_DESCRIPTION FROM USERS WHERE U_NAME = ?	SELECT UAU_DESC FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE = ?
SQL Set User Description:	UPDATE USERS SET U_DESCRIPTION = ? WHERE U_NAME = ?	UPDATE USER_AUTHORISATIONS SET UAU_DESC= ? WHERE UAU_USR_CODE= ?
SQL Get Group Description:	SELECT G_DESCRIPTION FROM GROUPS WHERE G_NAME = ?	SELECT UGR_GROUP_DESC FROM USER_GROUPS WHERE UGR_GROUP_CODE= ?
SQL Set Group Description:	UPDATE GROUPS SET G_DESCRIPTION = ? WHERE G_NAME = ?	UPDATE USER_GROUPS SET UGR_GROUP_DESC= ? WHERE UGR_GROUP_CODE= ?
Provider Name	OFSLLDBAuthenticator	

The screenshot shows the configuration page for the OFSLLDBAuthenticator provider. It includes the following sections:

- SQL Remove Group Member:** A text field containing "MEMBER_GROUP_CODE= ?". To the right, a description states: "The SQL statement used to remove a member from a group. The SQL statement requires a single parameter; the username or group name removed." with a "More Info..." link.
- Descriptions Supported:** A checkbox labeled "Descriptions Supported" is checked. To the right, a description states: "Indicates whether user and group descriptions are supported by the database used by the provider." with a "More Info..." link.
- SQL Get User Description:** A text field containing "WHERE UAU_USR_CODE = ?". To the right, a description states: "The SQL statement used to retrieve the description of a specific user. Only valid if Descriptions Supported is enabled. The SQL statement requires a single parameter for the username and must return a result set containing at most a single record for the user description." with a "More Info..." link.
- SQL Set User Description:** A text field containing "WHERE UAU_USR_CODE= ?".
- SQL Get Group Description:** A text field containing "WHERE UGR_GROUP_CODE= ?". To the right, a description states: "The SQL statement used to retrieve the description of a specific group. Only valid if Descriptions Supported is enabled. The SQL statement requires a single parameter for the group name and must return a result set containing at most a single record for the group description." with a "More Info..." link.
- SQL Set Group Description:** A text field containing "WHERE UGR_GROUP_CODE= ?". To the right, a description states: "The SQL statement used to specify a description for a group. Only valid if Descriptions Supported is enabled. The SQL statement requires two parameters: the group description and the group name." with a "More Info..." link.
- Save:** A button at the bottom left of the configuration area.

12. Click 'Save'.

Note

Application server needs to be restarted for these changes to take effect.

3.6 Creating User Groups and Users

3.6.1 Creating Users

Create an OFSLL application super user to login to the application.

A script is provided in the distribution media in the dba_utils folder to create an user.

Note

By default there are no users created to login to OFSLL application.

Run the script 'crt_app_user.sql script' as a OFSLL application owner user.

```
SQL*Plus: Release 12.1.0.2.0 Production on Thu Feb 4 12:47:05 2016
Copyright (c) 1982, 2014, Oracle. All rights reserved.

Enter user-name: OFSLL143TEST1
Enter password:
Last Successful login time: Thu Feb 04 2016 12:02:37 +05:30

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing opt
ions

SQL> @/home/dev/Desktop/crt_app_user.sql;
Enter the name of the OFSLL App user Id you
Want to create user: DEMOSUPR
Enter the First Name for this user: DEMO
Enter the Last Name for this user: SUPR
Enter the Phone Number for this user: 9999777321
Enter the Fax Number for this user: 9999888321

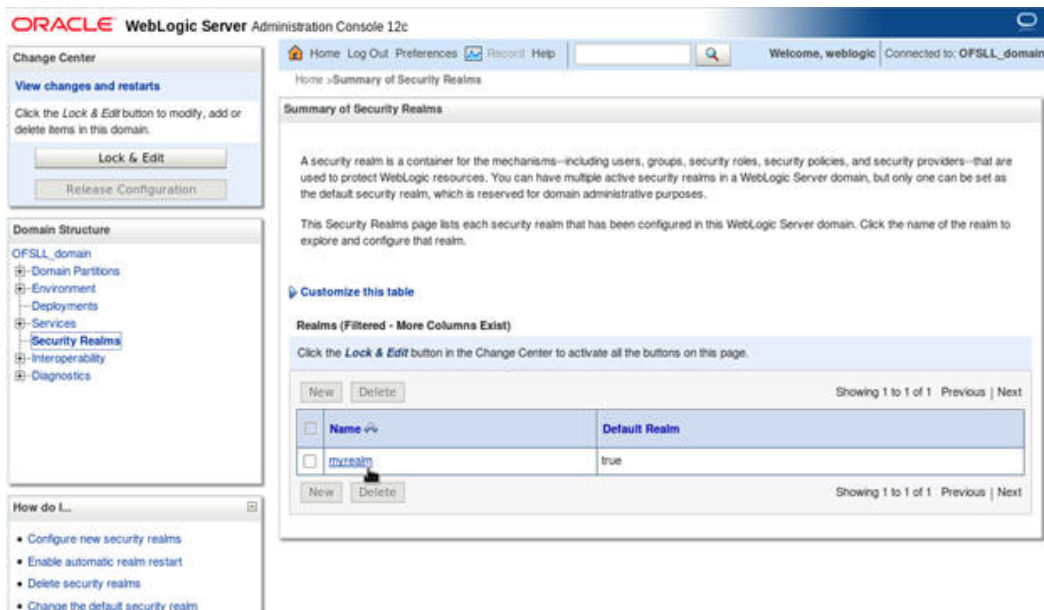
1 row created.

1 row created.

1 row created.

SQL> █
```

1. Login into WebLogic server console.
2. Click 'Security Realms' on the left panel.
3. Click 'myrealm' on the right panel..



4. Select 'Users' tab under Users and Groups.

5. If SQLAuthenticator is configured as a Security Provider for the OFSLL application, the Users are automatically created in weblogic when created through an application.

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains the 'Change Center' with 'View changes and restarts' and 'Lock & Edit' buttons, and a 'Domain Structure' tree. The main area is titled 'Settings for myrealm' and has tabs for 'Configuration', 'Users and Groups', 'Roles and Policies', 'Credential Mappings', 'Providers', and 'Migration'. The 'Users and Groups' tab is active, and the 'Users' sub-tab is selected. A message states: 'This page displays information about each user that has been configured in this security realm.' Below this is a 'Customize this table' link and a table of users. The table has columns for 'Name', 'Description', and 'Provider'. The users listed are DEMOSUPR, LCMUser, OracleSystemUser, TESTUSER, and weblogic. The 'weblogic' user is highlighted with a mouse cursor.

Name	Description	Provider
DEMOSUPR	DEMO SUPR	OFSLLDBAuthenticator
LCMUser	This is the default service account for WebLogic Server Lifecycle Manager configuration updates.	DefaultAuthenticator
OracleSystemUser	Oracle application software system user.	DefaultAuthenticator
TESTUSER	TEST USER	OFSLLDBAuthenticator
weblogic	This user is the default administrator.	DefaultAuthenticator

3.6.2 Creating User Groups

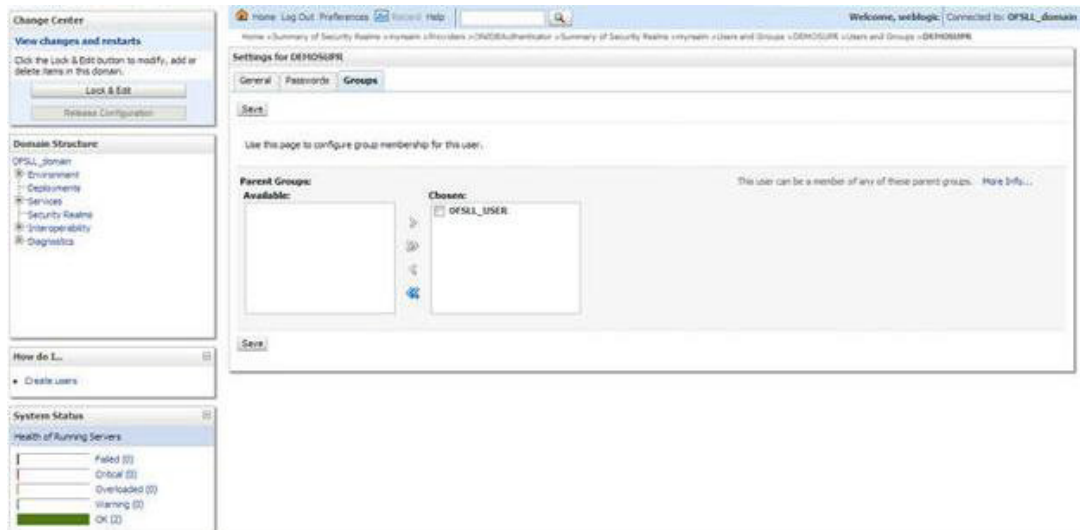
1. Select 'Groups' tab under Users and Groups.
2. If SQLAuthenticator is configured as a Security Provider for the OFSLL application, the Groups are automatically created in weblogic when created through an application.

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains the 'Change Center' with 'View changes and restarts' and 'Lock & Edit' buttons, and a 'Domain Structure' tree. The main area is titled 'Settings for myrealm' and has tabs for 'Configuration', 'Users and Groups', 'Roles and Policies', 'Credential Mappings', 'Providers', and 'Migration'. The 'Users and Groups' tab is active, and the 'Groups' sub-tab is selected. A message states: 'This page displays information about each group that has been configured in this security realm.' Below this is a 'Customize this table' link and a table of groups. The table has columns for 'Name', 'Description', and 'Provider'. The groups listed are AdminChannelUsers, Administrators, AppTesters, CrossDomainConnectors, Deployers, Monitors, OFSLL_USER, Operators, and OracleSystemGroup. The 'OFSLL_USER' group is highlighted with a mouse cursor.

Name	Description	Provider
AdminChannelUsers	AdminChannelUsers can access the admin channel.	DefaultAuthenticator
Administrators	Administrators can view and modify all resource attributes and start and stop servers.	DefaultAuthenticator
AppTesters	AppTesters group.	DefaultAuthenticator
CrossDomainConnectors	CrossDomainConnectors can make inter-domain calls from foreign domains.	DefaultAuthenticator
Deployers	Deployers can view all resource attributes and deploy applications.	DefaultAuthenticator
Monitors	Monitors can view and modify all resource attributes and perform operations not restricted by roles.	DefaultAuthenticator
OFSLL_USER	OFSLL USER GROUP	OFSLLDBAuthenticator
Operators	Operators can view and modify all resource attributes and perform server lifecycle operations.	DefaultAuthenticator
OracleSystemGroup	Oracle application software system group.	DefaultAuthenticator

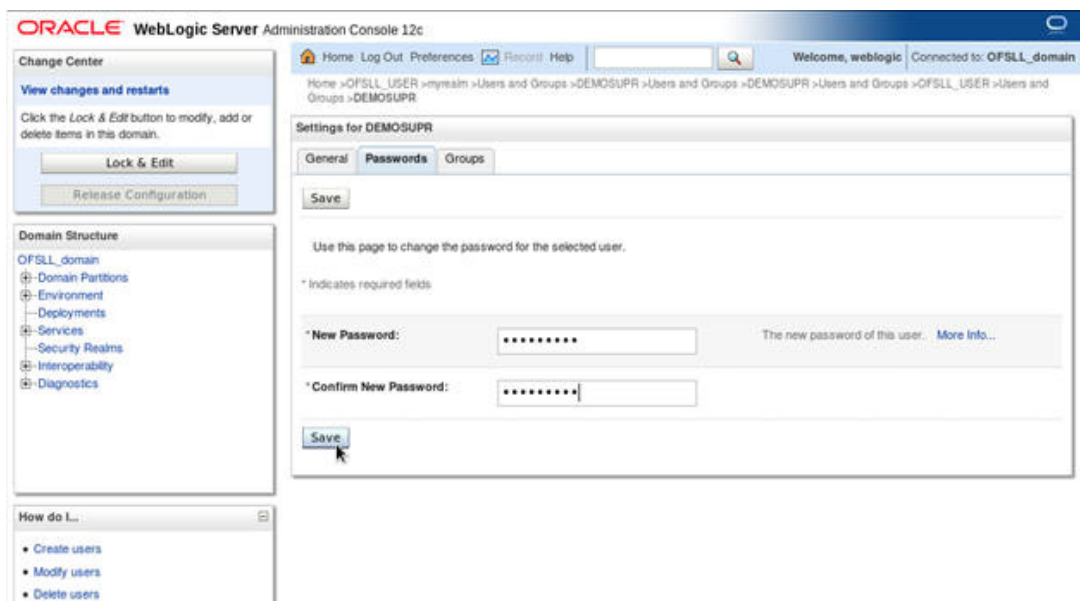
3.6.3 Assigning Users to Groups

The USERS are automatically mapped to default application group - OFSLL_USER.

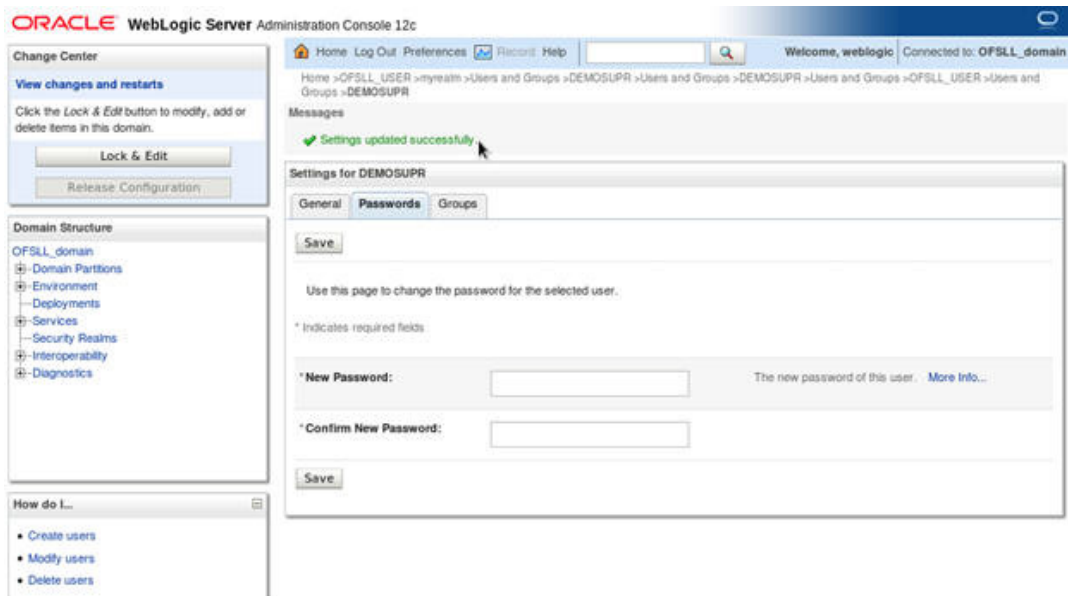


3.6.4 Resetting password via weblogic console

1. Click on 'User'. Select Passwords tab and enter new password and confirm password.



2. Click 'Save'. The following window displayed.



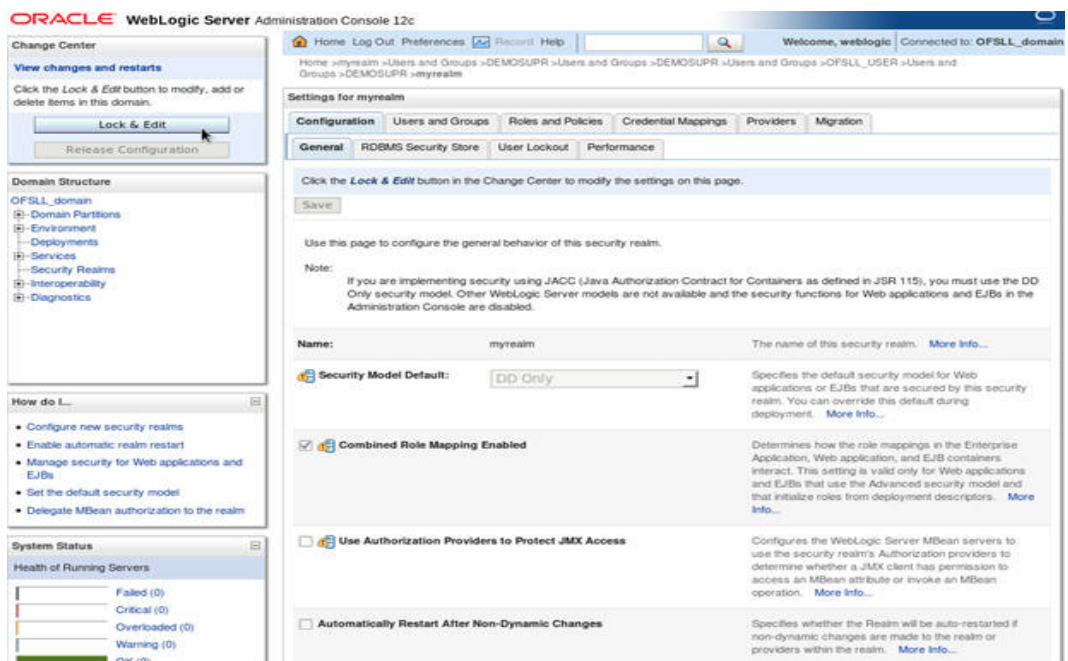
3.7 Implementing JMX Policy for Change Password

1. Login to Oracle WebLogic Server 12c console (<http://hostname:port/console>)

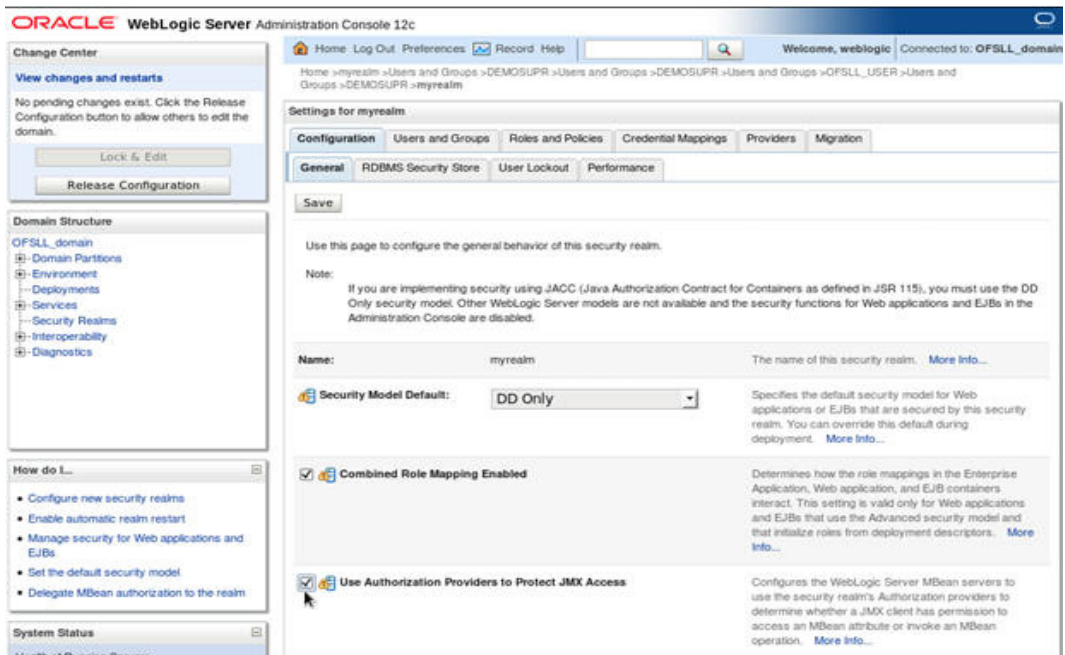
Note

The Change Password feature uses the JMX Policy configured on the domain. Hence, the AdminServer is required to be up and running to enable this.

2. Click **Domain > Security > myrealm > Configuration**



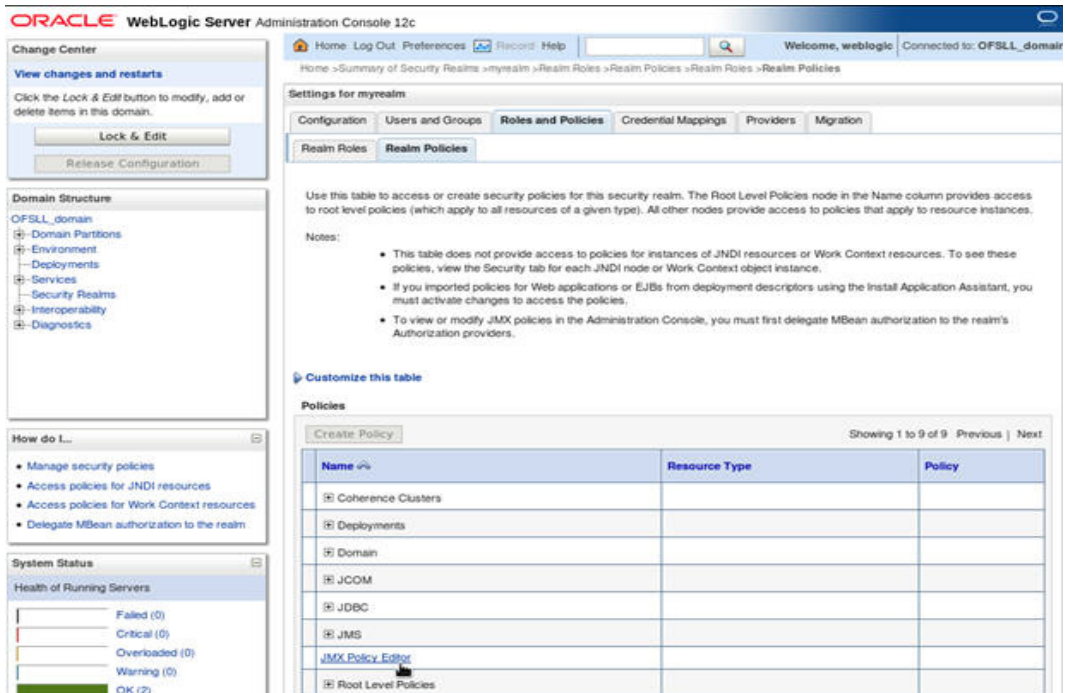
- To enable JMX policy select the 'Use Authorization Providers to Protect JMX Access' check box on the right panel



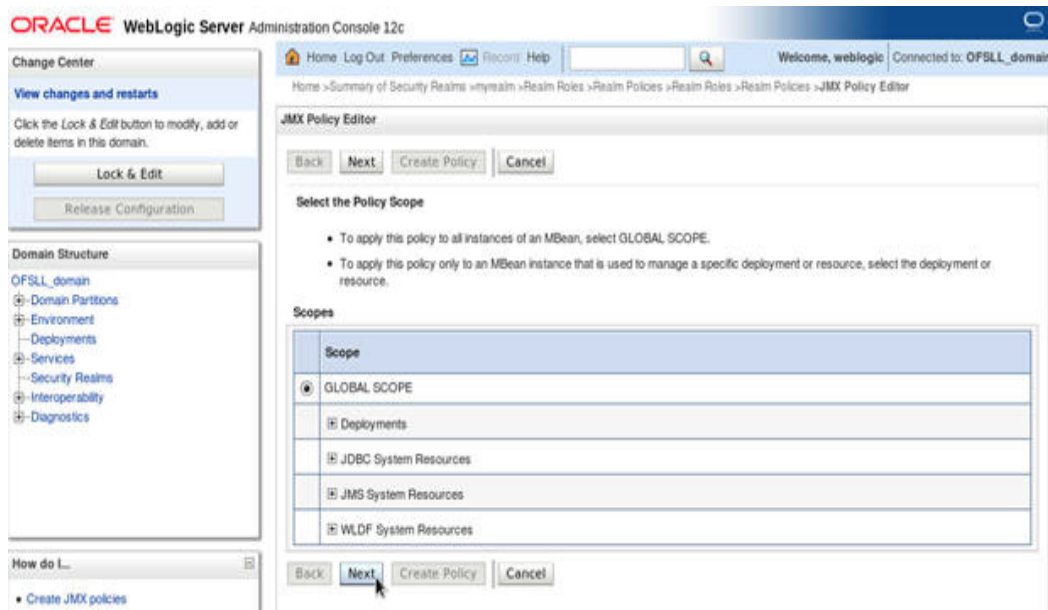
- Click 'Save' and restart the server.
- Re-login to console.
- Click Domain > Security > myrealm > Roles and Policies > Realm Policies

Note

If server is not restarted, JMX Policy Editor option will not appear



7. Click on JMX Policy Editor to configure

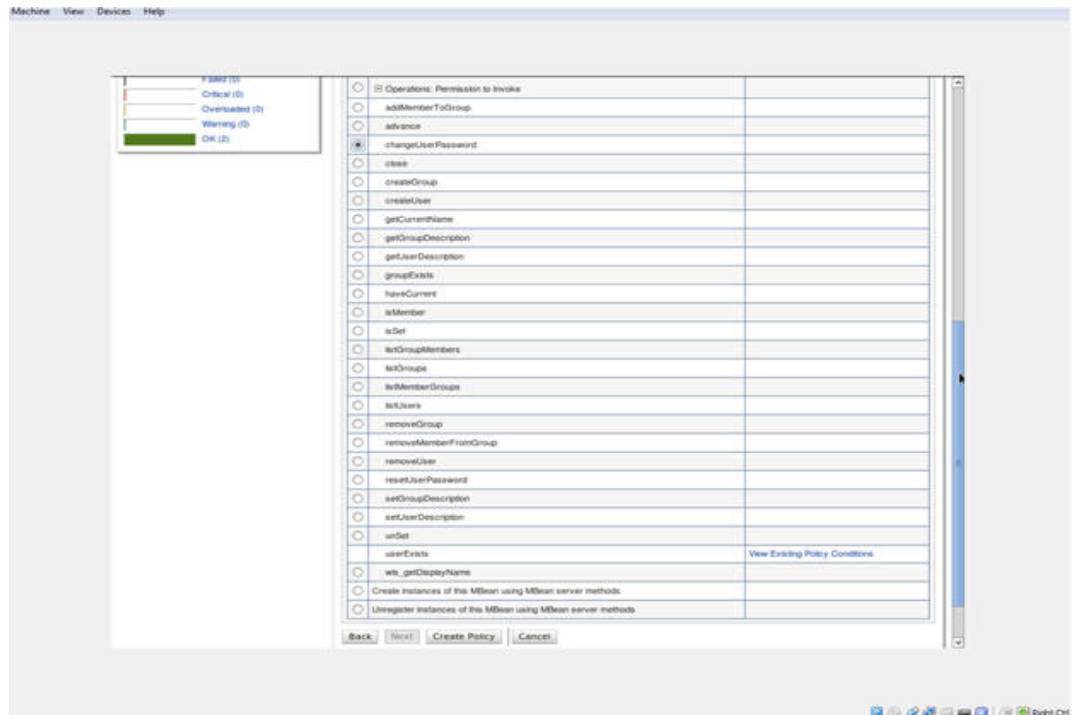


8. Select 'GLOBAL SCOPE' and click 'Next'.



9. Select weblogic.security.providers.authentication.

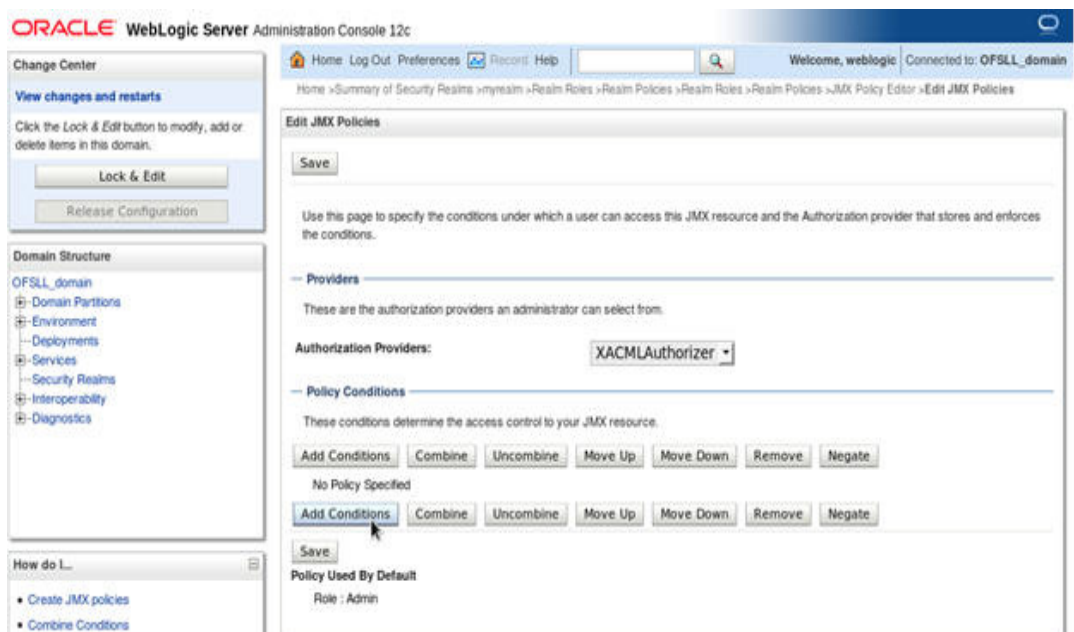
10. Select 'SQLAuthenticatorMBean'. Click 'Next'.



11. Expand 'Operations: Permissions to Invoke' and select 'ChangeUserPassword'.

12. Click 'Create Policy'. The following window is displayed for Authorization providers where you can add conditions to setup the policy.

13. Click 'Add Condition'. The below screen will be displayed.



14. For Predicate List, select Group for configuration. Click 'Next'.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Security Realms > myrealm > Realm Roles > Realm Policies > Realm Policies > JMX Policy Editor > Edit JMX Policies

Edit JMX Policies

Back Next Finish Cancel

Edit Arguments

On this page you will fill in the arguments that pertain to the predicate you have chosen.

Add one or more groups to this condition. If you add multiple groups, the condition evaluates as true if the user is a member of ANY of the groups.

Group Argument Name: Add

OFSLL_USER Remove

Back Next Finish Cancel

15. Select user roles for application.

16. Click 'Finish'. Click 'Save' to complete the configuration. The following window will be displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Security Realms > myrealm > Realm Roles > Realm Policies > Realm Policies > JMX Policy Editor > Edit JMX Policies

Edit JMX Policies

Save

Use this page to specify the conditions under which a user can access this JMX resource and the Authorization provider that stores and enforces the conditions.

Providers

These are the authorization providers an administrator can select from.

Authorization Providers: XACMLAuthorizer

Policy Conditions

These conditions determine the access control to your JMX resource.

Add Conditions Combine Uncombine Move Up Move Down Remove Negate

☒ Group: OFSLL_USER

Add Conditions Combine Uncombine Move Up Move Down Remove Negate

Save

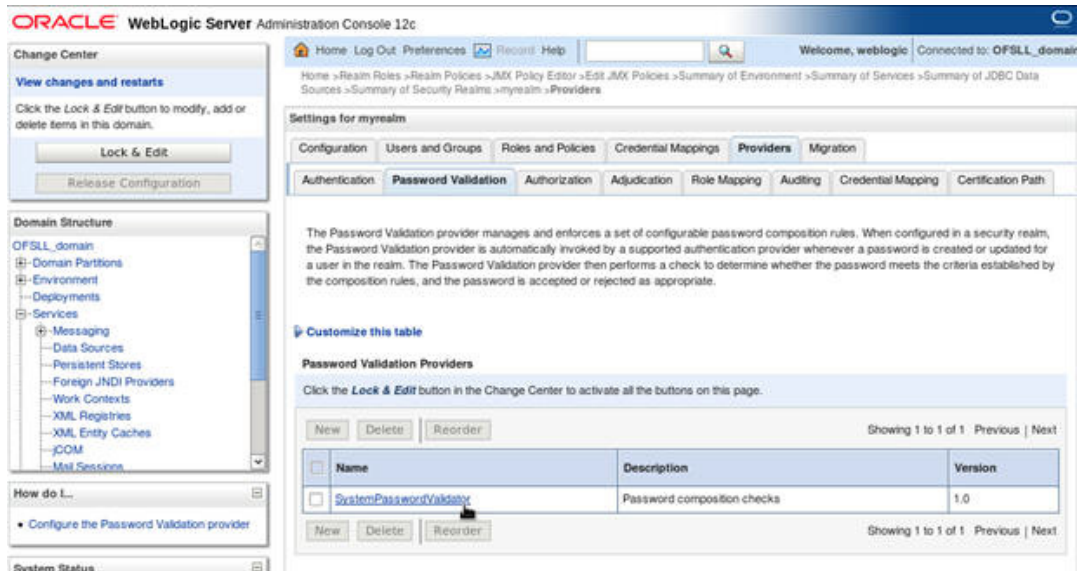
Override Policy

Role: Admin

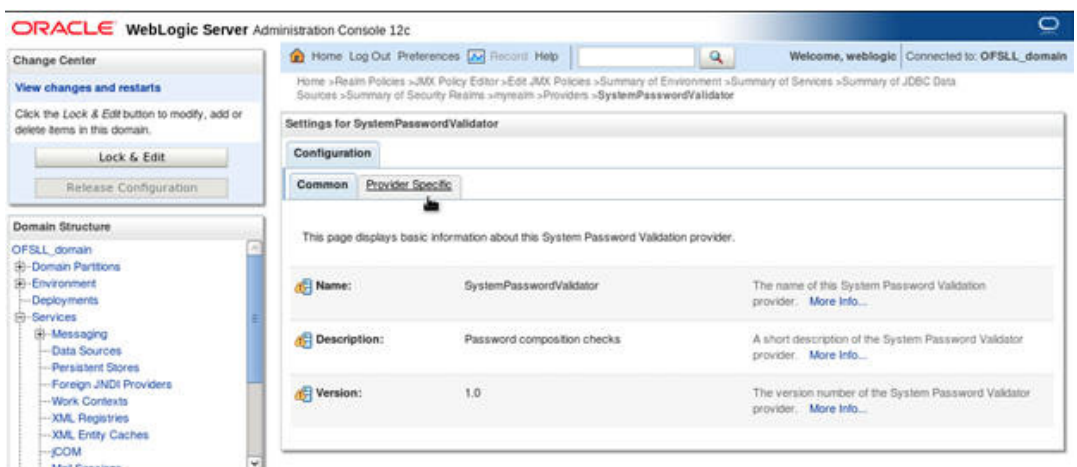
4. Configuring Policies

4.1 Configuring Password Policy for SQL Authenticator

1. Login to the WebLogic server administration console with user login credentials.
2. Browse to Security Realms > myrealm > Providers > Password Validation as shown below. The following window is displayed



3. Click 'SystemPasswordValidator' link. The following window is displayed.



4. Click **Provider Specific** Tab.

5. Configure the password policy as per the requirement. An example is provided in the following window.

The screenshot shows the 'Provider Specific' tab for configuring password policies. It includes sections for User Name Policies, Password Length Policies, and Character Policies. The 'Reject if Password Contains the User Name' and 'Reject if Password Contains the User Name Reversed' options are unchecked. Under Password Length Policies, the 'Minimum Password Length' is set to 8 and 'Maximum Password Length' is set to 0. Under Character Policies, 'Maximum Instances of Any Character' is 0, 'Maximum Consecutive Characters' is 0, 'Minimum Number of Alphabetic Characters' is 0, 'Minimum Number of Numeric Characters' is 0, 'Minimum Number of Lower Case Characters' is 0, 'Minimum Number of Upper Case Characters' is 0, 'Minimum Number of Non-Alphanumeric Characters' is 0, and 'Minimum Number of Non-Alphabetic Characters' is 1. A 'Save' button is at the bottom.

6. Click 'Save'.

4.2 Configuring User Lockout Policy

1. To Change User lockout policy, browse to **Security Realms > myrealm > Configuration Tab > User Lockout Tab**. The following window is displayed

The screenshot shows the 'User Lockout' configuration page in the Oracle WebLogic Server Administration Console. The 'Lockout Enabled' checkbox is checked. The 'Lockout Threshold' is set to 5, 'Lockout Duration' is 30, 'Lockout Reset Duration' is 5, 'Lockout Cache Size' is 5, and 'Lockout GC Threshold' is 400. Each setting has a description and a 'More Info...' link. A 'Save' button is at the bottom.

2. Configure the User Lockout details as per the requirement. An example is provided above.

5. Deploying Application

5.1 Deploying Application

1. Login to the Oracle Enterprise Manager 12c console . (i.e. <http://hostname:port/em>)

Domain: Domain_OFSLL_domain

* User Name: weblogic

* Password: [masked]

Login

ORACLE

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2. Click on 'Lock and Edit' as shown below.

ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain

OFSLL_domain

Servers: 2 Up

Clusters: 0

Deployments: 1 Up

Domain Partitions: 0

Administration Server

Name: AdminServer

Host: ofssl.in.oracle.com

Listen Port: 7001

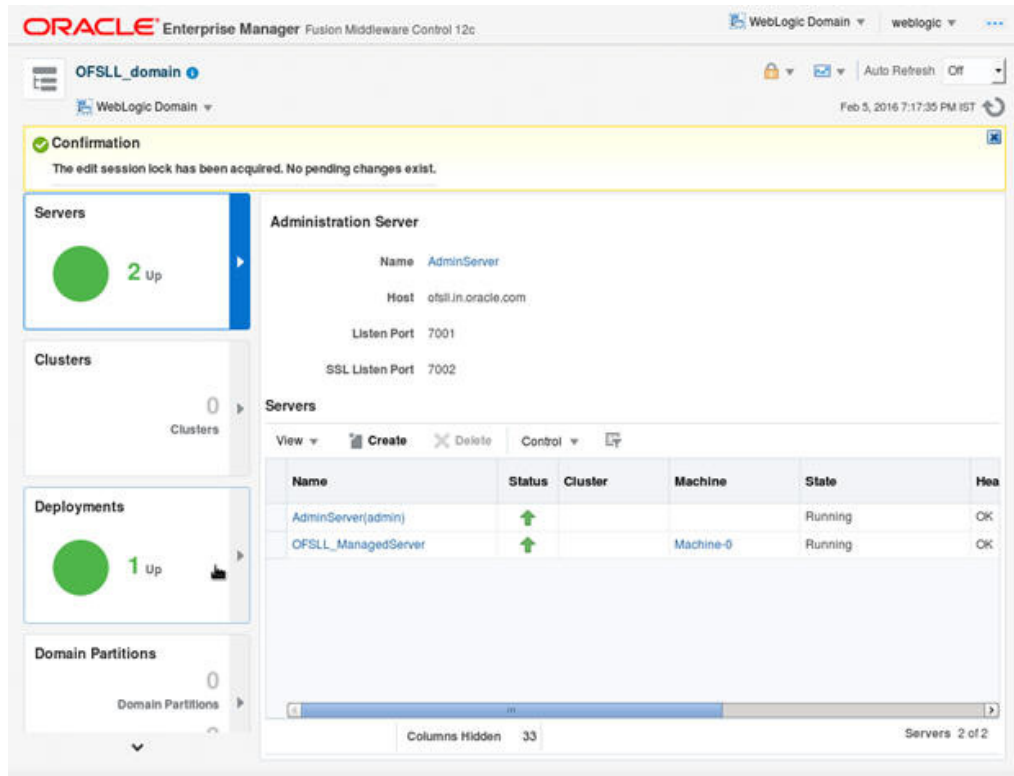
SSL Listen Port: 7002

Name	Status	Cluster	Machine	State
AdminServer(admin)	Running			Running
OFSLL_ManagedServer	Running		Machine-0	Running

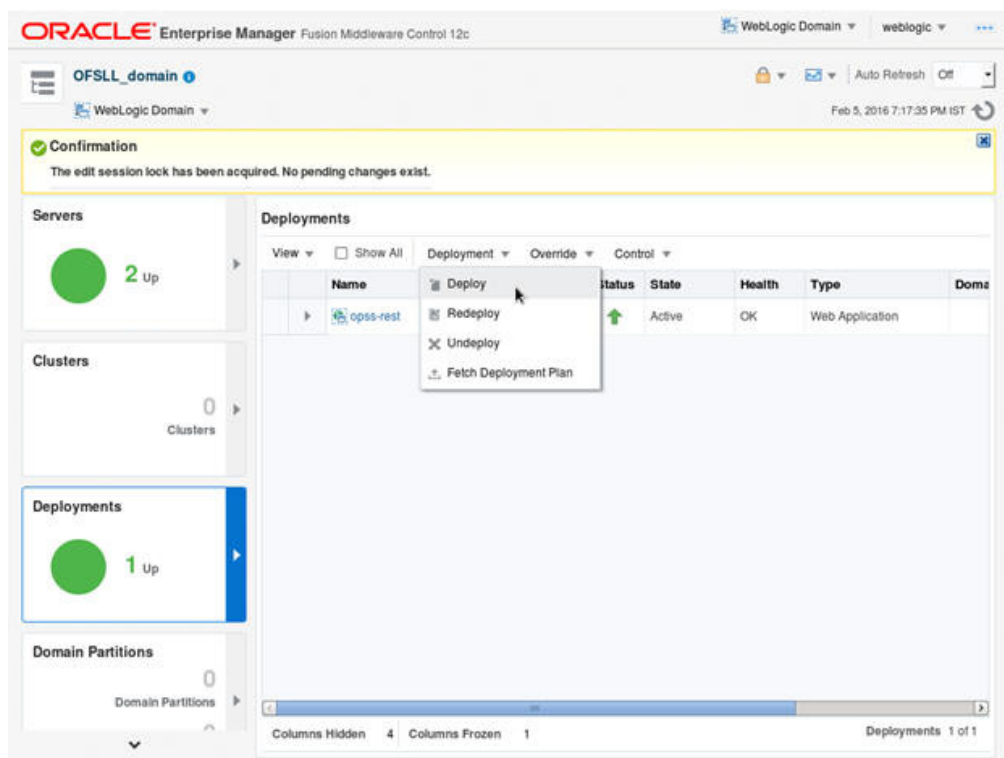
Columns Hidden: 33

Servers: 2 of 2

3. The following window is displayed.



4. Click on Deployments in the left panel. To deploy go to Deployments option in the menu as shown below.



- Click 'Choose File' button and select OFSLL application archive file i.e. ofssl_143.ear. Choose the 'Deployment Plan' (if any).

ORACLE® Enterprise Manager Fusion Middleware Control 12c weblogic

OFSLL_domain

Select Archive Select Target Application Attributes Deployment Settings

Deploy Java EE Application: Select Archive Back Step 1 of 4 **Next** Cancel

Scope
Select a scope that you want to deploy this application to: Global

Archive or Exploded Directory
Java EE archives, Web Modules (WAR files), EJB Modules (EJB JAR files), Resource Adapter Modules (RAR files), Coherence Archives (GAR files), JDBC Modules, JMS Modules, and library files (Jar files) can be deployed. You can also deploy an exploded archive that is present on the server where Enterprise Manager is running.

☒ Archive is on the machine where this Web browser is running.
Browse... ofssl_143.ear

☐ Archive or exploded directory is on the server where Enterprise Manager is running.
Browse...

Deployment Plan
The deployment plan is a file that contains the deployment settings for an application. You can use a previously saved deployment plan for this application. Later in the deployment process, you can optionally edit the deployment plan and save it for a future deployment of this application. If you do not have a deployment plan, one will be created automatically during the deployment process when deployment configuration is done. The deployment plan is not applicable when you deploy a library.

☐ Create a new deployment plan when deployment configuration is done.

☒ Deployment plan is on the machine where this Web browser is running.
Browse... plan.xml

☐ Deployment plan is on the server where Enterprise Manager is running.

Information
Use this page to deploy applications that require Metadata Services (MDS). Take advantage of the C Application Development Framework (Oracle ADF).
If your application is a SOA composite, use the SOA Composite deployment.
If your application is not a composite or it does not use MDS repository or ADF connections, then you can deploy your application using the Oracle WebLogic Administration Console.

Note

A deployment plan can be used to easily change an application's WebLogic Server configuration for a specific environment without modifying existing deployment descriptors.

Sample plan.xml

```
<deployment-plan xmlns="http://xmlns.oracle.com/weblogic/deployment-plan"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://xmlns.oracle.com/weblogic/deployment-plan
http://xmlns.oracle.com/weblogic/deployment-plan/1.0/deployment-plan.xsd">
  <application-name>ofssl_143</application-name>
  <variable-definition>
    <variable>
      <name>NewSessionValue</name>
      <value>30</value>
    </variable>
    <variable>
      <name>ofssl_DS_JNDIName</name>
      <value>jdbc/ofsslDBConnDS</value>
    </variable>
  </variable-definition>
  <module-override>
    <module-name>ofssl143.war</module-name>
    <module-type>war</module-type>
    <module-descriptor external="false">
      <root-element>weblogic-web-app</root-element>
      <uri>WEB-INF/weblogic.xml</uri>
      <variable-assignment>
        <name>ofssl_DS_JNDIName</name>
        <xpath>/weblogic-web-app/resource-description/[res-ref-name="jdbc/ofsslDBConnDS"]/jndi-name</xpath>
        <origin>planbased</origin>
      </variable-assignment>
    </module-descriptor>
    <module-descriptor external="false">
      <root-element>web-app</root-element>
      <uri>WEB-INF/web.xml</uri>
      <variable-assignment>
        <name>NewSessionValue</name>
        <xpath>/web-app/session-config/session-timeout</xpath>
      </variable-assignment>
    </module-descriptor>
  </module-override>
  <config-root>D:\temp</config-root>
</deployment-plan>
```

6. Click 'Next'. The following window is displayed.

Select	Name	Type	Deployed Applications
☐	AdminServer	Oracle WebLogic Server	ofssl_143
☒	OFSLL_ManagedServer	Oracle WebLogic Server	ofssl_143

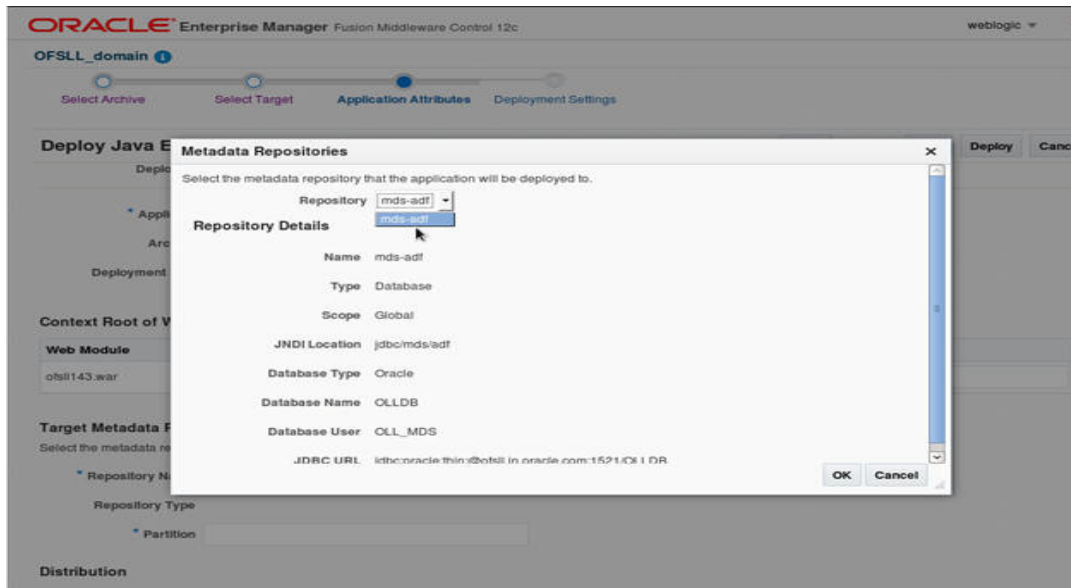
7. Check target server as per the requirement 'OFSLL_ManagedServer' and click 'Next'. The following window is displayed.

Application Name: ofssl143
Archive Version: V14.3.0.0.0-b262
Deployment Plan Version:

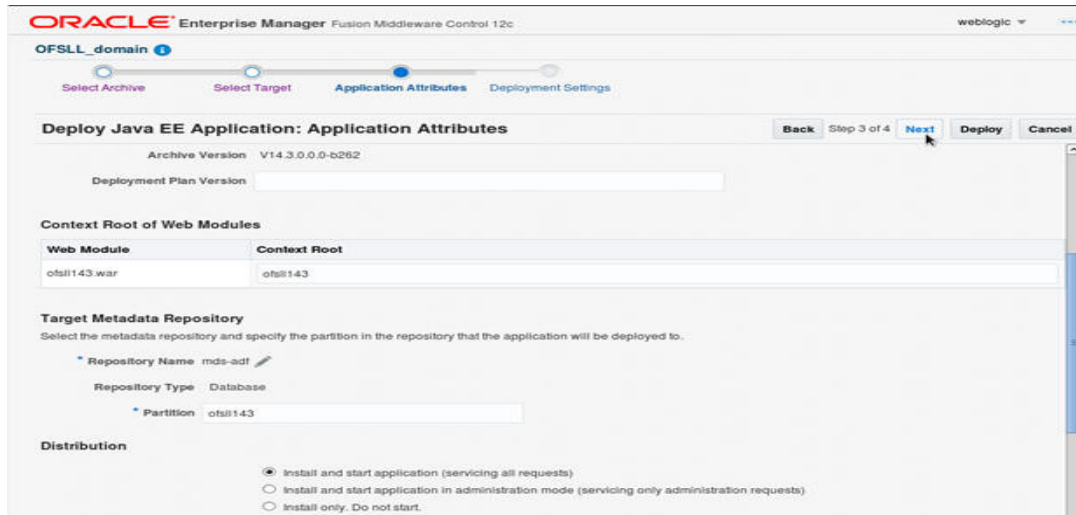
Web Module	Context Root
ofssl143.war	ofssl143

Repository Name: Not specified in archive
Repository Type: [Select or view the target metadata repository](#)
Partition:

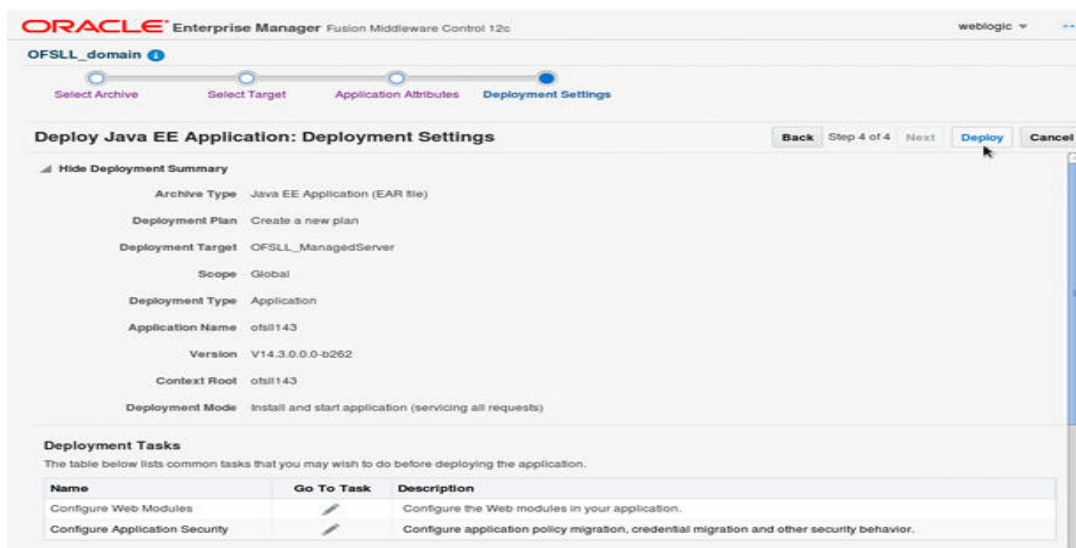
8. Click  button to select Repository Name. The following window is displayed.



9. Select Repository as per requirement and click 'OK'.



10. Enter Partition name as per the requirement and click 'Next'.



11. Click 'Deploy'. The following window is displayed



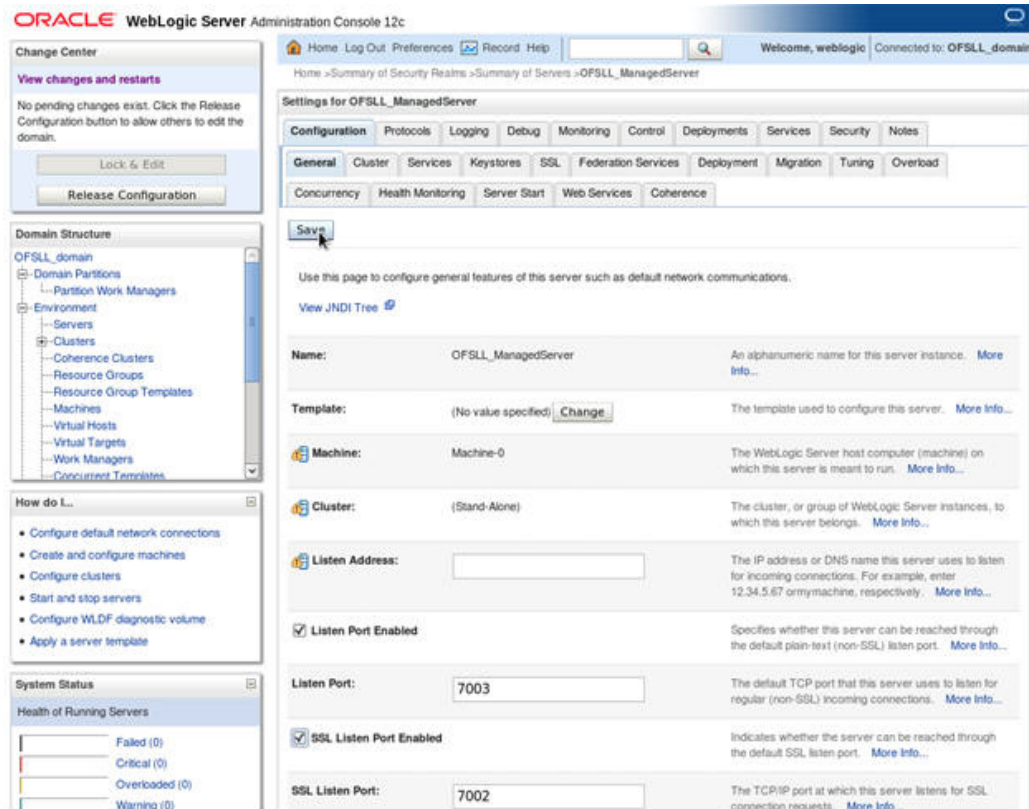
12. Click Close once the message 'Deploy operation completed' is displayed.

6. Enabling SSL

The application is accessible only via https protocol; hence, after the deployment of the application, you need to enable SSL.

To enable SSL

1. Login to console.
2. \$Domain_Home > Servers > Manage Servers > Configuration > General. The below screen is displayed.



3. Check the 'SSL Listen Port Enabled' check box.
4. Specify the port for 'SSL Listen Port'.

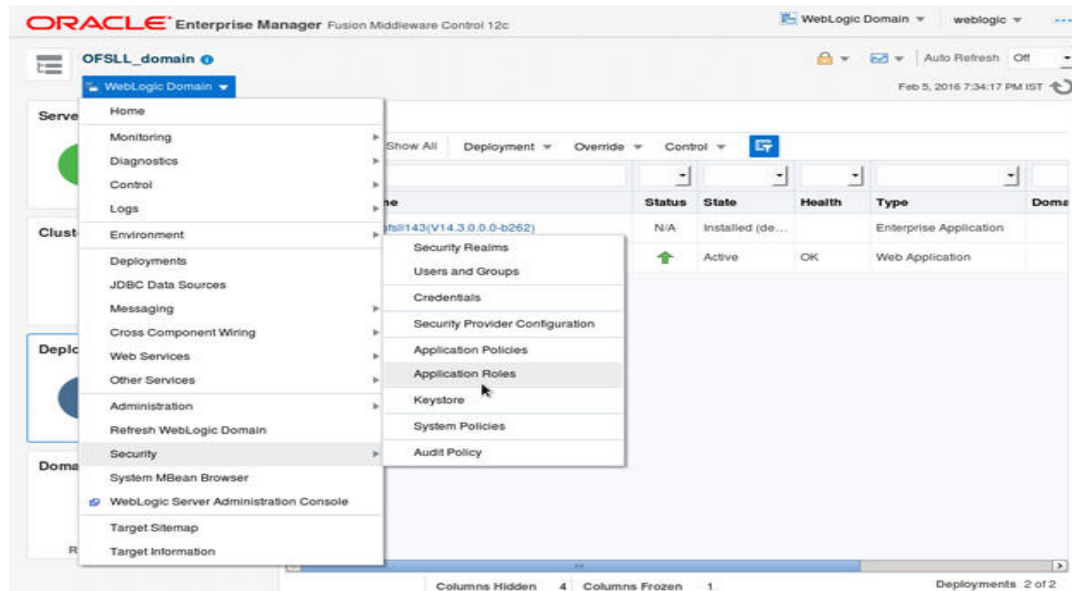
Note

It is recommended to disable http protocol.

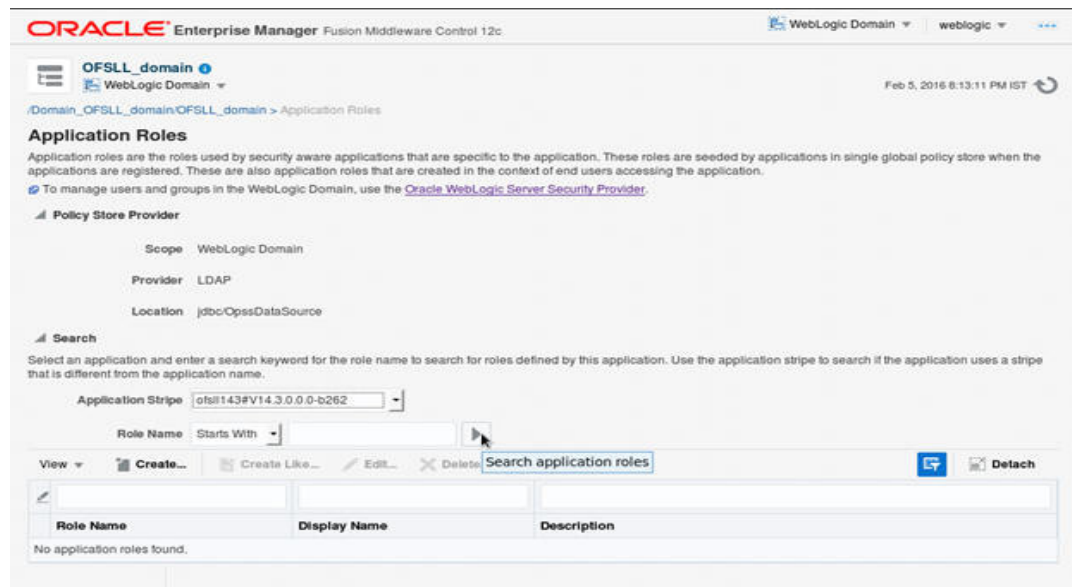
7. Mapping Enterprise Group with Application Role

Follow the below steps to add an user to the group

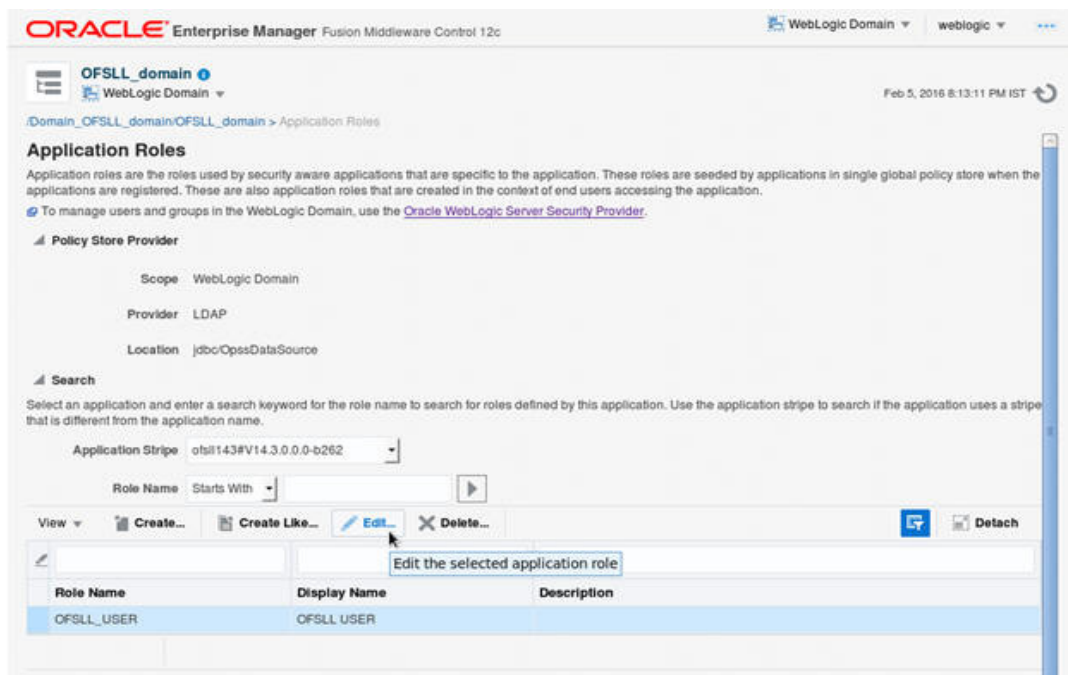
1. Login to Oracle Enterprise Manager 12c console (<http://hostname:port/em>).
2. Click WebLogic Domain > Security > Application Roles on the right panel.



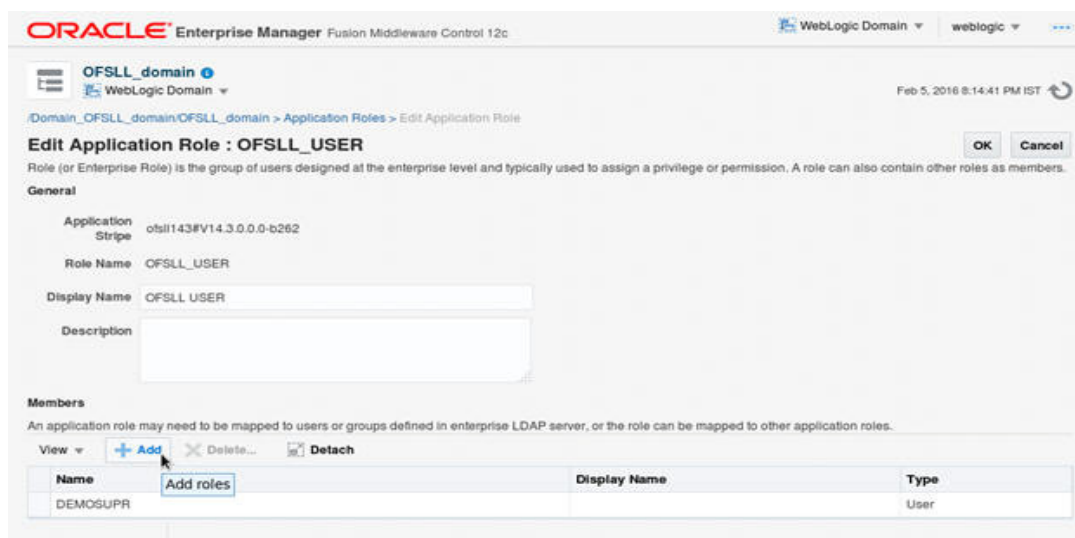
3. Select Application Stripe from the drop-down menu.
4. Click the arrow head button. Details of the existing Roles are displayed below:



5. Select the 'Role Name'. Membership details of the selected Role Name are displayed under Membership for "role_name"..

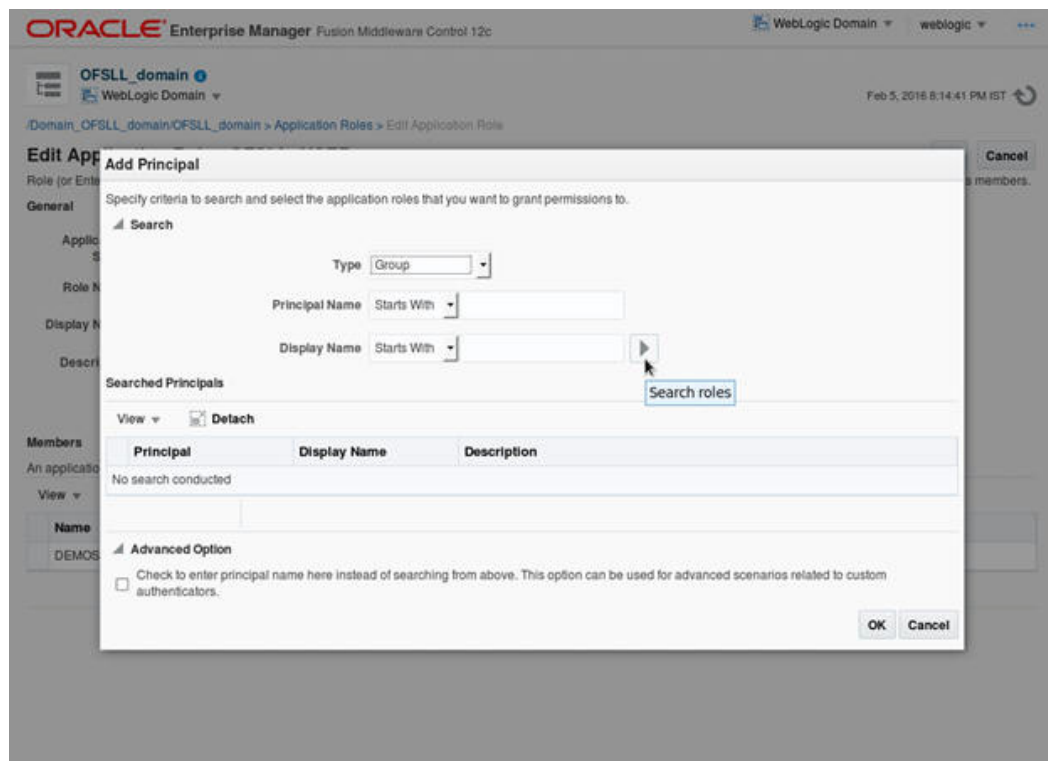


6. Click 'Edit'. The following window is displayed.

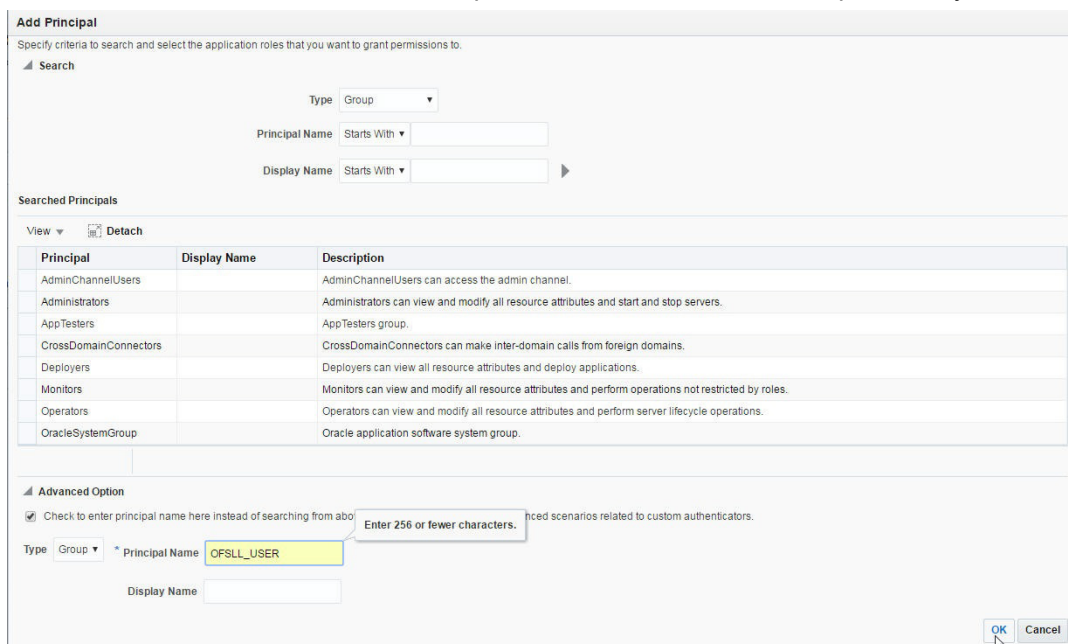


7. Click 'Add'. Select type as Group. Click on the arrow head button.

8. Follow the given steps to select the Principal 'OFSLL_USER' to add and click OK. The following window is displayed.



9. Check the check box in Advanced options. Enter the name of Group manually.



10. Click 'OK'.

The screenshot shows the 'Edit Application Role' window for 'OFSLL_USER' in the 'OFSLL_domain' WebLogic Domain. The window includes a breadcrumb trail, a title bar, and a main content area with the following sections:

- General**: Contains fields for 'Application Stripe' (otsl143#V14.3.0.0.0-b262), 'Role Name' (OFSLL_USER), 'Display Name' (OFSLL USER), and a 'Description' text area.
- Members**: A section with a message: 'An application role may need to be mapped to users or groups defined in enterprise LDAP server, or the role can be mapped to other application roles.' Below this is a table with columns 'Name', 'Display Name', and 'Type'.

Name	Display Name	Type
DEMOSUPR		User
OFSLL_USER		Group

At the top right of the main content area, there are 'OK' and 'Cancel' buttons. A mouse cursor is pointing at the 'OK' button.

11. The following window is displayed with the confirmation message as 'The Application role of 'group_name' has been updated'.

The screenshot shows the 'Application Roles' window in the 'OFSLL_domain' WebLogic Domain. A yellow information banner at the top displays the message: 'An application role OFSLL_USER has been updated.' Below the banner, the window contains the following sections:

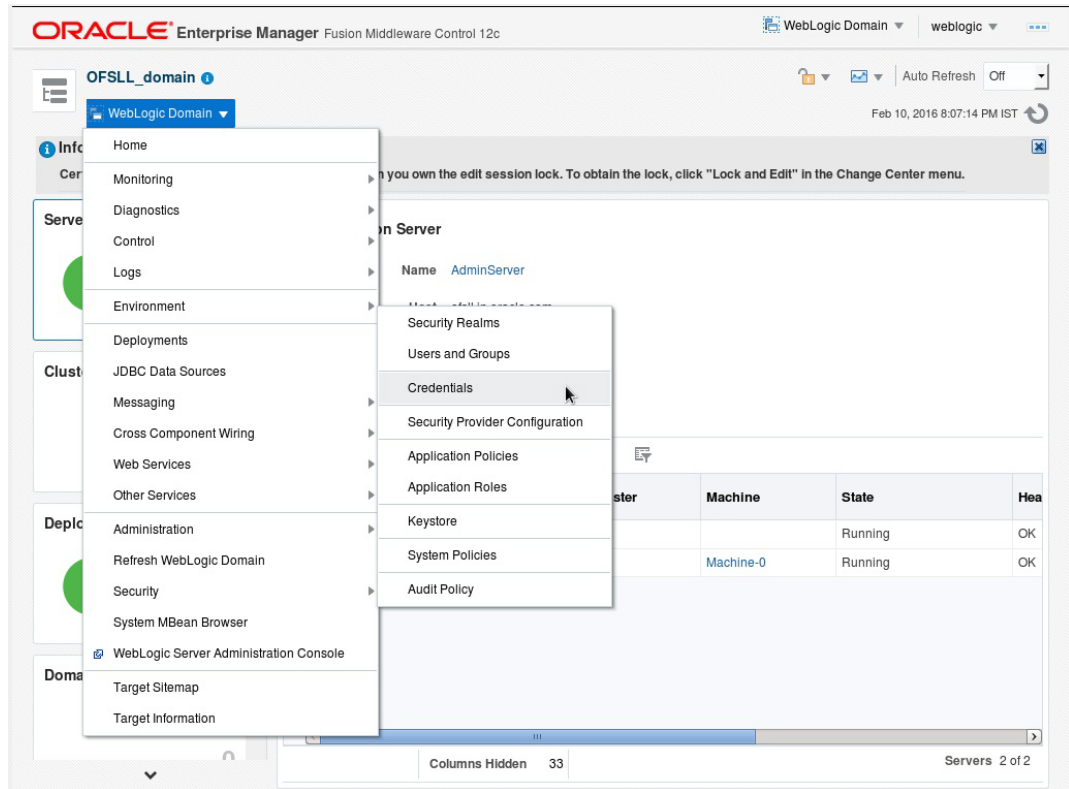
- Policy Store Provider**: Fields for 'Scope' (WebLogic Domain), 'Provider' (LDAP), and 'Location' (jdbc:OpssDataSource).
- Search**: A section with a message: 'Select an application and enter a search keyword for the role name to search for roles defined by this application. Use the application stripe to search if the application uses a stripe that is different from the application name.' It includes an 'Application Stripe' dropdown (otsl143#V14.3.0.0.0-b262) and a 'Role Name' search field.
- Table**: A table with columns 'Role Name', 'Display Name', and 'Description'. The row for 'OFSLL_USER' is highlighted.

Role Name	Display Name	Description
OFSLL_USER	OFSLL USER	

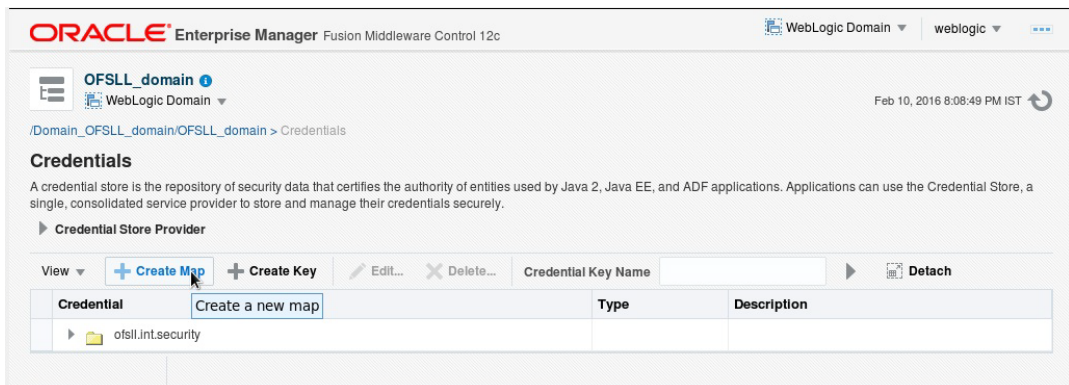
At the bottom of the window, there are buttons for 'View', 'Create...', 'Create Like...', 'Edit...', 'Delete...', and 'Detach'.

8. Configuring JNDI name for HTTP Listener

1. Click 'WebLogic Domain' on the right panel. Select Security > Credentials.



2. Click 'Credentials'. The following window is displayed.



3. Click 'Create Map'. The following window is displayed.

The screenshot shows the 'Create Map' dialog box in the Oracle Enterprise Manager interface. The dialog is titled 'Create Map' and contains a text field for 'Map Name' with the value 'ofssl.http.listener.jndi'. There are 'OK' and 'Cancel' buttons at the bottom right. The background shows the 'Credentials' page of the 'OFSLL_domain'.

4. Enter Map name as 'ofssl.http.listener.jndi'.

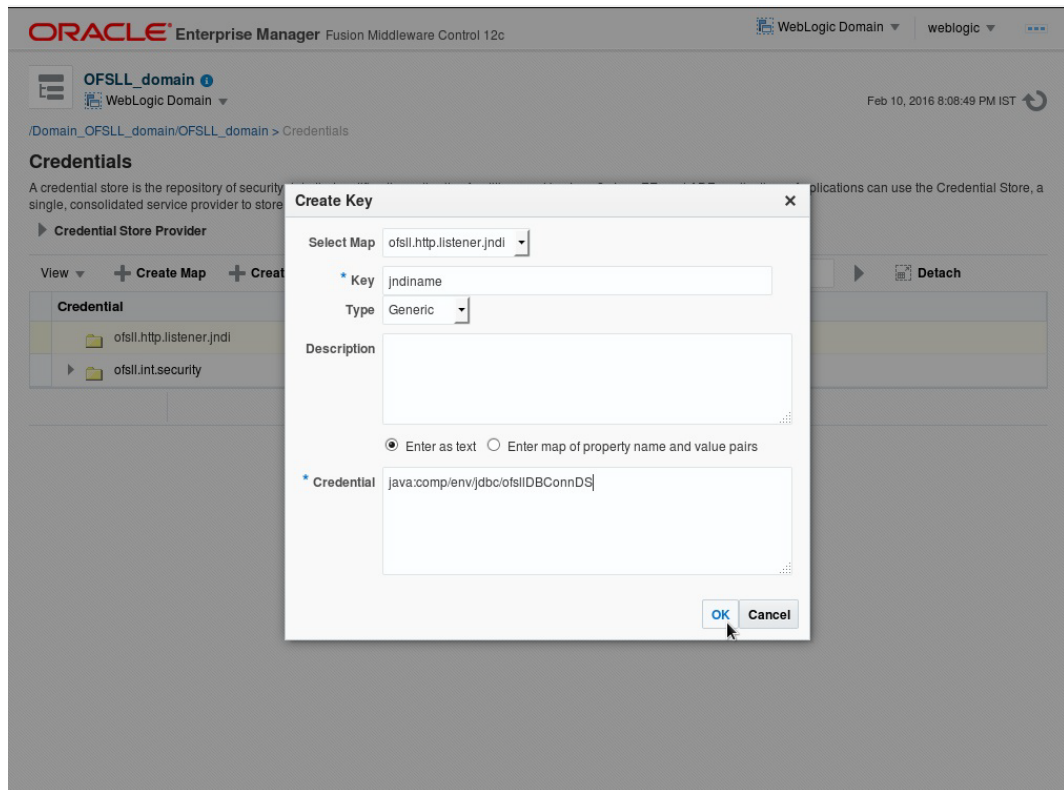
5. Click 'OK'. The following window is displayed.

The screenshot shows the 'Credentials' page in the Oracle Enterprise Manager interface. A yellow information banner at the top states: 'The credential map, ofssl.http.listener.jndi, has been created.' Below the banner, there is a table with columns 'Credential', 'Type', and 'Description'. The table contains two entries: 'ofssl.http.listener.jndi' and 'ofssl.int.security'.

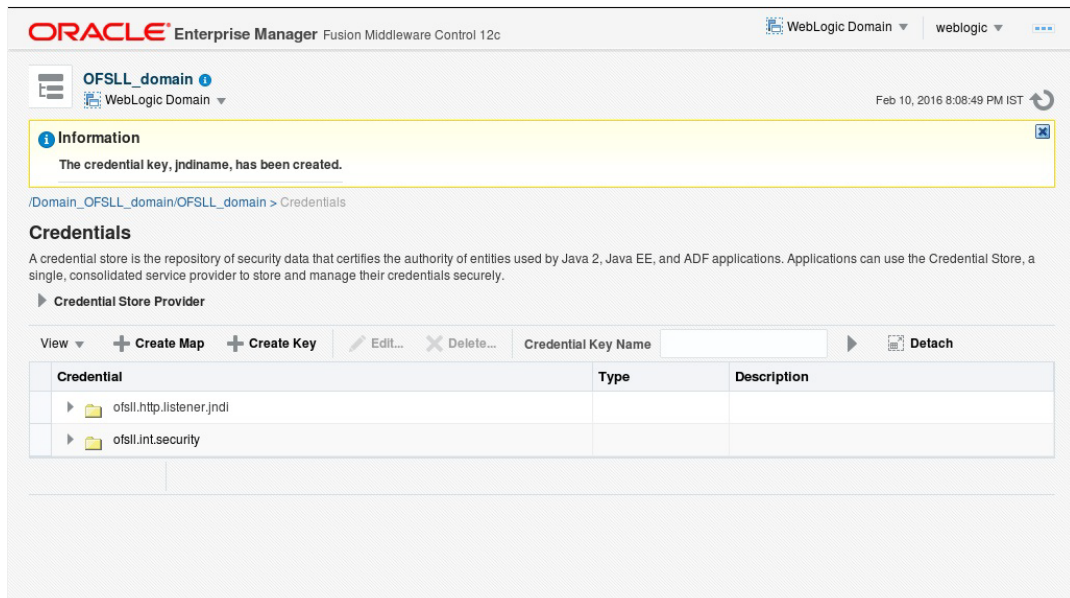
6. Click 'Create Key' Button. The following window is displayed.

The screenshot shows the 'Create Key' dialog box. It has a 'Select Map' dropdown menu with 'ofssl.http.listener.jndi' selected. Below it are fields for 'Key', 'Type' (set to 'Password'), 'User Name', 'Password', 'Confirm Password', and a 'Description' text area. There are 'OK' and 'Cancel' buttons at the bottom right.

7. Enter the following details as per your requirement.
- Key: jndiname
 - Credential: java:comp/env/jdbc/ofslIDBConnDS
 - Type:Generic



8. Click 'OK'. The following window is displayed.

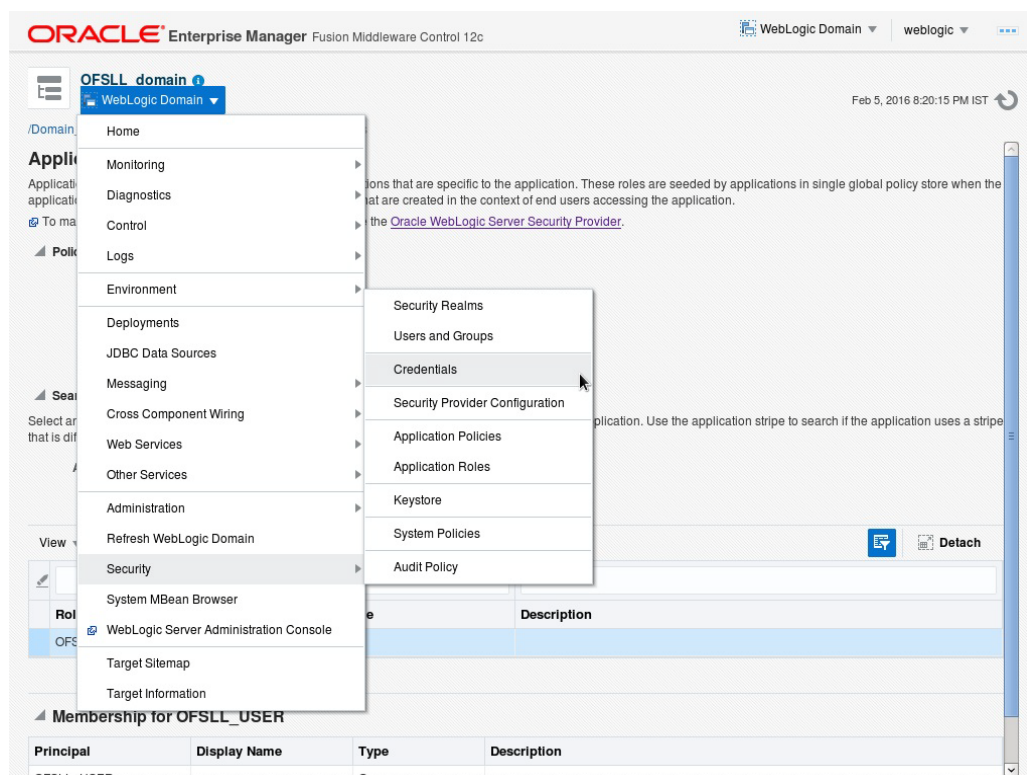


9. Configuring Oracle BI Publisher for Application

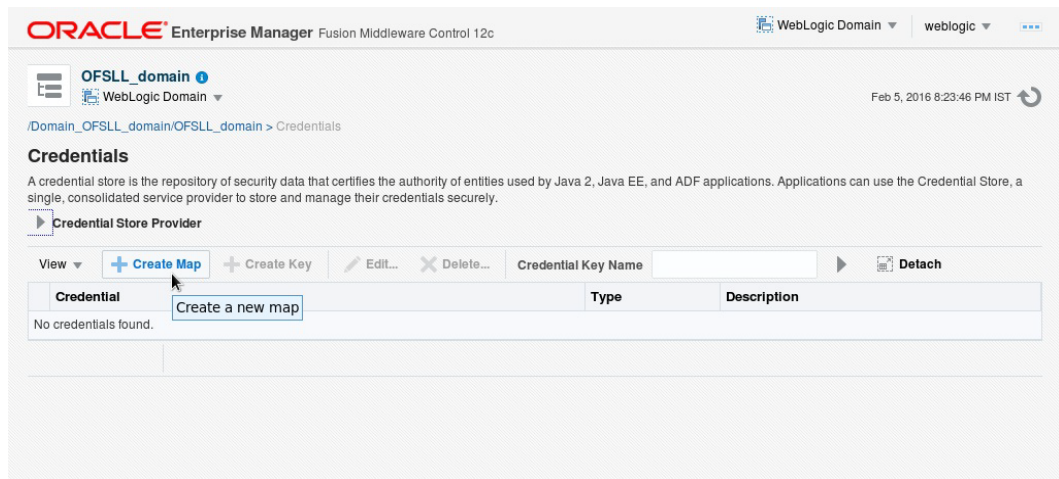
1. Copy the OfsslCommonCSF.jar from /WEB-INF/lib available in the staging area to \$DOMAIN_HOME/lib
2. Update the setDomainEnv.sh file (\$MW_HOME/user_projects/domains/mydomain/bin directory) by appending the above jar file path – EXTRA_JAVA_PROPERTIES="..... \${EXTRA_JAVA_PROPERTIES} -Dofssl.csf.path=\${DOMAIN_HOME}"
3. Configure Security via EMconsole

Note

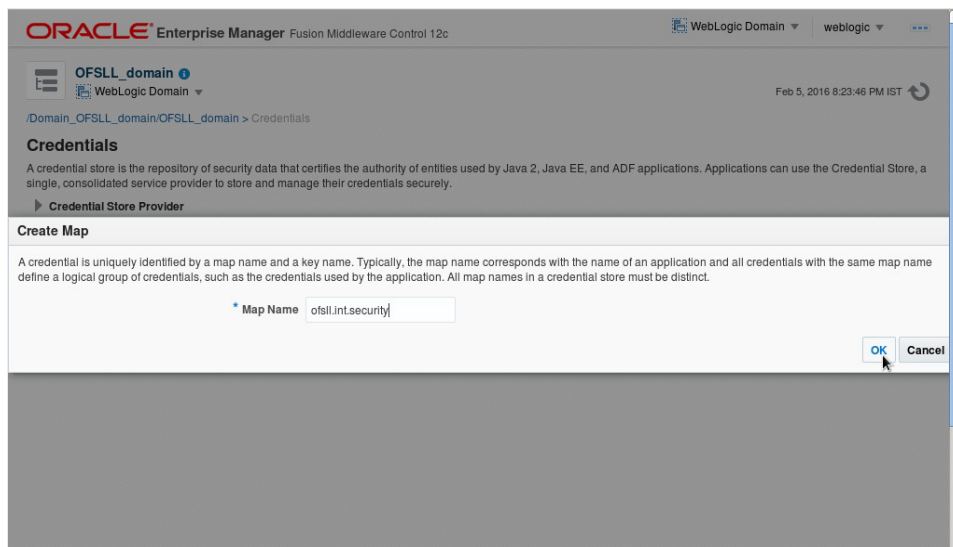
It is assumed that BI Publisher is installed and configured. Refer BI Publisher Guide for further details.



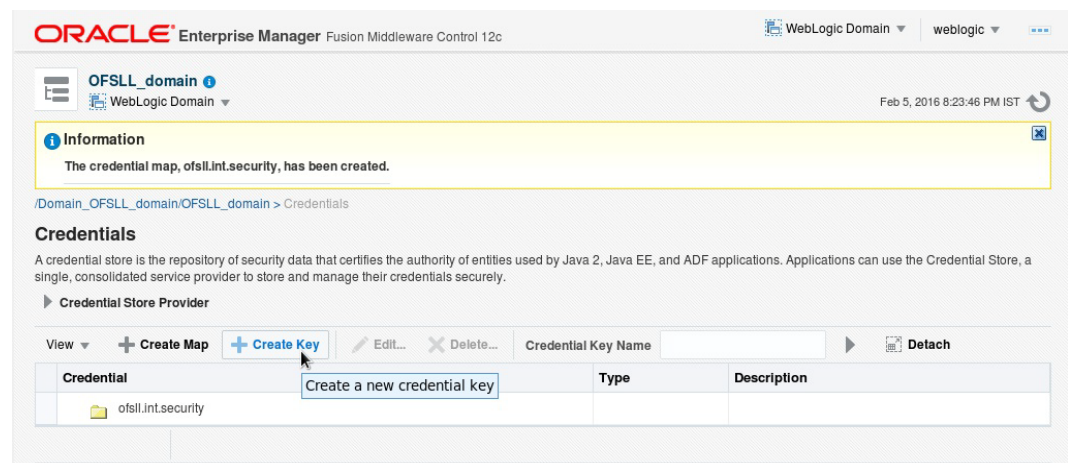
- Click WebLogic Domain on the right panel. Select Security > Credentials. Click 'Create Map'.



- Enter the Map Name: ofssl.int.security.

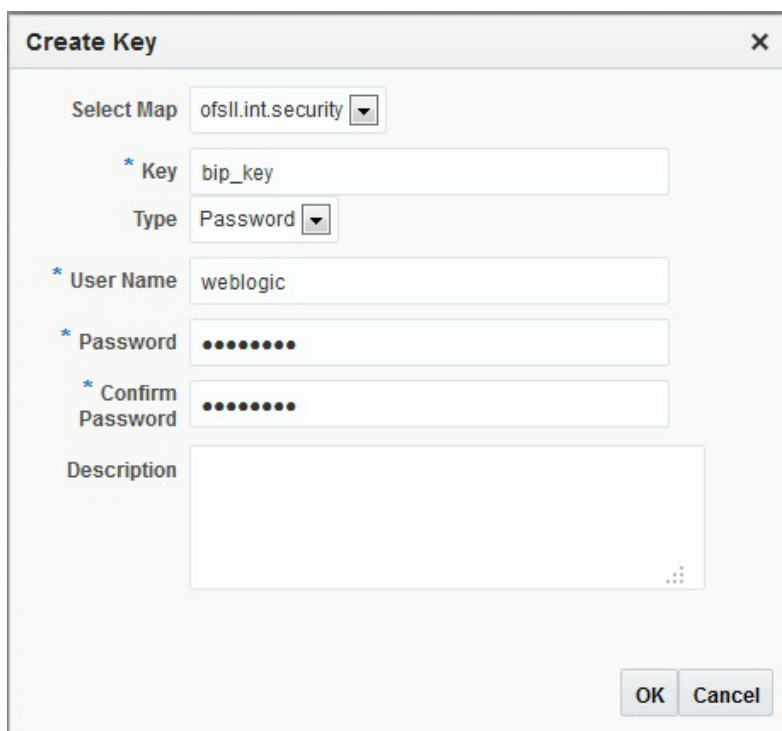


- Click 'OK'.



- Click 'Create Key' Button.

8. Enter the details as per your requirement. Specify 'User Name' and 'Password' of BI Publisher console.

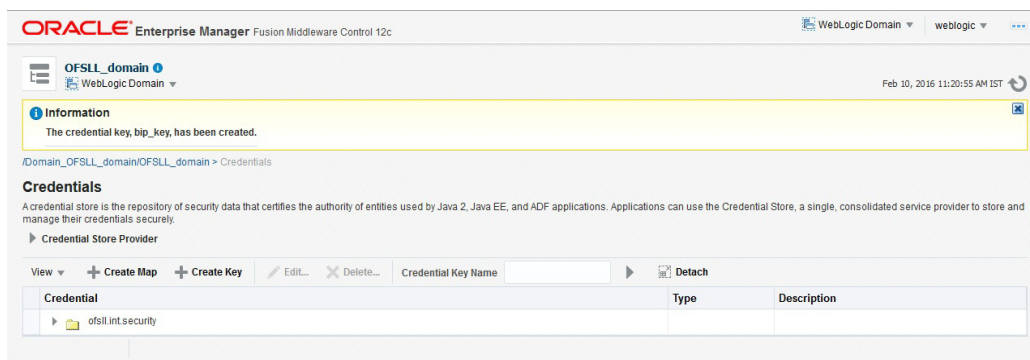


The 'Create Key' dialog box is shown with the following fields and values:

- Select Map: ofssl.int.security
- * Key: bip_key
- Type: Password
- * User Name: weblogic
- * Password: (masked with dots)
- * Confirm Password: (masked with dots)
- Description: (empty text area)

Buttons: OK, Cancel

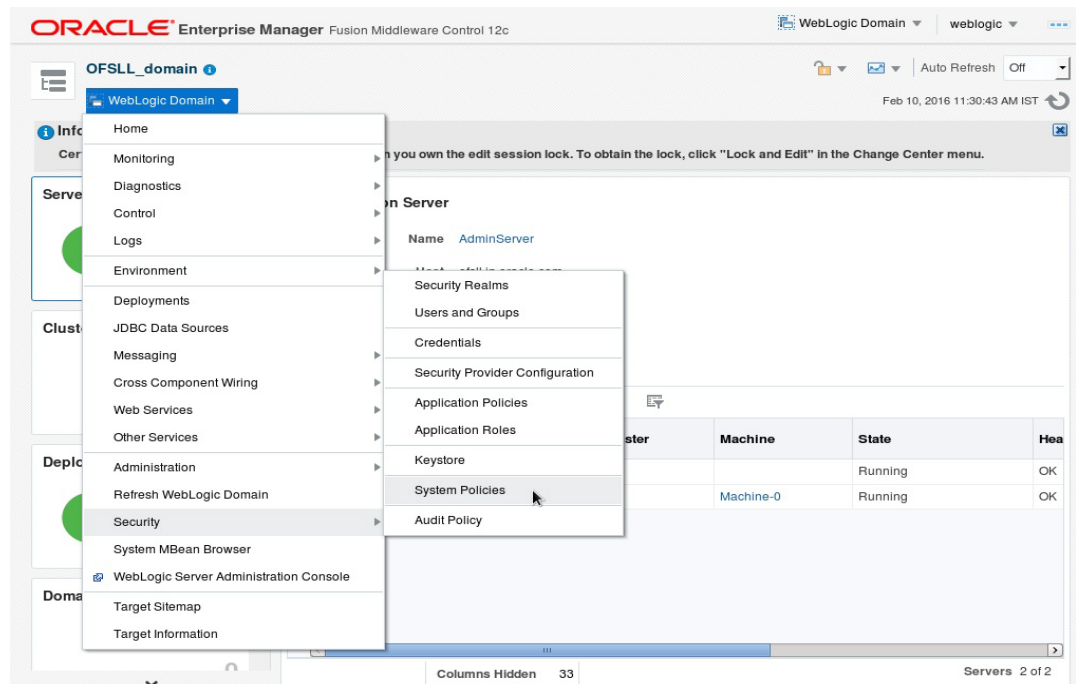
9. Click 'OK'. The following window is displayed.



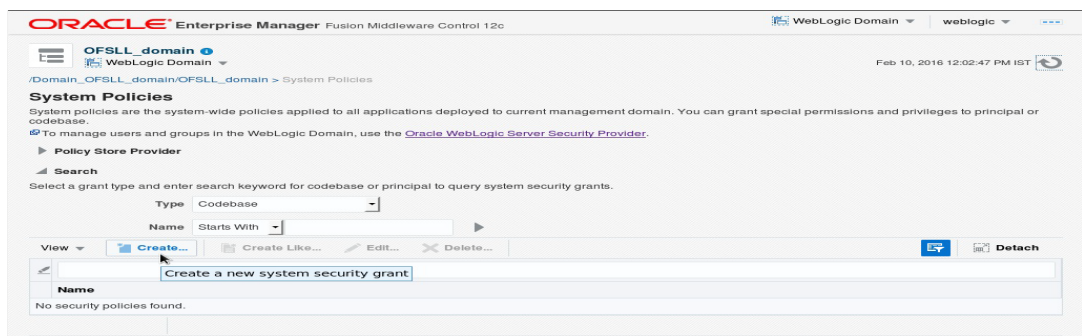
The Oracle Enterprise Manager console displays the 'Credentials' page for the 'OFSLL_domain'. The page shows a message: 'The credential key, bip_key, has been created.' Below this, there is a table with the following data:

Credential	Type	Description
ofssl.int.security		

10. On the left panel, right click on the domain OFSLL_domain > Security > System Policies. The following window is displayed.



11. Click 'Create'.

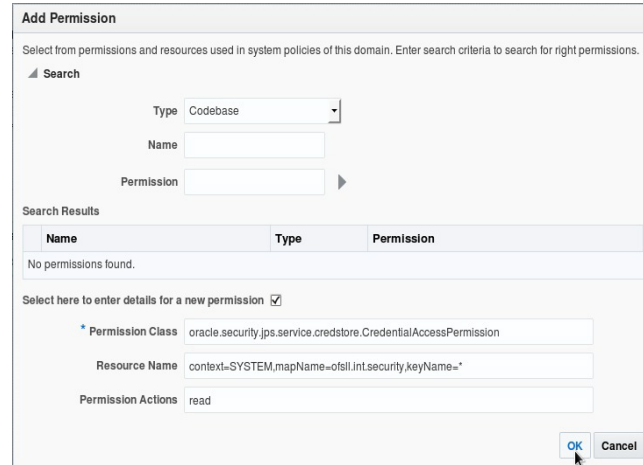


12. The following window is displayed. Enter the codebase as 'file:\${ofsl.csf.path}/lib/OfsllCommonCSF.jar' and click 'Add'.



13. The following window is displayed. Select the checkbox 'Select here to enter details for a new permission' and enter the following details as the first permission class.
- Permission Class: oracle.security.jps.service.credstore.CredentialAccessPermission
 - Resource Name: context=SYSTEM,mapName=ofsl.int.security,keyName=*

- Permission Actions: read



Add Permission

Select from permissions and resources used in system policies of this domain. Enter search criteria to search for right permissions.

Search

Type: Codebase
 Name:
 Permission:

Search Results

Name	Type	Permission
No permissions found.		

Select here to enter details for a new permission ☒

* Permission Class: oracle.security.jps.service.credstore.CredentialAccessPermission
 Resource Name: context=SYSTEM,mapName=ofssl.int.security.keyName=*

Permission Actions: read

OK Cancel

Configuring JNDI Name for http Listener

1. Similarly, click Add to add the second permission class. Select the check box 'Select here to enter details for a new permission' and enter the following details as the second permission class.
 - Permission Class: oracle.security.jps.service.credstore.CredentialAccessPermission
 - Resource Name: context=SYSTEM,mapName=ofssl.http.listener.jndi,keyName=*
 - Permission Actions: read
2. Click 'OK'. The following window is displayed.



ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain: weblogic

Feb 10, 2016 7:45:05 PM IST

Create System Grant

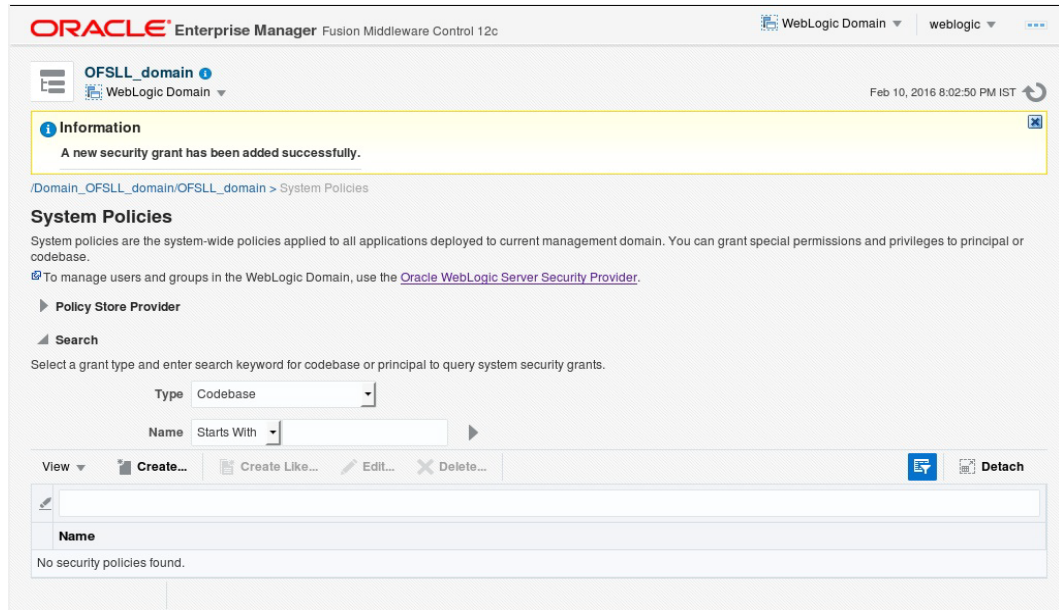
There are two different types of system policies supported by application server: principal policy and codebase policy. Principal policy grants permissions and privileges to a list of users or roles. Codebase policy grants permissions and privileges to a codebase, which is mostly URL or location of jar file in file system. Codebase can be either absolute path or relative path.

Grant To: Codebase
 * Codebase: file:\${ofssl.csf.path}/lib/OfsslCommonCSF.jar

Permissions

Permission Class	Resource Name	Permission Actions
oracle.security.jps.service.credstore.CredentialAc...	context=SYSTEM,mapName=ofssl.int.security.keyName=*	read
oracle.security.jps.service.credstore.CredentialAc...	context=SYSTEM,mapName=ofssl.http.listener.jndi,keyName=*	read

3. Click 'OK'. The following window is displayed.



10. Launching Application

Verifying Successful Application Deployment and Launching Application

Successful Application deployment can be verified by following:

- Making sure that the state is ACTIVE and health in OK in the Weblogic.
- Access and log into the application.

After you enable SSL you can launch the application via https:\\ protocol.

To launch application

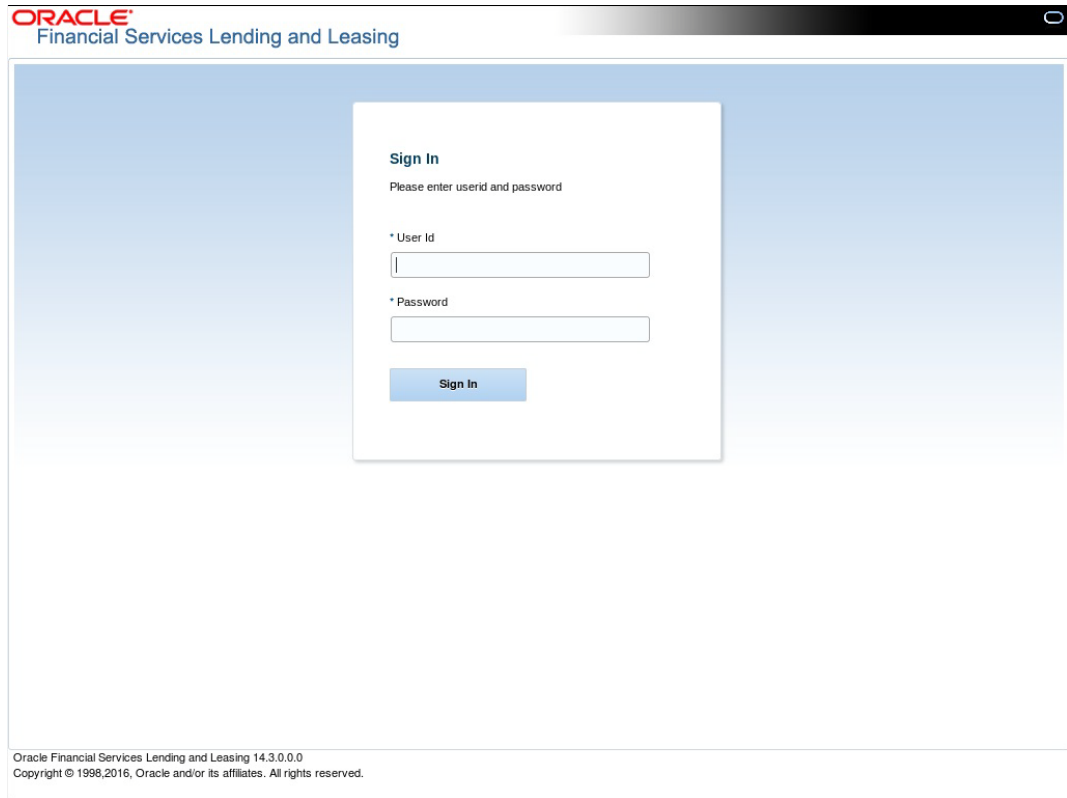
1. Verify if the deployed OFSLL application is 'Active'.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled 'Summary of Deployments' and contains a table of deployed applications. The table has columns for Name, State, Health, Type, Targets, Scope, Domain Partitions, and Deployment Order. The 'Deployments' tab is selected, and the table shows several applications, including 'adf.oracle.businesseditor', 'adf.oracle.domain', 'coherence-transaction-rar', 'ofssl143', 'DMS Application', 'em', 'emagentsdkimpl.jar', 'emagentsdk.jar', and 'emagentsdk.jar'. The 'OFSLL' application is listed with a state of 'Active' and health of 'OK'.

Name	State	Health	Type	Targets	Scope	Domain Partitions	Deployment Order
adf.oracle.businesseditor(1.0,12.2.1.0.0)	Active		Library	AdminServer, OFSLLREL_ManagedServer, WebService_ManagedServer	Global		100
adf.oracle.domain(1.0,12.2.1.0.0)	Active		Library	AdminServer, OFSLLREL_ManagedServer, WebService_ManagedServer	Global		100
adf.oracle.domain.webapp(1.0,12.2.1.0.0)	Active		Library	AdminServer, OFSLLREL_ManagedServer, WebService_ManagedServer	Global		100
coherence-transaction-rar	Active	OK	Resource Adapter	AdminServer, OFSLLREL_ManagedServer, WebService_ManagedServer	Global		100
ofssl143 (V14.3.0.0.4-b148)	Active	OK	Enterprise Application	OFSLLREL_ManagedServer,	Global		100
DMS Application (12.2.1.0.0)	Active	OK	Web Application	AdminServer, OFSLLREL_ManagedServer, WebService_ManagedServer	Global		5
em	Active	OK	Enterprise Application	AdminServer	Global		400
emagentsdkimpl.jar(12.4,12.1.0.4.0)	Active		Library	AdminServer	Global		100
emagentsdk.jar(12.4,12.1.0.4.0)	Active		Library	AdminServer	Global		100
emagentsdk.jar(12.4,12.1.0.4.0)	Active		Library	AdminServer	Global		100

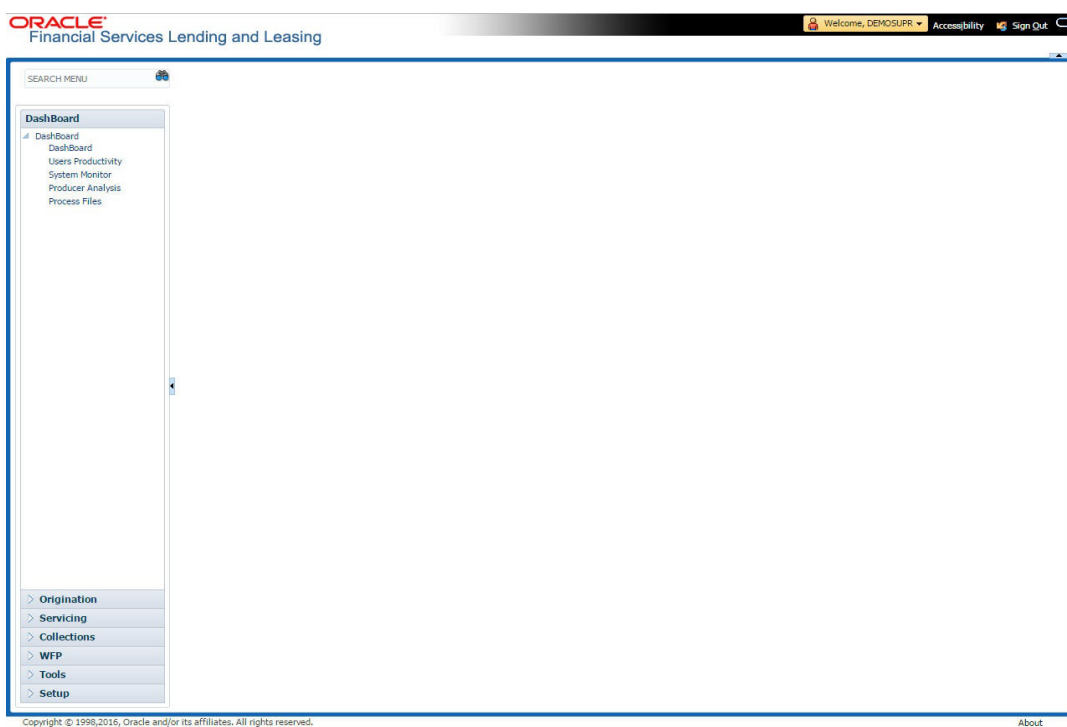
2. The URL of the OFSLL application will be of the format - https://<hostname>:<Port>/<ContextName>/faces/pages/OfsllSignIn.jsf (Example: https://localhost:7003/ofssl/faces/pages/OfsllSignIn.jsf)

3. Login with the user credentials that was created in Users Creation.



The screenshot shows the Oracle Financial Services Lending and Leasing Sign In page. The page has a blue header with the Oracle logo and the text "Financial Services Lending and Leasing". The main content area is white with a blue gradient background. In the center, there is a white box titled "Sign In" with the instruction "Please enter userid and password". Below this, there are two input fields: "* User Id" and "* Password". At the bottom of the box is a blue "Sign In" button. The footer of the page contains the text "Oracle Financial Services Lending and Leasing 14.3.0.0.0 Copyright © 1998,2016, Oracle and/or its affiliates. All rights reserved."

4. After successful login, the following screen is displayed



11. Installing Upgrade

There is an infrastructure upgrade required (from 11g fusion middleware to 12c fusion middleware) when upgrading from OFSLL 14.2.0.0.0 to OFSLL 14.3.0.0.0.

Hence, it is recommended to install a new 12c fusion middleware infrastructure and deploy the 14.3.0.0.0 OFSLL application.