

Application Installation Guide  
**Oracle Financial Services Lending and Leasing**  
Release 14.5.0.0.0

**Part No. E95814-01**

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Application Installation Guide  
May 2018  
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# 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 consists of following steps.

- [Installing Software](#)
- [Creating Domains, Repositories, Data Sources](#)
- [Configuring Policies](#)
- [Deploying Application](#)
- [Enabling SSL](#)
- [Mapping Enterprise Group with Application Role](#)
- [Configuring JNDI name for HTTP Listener](#)
- [Configure AQ-JMS Bridge](#)
- [Configuring Oracle BI Publisher for Application](#)
- [Launching Application](#)
- [Installing Upgrade](#)

## 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. JDK Version 1.8.0\_144 or above <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
2. Oracle WebLogic Server 12c Version 12.2.1.3.0 (<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.
4. The patches for Fusion Middleware 12.2.1.3.0 with the following patch numbers are to be applied - 23741897 and 27438258.

---

### 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**

<b>Term</b>	<b>Refers to</b>
Application	Oracle Financial Services Lending and Leasing

---

## 2. Installing Software

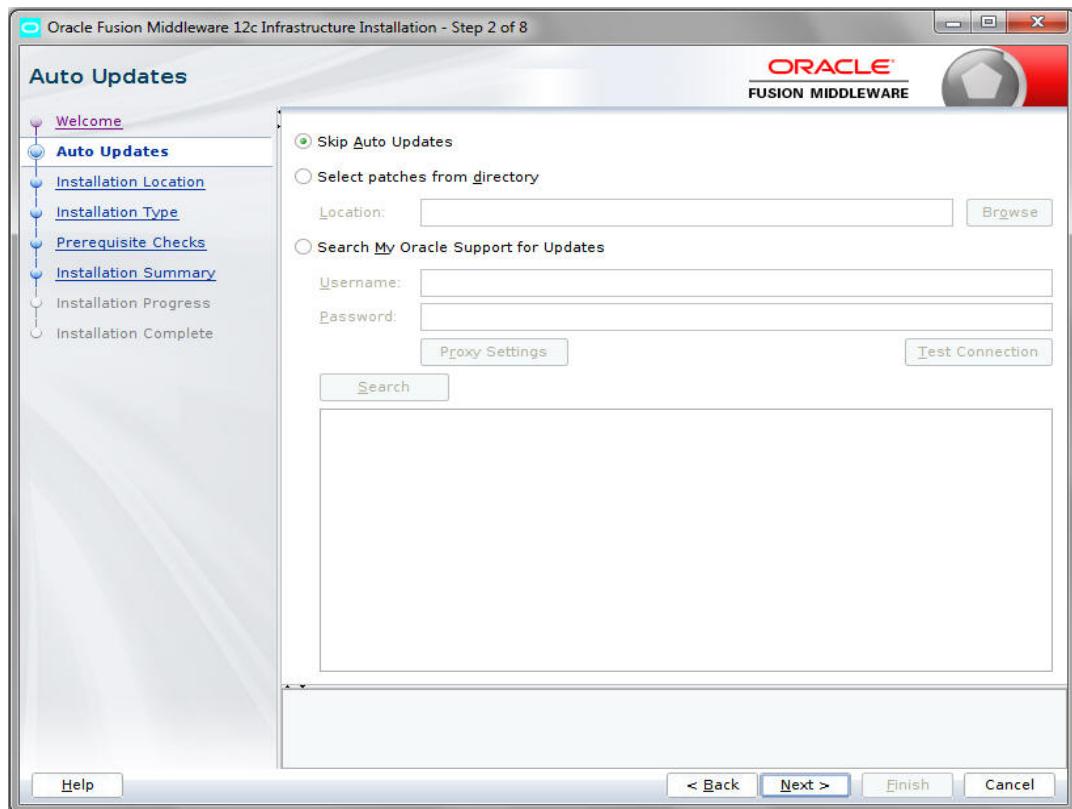
### 2.1 Installing Oracle WebLogic Server 12c

#### To install using generic Weblogic installer

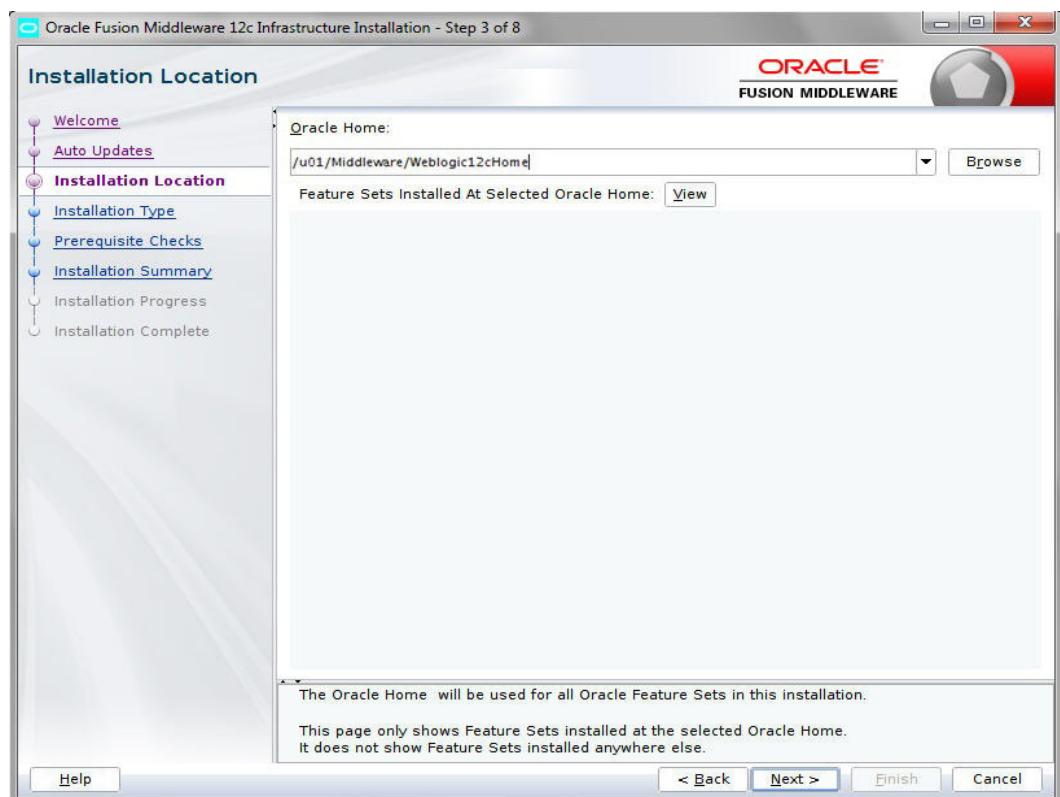
1. Run the command > `java -jar fmw_12.2.1.3.0_infrastructure.jar`
2. Welcome screen is displayed as shown below. Click Next.



3. The following window is displayed.

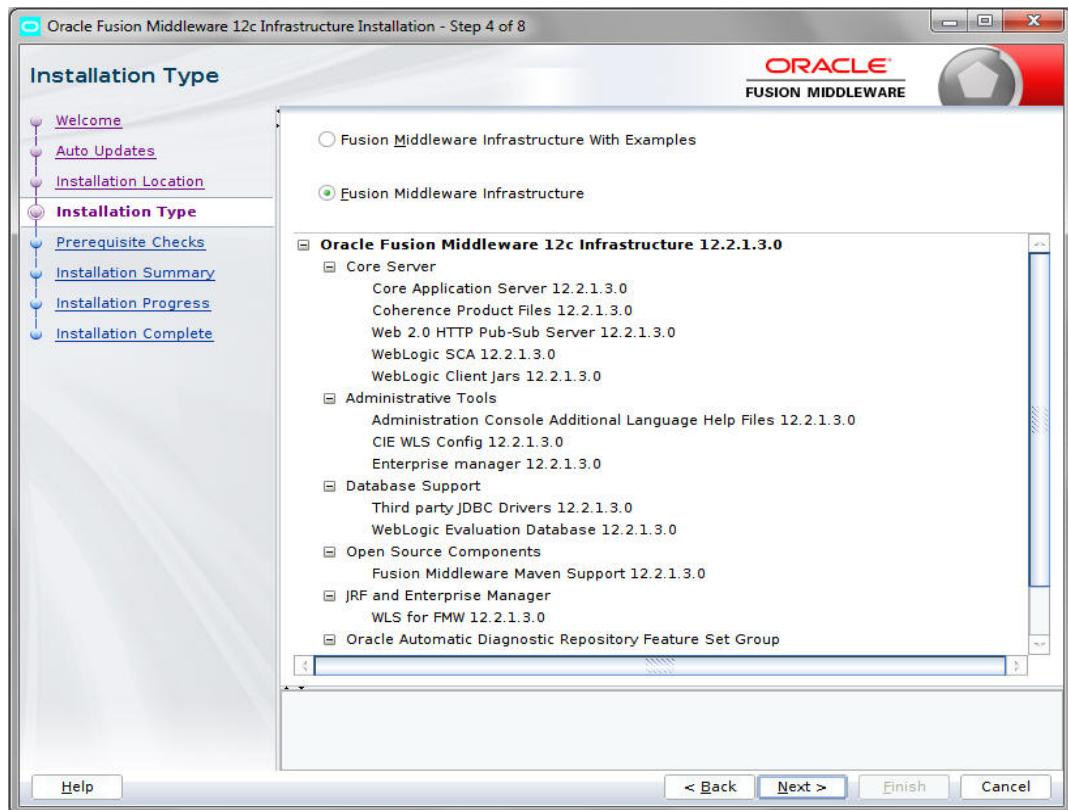


4. Select 'Skip Auto Updates' and Click 'Next'.

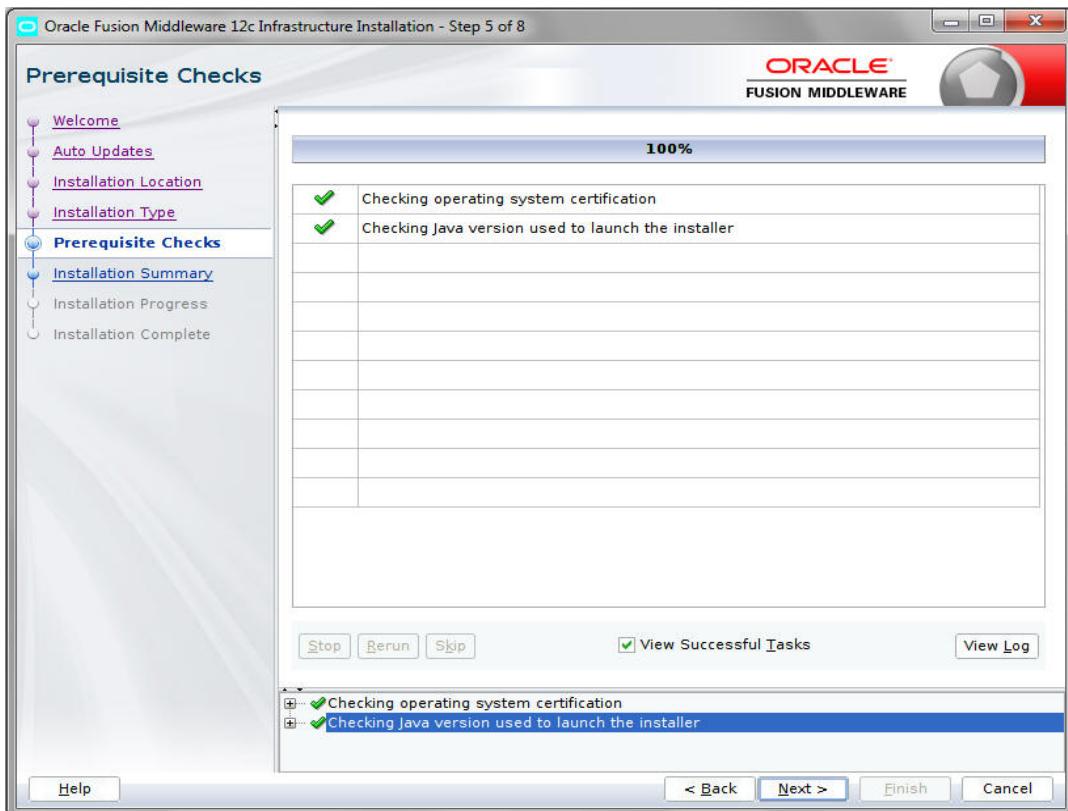


5. Specify the path for Middleware Home Directory.

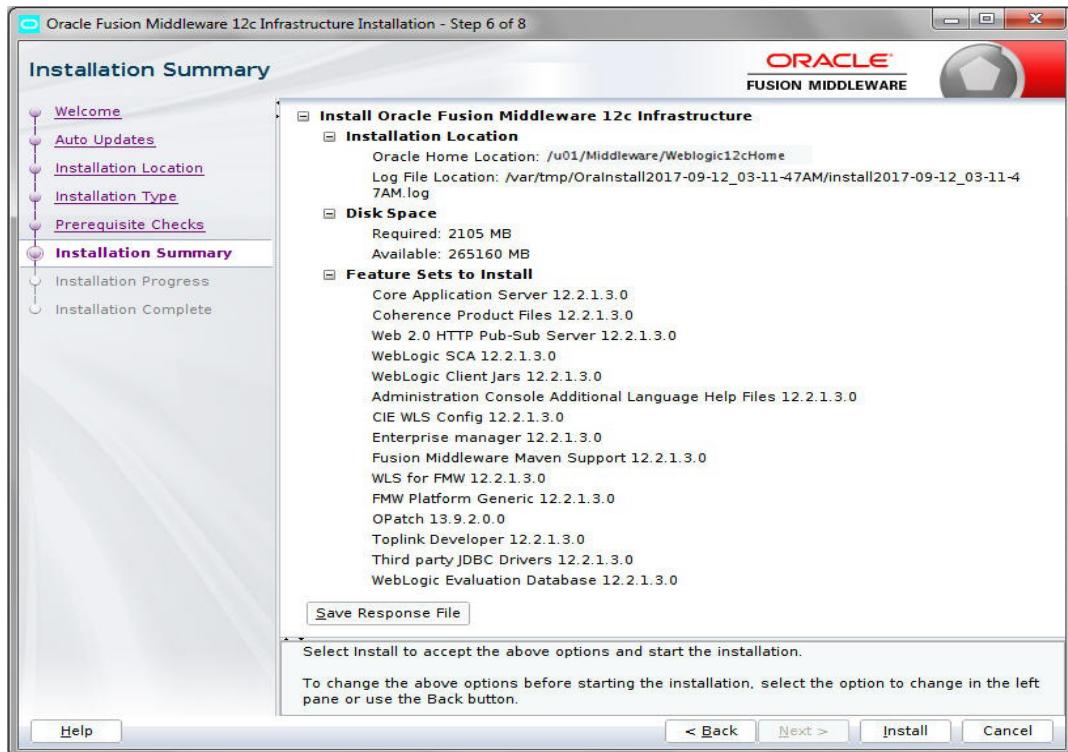
6. Click 'Next'. The following window is displayed.



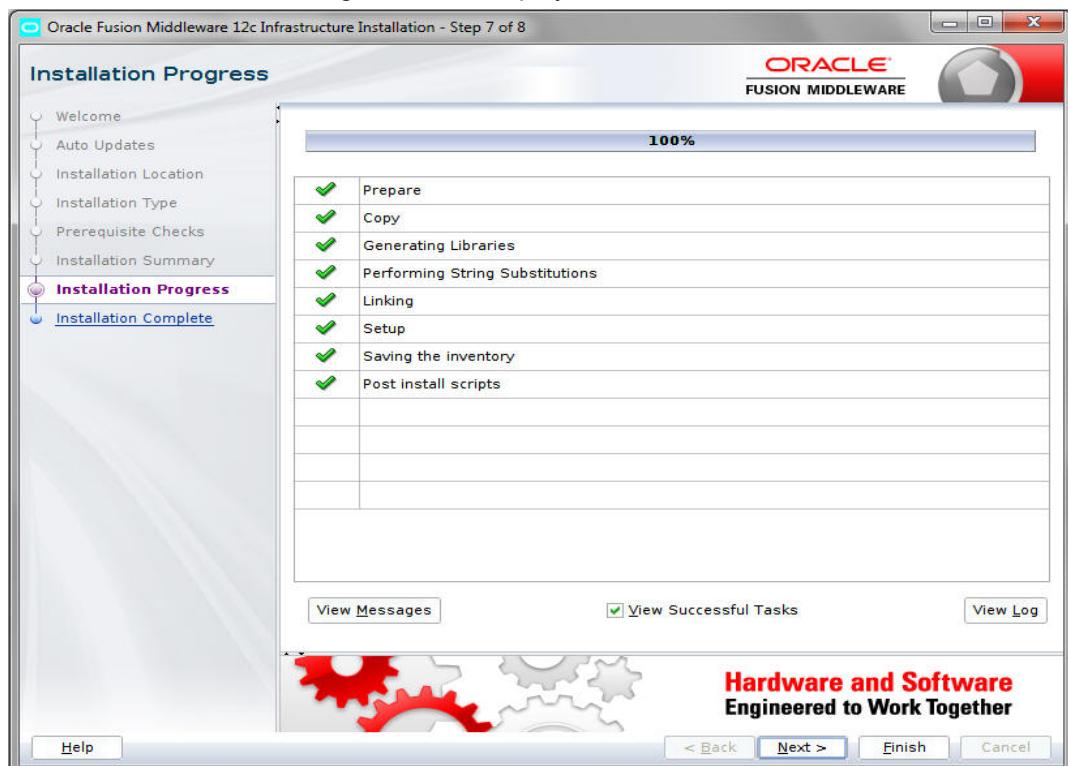
7. Select the option 'Fusion Middleware Infrastructure'. Click 'Next'.



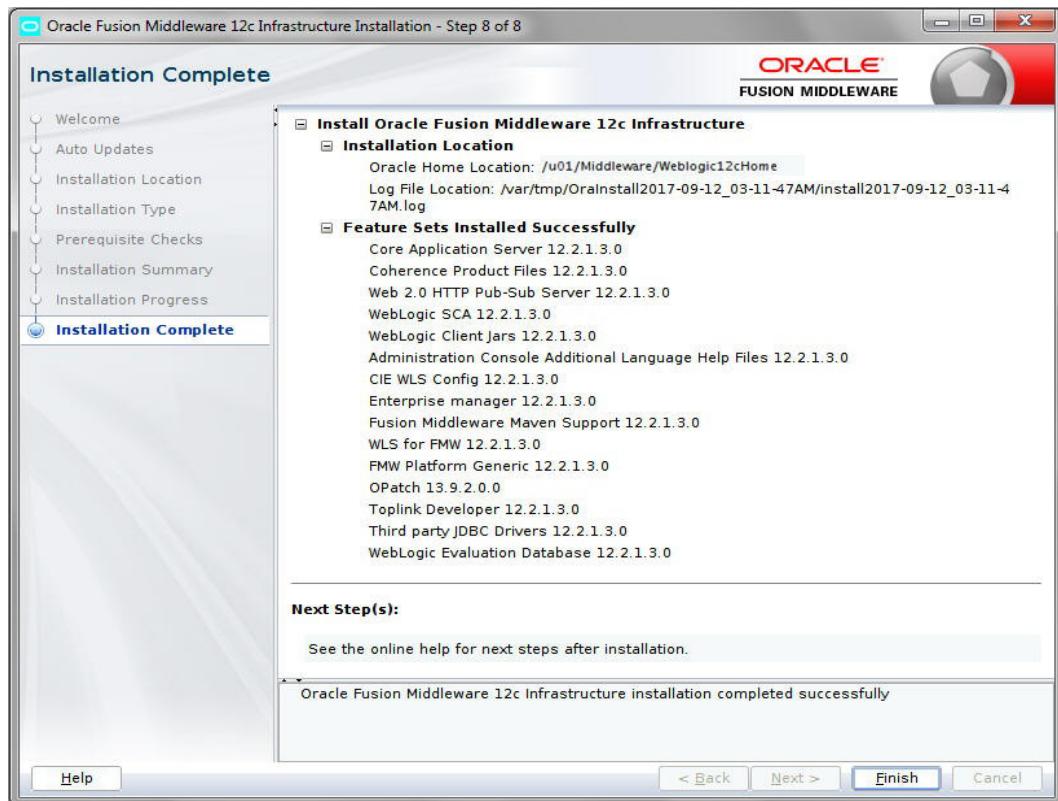
8. Click 'Next'. The following window is displayed.



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



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



11. Click 'Finish' to close the window.

---

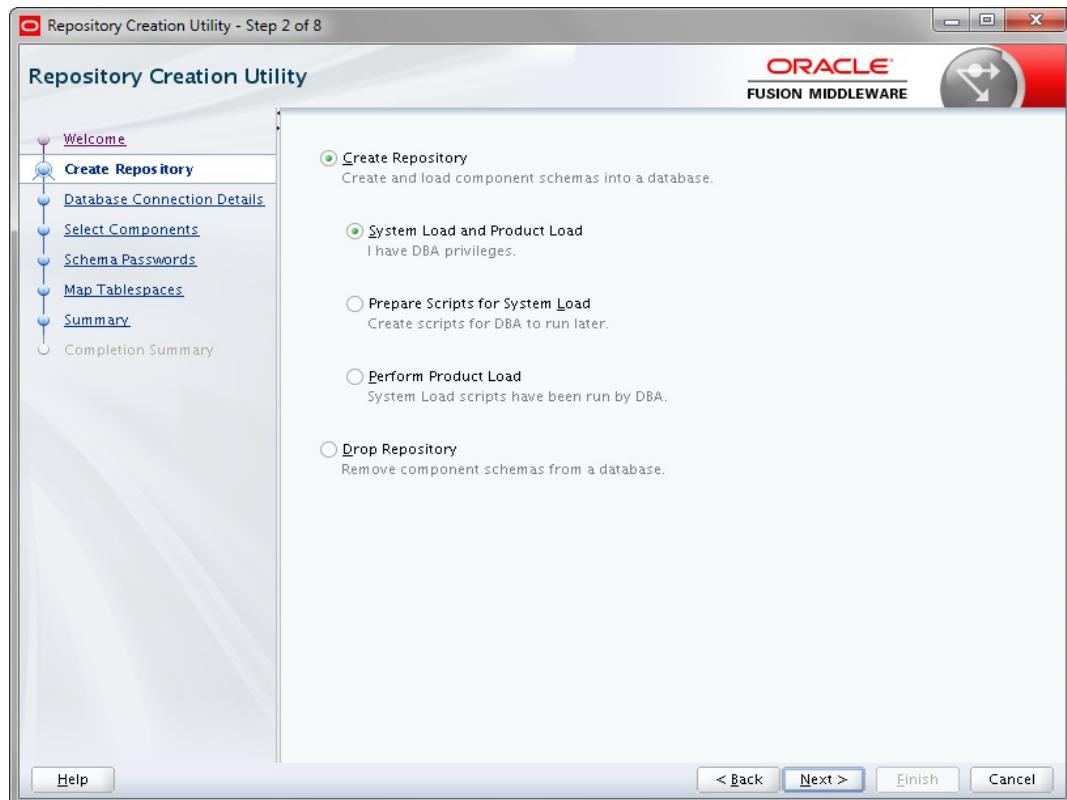
## 3. Creating Domains, Repositories, Data Sources

### 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.

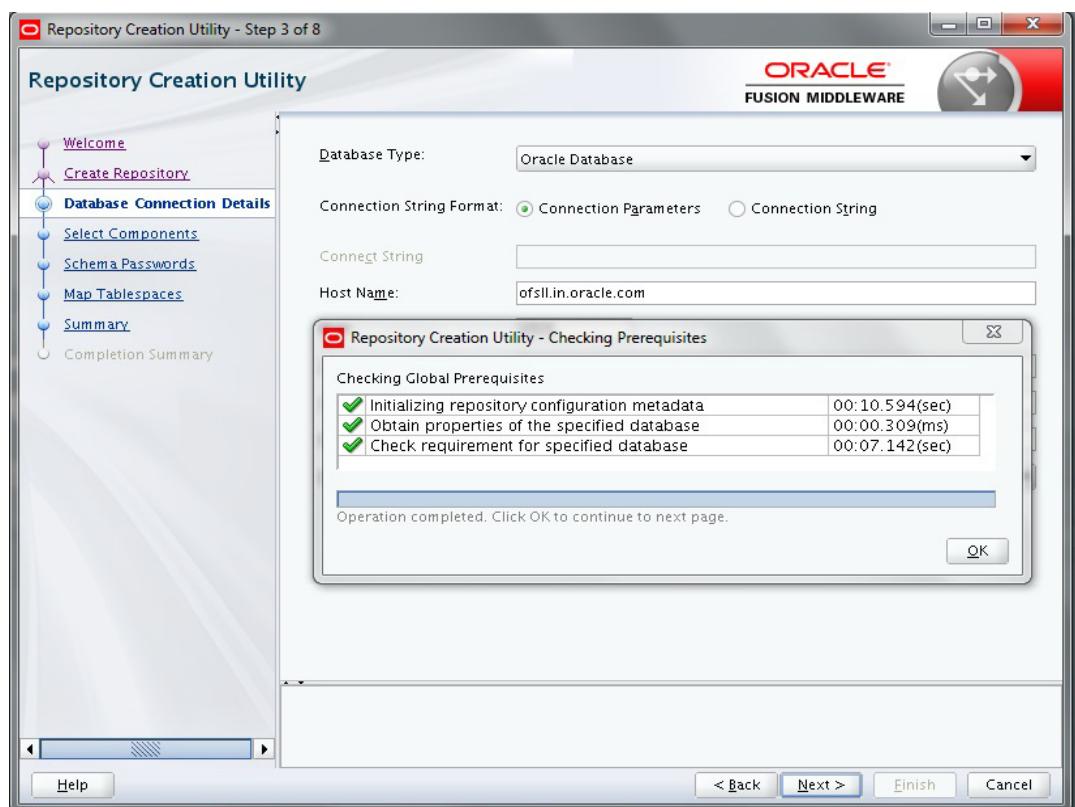
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**Note**

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

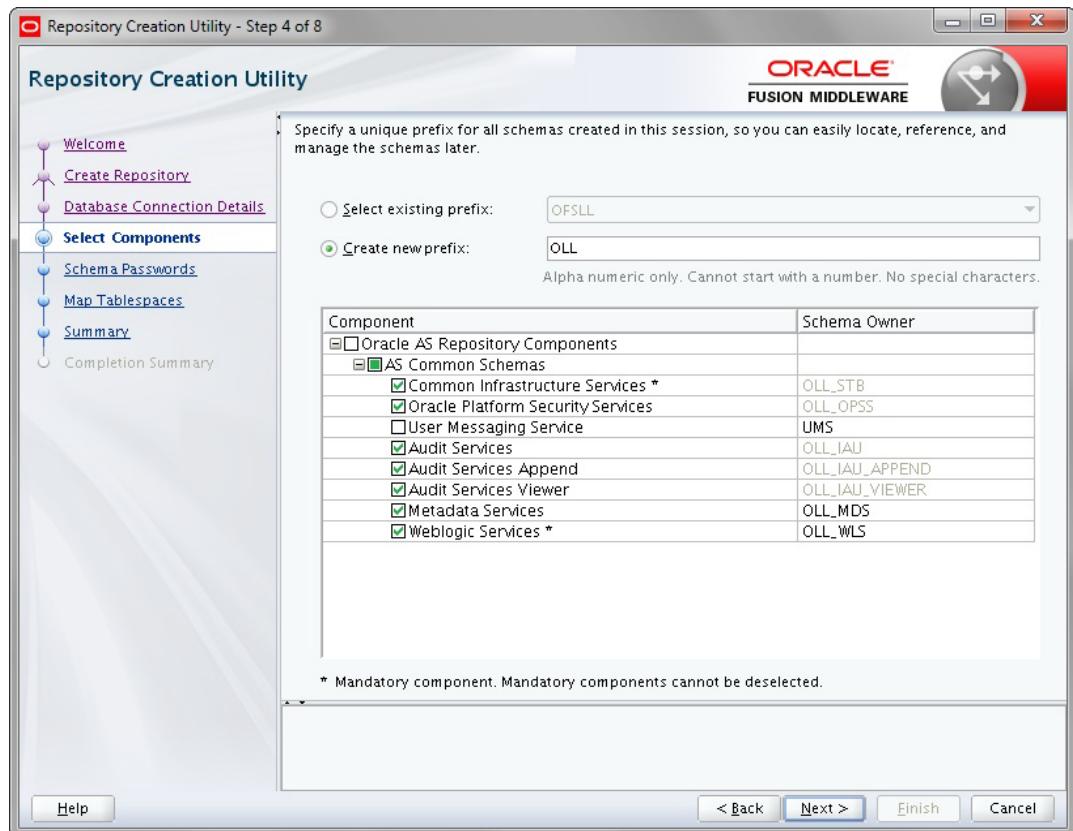
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5. Click 'Next'. The following window is displayed.



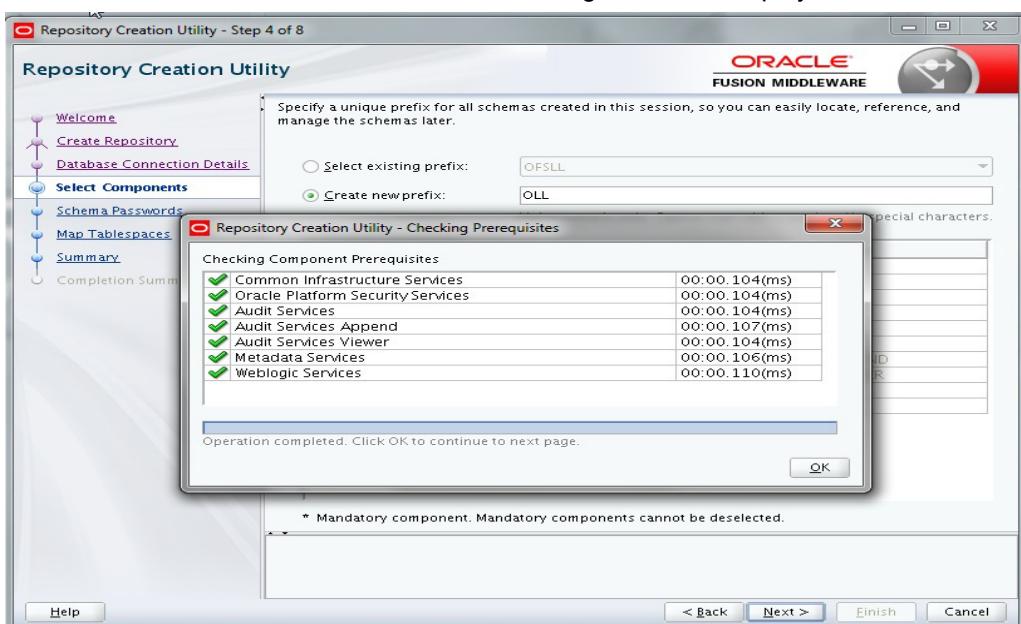
6. Click 'OK' in the confirmation dialog.

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

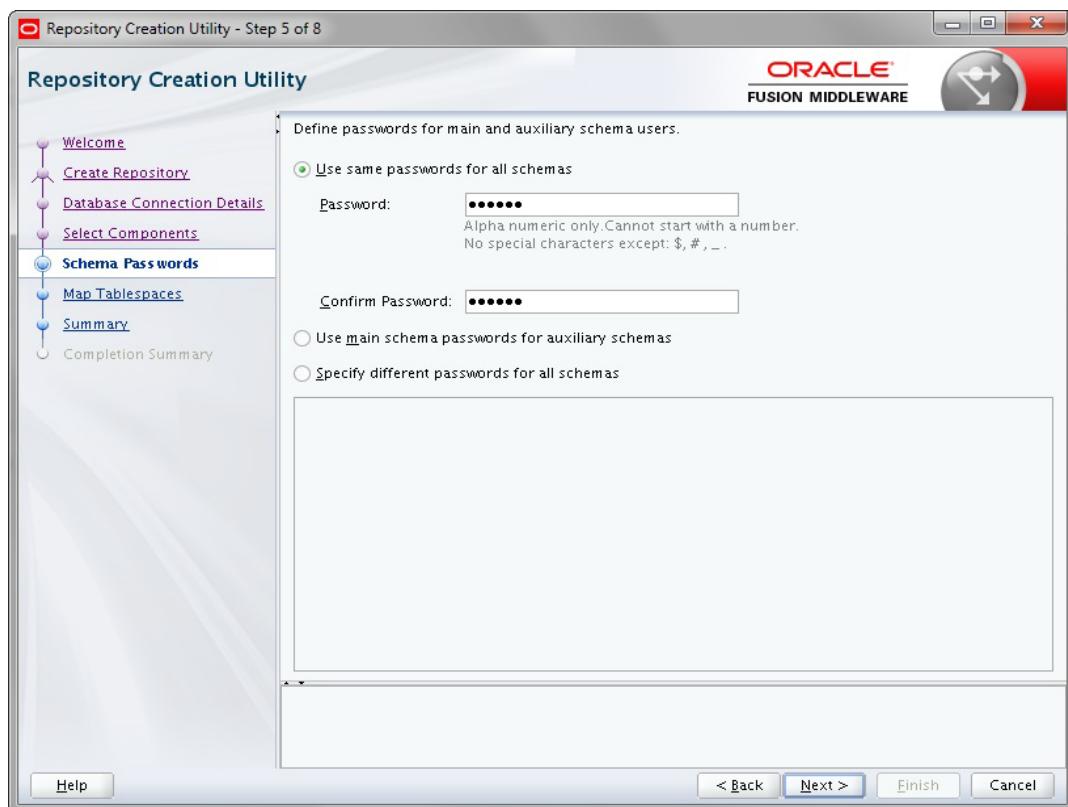


8. Select 'Create new Prefix' option and specify the value. For example, OLL.

9. Select the options 'Metadata Services' and 'Oracle Platform Security Services' as shown in the above screen. Click 'Next'. The following window is displayed.



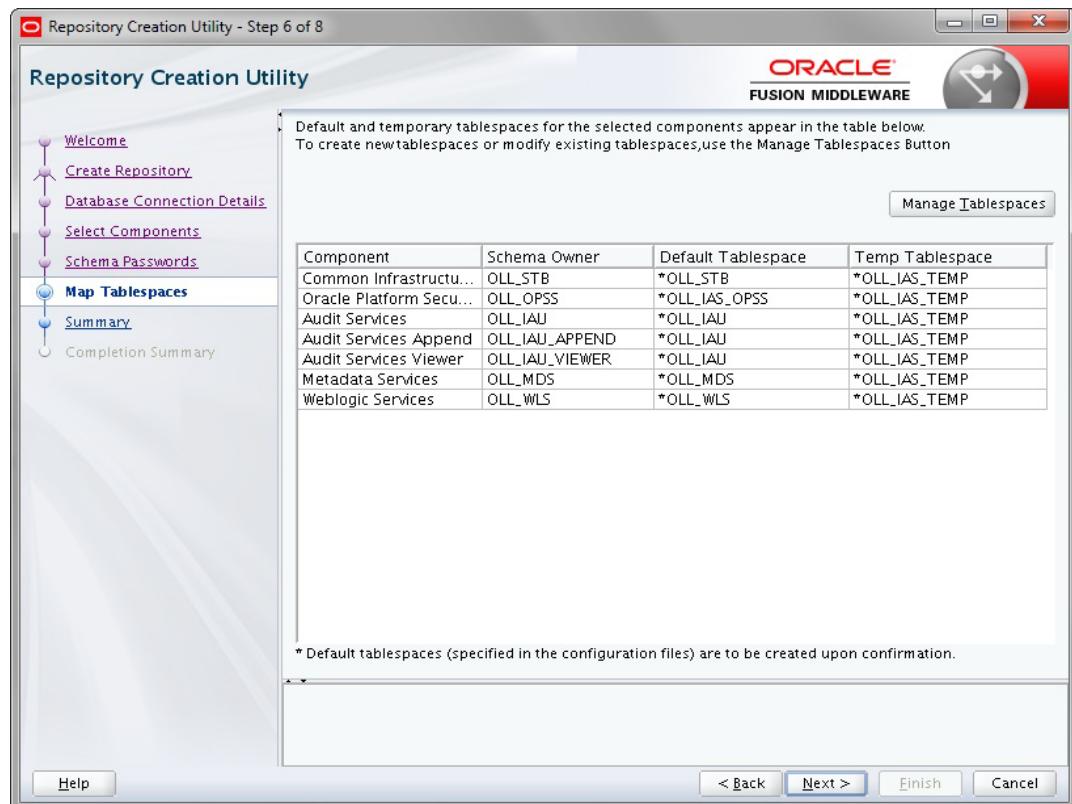
10. Click 'Next'. The following window is displayed.



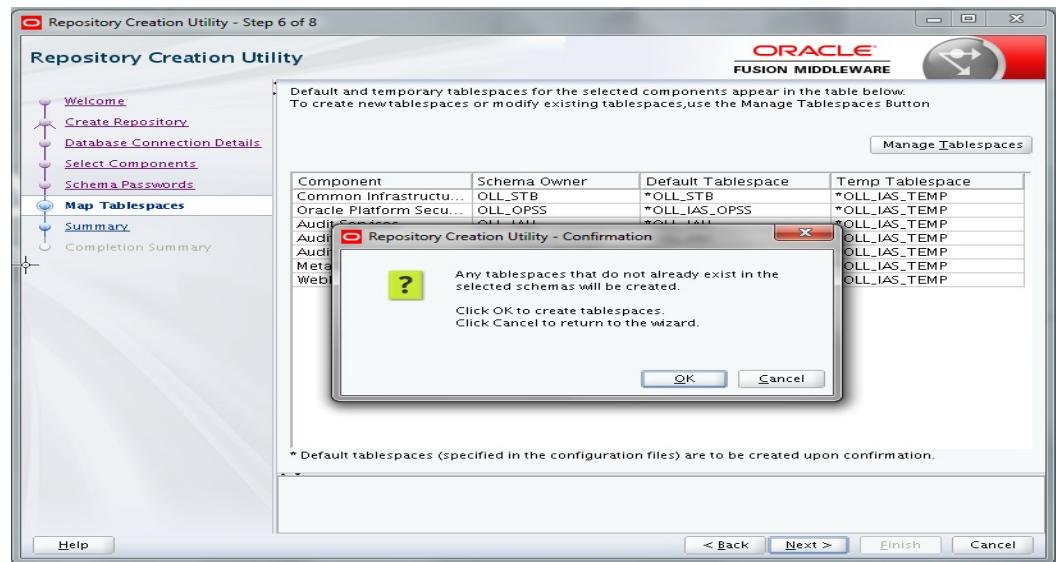
11. You can select one of the following:

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

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

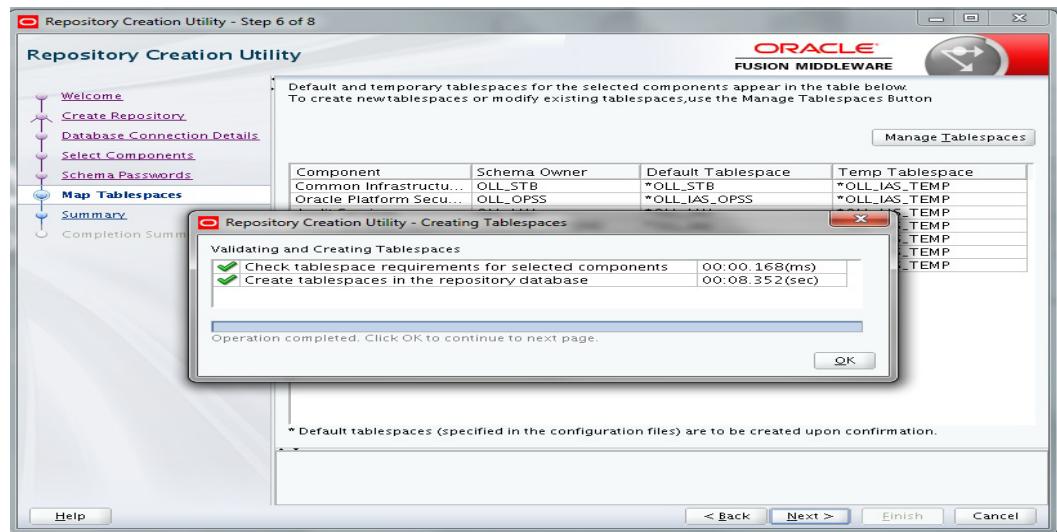


13. Click 'Next'. The following window is displayed.



14. Click 'OK' in the confirmation dialog.

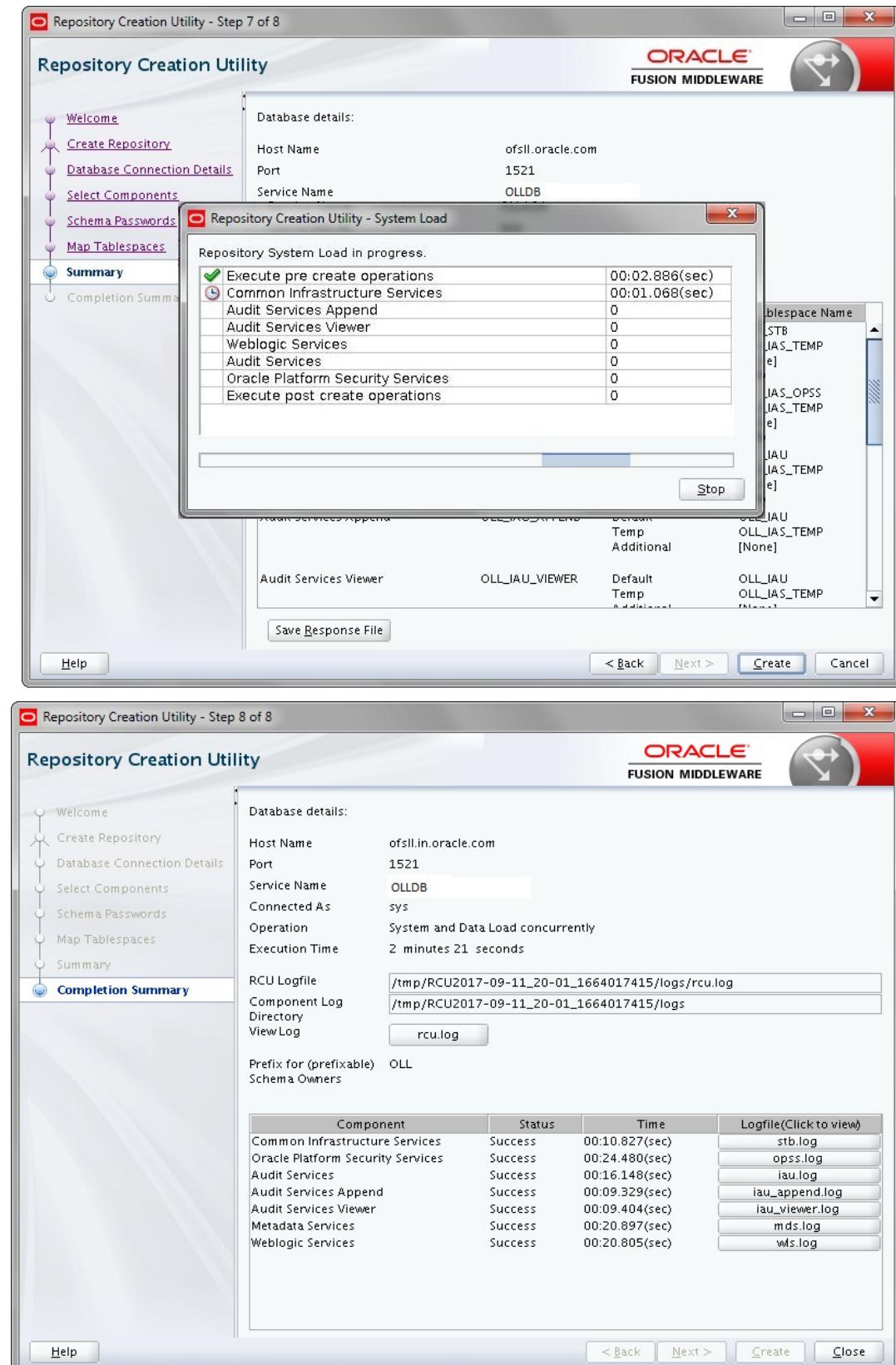
15. Click 'Next'. The following window is displayed.



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



17. Click 'Create'. The following windows are displayed.



18. Click 'Close' to close the window.

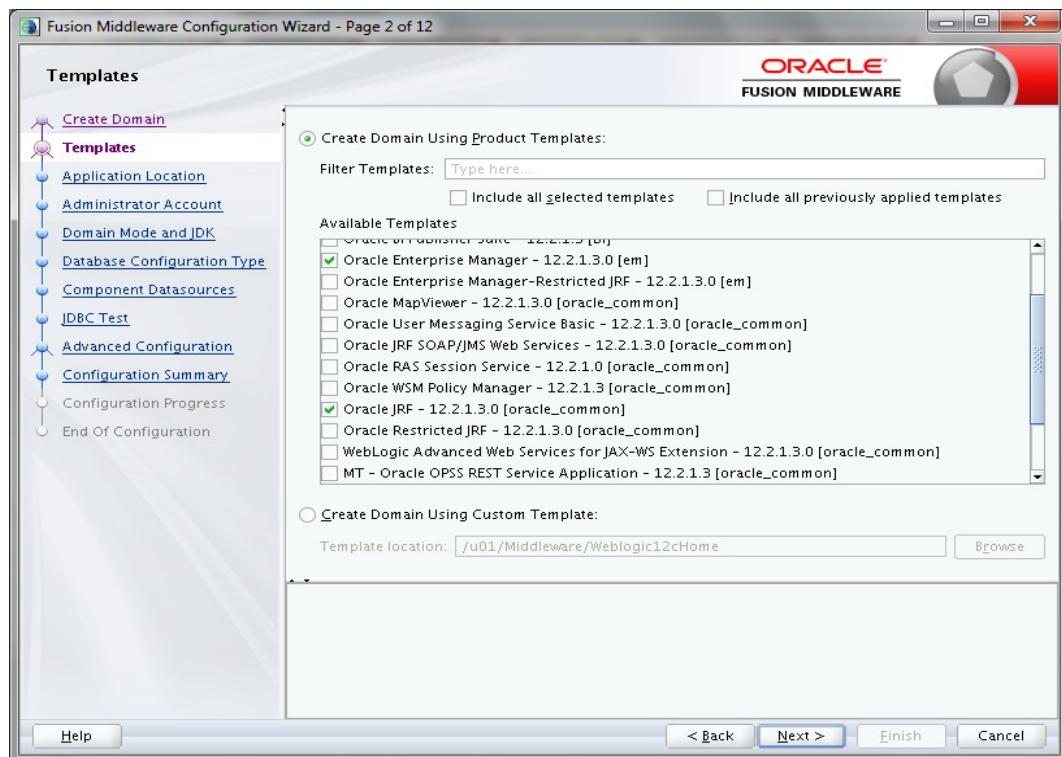
## 3.2 Creating Domain and Servers

1. In Unix/Linux machine, once the Oracle WebLogic Server is installed, navigate to the following path - <WL\_HOME>/oracle\_common/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.

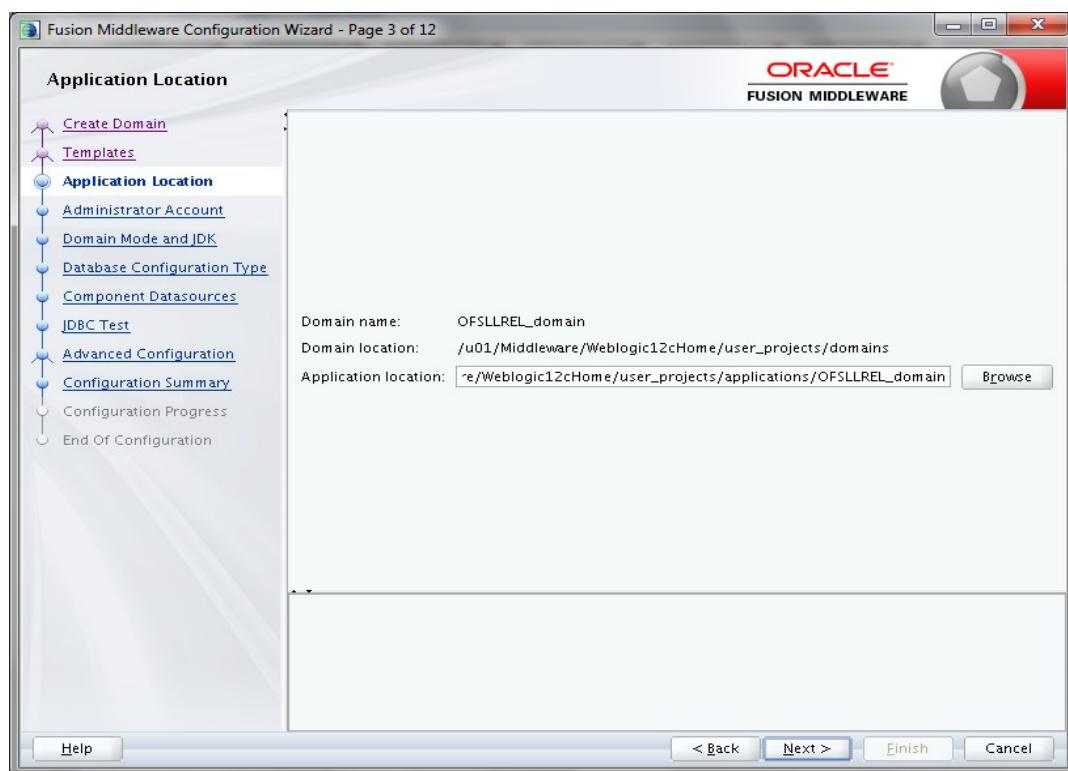
4. Click 'Next'. The following window is displayed.



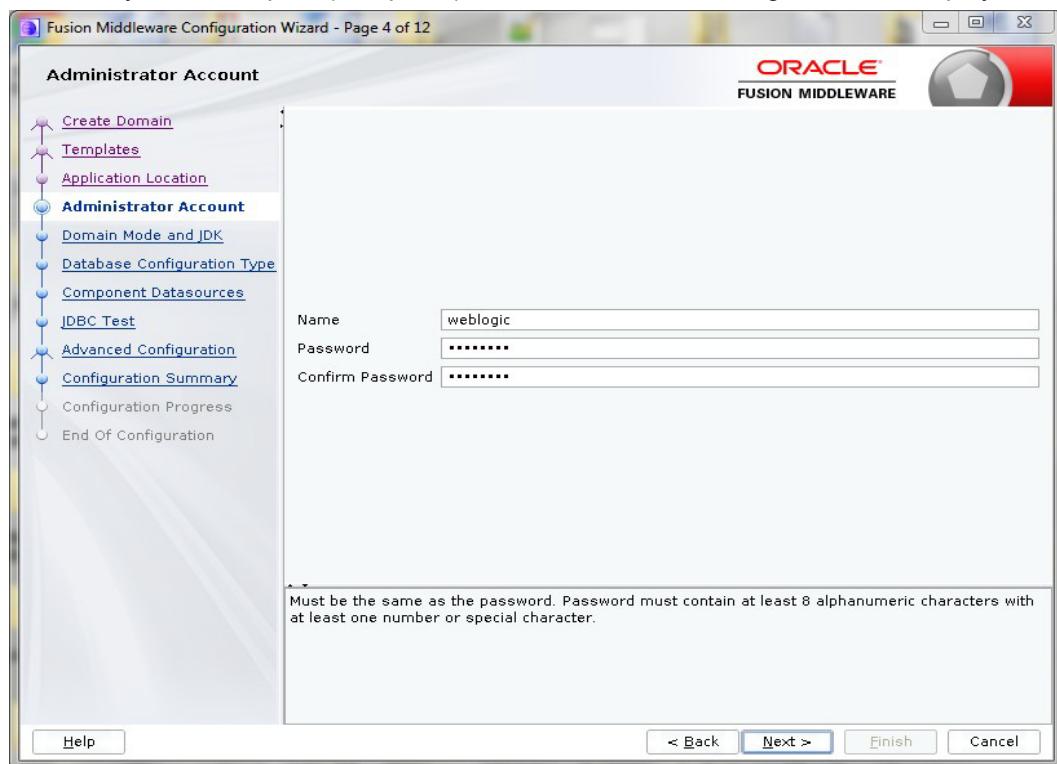
5. Select the option 'Create Domain Using Product Templates' in the list of available templates and select 'Oracle Enterprise Manager - 12.2.1.3.0 [em]'. On selection, the following options are auto-selected:

- Oracle JRF - 12.2.1.3.0 [oracle\_common]
- Weblogic coherence cluster Extension-12.2.1.3.0 [wlserver]

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



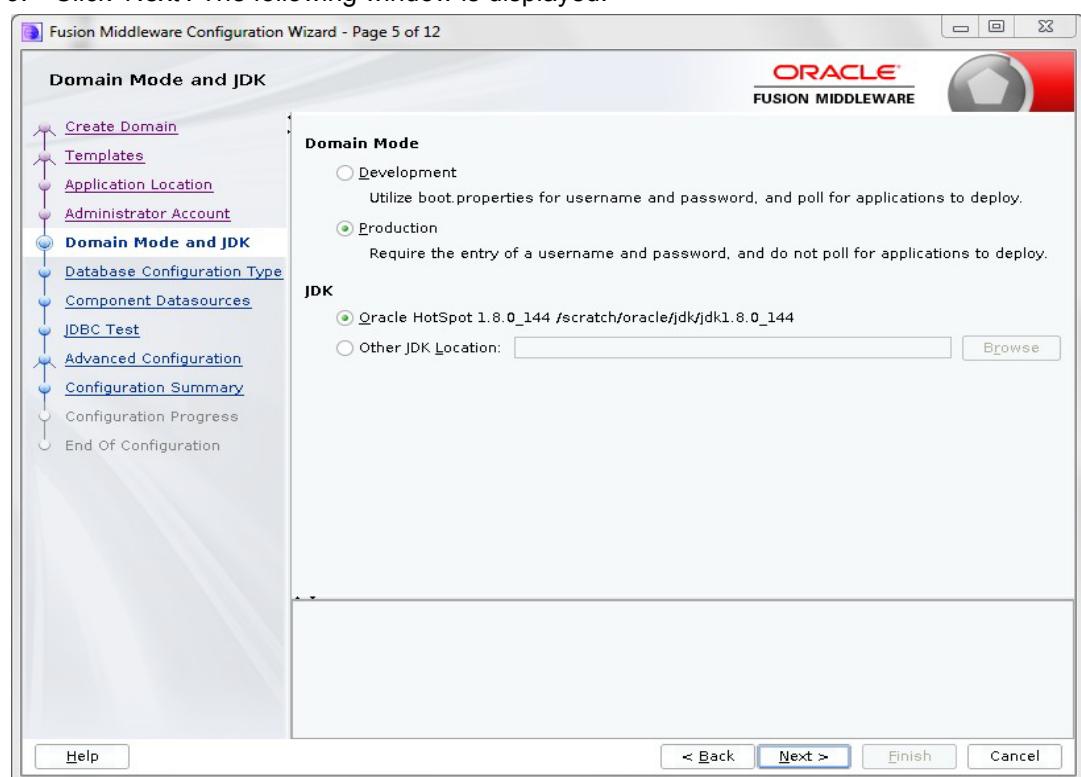
7. Specify the Domain Name in the 'Application location' field. You can click browse to directly select the path (if required). Click 'Next'. The following window is displayed.



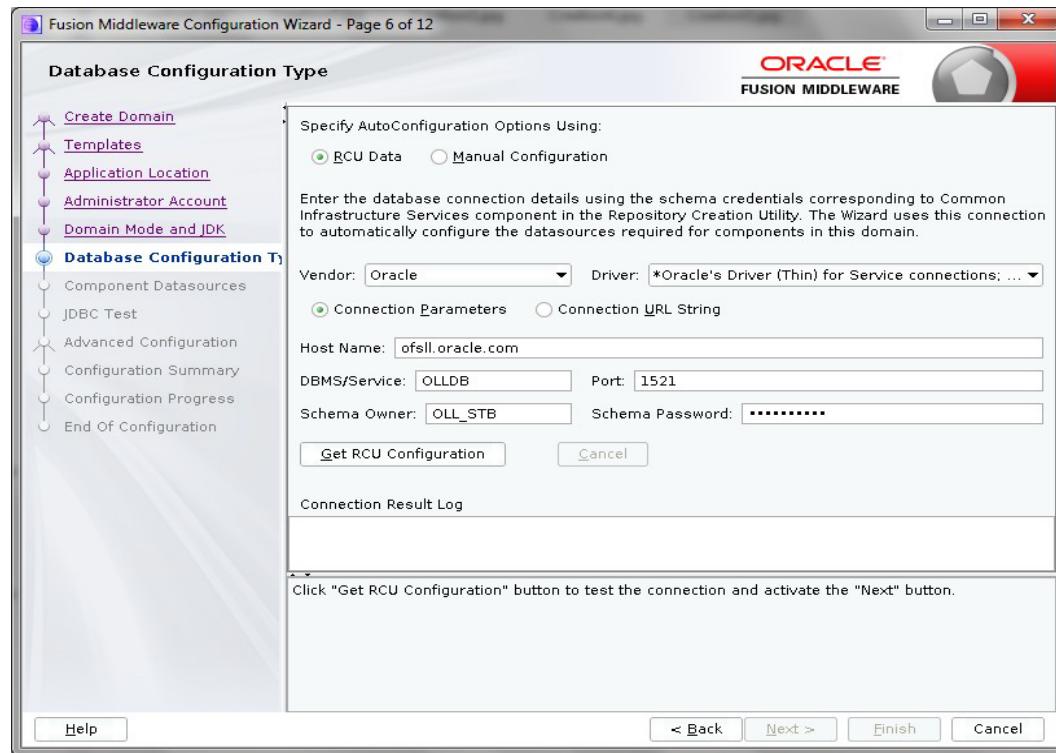
8. Enter credentials for the following:

- Name
- Password
- Confirm Password

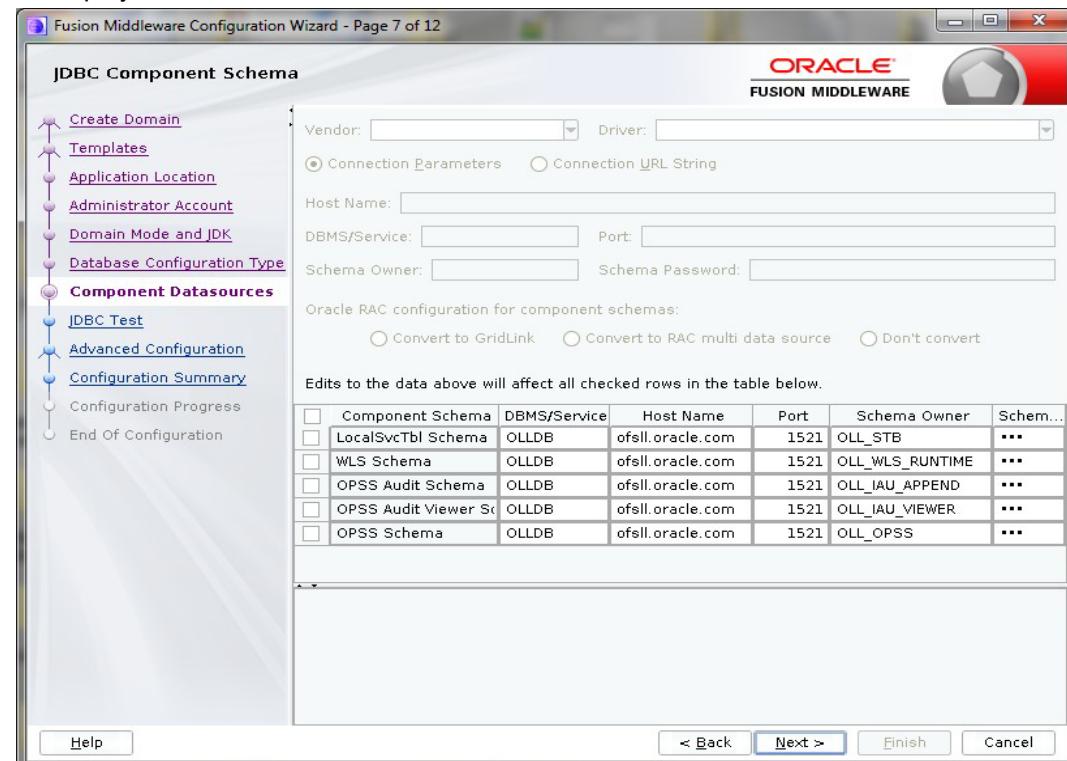
9. Click 'Next'. The following window is displayed.



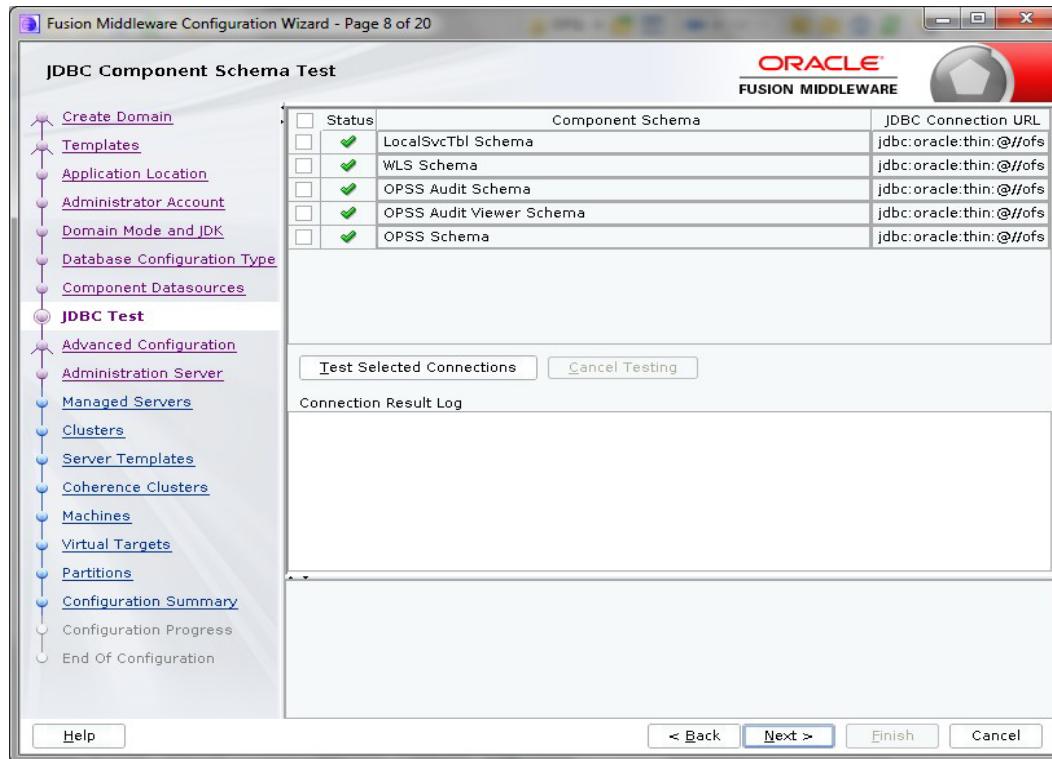
10. Select the Domain Mode as 'Production' and 'JDK' from Available JDKs. You can also select any other JDK by selecting 'Other JDK Location' option. Click 'Next'. The following window is displayed.



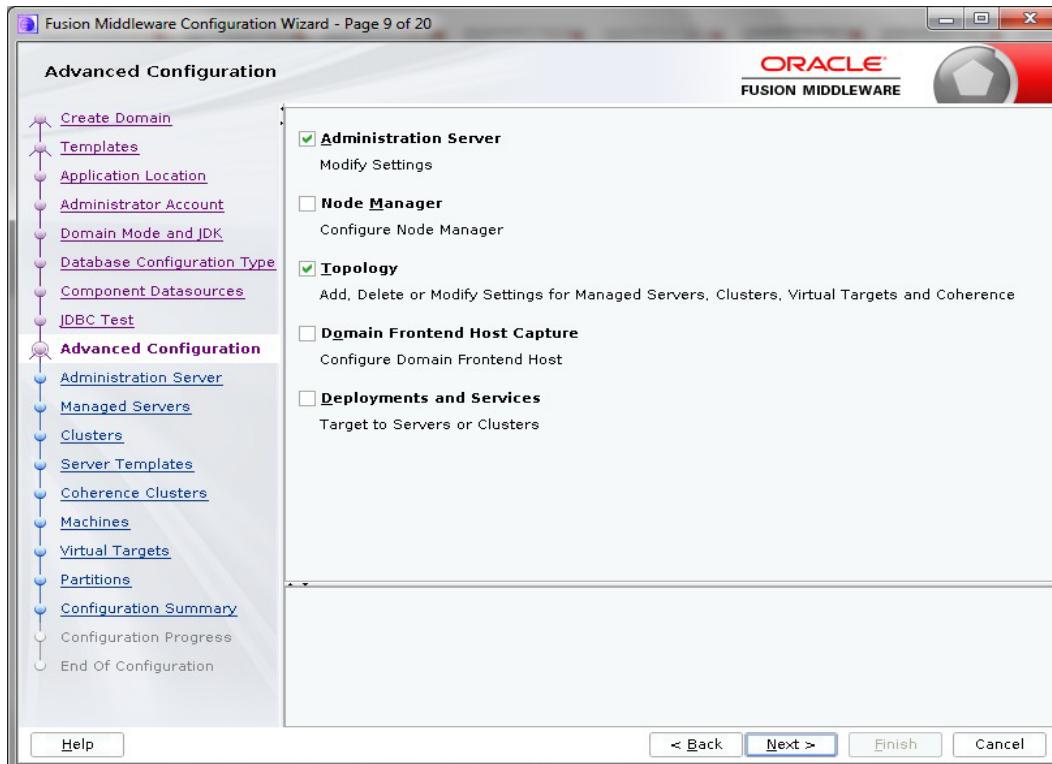
11. Specify the RCU data and click on 'Get RCU Configuration'. The following window is displayed.



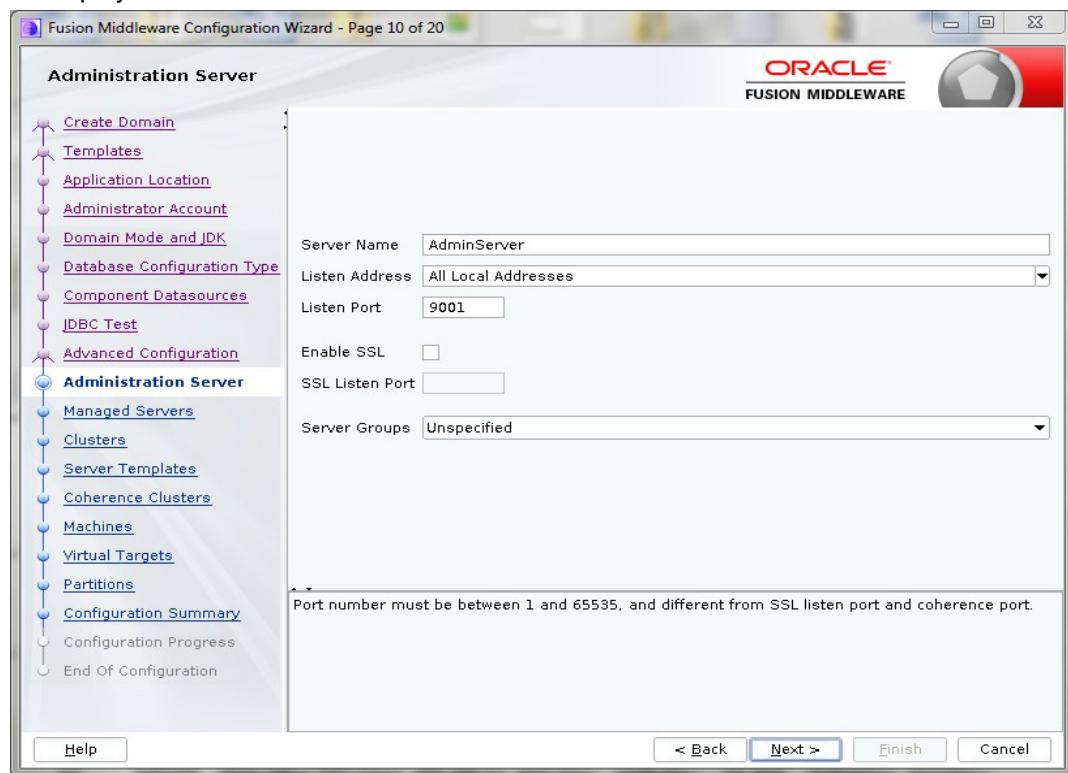
12. Click 'Next'. The following window is displayed.



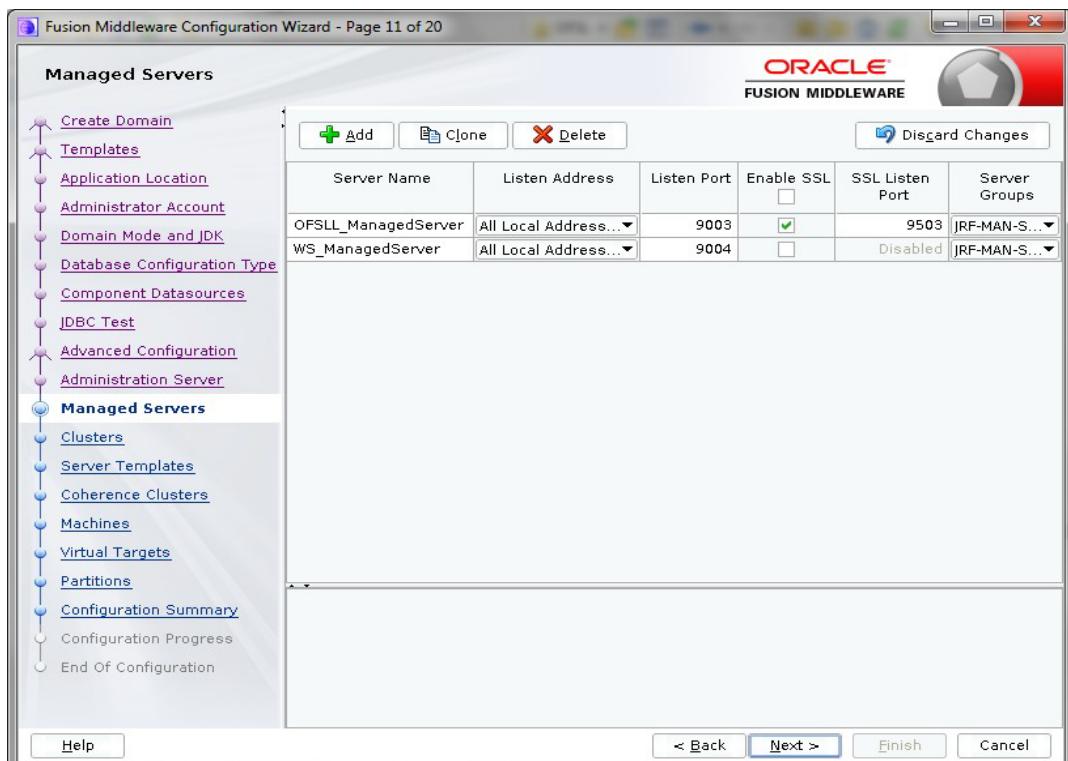
13. Click 'Next'. The following window is displayed.



14. Select 'Administration Server' and 'Topology' and click 'Next'. The following window is displayed.



15. Enter Administration 'Server Name' and 'Listen Port' details. Click 'Next'. The following window is displayed.



16. Click 'Add' button to create 'ManagedServer'.  
 17. Select the Server Group as 'JRF-MAN-SVR'. *Selecting this server group ensures that the Oracle JRF services are targeted to the specific Managed Servers created.*

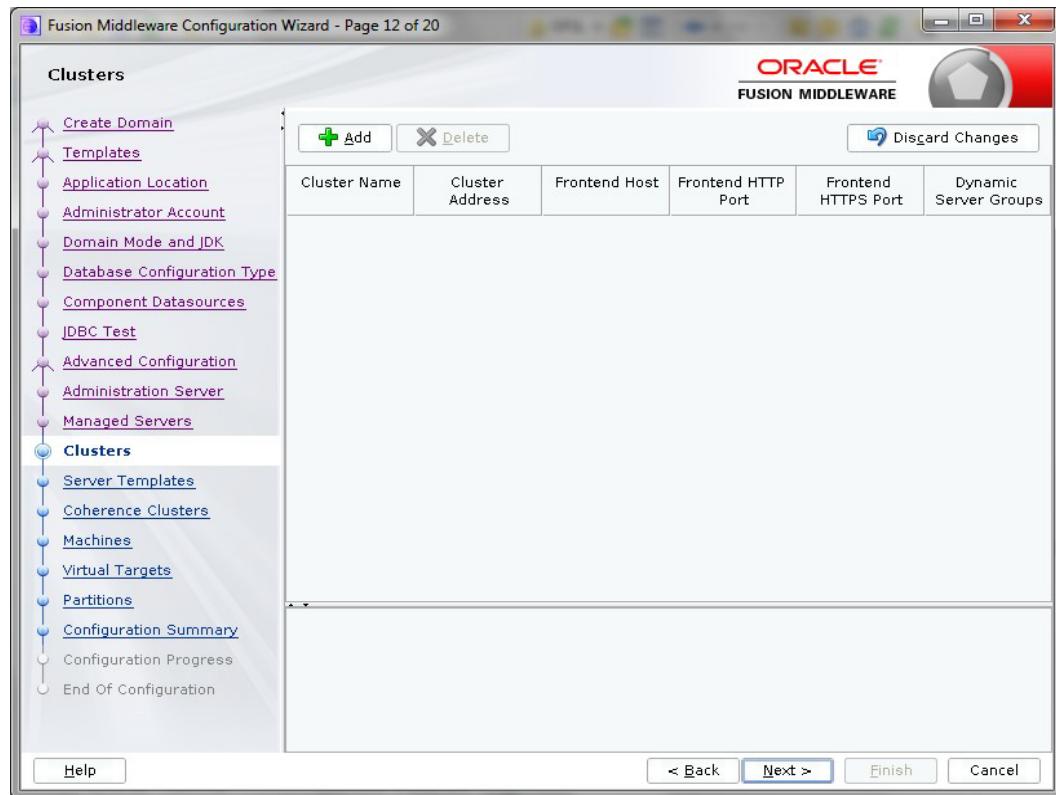
---

**Note**

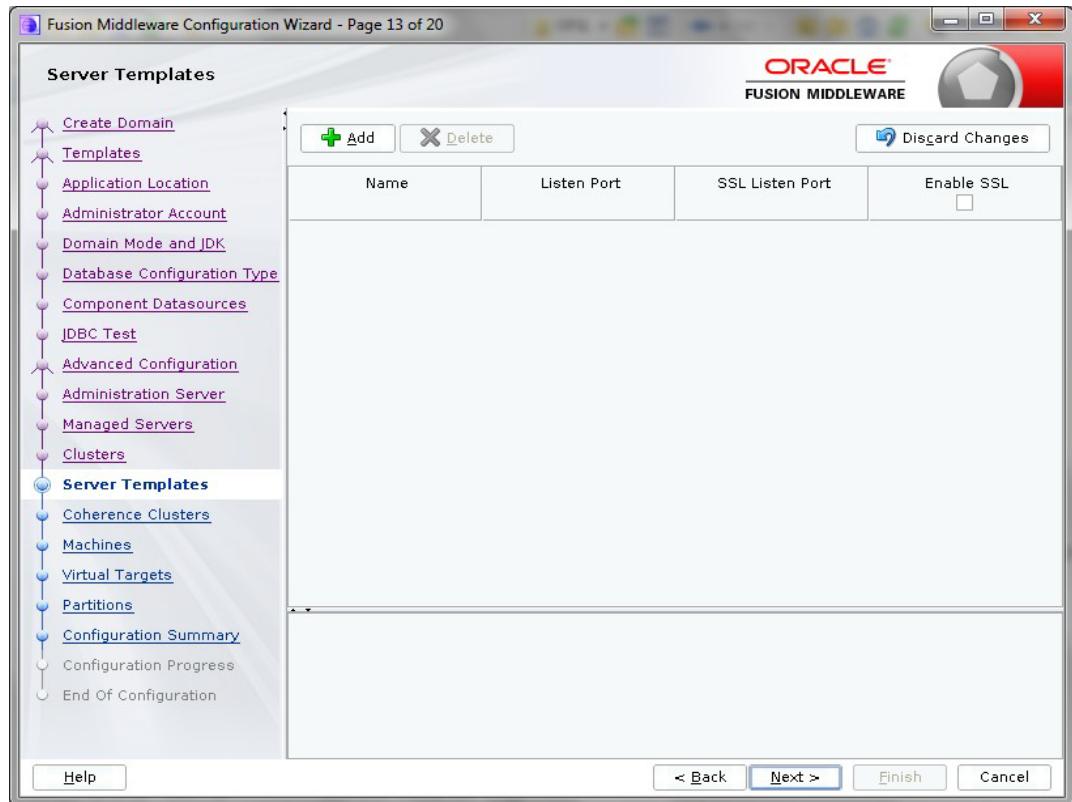
It is recommended to create two managed servers, one each for UI and Web Services.

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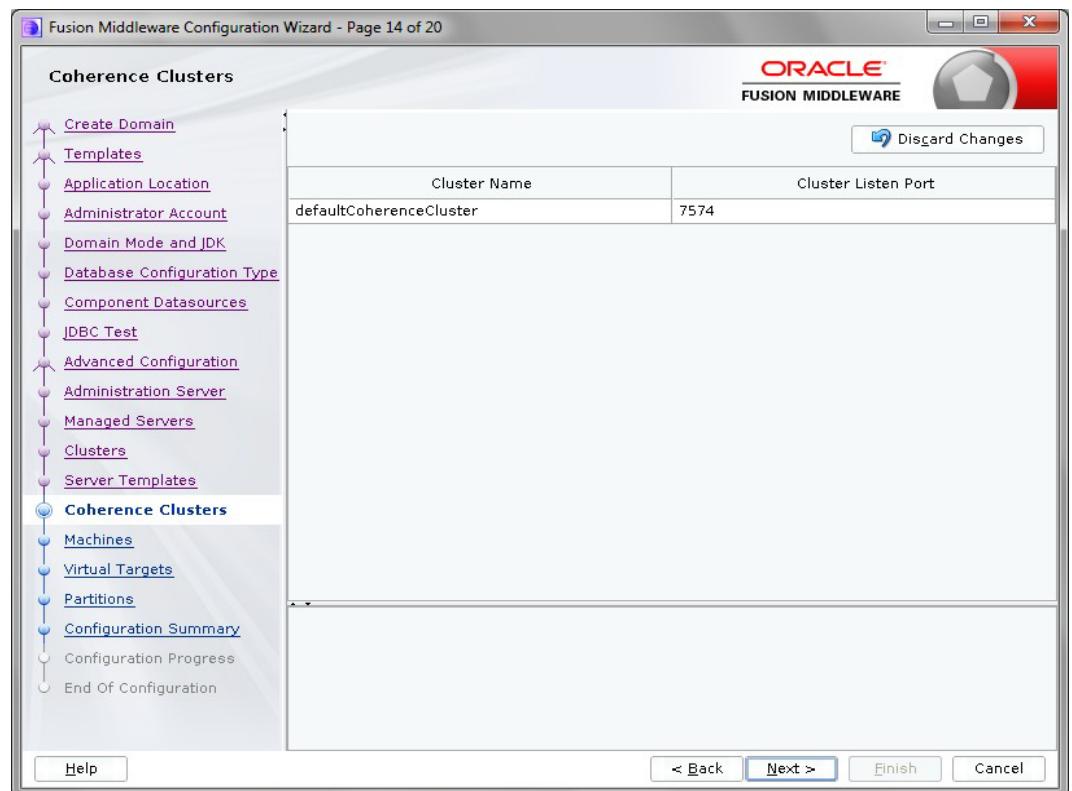
18. Click 'Next'. The following window is displayed.



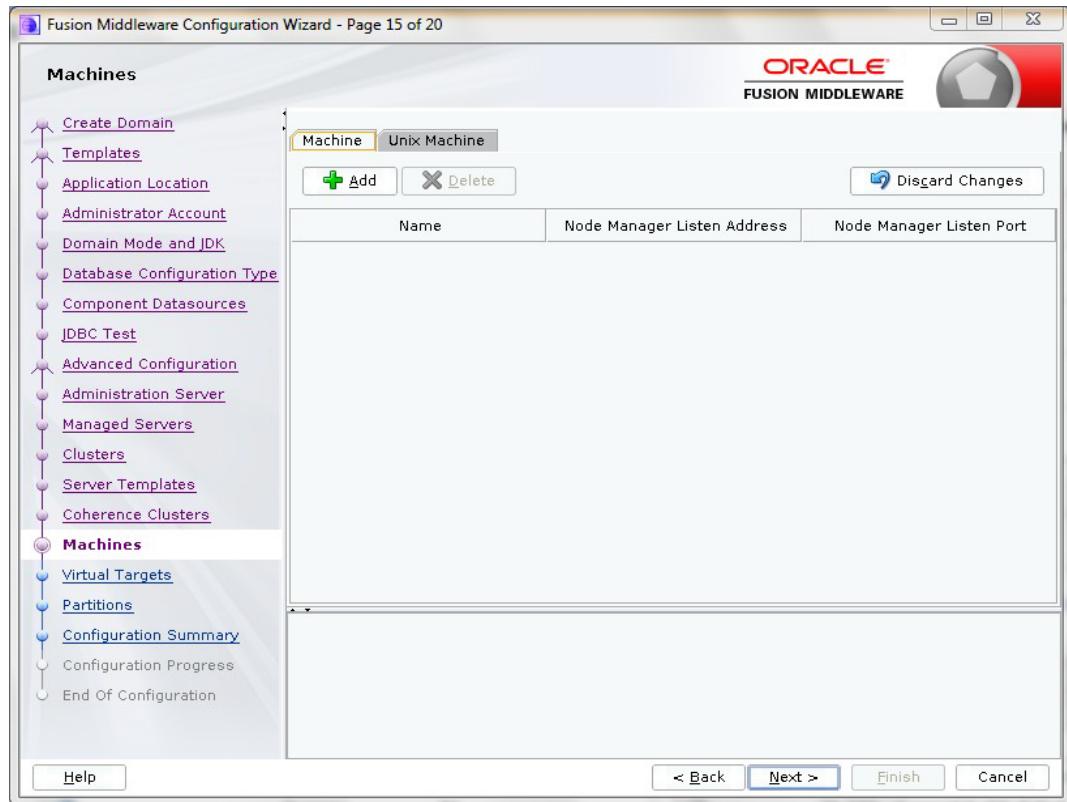
19. Configure as required and click 'Next'. The following window is displayed.



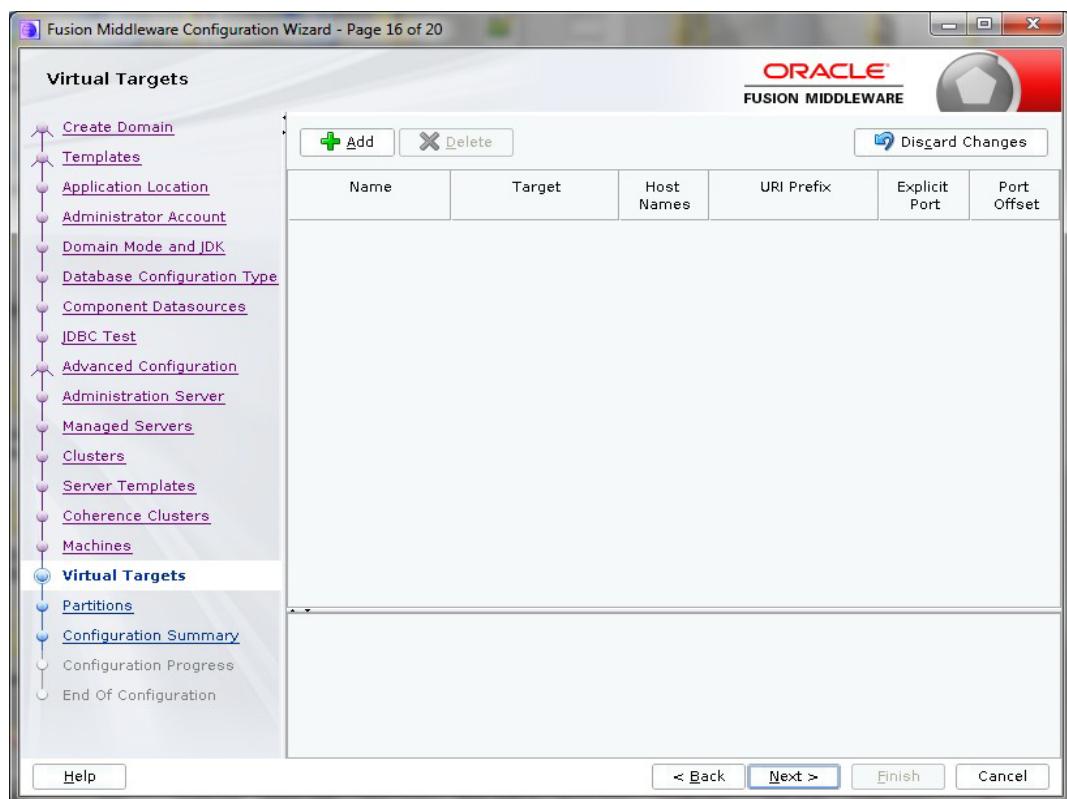
20. Configure as required and click 'Next'. The following window is displayed.



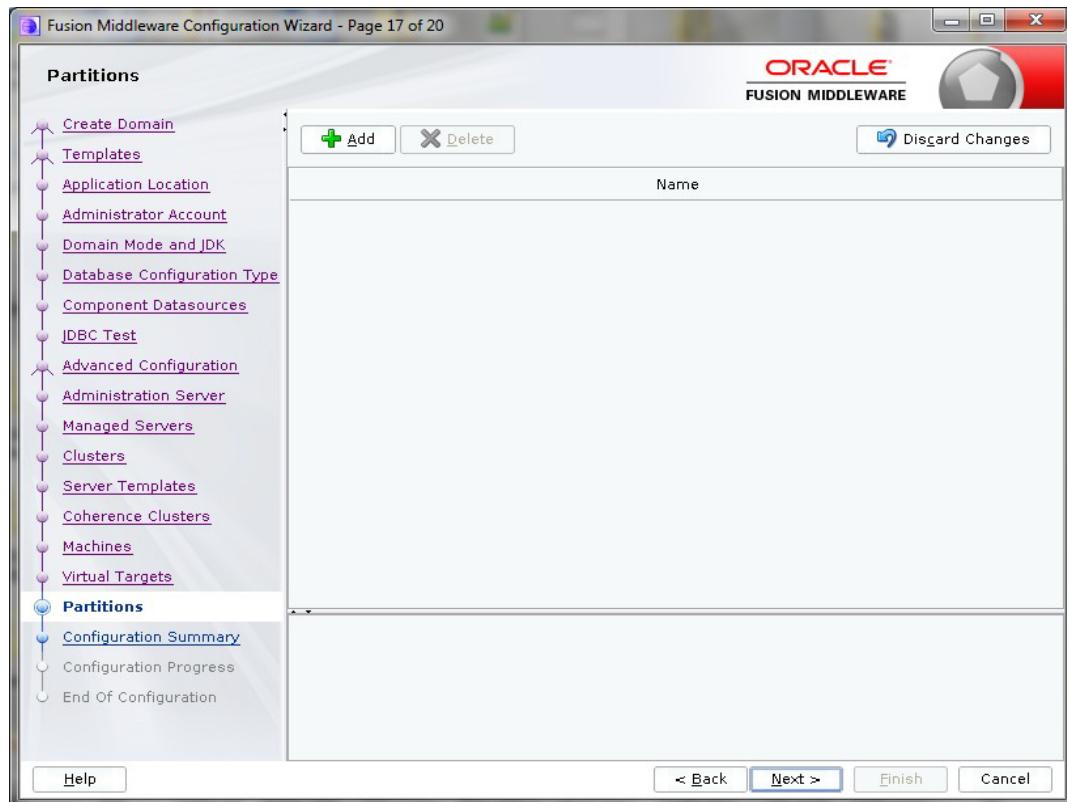
21. Configure as required and click 'Next'. The following window is displayed.



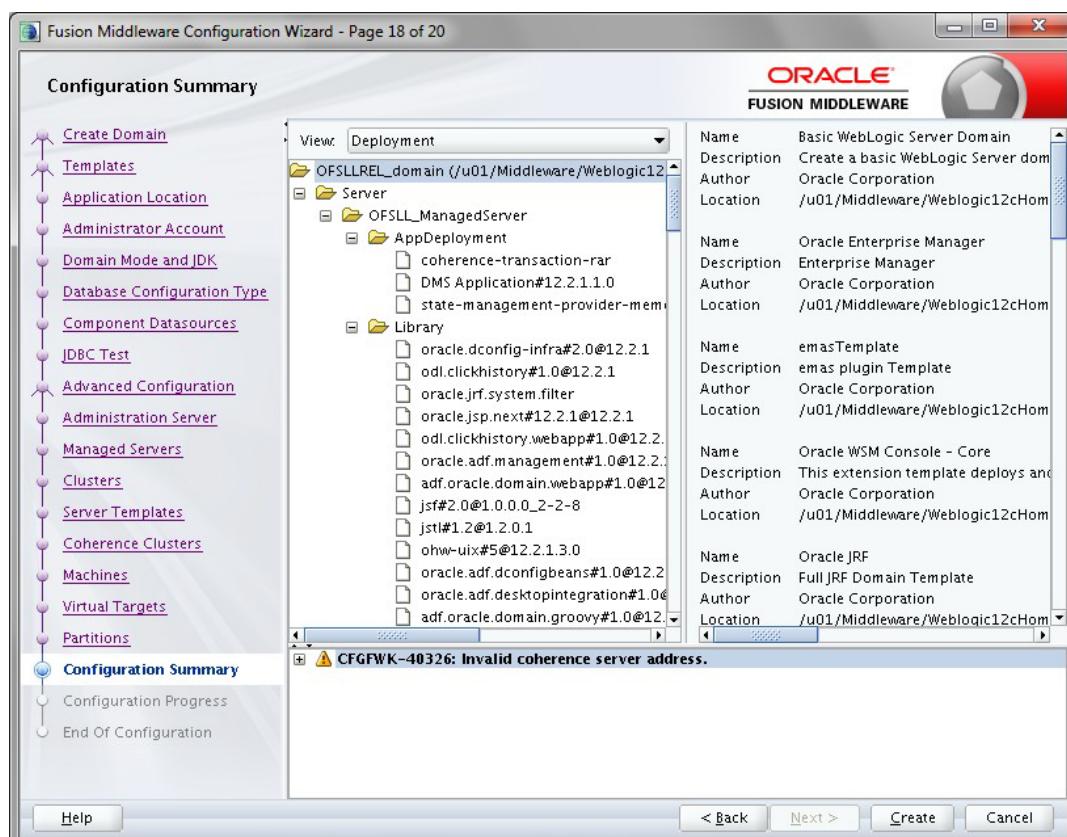
22. Click 'Create'. The following window is displayed.



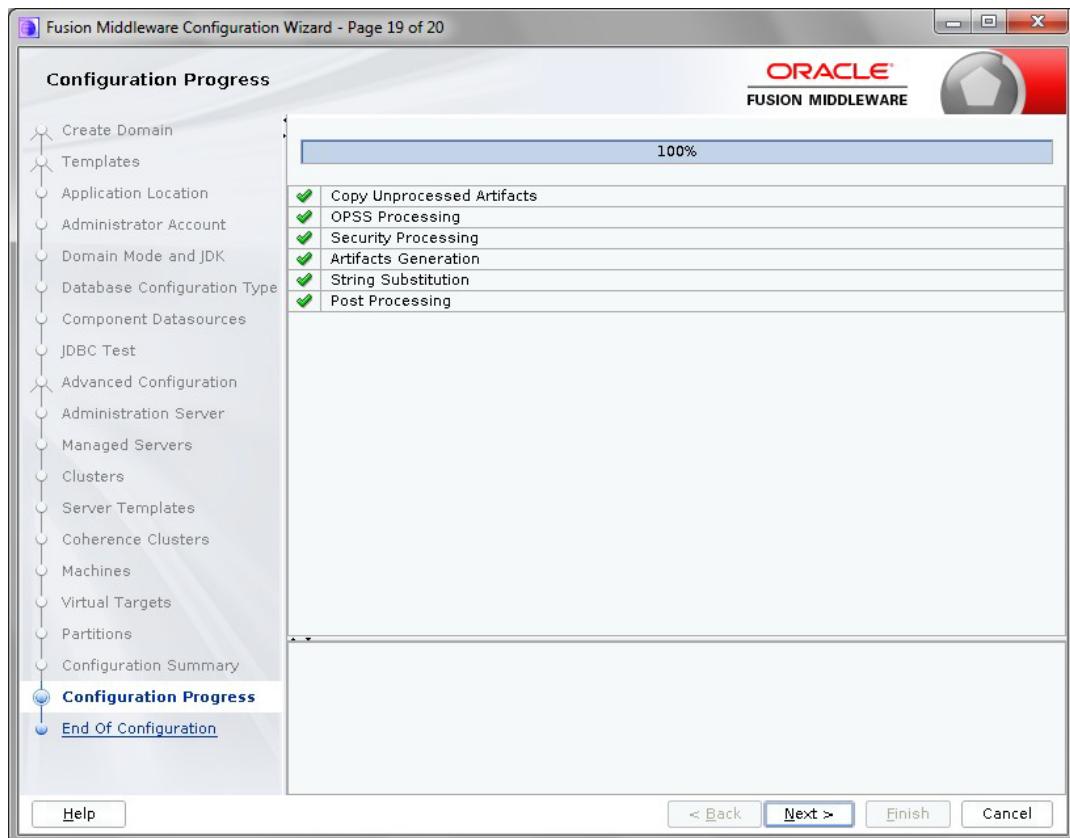
23. Click 'Next'. The following window is displayed.



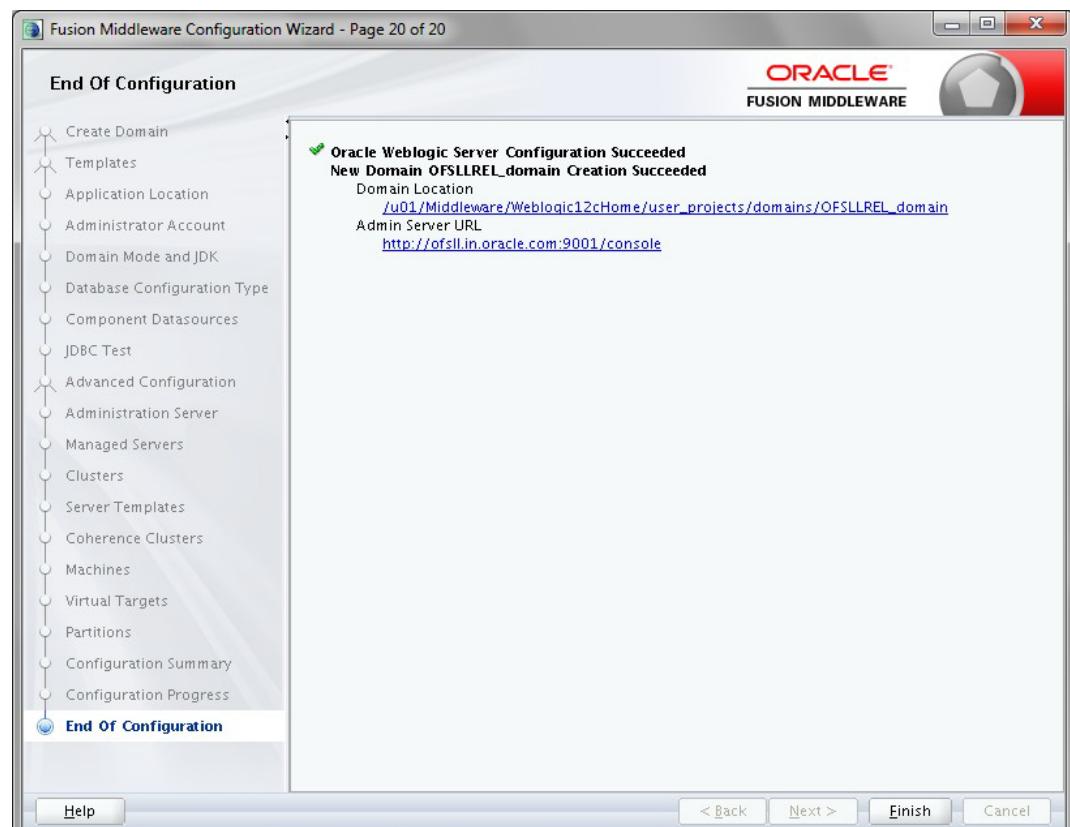
24. Click 'Next'. The following window is displayed.



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



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



27. 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"
```

---

28. 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 &
```

29. 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} &
```

The recommended parameters for each Managed Server for application and web services are as follows:

- For managed server where application is deployed:

```
-Xms8g -Xmx8g -XX:NewRatio=3 -XX:HeapDumpPath=/tmp -  
Dweblogic.threadpool.MinPoolSize=40 -Dweblogic.threadpool.MaxPoolSize=150 -  
XX:SoftRefLRUPolicyMSPerMB=10 -  
Dweblogic.diagnostics.debug.DebugLogger.DISABLED=true -  
Dweblogic.management.discover=false -Dweblogic.llr.table.specjds1=wl_llr_jent31_1 -  
Dweblogic.llr.table.specjds2=wl_llr_jent31_2 -Dsun.net.inetaddr.ttl=0 -  
Dnetworkaddress.cache.ttl=0 -XX:AllocatePrefetchDistance=256 -  
XX:AllocatePrefetchStyle=1 -XX:+AggressiveOpts -XX:+UseConcMarkSweepGC -  
XX:+UseParNewGC -XX:MaxTenuringThreshold=4 -XX:-  
UseCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccupancyFraction=60 -  
XX:CMSTriggerRatio=60 -XX:+CMSParallelRemarkEnabled -  
XX:+UseCMSCompactAtFullCollection -XX:+CMSCompactWhenClearAllSoftRefs -  
XX:PrintCMSStatistics=1 -XX:+PrintClassHistogram -XX:-UseParallelGC -  
XX:ParallelGCThreads=10 -XX:-TraceClassUnloading -XX:-UseParallelOldGC -  
XX:+UseCompressedOops -XX:+UseBiasedLocking -XX:+AlwaysPreTouch -XX:-  
UseAdaptiveSizePolicy -Djbo.load.components.lazily=true -  
Djbo.ampool.initpoolsize=100 -Djbo.recyclethreshold=200 -  
Djbo.ampool.minavailablesize=200 -Djbo.ampool.maxavailablesize=200 -  
Djbo.ampool.timetolive=-1 -Djbo.locking.mode=optimistic -  
Djbo.doconnectionpooling=true -Djbo.txn.disconnect_level=1 -  
Djbo.ampool.doampooling=true -Djbo.dofailover=false -  
Djbo.ampool.maxinactiveage=3600000 -Djbo.ampool.monitorsleepinterval=360000 -  
Doracle.multitenant.enabled=false -XX:StringTableSize=100003 -  
XX:ReservedCodeCacheSize=1g -XX:+UseStringCache -XX:+OptimizeStringConcat -  
XX:+UnlockCommercialFeatures -XX:+FlightRecorder -  
Doracle.adfm.useSharedTransactionForFrame=false
```

- For managed server where web services are deployed:
 

```
-Xms8g -Xmx8g -XX:NewRatio=3 -XX:HeapDumpPath=/tmp -
Dweblogic.threadpool.MinPoolSize=40 -Dweblogic.threadpool.MaxPoolSize=150 -
XX:SoftRefLRUPolicyMSPerMB=10 -
Dweblogic.diagnostics.debug.DebugLogger.DISABLED=true -
Dweblogic.management.discover=false -Dweblogic.llr.table.specjds=wl_llr_jent31_1 -
Dweblogic.llr.table.specjds2=wl_llr_jent31_2 -Dsun.net.inetaddr.ttl=0 -
Dnetworkaddress.cache.ttl=0 -XX:AllocatePrefetchDistance=256 -
XX:AllocatePrefetchStyle=1 -XX:+AggressiveOpts -XX:+UseConcMarkSweepGC -
XX:+UseParNewGC -XX:MaxTenuringThreshold=4 -XX:-
UseCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccupancyFraction=60 -
XX:CMSTriggerRatio=60 -XX:+CMSParallelRemarkEnabled -
XX:+UseCMSCompactAtFullCollection -XX:+CMSCompactWhenClearAllSoftRefs -
XX:-UseParallelGC -XX:ParallelGCThreads=10 -XX:-TraceClassUnloading -XX:-
UseParallelOldGC -XX:+UseCompressedOops -XX:+UseBiasedLocking -
XX:+AlwaysPreTouch -XX:-UseAdaptiveSizePolicy -
Doracle.multitenant.enabled=false -XX:StringTableSize=100003 -
XX:ReservedCodeCacheSize=1g -XX:+UseStringCache -XX:+OptimizeStringConcat -
XX:+UnlockCommercialFeatures -XX:+FlightRecorder
```

### 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>).

The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface. The top navigation bar shows 'WebLogic Domain' and 'weblogic'. The left sidebar lists 'OFSSLREL\_domain' (WebLogic Domain), 'Information' (with a note about edit session lock), 'Servers' (3 Up), 'Clusters' (0 Clusters), and 'Deployments' (1 Up). The main content area shows the 'Administration Server' configuration for 'AdminServer' (Host: ofssl.in.oracle.com, Listen Port: 9001). On the right, a navigation tree includes 'Home', 'Monitoring', 'Diagnostics', 'Control', 'Logs', 'Environment', 'Deployments', 'JDBC Data Sources', 'Messaging', 'Cross Component Wiring', 'Web Services', 'Other Services', 'Administration', 'Refresh WebLogic Domain', 'Security', 'JNDI Browser', 'System MBean Browser', 'WebLogic Server Administration Console' (selected), 'Target Sitemap', and 'Target Information'. The 'Metadata Repositories' option is located under the 'Administration' section of the tree.

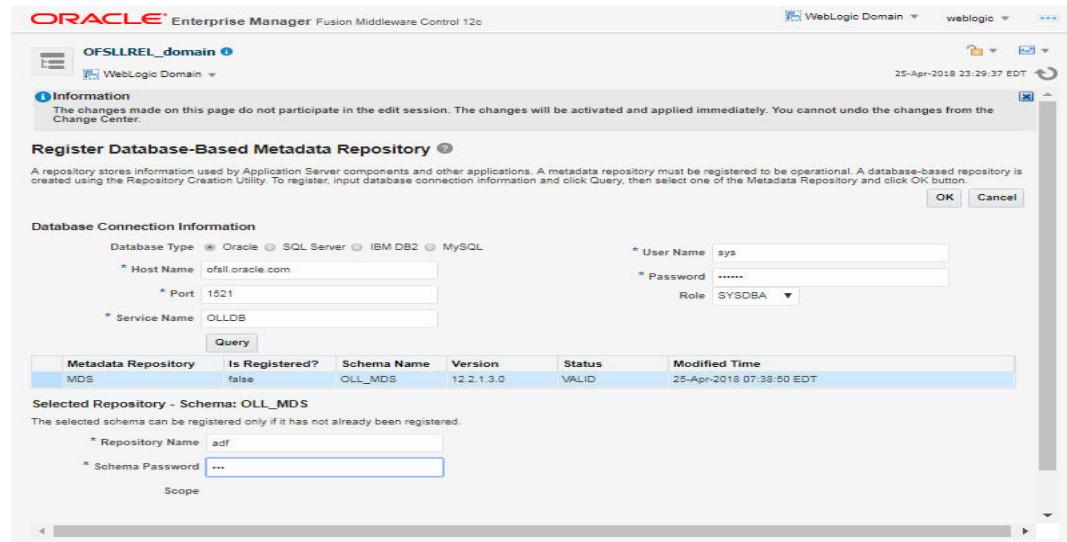
2. Click on domain name OFSSLREL\_domain on the left side panel.
3. Expand Weblogic domain OFSSLREL\_domain and click 'Metadata Repositories' option, as shown in the above screen.

4. The following window is displayed.

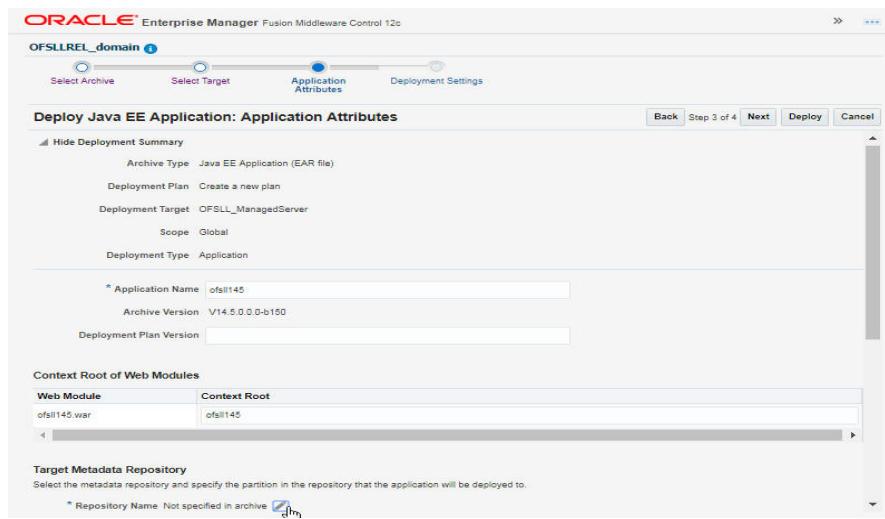
5. Click 'Register' button. The following window is displayed.

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.



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



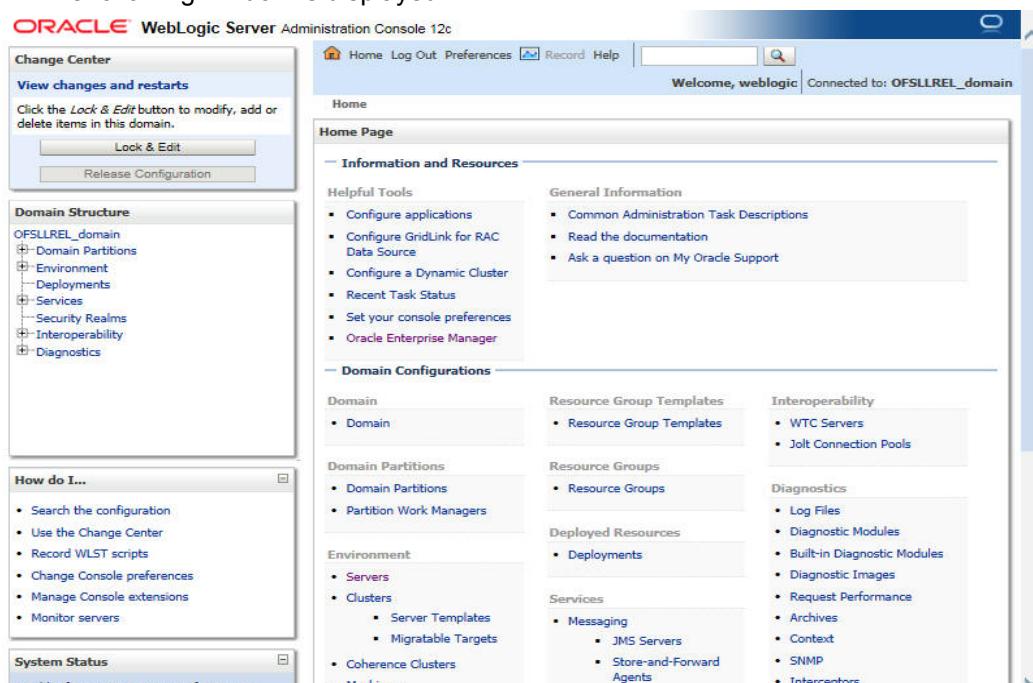
10. Click 'Add' and target to AdminServer and OFSLL\_ManagedServer as on right panel.

## 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.

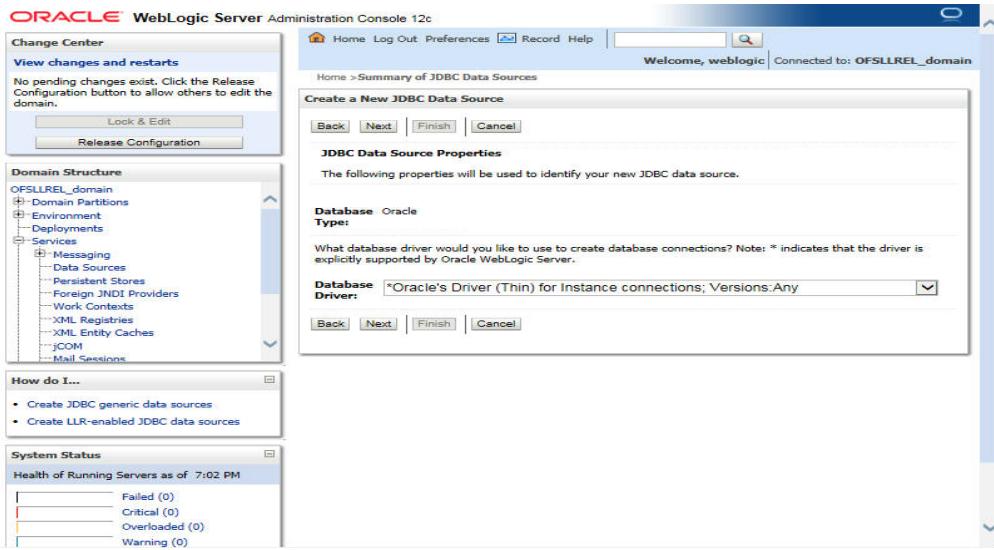
4. The following window is displayed.

Name	Type	JNDI Name	Targets
LocalSvcTblDataSource	Generic	jdbc/LocalSvcTblDataSource	AdminServer
mds-adf	Generic	jdbc/mds/adf	AdminServer
opss-audit-DBDS	Generic	jdbc/AuditAppendDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
opss-audit-viewDS	Generic	jdbc/AuditViewDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
opss-data-source	Generic	jdbc/OpsDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
WLSSchemaDataSource	Generic	jdbc/WLSSchemaDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer

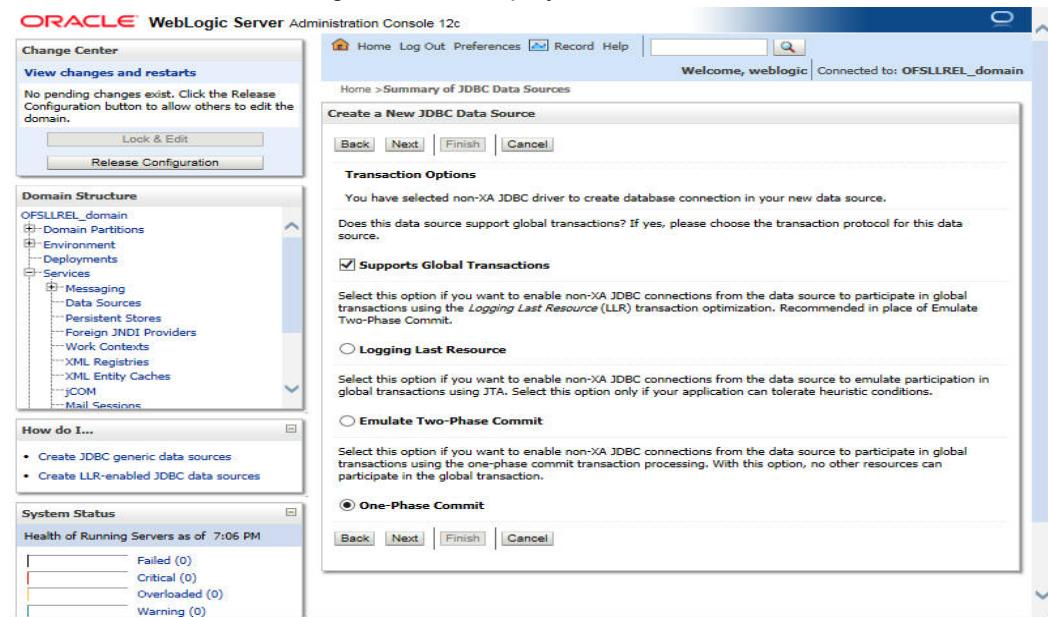
5. Click 'Lock & Edit' button on the left panel. Click 'New' on right panel and select Generic Data Source.

6. Enter Data source 'Name', JNDI Name as 'jdbc/ofsl1DBConnDS' and select 'Oracle' as Database Type.

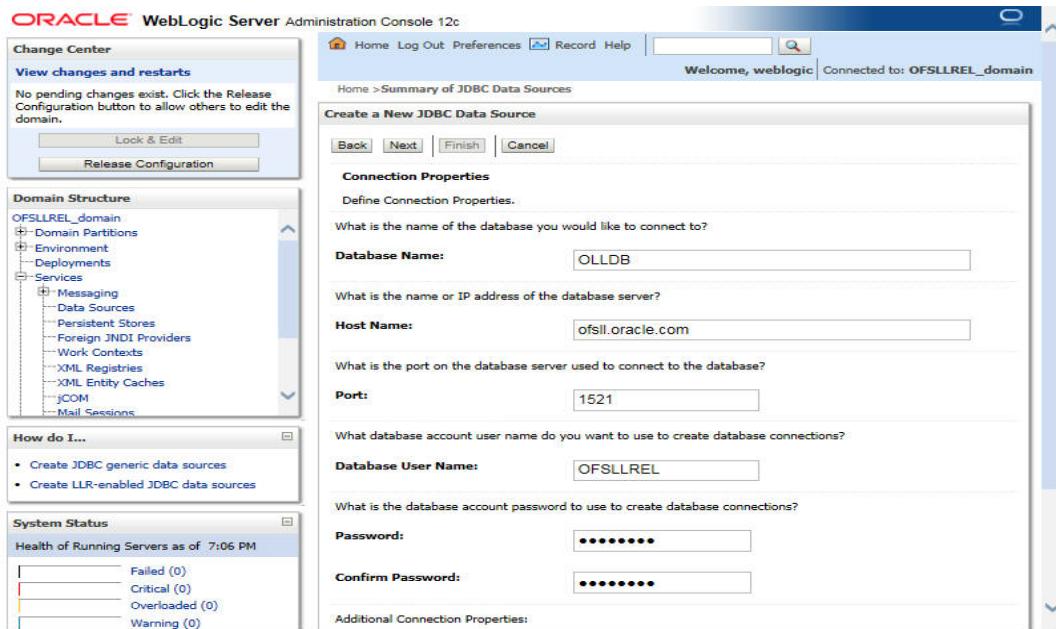
7. Click 'Next'. The following window is displayed.



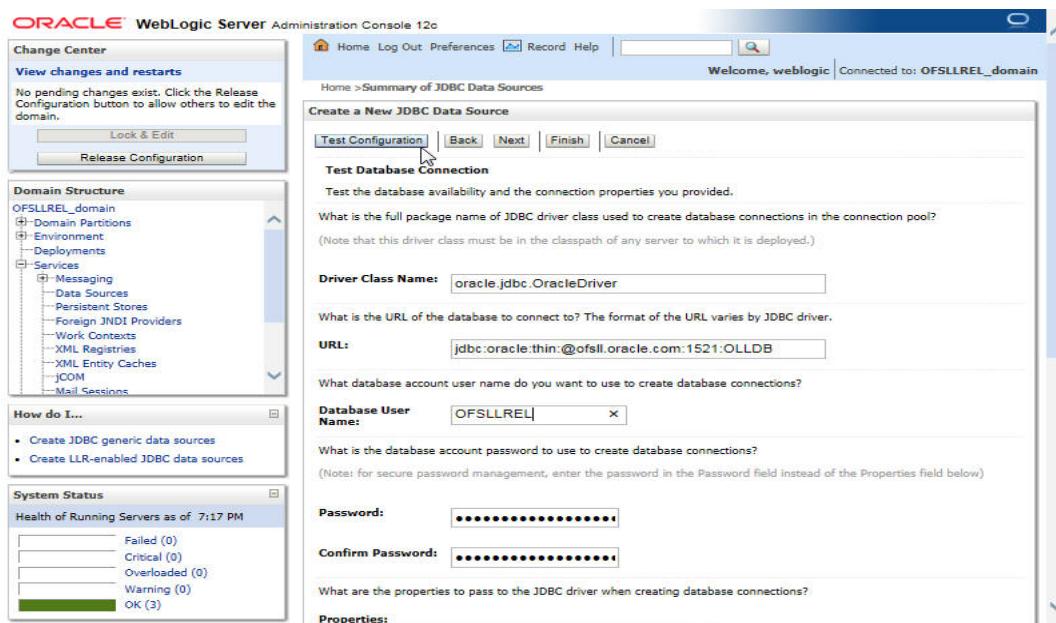
8. Select the Database Driver 'Oracle's Driver(Thin) for Instance connections; Versions:Any' as shown above.
9. Click 'Next'. The following window is displayed.



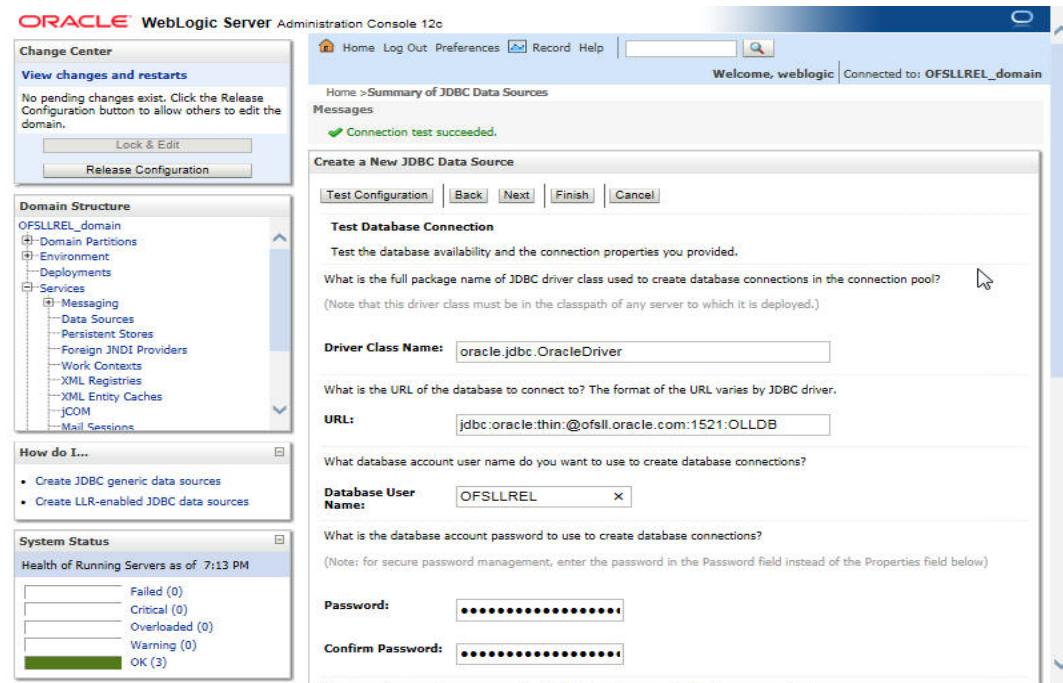
10. Click 'Next'. The following window is displayed.



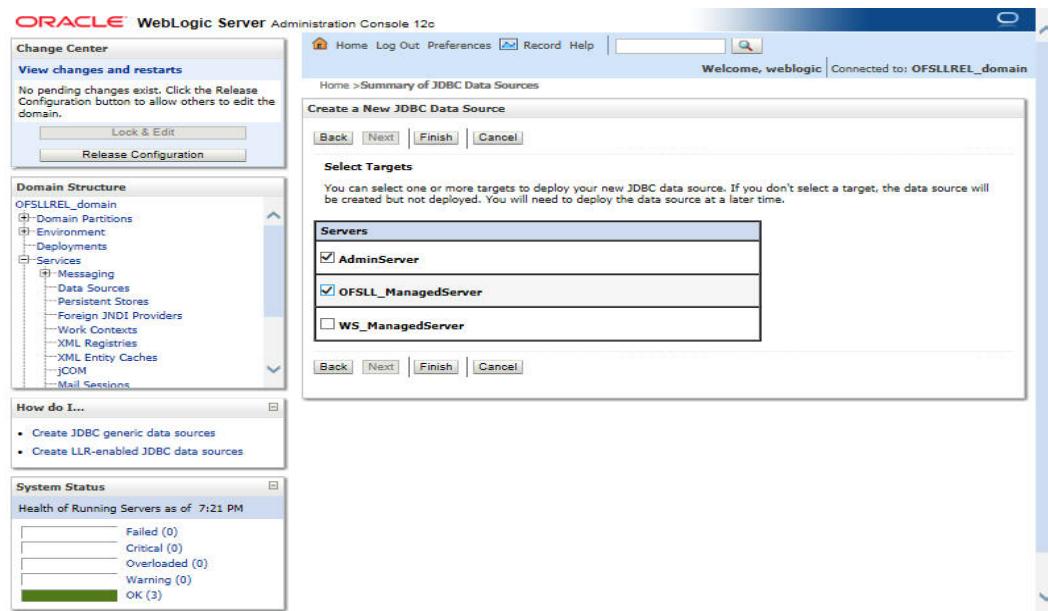
11. Enter Database details click 'Next'. The following window is displayed.



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



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



14. Select target Servers 'AdminServer' and 'OFSLL\_ManagedServer' and click 'Finish'. The following window is displayed.

ORACLE WebLogic Server Administration Console 12c

Change Center

View changes and restarts

Click the **Lock & Edit** button to modify, add or delete items in this domain.

**Lock & Edit**

Release Configuration

Domain Structure

OFSSL domain

- Domain Partitions
- Environment
- Deployment
- Services
- Session
- Data Source**
- Deployment
- Foreign JNDI Providers
- Web Contexts
- XML Catalogs
- XML Entity Caches
- Cloud
- Mail Sessions

How do I...:

- Create JDBC generic data sources
- Create JDBC GridLink data sources
- Create JDBC connection pools
- Create UCP data sources
- Create Proxy data sources

System Status

Health of Running Servers as of: 7/22 PM

Failed (0)
Critical (0)
Overloaded (0)
...

Home Log Out Preferences Record Help

Welcome, weblogic! Connected to: OFSSLRE1\_domain

Home > Summary of JDBC Data Sources

Messages

All changes have been activated. No restarts are necessary.

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.

<b>New</b>	<b>Delete</b>	Showing 1 to 7 of 7   Previous   Next			
Name	Type	JNDI Name	Targets		
localSvcTb1DataSource	Generic	jdbc/localSvcTb1DataSource	AdminServer	AdminServer	
mids-adf	Generic	jdbc/mids-adf	AdminServer	AdminServer	
OFSSL	Generic	jdbc/ofsslJDBCConnDS	AdminServer, OFSSL_ManagedServer	AdminServer, OFSSL_ManagedServer	
opss-audit-DBDS	Generic	jdbc/opssAuditAppendDataSource	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	
opss-audit-viewDS	Generic	jdbc/AuditViewDataSource	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	
opss-data-source	Generic	jdbc/OpssDataSource	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	AdminServer, OFSSL_ManagedServer, W5_ManagedServer	
WLSSchemaDataSource	Generic	jdbc/WLSSchemaDataSource			

New | Delete | Showing 1 to 7 of 7 | Previous | Next

...
-----

Showing 1 to 7 of 7 | Previous | Next

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'.

## Note

User Authentication and Management is outside of Oracle Financial Services Lending and Leasing application. Organizations can use an LDAP implementation for authentication. For Development and Testing purpose, the following sections can be configured for authentication:

- 3.5 Creating SQL Authentication Provider
- 3.6 Creating User Groups and Users
- 3.7 Implementing JMX Policy for Change Password
- 4.1 Configuring Password Policy for SQL Authenticator
- 4.2 Configuring User Lockout Policy

## 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.

Name	Default Realm
myrealm	true

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

**General**

**Security Model Default:** DD Only

**Combined Role Mapping Enabled**

**Use Authorization Providers to Protect JMX Access**

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

ORACLE WebLogic Server Administration Console 12c

Welcome, weblogic | Connected to: OFSLLREL\_domain

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

<input type="checkbox"/> Name	Description	Version
<input type="checkbox"/> Trust Service Identity Asserter	Trust Service Identity Assertion Provider	1.0
<input type="checkbox"/> DefaultAuthenticator	WebLogic Authentication Provider	1.0
<input type="checkbox"/> DefaultIdentityAssertor	WebLogic Identity Assertion provider	1.0

New | Delete | Reorder | Showing 1 to 3 of 3 | Previous | Next

How do I... | System Status |

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

ORACLE WebLogic Server Administration Console 12c

Welcome, weblogic | Connected to: OFSLLREL\_domain

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

Create a New Authentication Provider

OK | Cancel

Create a new Authentication Provider

The following properties will be used to identify your new Authentication Provider.

\* Indicates required fields

The name of the authentication provider.

\* Name:

This is the type of authentication provider you wish to create.

Type:

OK | Cancel

How do I... | System Status |

5. Create Authentication provider with following values:

- Name: OFSLLDBAuthenticator
- Type: SQLAuthenticator

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

ORACLE WebLogic Server Administration Console 12c

Welcome, weblogic | Connected to: OFSLLREL\_domain

Settings for myrealm

Authentication Providers

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
OFSLDBAuthenticator	Provider that performs DBMS authentication	1.0

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

ORACLE WebLogic Server Administration Console 12c

Welcome, weblogic | Connected to: OFSLLREL\_domain

Settings for myrealm

Authentication Providers

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

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

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

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.

<b>Operation</b>	<b>Default SQL Query from Weblogic</b>	<b>Corresponding SQL Queries as per our Tables</b>
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_AUTHORISATIONS(UAU_USR_CODE, UAU_USR_PASSWORD, UAU_DESC) VALUES(?, ?, ?)
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 = ?

Operation	Default SQL Query from Weblogic	Corresponding SQL Queries as per our Tables
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= ?
SQL Get User Description:	SELECT U_DESCRIPTION FROM USERS WHERE U_NAME = ?	SELECT UAU_DESC FROM USER_AUTHORISATIONS WHERE UAU_USR_CODE = ?
SQLSet 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	OFSLDBAuthenticator	

SQL Remove Member From Group: EMBER\_USR\_CODE=?  
 The SQL statement used to remove a member from a group. The SQL statement requires two parameters: the group name and the group member being deleted from the group. [More Info...](#)

SQL Remove Group Member: DELETE FROM USER\_  
 The SQL statement used to remove a member from a group. The SQL statement requires a single parameter: the username or group name being removed. [More Info...](#)

Descriptions Supported  
 Indicates whether user and group descriptions are supported by the database used by the authentication provider. [More Info...](#)

SQL Get User Description: E\_UAU\_USR\_CODE=?  
 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 resultSet containing at most a single record containing the user description. [More Info...](#)

SQL Set User Description: E\_UAU\_USR\_CODE=?  
 The SQL statement used to retrieve the description of a group. Only valid if Descriptions Supported is enabled. The SQL statement requires a single parameter for the group name and must return a resultSet containing at most a single record containing the group description. [More Info...](#)

SQL Get Group Description: JGR\_GROUP\_CODE=?  
 The SQL statement used to retrieve the description of a group. Only valid if Descriptions Supported is enabled. The SQL statement requires a single parameter for the group name and must return a resultSet containing at most a single record containing the group description. [More Info...](#)

SQL Set Group Description: JGR\_GROUP\_CODE=?  
 The SQL statement used to specify a description for a group. Only valid if Descriptions Supported attribute is enabled. The SQL statement requires two parameters: the group description and the group name. [More Info...](#)

**Save**

WebLogic Server Version: 12.2.1.3.0  
 Copyright (c) 1996-2017, 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.

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.

---

Login as application schema owner and run the script 'crt\_app\_user.sql' to create OFSLL application user.

```

SQL*Plus: Release 12.1.0.2.0 Production on Sat Sep 16 10:35:29 2017
Copyright (c) 1982, 2014, Oracle. All rights reserved.

Enter user-name: OFSLLREL
Enter password:
Last Successful login time: Sat Sep 16 2017 10:38:03 +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 options

SQL> @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: SUPER
Enter the Phone Number for this user: 9997778886
Enter the Fax Number for this user: 6655544422

1 row created.

1 row created.

1 row created.

SQL> commit;

Commit complete.

SQL> 

```

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

Name	Default Realm
myrealm	true

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.

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
weblogic	This user is the default administrator.	DefaultAuthenticator

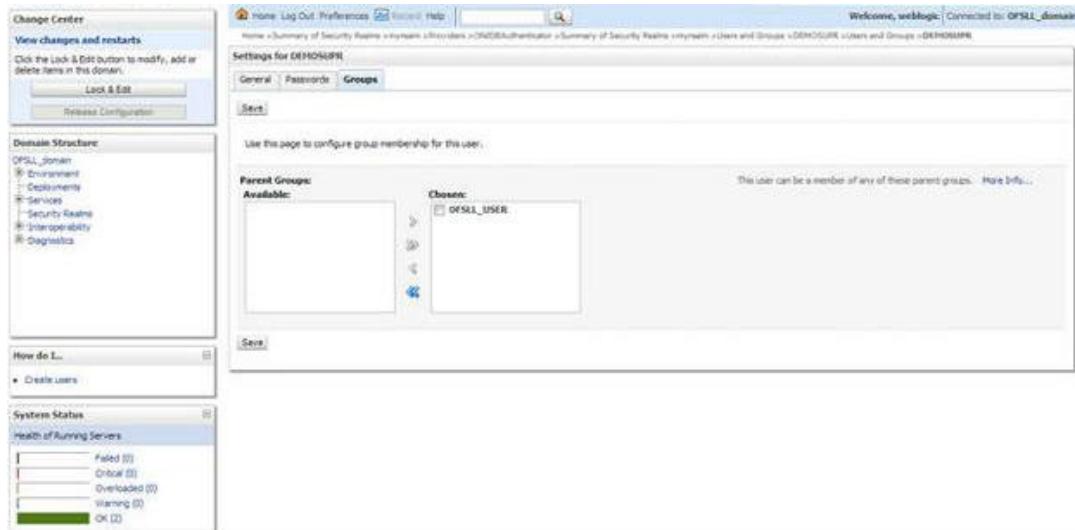
### 3.6.2 Creating User Groups

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.

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

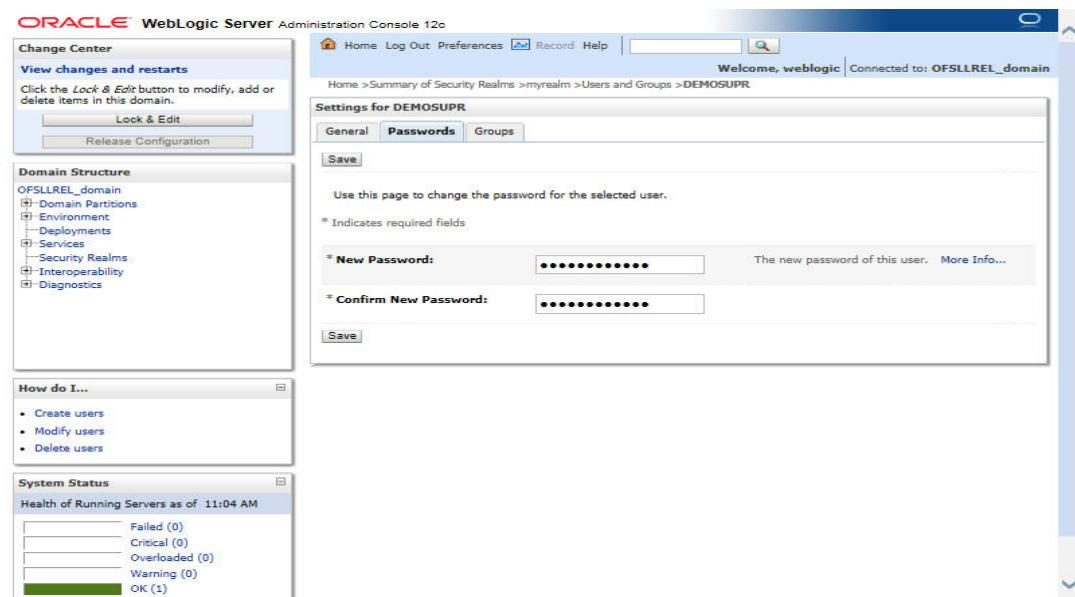
### 3.6.3 Assigning Users to Groups

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.

The screenshot shows the Oracle WebLogic Server Administration Console 12c. The left sidebar shows the 'Domain Structure' of the 'OFSSLREL\_domain'. The main content area is titled 'Settings for DEMOSUPR' and shows the 'Passwords' tab selected. It has fields for 'New Password' and 'Confirm New Password', both of which are filled with the same value. A 'Save' button is at the bottom. The top status bar shows 'Welcome, weblogic' and 'Connected to: OFSSLREL\_domain'.

## 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

The screenshot shows the Oracle WebLogic Server Administration Console 12c. The left sidebar shows the 'Domain Structure' of the 'OFSSLREL\_domain'. The main content area is titled 'Settings for myrealm' and shows the 'Configuration' tab selected. It has sections for 'General', 'RDBMS Security Store', 'User Lockout', and 'Performance'. Under 'General', there is a note about JACC and a 'Save' button. The 'Security Model Defaults' dropdown is set to 'DD Only'. Other configuration options like 'Combined Role Mapping Enabled' and 'Use Authorization Providers to Protect JMX Access' are also visible.

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

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The left sidebar shows the 'Domain Structure' for 'OFSSLREL\_domain' with various nodes like Domain Partitions, Environment, Deployments, Services, Security Realms, Interoperability, and Diagnostics. The right panel is titled 'Settings for myrealm' and shows the 'General' tab selected. Under 'General', the 'Name' is set to 'myrealm'. The 'Security Model Default' is set to 'DD Only'. The 'Combined Role Mapping Enabled' checkbox is checked. The 'Use Authorization Providers to Protect JMX Access' checkbox is checked (highlighted in red). Other tabs include 'RDBMS Security Store', 'User Lockout', and 'Performance'. A note at the bottom of the panel states: '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.' A 'Save' button is visible at the bottom left.

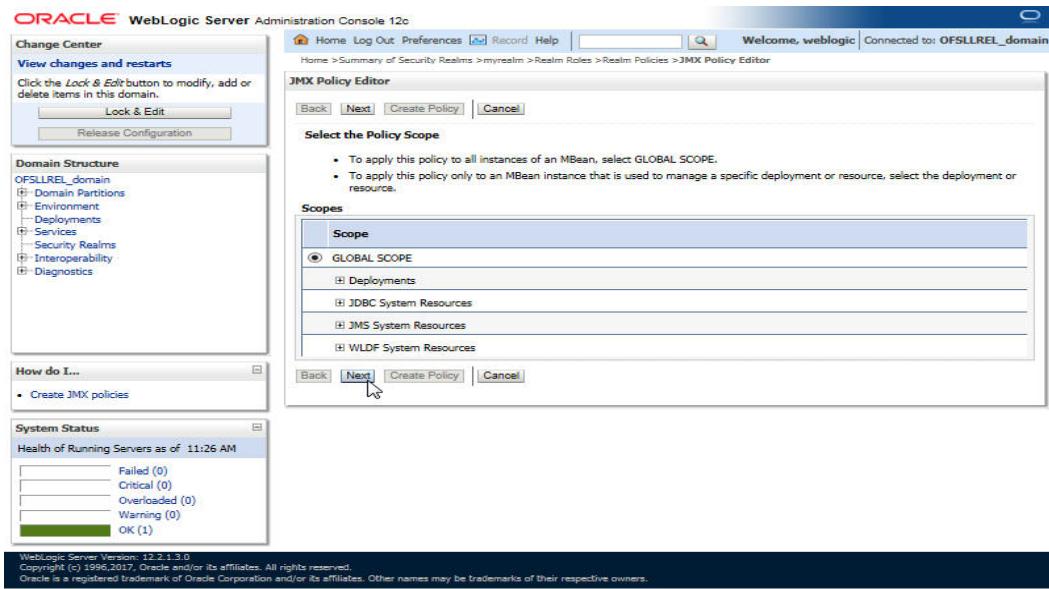
4. Click 'Save' and restart the server.  
 5. Re-login to console.  
 6. Click Domain > Security > myrealm > Roles and Policies > Realm Policies

#### Note

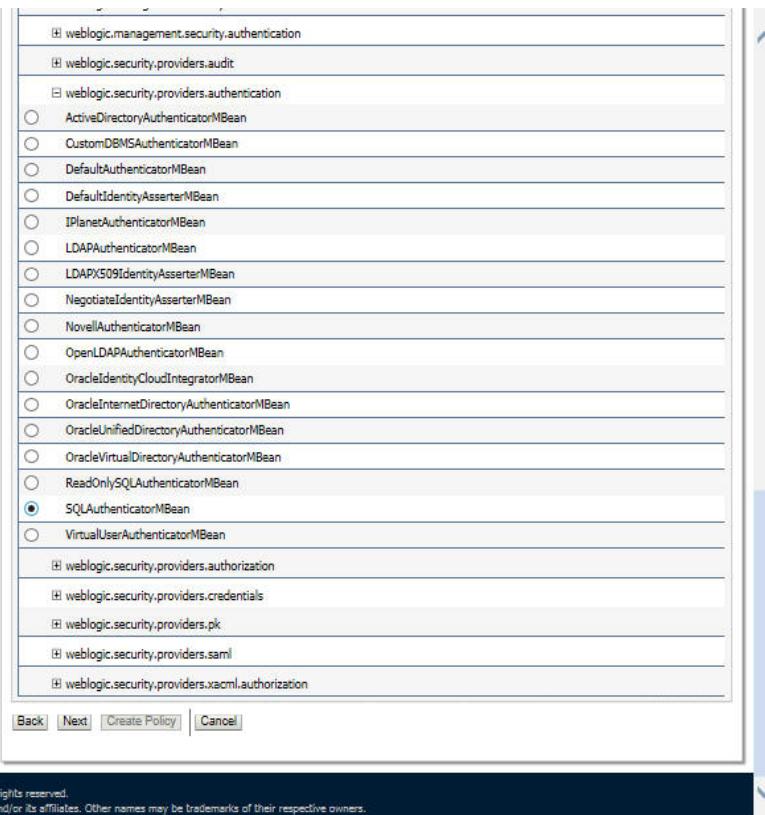
If server is not restarted, JMX Policy Editor option will not appear

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The left sidebar shows the 'Domain Structure' for 'OFSSLREL\_domain'. The right panel is titled 'Settings for myrealm' and shows the 'Roles and Policies' tab selected. Under 'Roles and Policies', the 'Realm Policies' tab is selected. A note states: 'Use this table to access or create security policies for this security realm. The Root Level Policies node in the Name column provides access to root level policies (which apply to all resources of a given type). All other nodes provide access to policies that apply to resource instances.' A 'Notes' section lists: 'This table does not provide access to policies for instances of JNDI resources or Work Context resources. To see these policies, view the Security tab for each JNDI node or Work Context object instance.', 'If you imported policies for Web applications or EJBs from deployment descriptors using the Install Application Assistant, you must activate changes to access the policies.', and 'To view or modify JMX policies in the Administration Console, you must first delegate MBean authorization to the realm's Authorization providers.' A 'Customize this table' section is present. A table titled 'Policies' shows a single row for 'JMX Policy Editor' with a 'Root Level Policies' checkbox. Other tabs include 'Configuration', 'Users and Groups', 'Roles and Policies', 'Credential Mappings', 'Providers', and 'Migration'.

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'.

ORACLE WebLogic Server Administration Console 12c

Change Center

View changes and restarts

Click the Lock & Edit button to modify, add or delete items in this domain.

Lock & Edit

Release Configuration

Domain Structure

OFSSLREL\_domain

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

How do I... Create JMX policies

System Status

Health of Running Servers as of 11:30 AM

Failed (0)
Critical (0)
Overloaded (0)
Warning (0)
OK (1)

Welcome, weblogic | Connected to: OFSSLREL\_domain

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

JMX Policy Editor

Back | Next | **Create Policy** | Cancel

Select Read, Write, or Invoke Privileges

Specify read/write privileges for one or all MBean attributes, or specify privileges for invoking an MBean operation.

- If you chose ALL MBEAN TYPES on the previous page, you must apply the policy to all attributes or all operations.
- If you chose a specific MBean type on the previous page, you can select a specific attribute or operation or you can apply the policy to all attributes or operations.

Selected Scope: GLOBAL SCOPE

Selected MBean Type: SQLAuthenticatorMBean

Attributes and Operations

Attribute or Operation	Existing Policy
<input type="radio"/> Attributes: Permission to Read	
<input type="radio"/> Attributes: Permission to Write	
<input type="radio"/> Encrypted Attributes: Permission to Read	
<input type="radio"/> Encrypted Attributes: Permission to Write	
<input type="radio"/> Lookup Operations: Permission to Invoke	
<input type="radio"/> Operations: Permission to Invoke	
<input type="radio"/> addMemberToGroup	
<input type="radio"/> advance	
<input checked="" type="radio"/> changeUserPassword	
<input type="radio"/> close	
<input type="radio"/> createGroup	
<input type="radio"/> createUser	
<input type="radio"/> getCurrentName	

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.

ORACLE WebLogic Server Administration Console 12c

Change Center

View changes and restarts

Click the Lock & Edit button to modify, add or delete items in this domain.

Lock & Edit

Release Configuration

Domain Structure

OFSSLREL\_domain

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

How do I... Create JMX policies Combine conditions

System Status

Health of Running Servers as of 11:31 AM

Failed (0)
Critical (0)
Overloaded (0)
Warning (0)
OK (1)

Welcome, weblogic | Connected to: OFSSLREL\_domain

Home > Summary of Security Realms > myrealm > Realm Roles > Realm Policies > 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

No Policy Specified

Add Conditions | Combine | Uncombine | Move Up | Move Down | Remove | Negate

Save

Policy Used By Default

Role : Admin

WebLogic Server Version: 12.2.1.3.0  
Copyright (c) 1996-2017, 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.

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

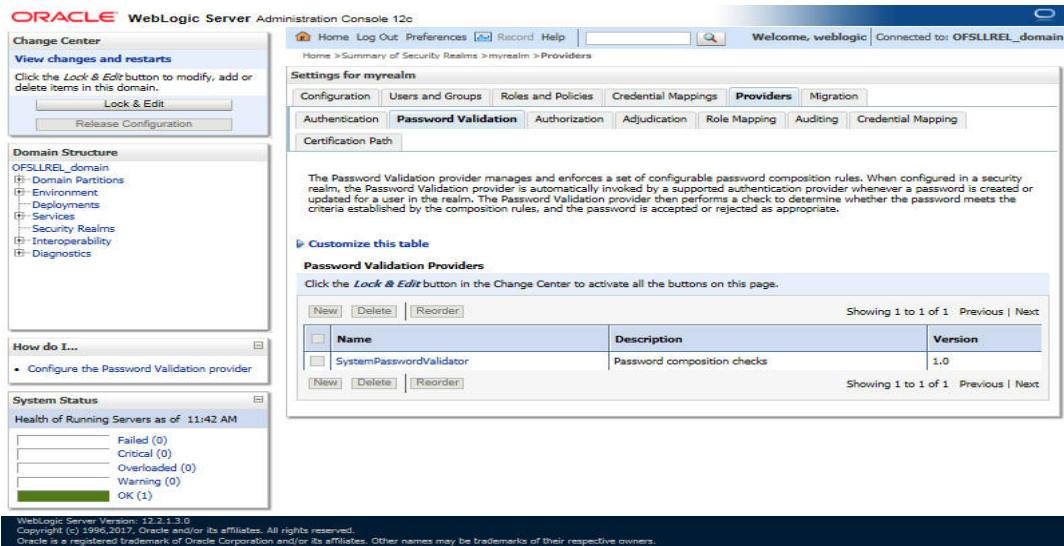
15. Select user roles for application.

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

# 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

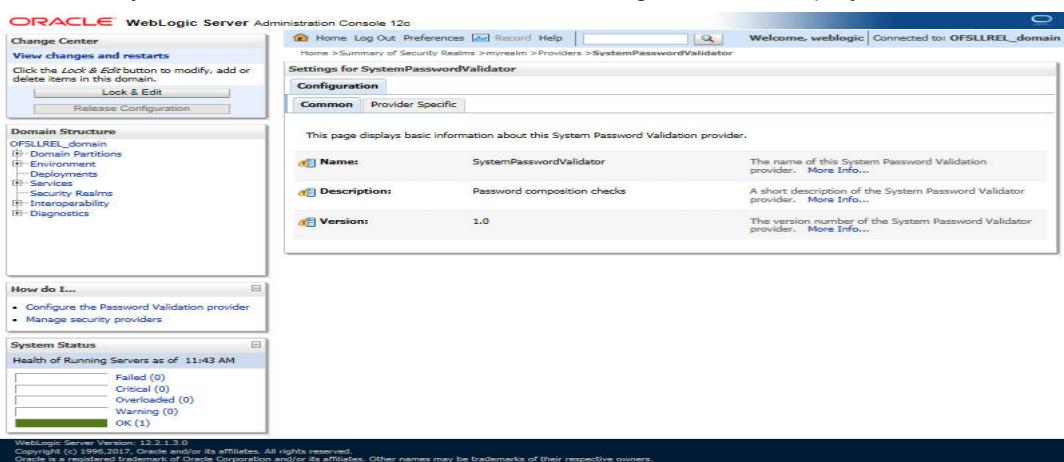


The screenshot shows the Oracle WebLogic Server Administration Console 12c. The left sidebar shows the 'Domain Structure' for 'OFSSLREL\_domain' with various sub-nodes like Domain Partitions, Environment, Deployments, Services, Security Realms, Interoperability, and Diagnostics. The main content area is titled 'Settings for myrealm' and shows the 'Providers' tab selected. Under 'Password Validation', there is a table with one row:

Name	Description	Version
SystemPasswordValidator	Password composition checks	1.0

Below the table, there are 'New', 'Delete', and 'Reorder' buttons. The status bar at the bottom indicates 'Showing 1 to 1 of 1'.

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



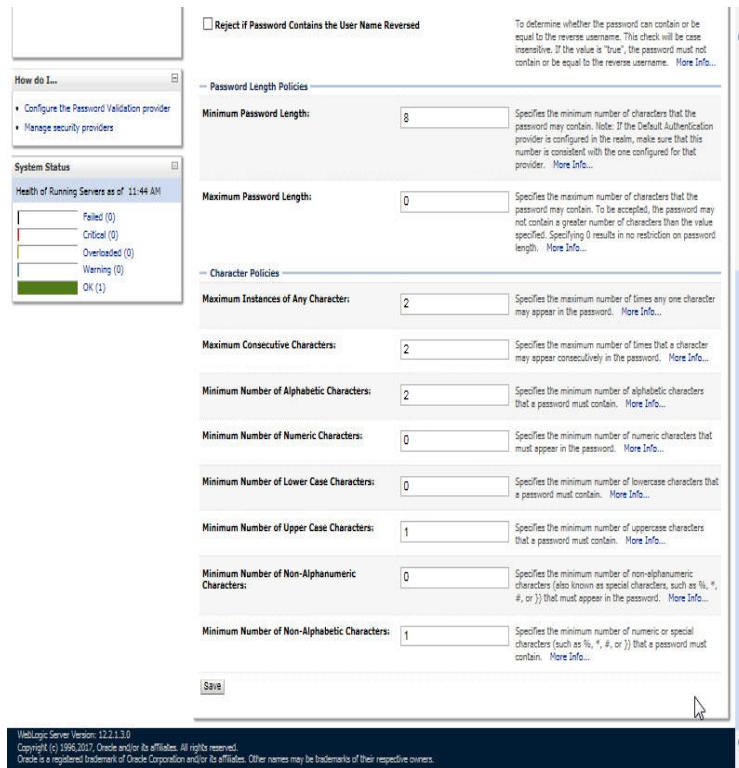
The screenshot shows the Oracle WebLogic Server Administration Console 12c. The left sidebar shows the 'Domain Structure' for 'OFSSLREL\_domain'. The main content area is titled 'Settings for SystemPasswordValidator' and shows the 'Configuration' tab selected. It displays basic information about the provider:

Name	SystemPasswordValidator	The name of this System Password Validation provider. <a href="#">More Info...</a>
Descriptions	Password composition checks	A short description of the System Password Validator provider. <a href="#">More Info...</a>
Version	1.0	The version number of the System Password Validator provider. <a href="#">More Info...</a>

Below the table, there are 'Common' and 'Provider Specific' tabs. The status bar at the bottom indicates 'Showing 1 to 1 of 1'.

4. Click Provider Specific Tab.

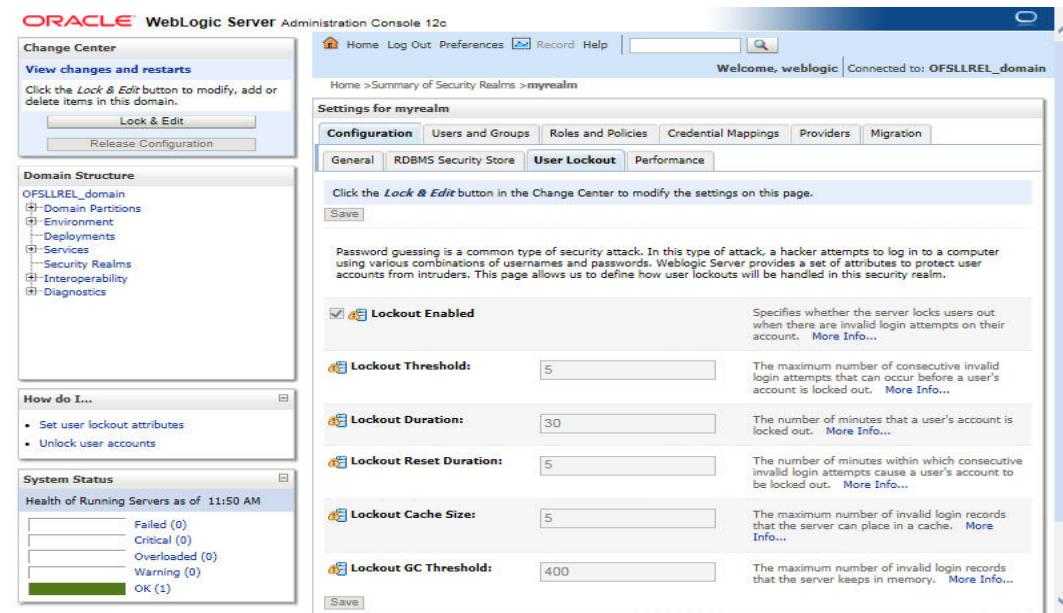
5. Configure the password policy as per the requirement. An example is provided in the following window.



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

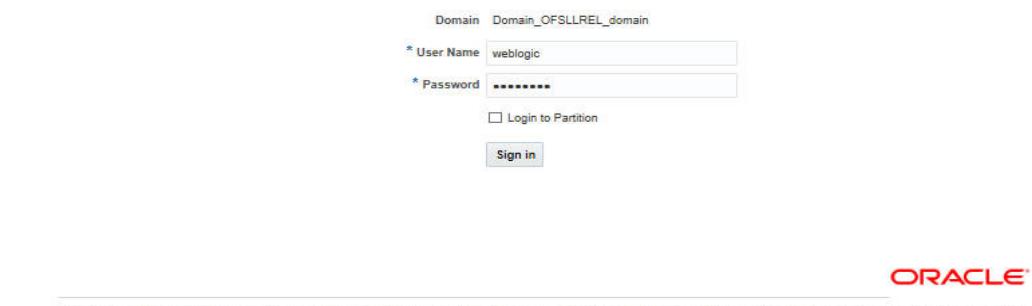


2. Configure the User Lockout details as per the requirement. An example is provided above.

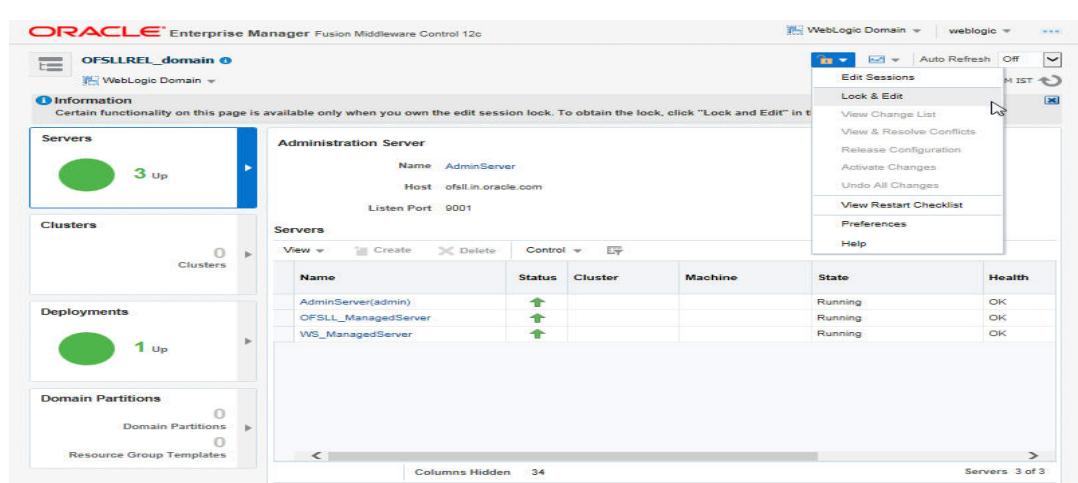
# 5. Deploying Application

## 5.1 Deploying Application

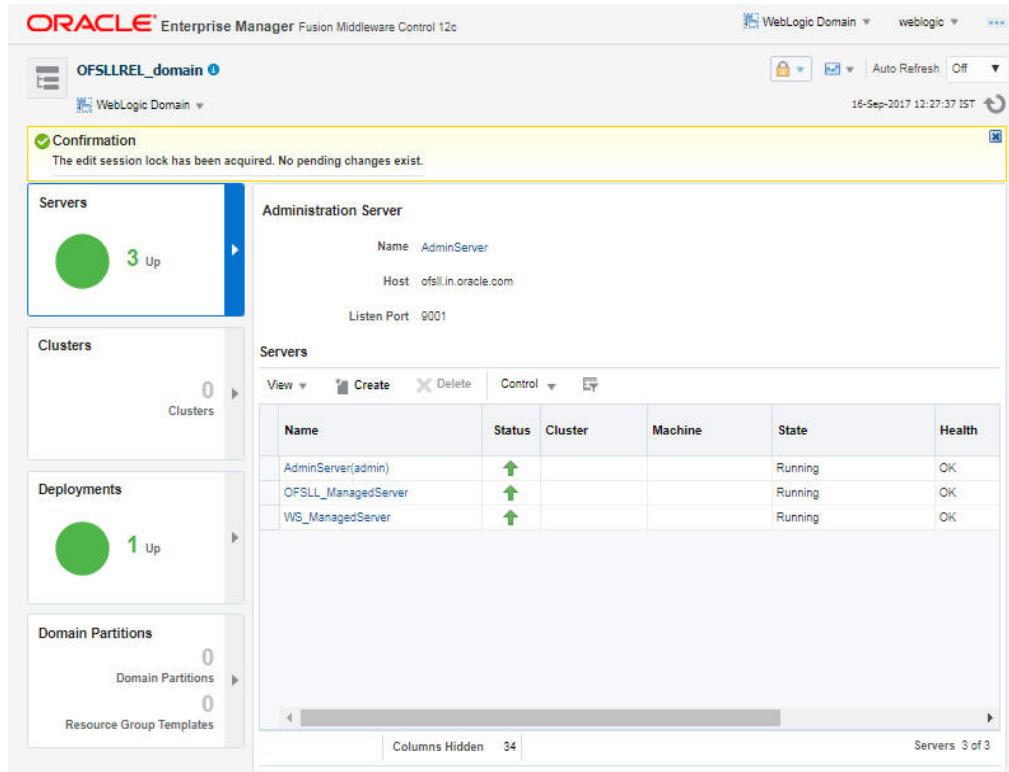
1. Login to the Oracle Enterprise Manager 12c console . (i.e. <http://hostname:port/em>)



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



3. The following window is displayed.

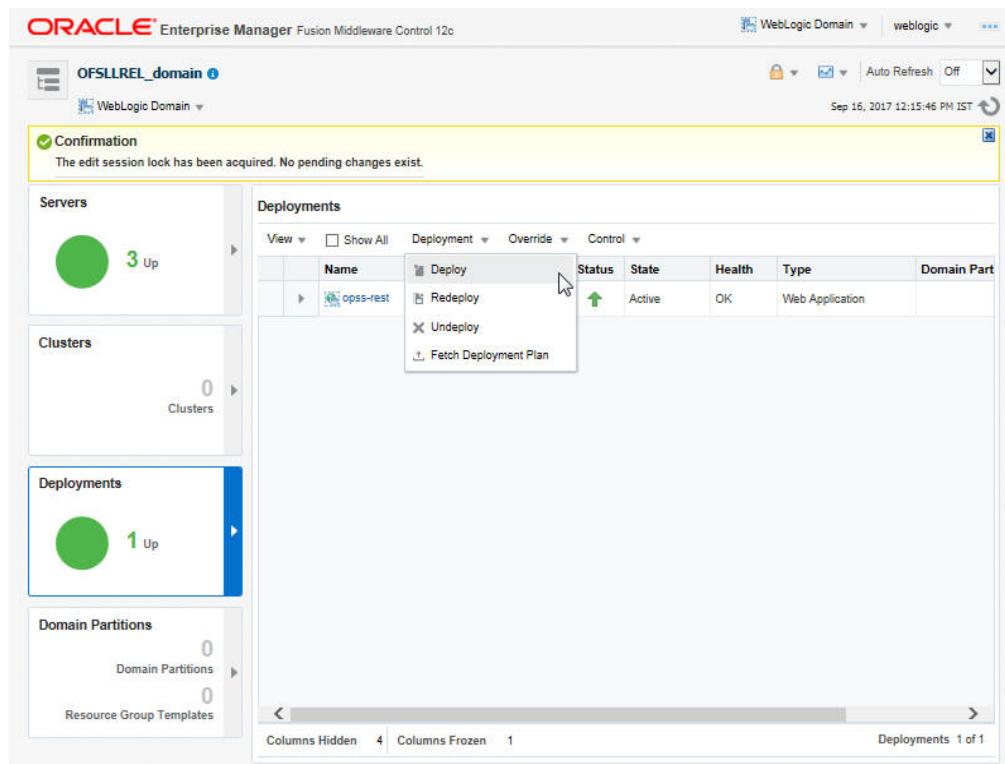


The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface. The top navigation bar indicates 'WebLogic Domain' and 'weblogic'. The main panel is titled 'OFSSLREL\_domain' and shows a 'Confirmation' message: 'The edit session lock has been acquired. No pending changes exist.' On the left, there are four main navigation items: 'Servers' (3 Up), 'Clusters' (0 Clusters), 'Deployments' (1 Up), and 'Domain Partitions' (0 Domain Partitions, 0 Resource Group Templates). The right panel is titled 'Administration Server' and displays the following details:

Name	Status	Cluster	Machine	State	Health
AdminServer(admin)	Up			Running	OK
OFSSL_ManagedServer	Up			Running	OK
WS_ManagedServer	Up			Running	OK

At the bottom of the right panel, there are buttons for 'Columns Hidden' (34) and 'Servers 3 of 3'.

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

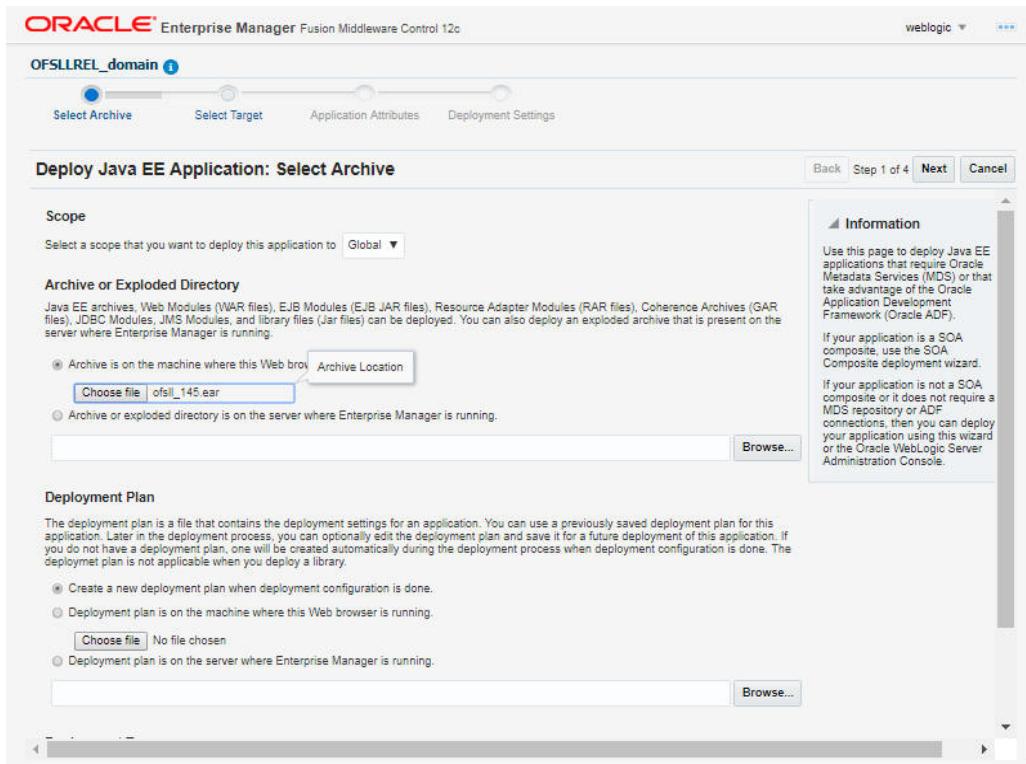


The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface, similar to the previous one but with a different focus. The top navigation bar indicates 'WebLogic Domain' and 'weblogic'. The main panel is titled 'OFSSLREL\_domain' and shows a 'Confirmation' message: 'The edit session lock has been acquired. No pending changes exist.' On the left, the 'Deployments' item is selected, showing 1 Up deployment. The right panel is titled 'Deployments' and displays the following details:

Name	Deploy	Status	State	Health	Type	Domain Part
opss-rest	Deploy	Up	Active	OK	Web Application	

A context menu is open over the 'opss-rest' deployment, showing options: 'Deploy', 'Redeploy', 'Undeploy', and 'Fetch Deployment Plan'. At the bottom of the right panel, there are buttons for 'Columns Hidden' (4), 'Columns Frozen' (1), and 'Deployments 1 of 1'.

5. Click 'Choose File' button and select OFSLL application archive file i.e. ofssl\_145.ear. Choose the 'Deployment Plan' (if any).



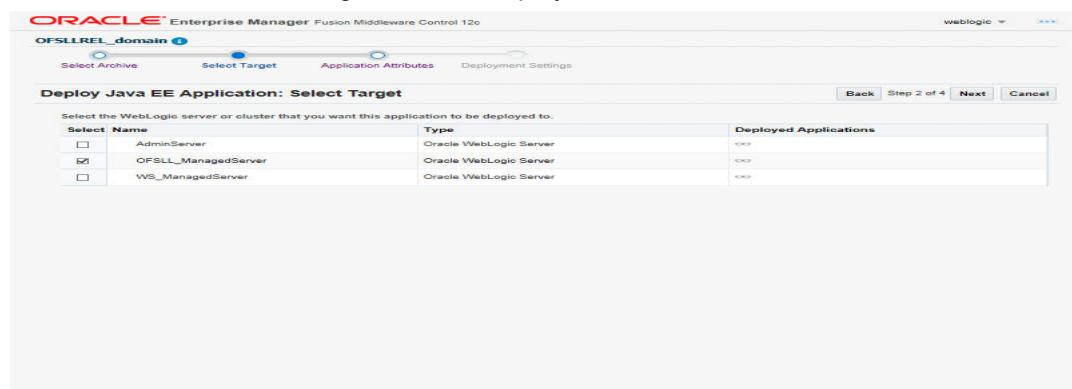
### Note

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

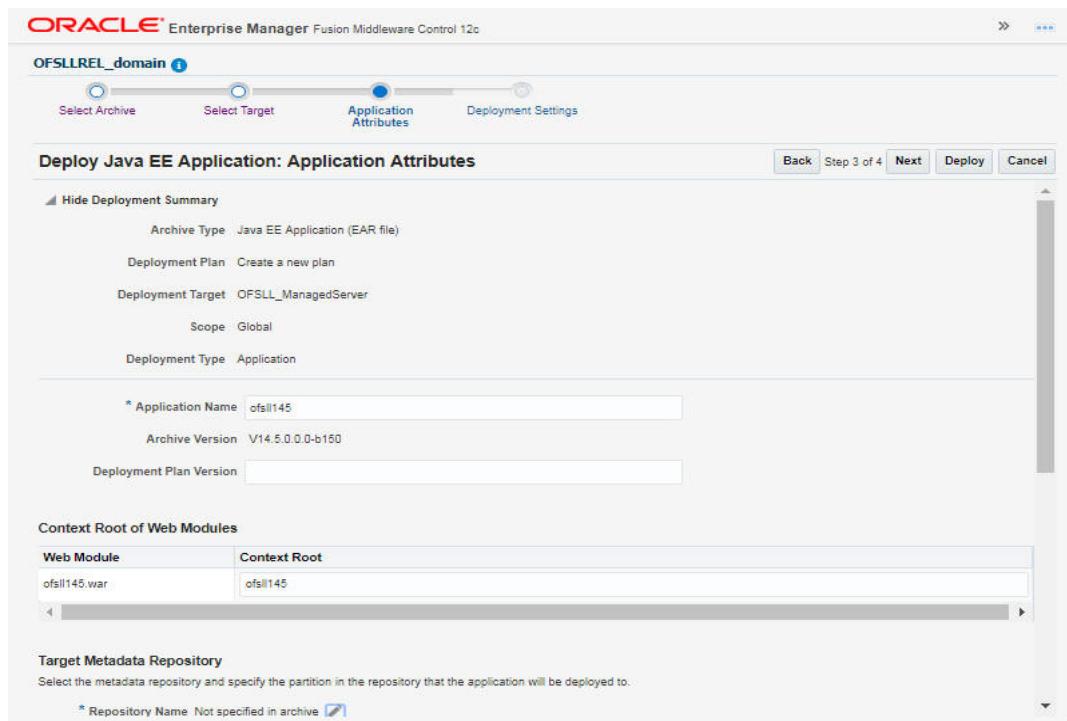
## Sample plan.xml

```
<?xml version='1.0' encoding='UTF-8'?>
<deployment-plan xmlns="http://xmlns.oracle.com/weblogic/deployment-plan" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" schemaLocation="http://xmlns.oracle.com/weblogic/deployment-plan http://xmlns.oracle.com/weblogic/deployment-plan.xsd">
  <application-name>ofsl1145</application-name>
  <variable-definition>
    <variable>
      <name>Web_ofsl1145_contextRoot</name>
      <value>ofsl1145</value>
    </variable>
  </variable-definition>
  <module-override>
    <module-name>ofsl1145.ear</module-name>
    <module-type>ear</module-type>
    <module-descriptor external="false">
      <root-element>weblogic-application</root-element>
      <uri>META-INF/weblogic-application.xml</uri>
    </module-descriptor>
    <module-descriptor external="false">
      <root-element>application</root-element>
      <uri>META-INF/application.xml</uri>
      <variable-assignment>
        <name>Web_ofsl1145_contextRoot</name>
        <xpath>/application/module/web/[context-root="ofsl1145"]/context-root</xpath>
        <operation>replace</operation>
      </variable-assignment>
    </module-descriptor>
    <module-descriptor external="true">
      <root-element>wldf-resource</root-element>
      <uri>META-INF/weblogic-diagnostics.xml</uri>
    </module-descriptor>
  </module-override>
  <module-override>
    <module-name>ofsl1145.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>
    </module-descriptor>
    <module-descriptor external="false">
      <root-element>web-app</root-element>
      <uri>WEB-INF/web.xml</uri>
    </module-descriptor>
  </module-override>
</deployment-plan>
```

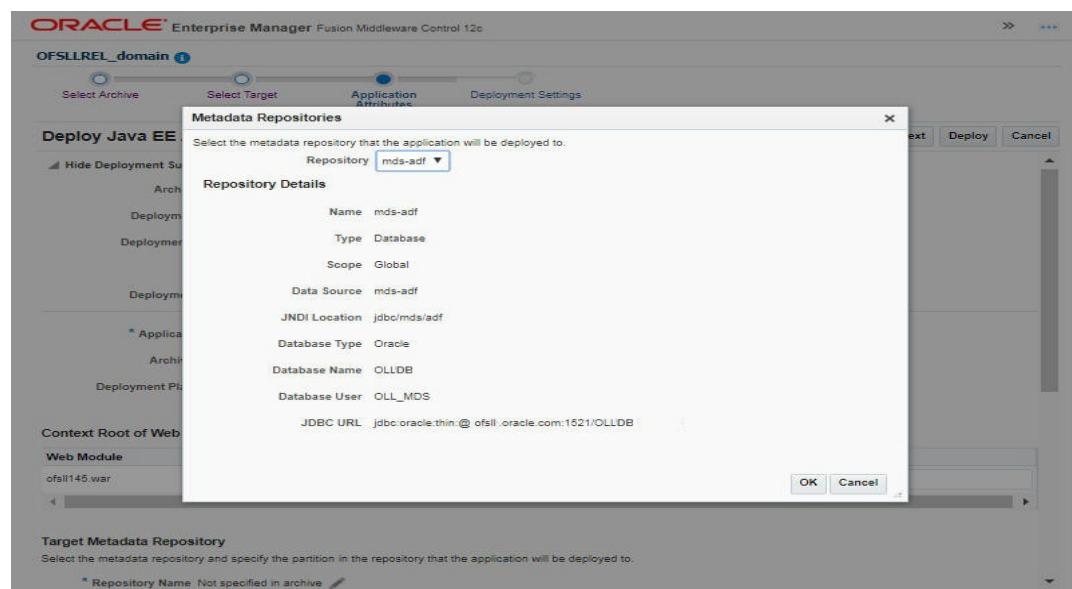
6. Click 'Next'. The following window is displayed.



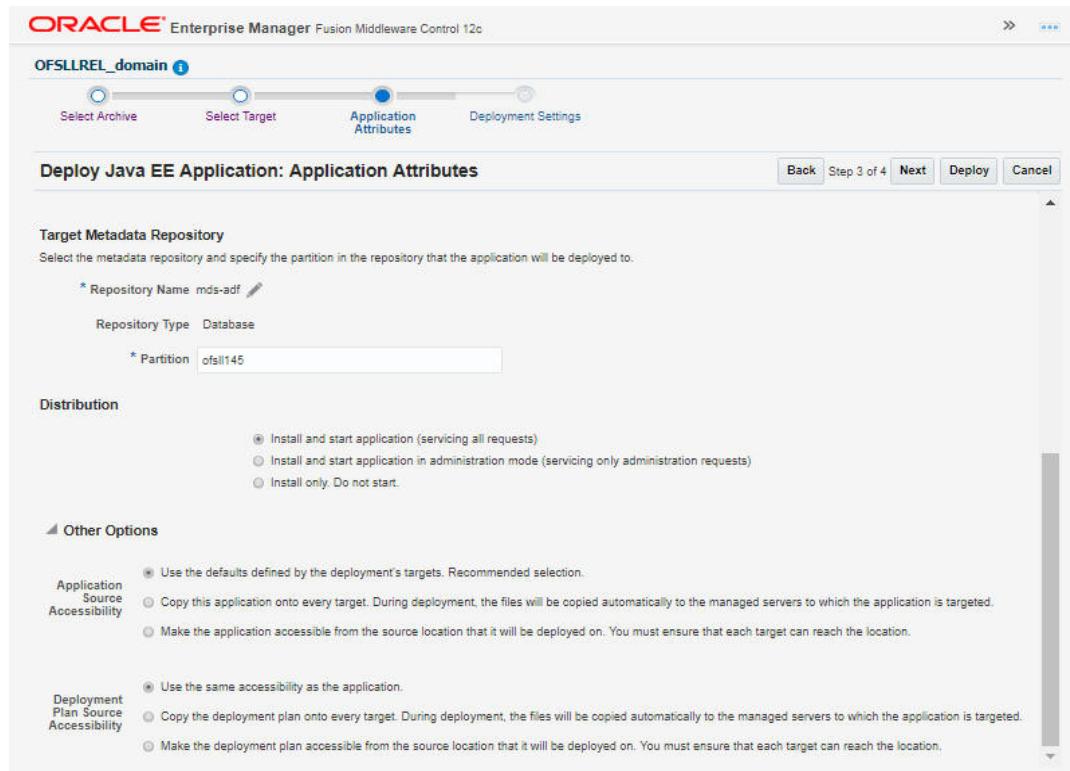
7. Check target server as per the requirement 'OFSLL\_ManagedServer' and click 'Next'.  
 The following window is displayed.



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



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



Deploy Java EE Application: Application Attributes

Target Metadata Repository

Select the metadata repository and specify the partition in the repository that the application will be deployed to.

\* Repository Name: mds-adf

Repository Type: Database

\* Partition: ofssl145

Distribution

Install and start application (servicing all requests)  
 Install and start application in administration mode (servicing only administration requests)  
 Install only. Do not start.

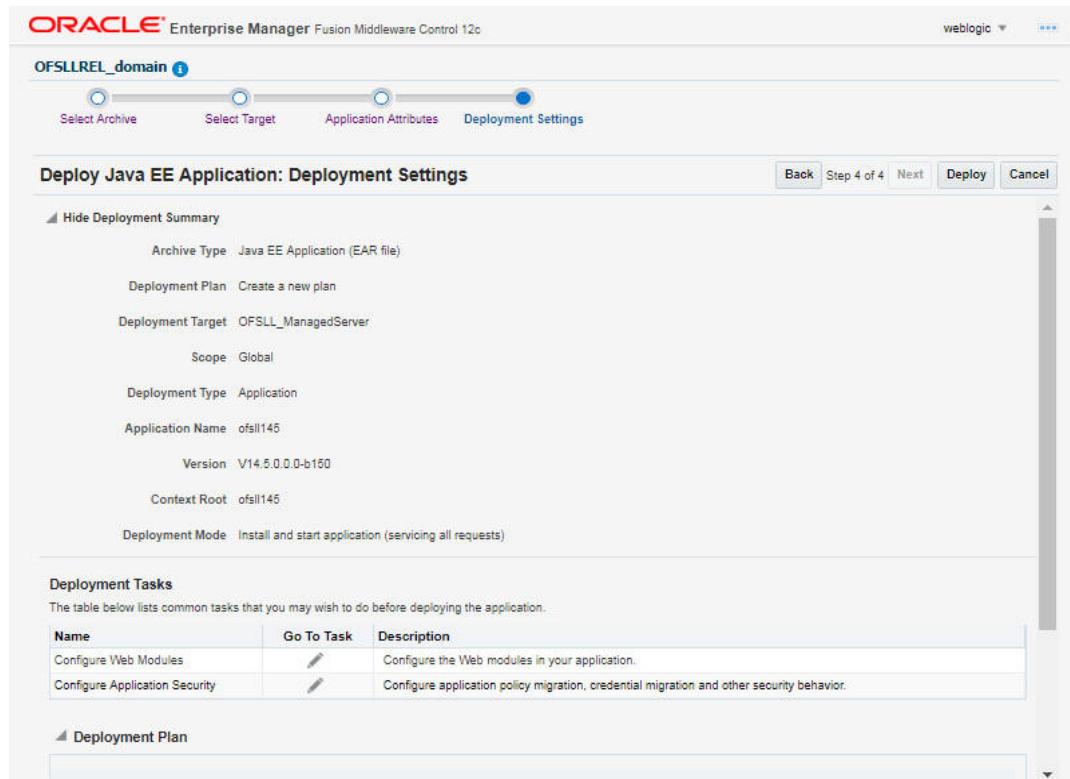
Application Source Accessibility

Use the defaults defined by the deployment's targets. Recommended selection.  
 Copy this application onto every target. During deployment, the files will be copied automatically to the managed servers to which the application is targeted.  
 Make the application accessible from the source location that it will be deployed on. You must ensure that each target can reach the location.

Deployment Plan Source Accessibility

Use the same accessibility as the application.  
 Copy the deployment plan onto every target. During deployment, the files will be copied automatically to the managed servers to which the application is targeted.  
 Make the deployment plan accessible from the source location that it will be deployed on. You must ensure that each target can reach the location.

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



Deploy Java EE Application: Deployment Settings

Archive Type: Java EE Application (EAR file)

Deployment Plan: Create a new plan

Deployment Target: OFSSL\_ManagedServer

Scope: Global

Deployment Type: Application

Application Name: ofssl145

Version: V14.5.0.0-b150

Context Root: ofssl145

Deployment Mode: Install and start application (servicing all requests)

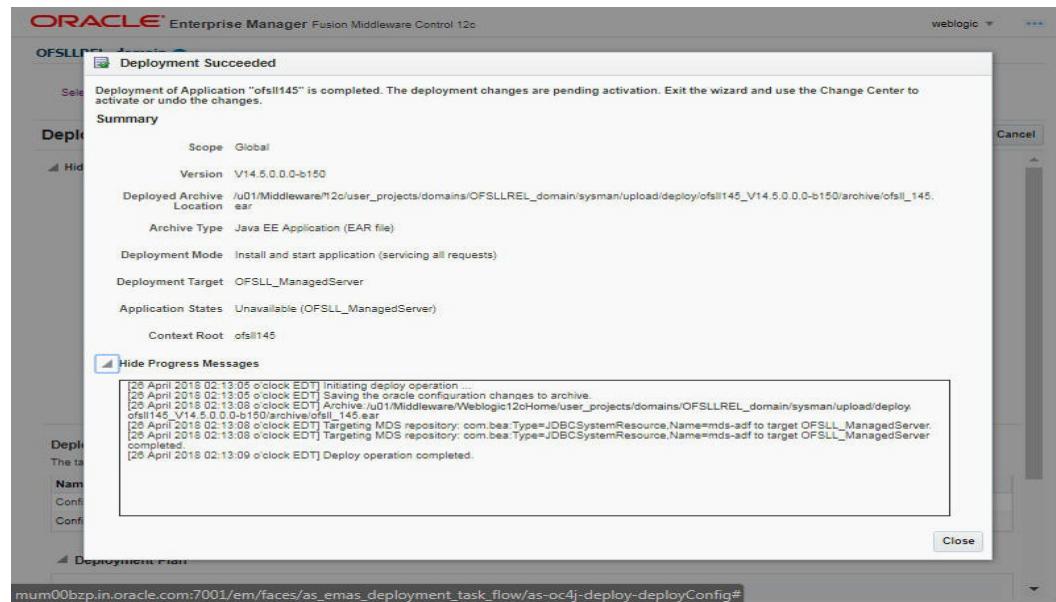
Deployment Tasks

The table below lists common tasks that you may wish to do before deploying the application.

Name	Go To Task	Description
Configure Web Modules		Configure the Web modules in your application.
Configure Application Security		Configure application policy migration, credential migration and other security behavior.

Deployment Plan

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.

The screenshot shows the 'Settings for OFSLLEL\_domain' page. The 'General' tab is selected. The 'Listen Port' is set to 9003 and 'SSL Listen Port' is set to 9503. The 'SSL Listen Port Enabled' checkbox is checked. The 'Client Cert Proxy Enabled' checkbox is unchecked.

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

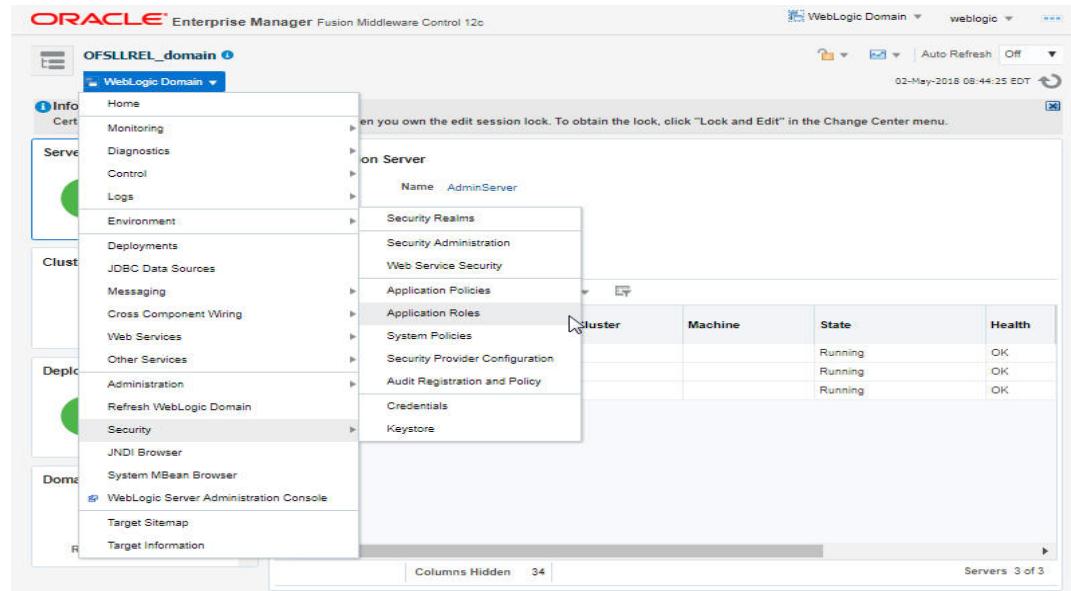
#### Note

It is recommended to disable http protocol.

## 7. Mapping Enterprise Group with Application Role

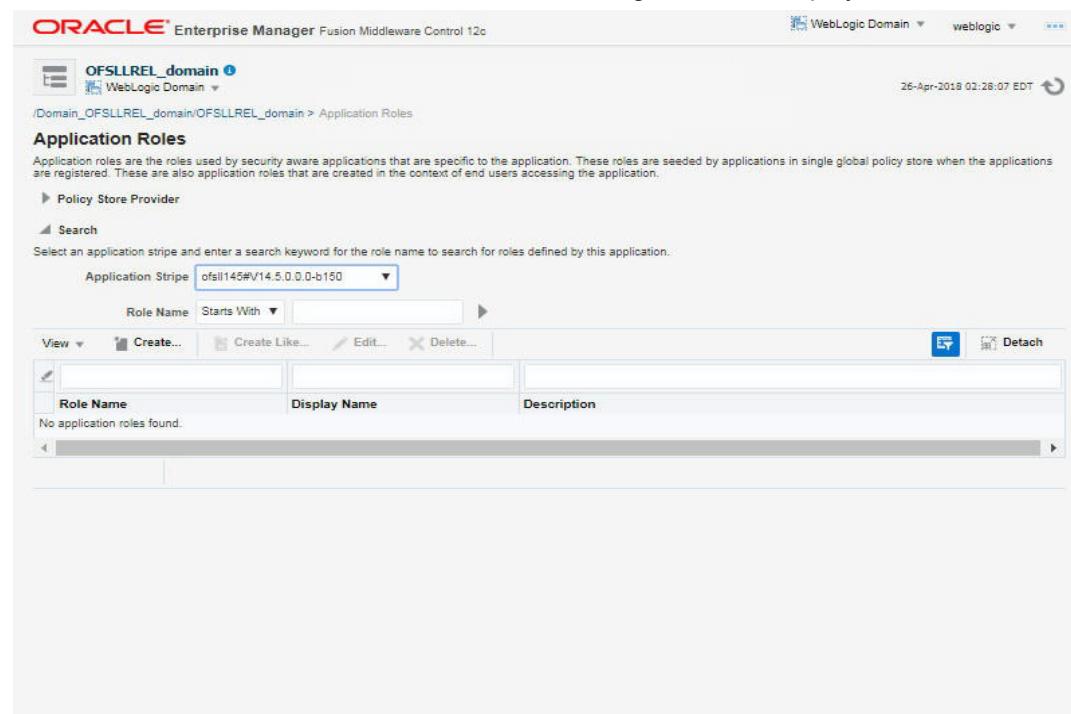
Follow the below steps to add an user to the group

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



The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface. The left sidebar shows a tree structure with nodes like 'Info', 'Cert', 'Server', 'Cluster', 'Deployment', 'Domain', and 'Resource'. Under 'Domain', 'WebLogic Domain' is expanded, showing 'Home', 'Monitoring', 'Diagnostics', 'Control', 'Logs', 'Environment', 'Deployments', 'JDBC Data Sources', 'Messaging', 'Cross Component Wiring', 'Web Services', 'Other Services', 'Administration', 'Refresh WebLogic Domain', 'Security', 'JNDI Browser', 'System MBean Browser', 'WebLogic Server Administration Console', 'Target Sitemap', and 'Target Information'. The 'Security' node is selected. The right panel shows a table titled 'Application Roles' with columns 'Cluster', 'Machine', 'State', and 'Health'. The table contains three rows: 'Running', 'Running', 'OK', and 'Running', 'Running', 'OK'. Below the table, there are links for 'Security Realms', 'Security Administration', 'Web Service Security', 'Application Policies', 'System Policies', 'Security Provider Configuration', 'Audit Registration and Policy', 'Credentials', and 'Keystore'. A tooltip for 'Application Policies' says: 'When you own the edit session lock. To obtain the lock, click "Lock and Edit" in the Change Center menu.'

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



The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface, specifically the 'Application Roles' page for the 'Domain\_OFSLREL\_domain/OFSLREL\_domain' application stripe. The left sidebar shows the same tree structure as the previous screenshot, with the 'Application Roles' node under 'Security' expanded. The right panel shows a table with columns 'Role Name', 'Display Name', and 'Description'. A search bar at the top says 'Application Stripe: ofsl145#V14.5.0.0-b150'. The table is empty, showing 'No application roles found.' The top right corner shows the date and time: '26-Apr-2018 02:28:07 EDT'.

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

Role Name	Display Name	Description
OFSLL_USER	OFSLL USER	

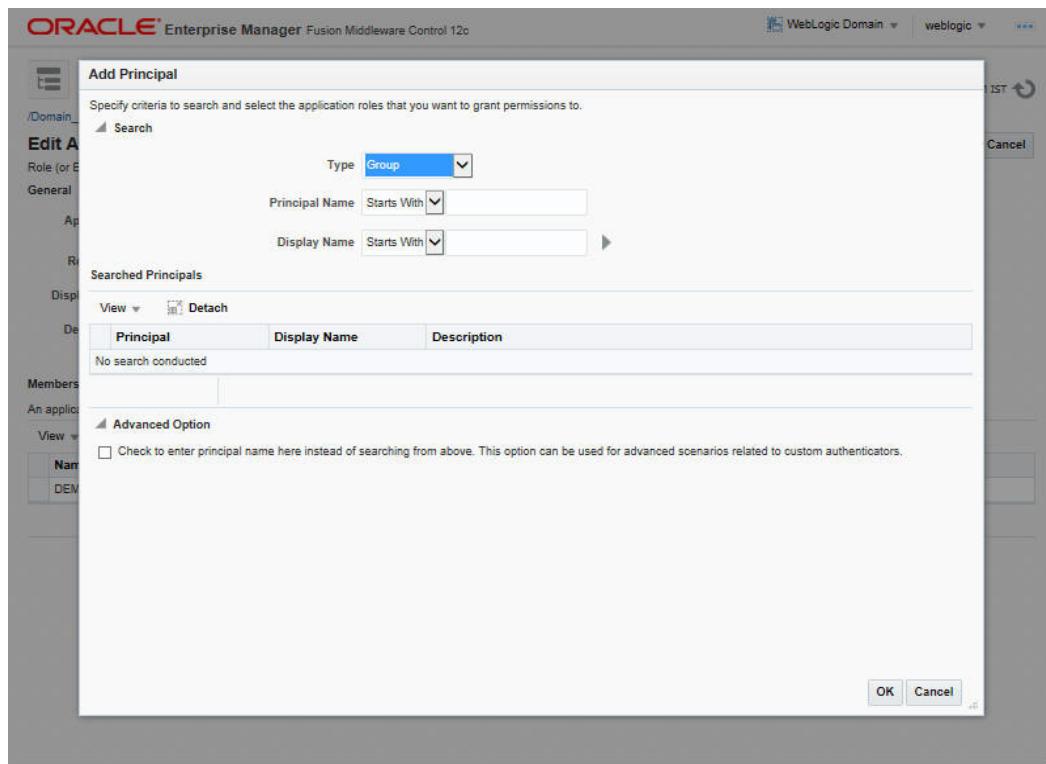
Principal	Display Name	Type	Description
DEMONSUPR		User	

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

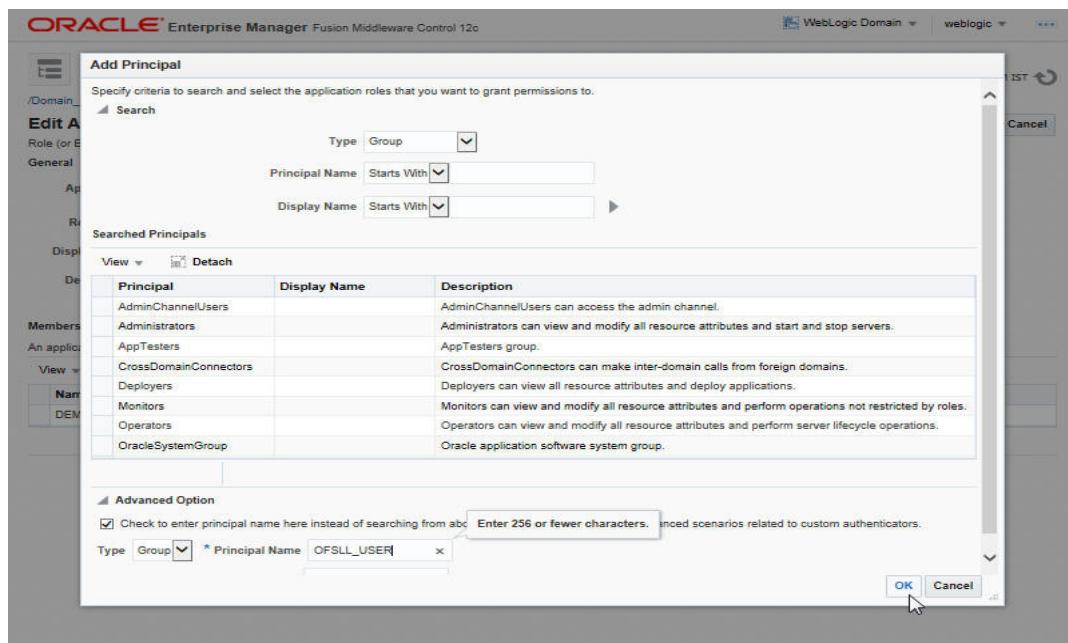
Name	Display Name	Type
DEMONSUPR		User

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

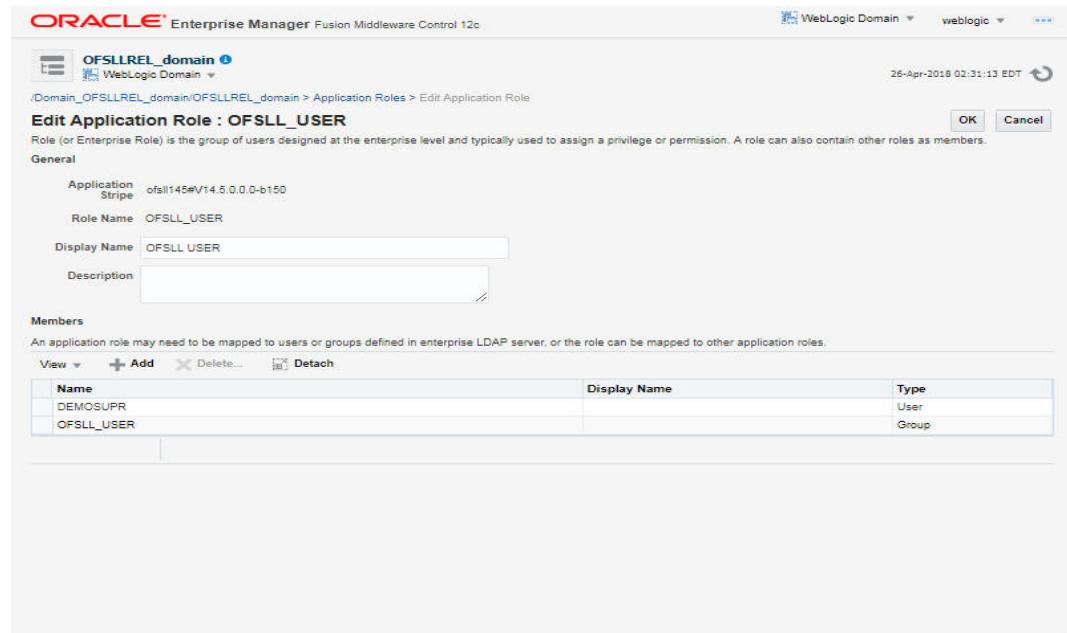
8. Follow the given steps to select the Principal 'OFSLL\_USER' to add and click OK. The following window is displayed.



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



10. Click 'OK'.



ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic 26-Apr-2018 02:31:13 EDT

OFSSLRE\_REL\_domain > Application Roles > Edit Application Role

**Edit Application Role : OFSSL\_USER**

Role (or Enterprise Role) is the group of users designed at the enterprise level and typically used to assign a privilege or permission. A role can also contain other roles as members.

**General**

Application Stripe: ofssl145#V14.5.0.0-b150

Role Name: OFSSL\_USER

Display Name: OFSSL USER

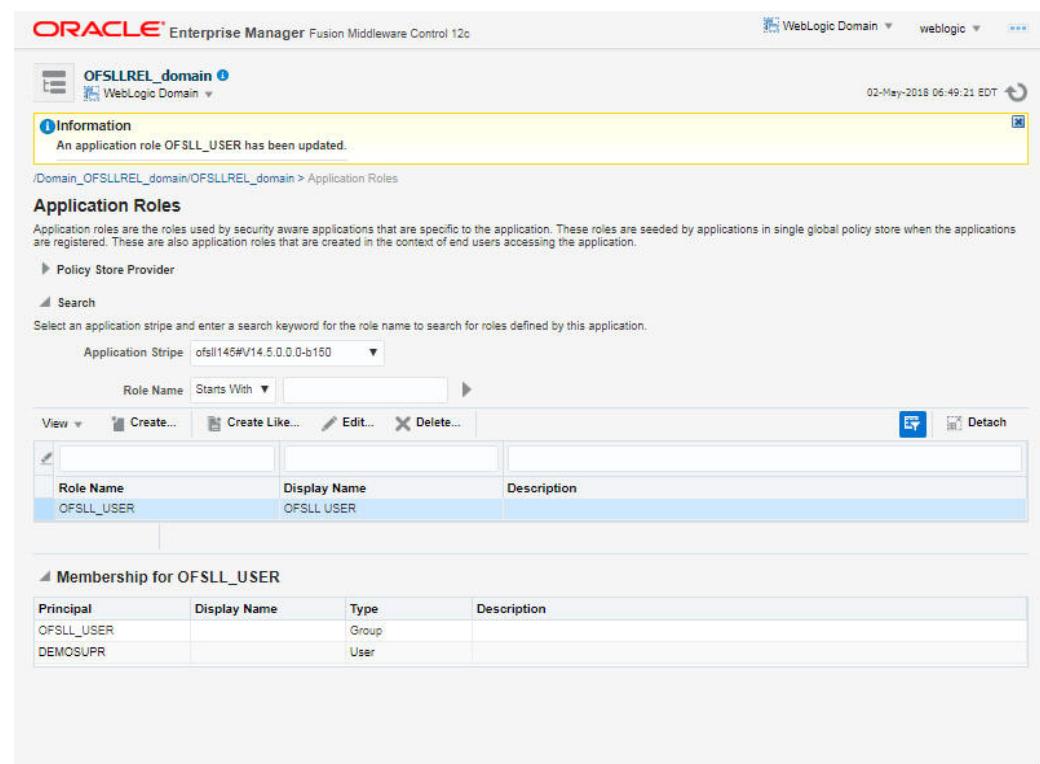
Description:

**Members**

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.

Name	Display Name	Type
DEMONSUPR		User
OFSSL_USER		Group

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



ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic 02-May-2018 06:49:21 EDT

OFSSL\_REL\_domain > Application Roles

**Application Roles**

Application roles are the roles used by security aware applications that are specific to the application. These roles are seeded by applications in single global policy store when the applications are registered. These are also application roles that are created in the context of end users accessing the application.

Policy Store Provider

Search

Select an application stripe and enter a search keyword for the role name to search for roles defined by this application.

Application Stripe: ofssl145#V14.5.0.0-b150

Role Name: Starts With:

View: Create... Create Like... Edit... Delete... Detach

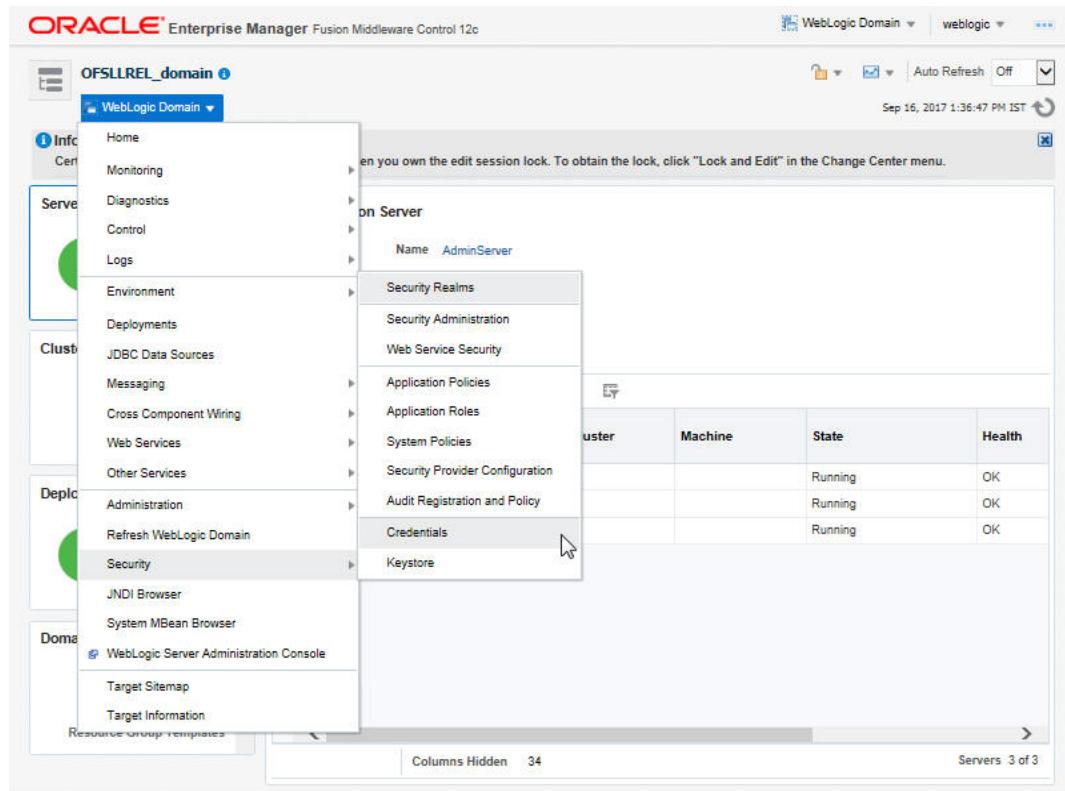
Role Name	Display Name	Description
OFSSL_USER	OFSSL USER	

Membership for OFSSL\_USER

Principal	Display Name	Type	Description
OFSSL_USER		Group	
DEMONSUPR		User	

## 8. Configuring JNDI name for HTTP Listener

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



ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic

OFSSLREL\_domain

WebLogic Domain

Home

Monitoring

Diagnostics

Control

Logs

Environment

Deployments

JDBC Data Sources

Messaging

Cross Component Wiring

Web Services

Other Services

Administration

Refresh WebLogic Domain

Security

JNDI Browser

System MBean Browser

WebLogic Server Administration Console

Target Sitemap

Target Information

Resources

Server

AdminServer

Name AdminServer

Security Realms

Security Administration

Web Service Security

Application Policies

Application Roles

System Policies

Security Provider Configuration

Audit Registration and Policy

Credentials

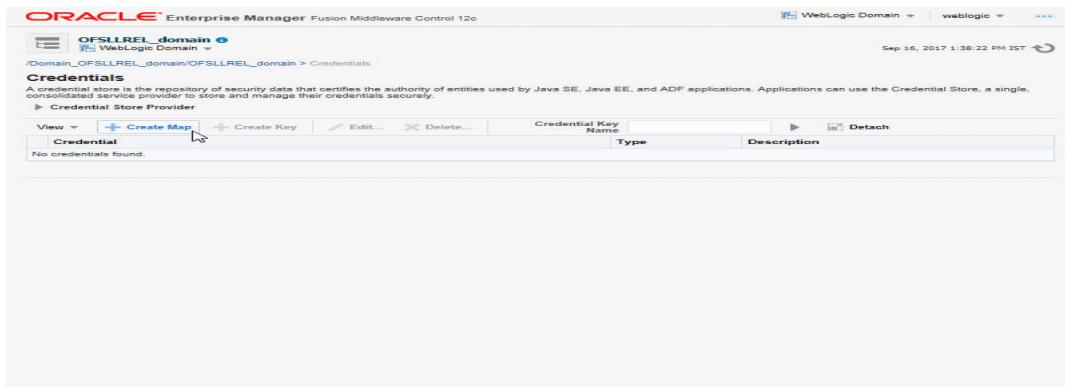
Keystore

User	Machine	State	Health
		Running	OK
		Running	OK
		Running	OK

Columns Hidden 34

Servers 3 of 3

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



ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic

OFSSLREL\_domain

/Domain\_OFSSLREL\_domain/OFSSLREL\_domain > Credentials

Credentials

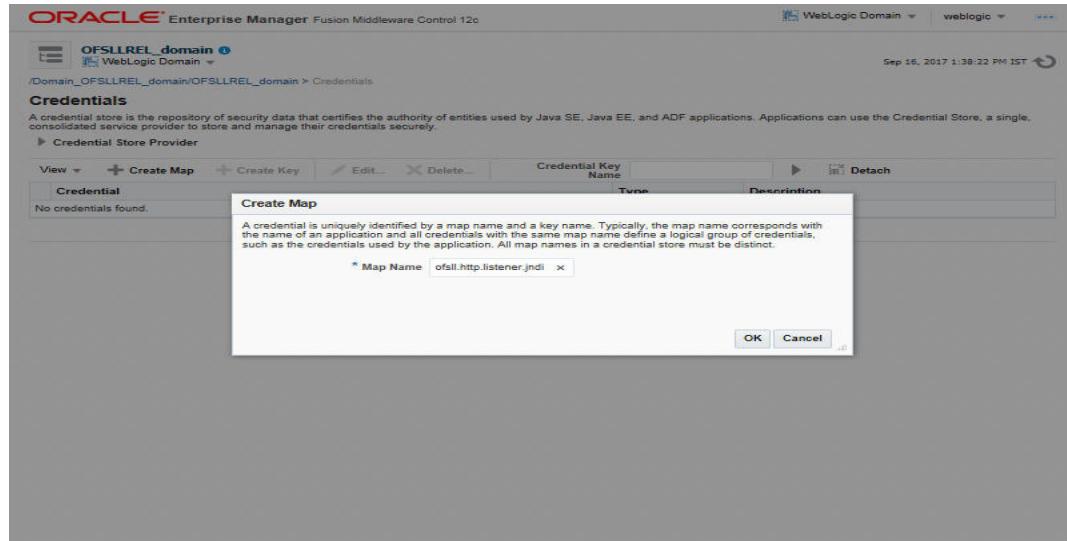
A credential store is the repository of security data that certifies the authority of entities used by Java SE, Java EE, and ADF applications. Applications can use the Credential Store, a single, consolidated service provider to store and manage their credentials securely.

Credential Store Provider

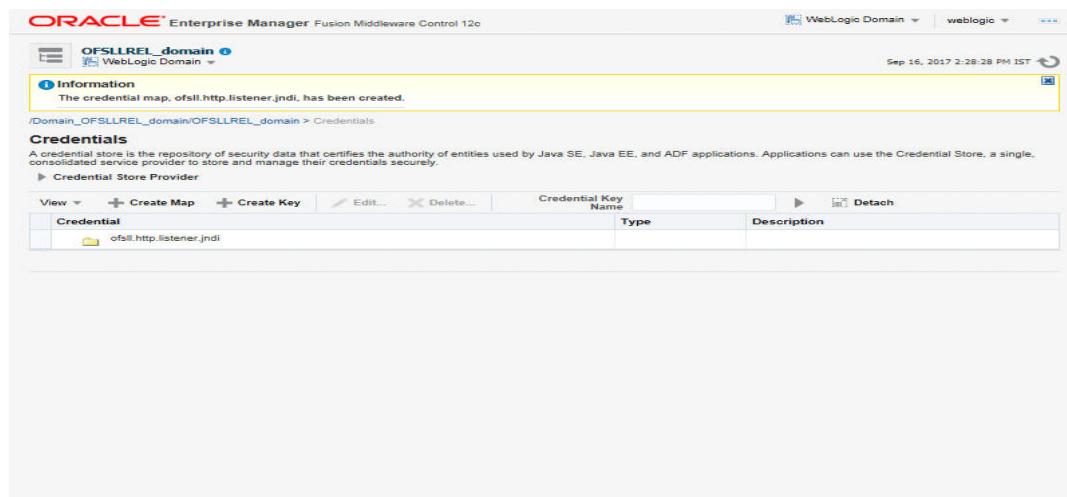
View Create Map Create Key Edit Delete Credential Key Name Type Description

No credentials found.

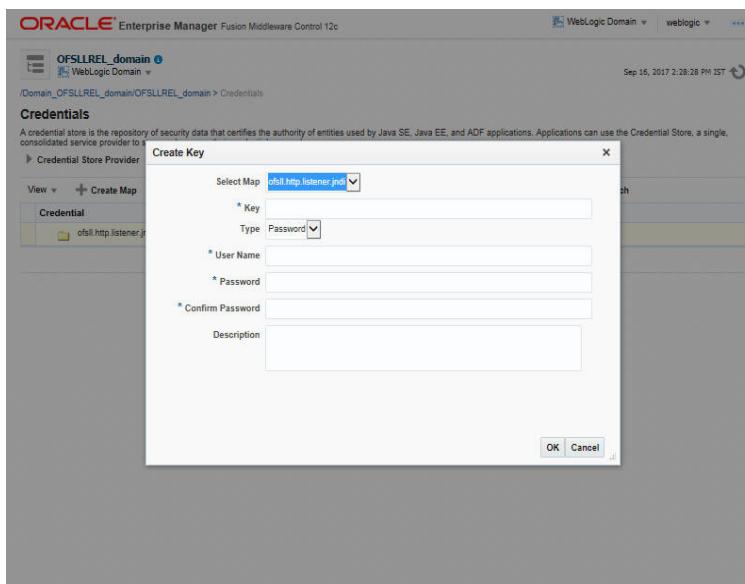
3. Click 'Create Map'. The following window is displayed.



4. Enter Map name as 'ofssl.http.listener.jndi'.
5. Click 'OK'. The following window is displayed.

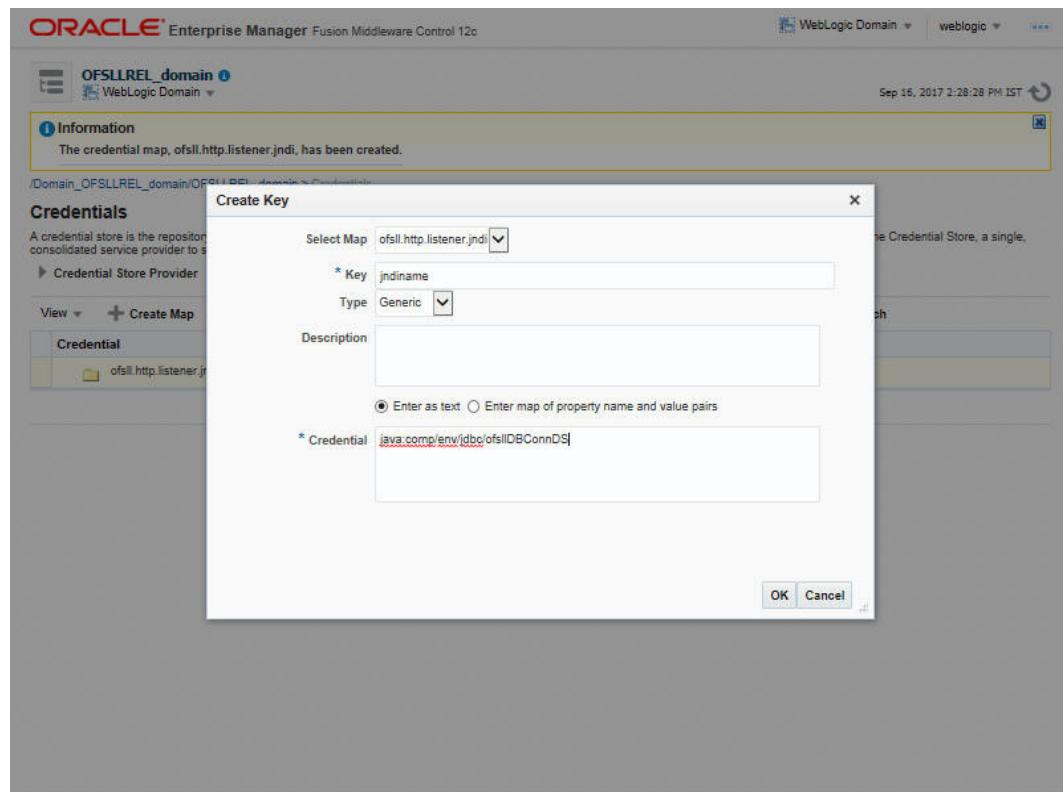


6. Click 'Create Key' Button. The following window is displayed.

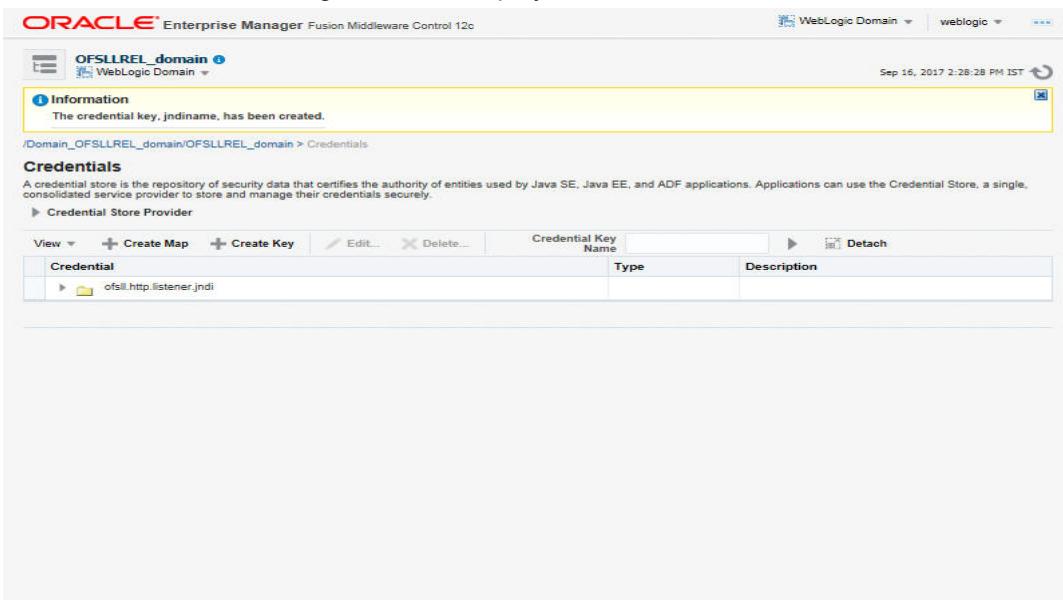


7. Enter the following details as per your requirement.

- Key: jndiname
- Credential: java:comp/env/jdbc/ofsllDBConnDS
- Type: Generic



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



---

## 9. Configure AQ-JMS Bridge

The following steps are to be performed to configure the AQ-JMS Bridge through the Weblogic Console:

- Create Data Sources for AQ-JMS Bridge
- Configure MDB Flow
- AQ-JMS Topic Setup
- Create Credentials and System Policies
- Deploy MDB EJB

---

### Note

Ensure that MDB EJB is not configured and deployed (i.e. OfsslAppQueue.ear deployment) on the same server on which the other WebServices are deployed.

---

### 9.1 Create Data Sources for AQ-JMS Bridge

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



2. On successful login, the following window is displayed.

3. Click Domain Name > Services > Data Sources. The following window is displayed.

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

Type	JNDI Name	Targets
Generic	jdbc/aqjmsdb	OFSLL_ManagedServer
Generic	jdbc/dk105nleJBDs	WS_ManagedServer
Generic	jdbc/LocalSvcTblDataSource	AdminServer
Generic	jdbc/mds/adf	AdminServer, OFSLL_ManagedServer
Generic	jdbc/ofsllDBConnDS	AdminServer, OFSLL_ManagedServer
Generic	jdbc/AuditAppendDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
Generic	jdbc/AuditViewDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
Generic	jdbc/OpssDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
Generic	jdbc/WLSSchemaDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer

5. The following window is displayed.

6. Specify the following details:

- Enter Data source Name
- Enter the JNDI Name as 'jdbc/aqjmsdb'.

---

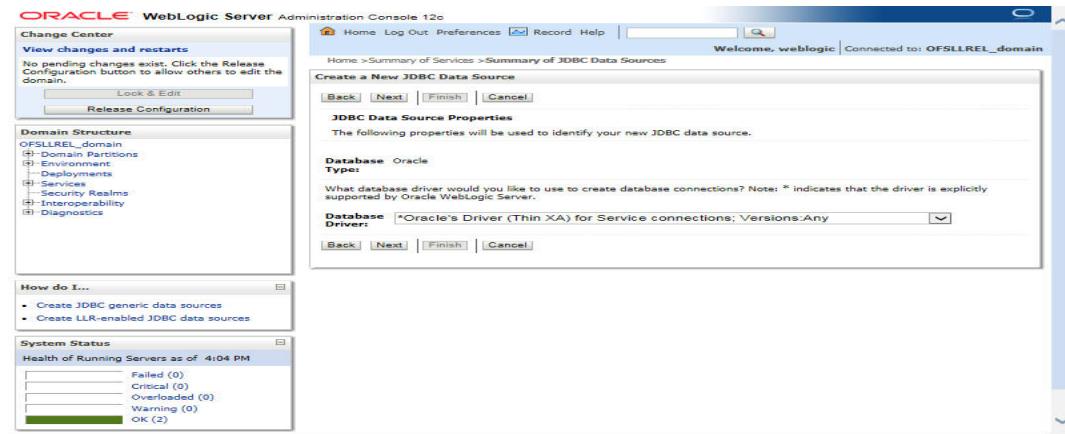
**Note**

If required, you may specify any other JNDI name, but ensure to use the same JNDI name during other configuration steps.

---

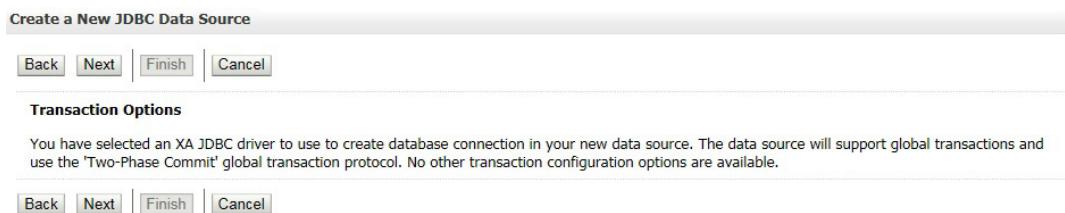
- Select 'Oracle' as Database Type.

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

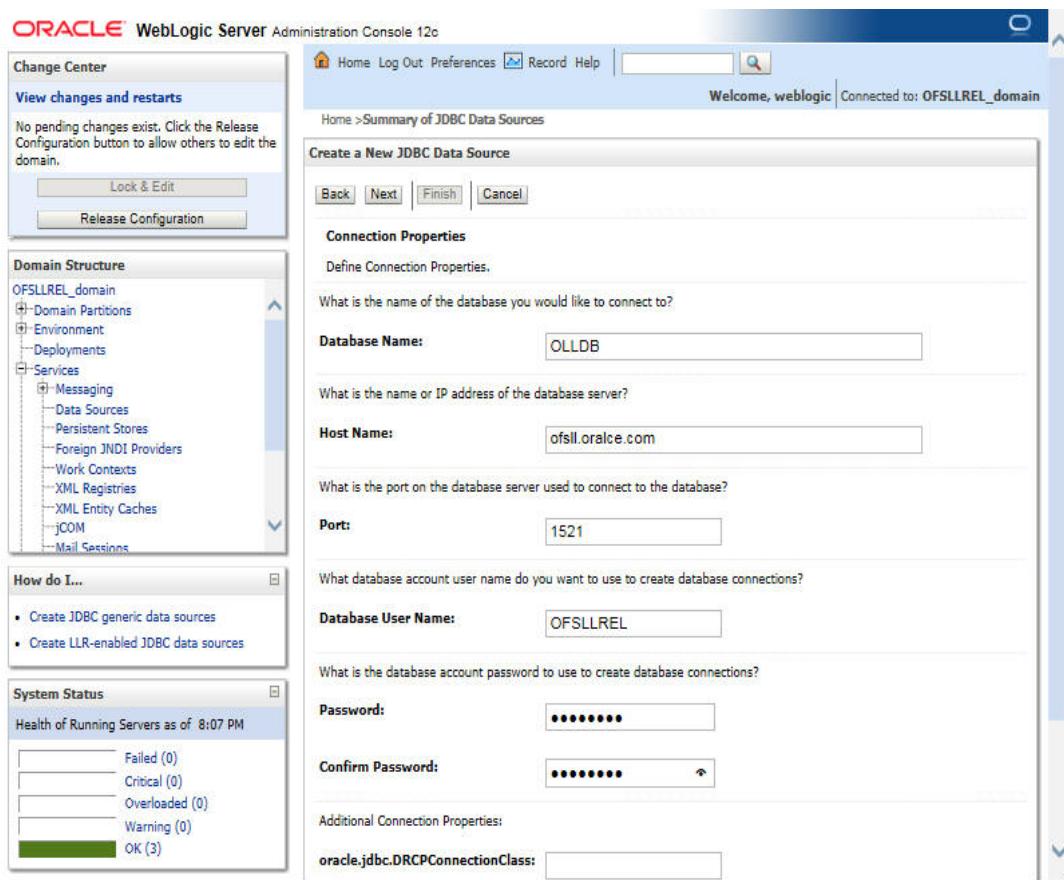


8. Select the Database Driver 'Oracle's Driver(Thin XA) for Services connections;Versions:Any'.

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



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



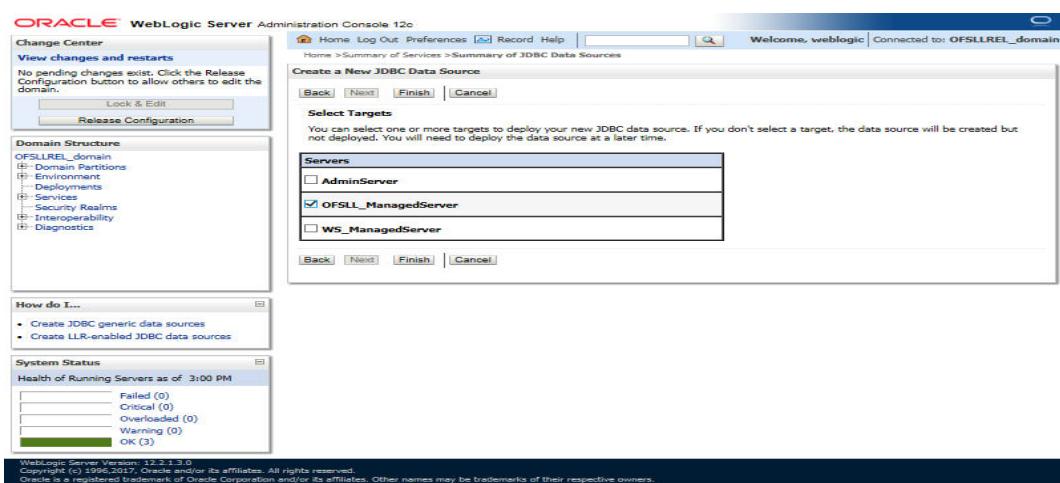
11. Enter the Database details.

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



13. Click 'Test Configuration'. On completion, displays a confirmation message as 'Connection test succeeded'.

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



15. Select target Server as 'OFSSL\_ManagedServer'.

16. Click 'Finish' to activate the changes.

**Update the following parameters in JDBC data source connection pool:**

1. Select Services > Data Sources > select the AQ\_JMS\_DB data source > Connection Pool.
2. Initial capacity and Maximum capacity is defaulted to 30, if the number of concurrent users are more this needs to be increased.
3. Click Advanced button and update the 'Inactive Connection Timeout' to 300 seconds.
4. Click 'Save' and restart the Data source.

Similarly create 'QueueAppDS' data sources which is used by MDB for all database related operations by following the steps mentioned in above section (Create Data Sources for AQ-JMS Bridge).

- Create data source name as QueueAppDS
- Update the JNDI as jdbc/QueueAppDS

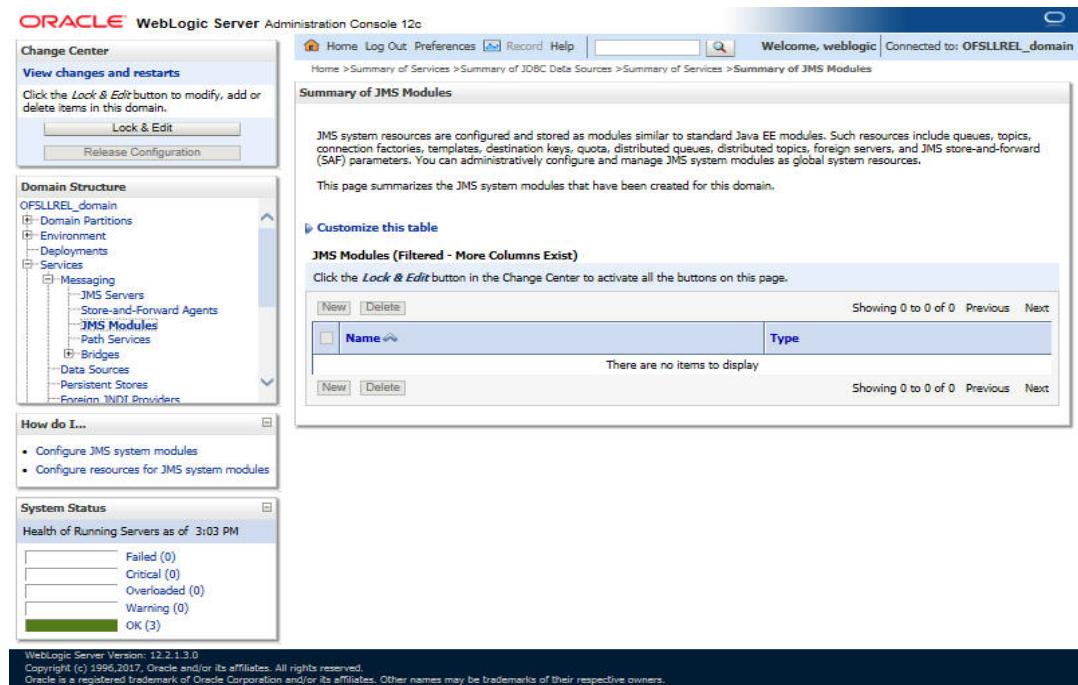
Do not perform the JDBC data source update and instead follow the below steps to configure the created 'QueueAppDS' data source:

- To Enable GRI (Generic Recovery Interface) CLOB logging from MDB to DB, click Advanced button and deselect the 'Wrap Data Types' check box.
- Set the 'Inactive Connection Timeout' to 300 seconds.

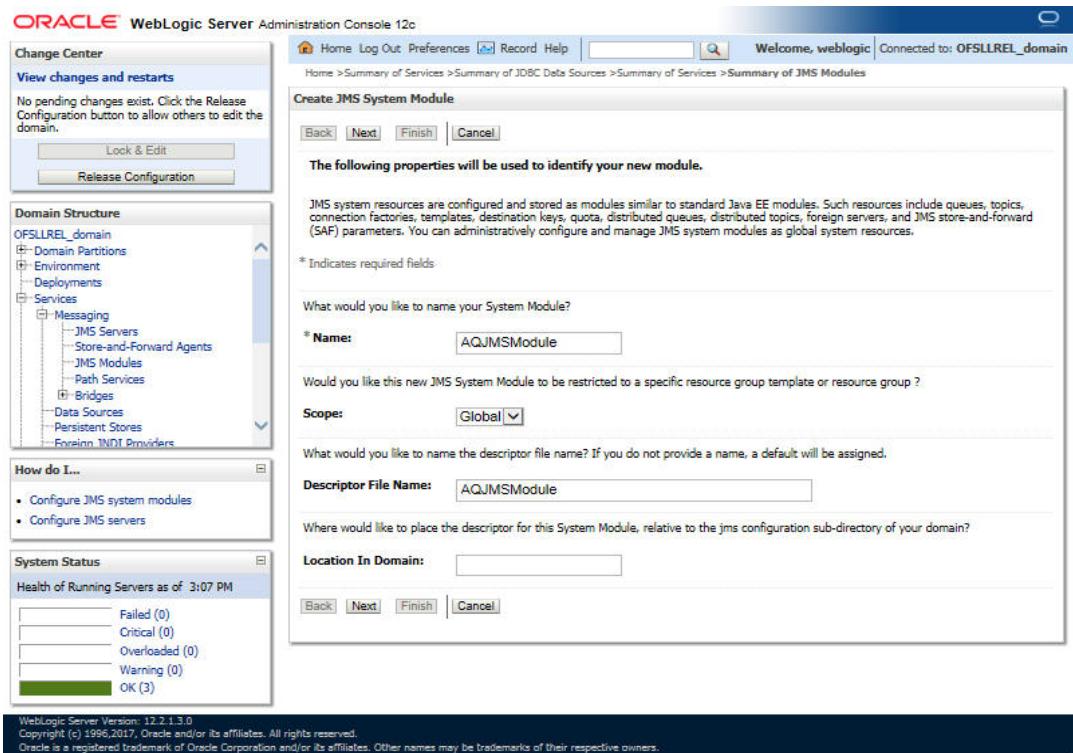
## **9.2 Configure MDB Flow**

To configure the MDB Flow from Weblogic Console, do the following:

1. Login to Oracle Weblogic 12c console (<http://hostname:port/console>).
2. On the left pane, click 'Services'.
3. In Messaging tree click 'JMS Modules'. The following window is displayed.



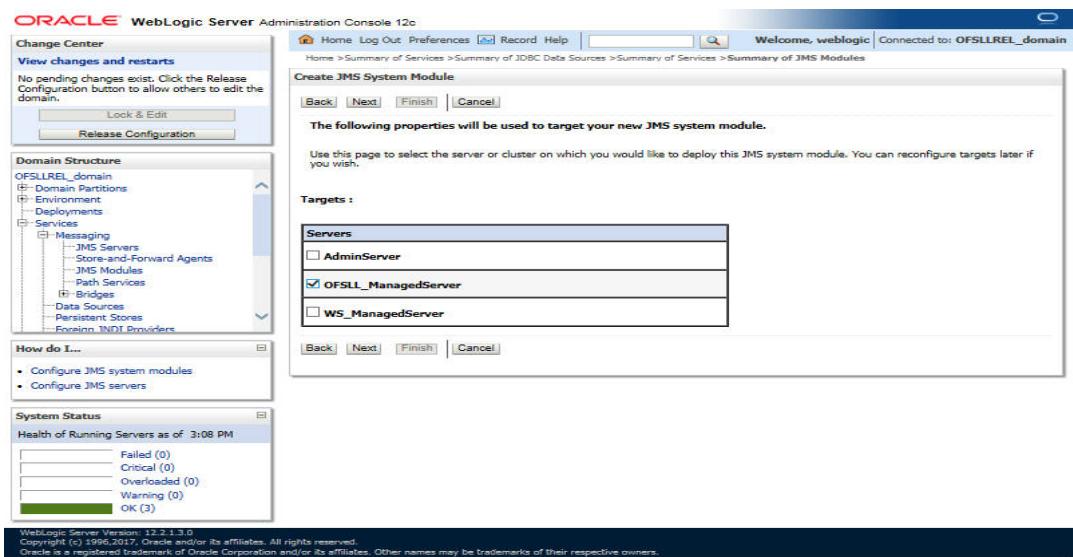
4. Click 'New'. The following screen is displayed.



5. Specify the following details:

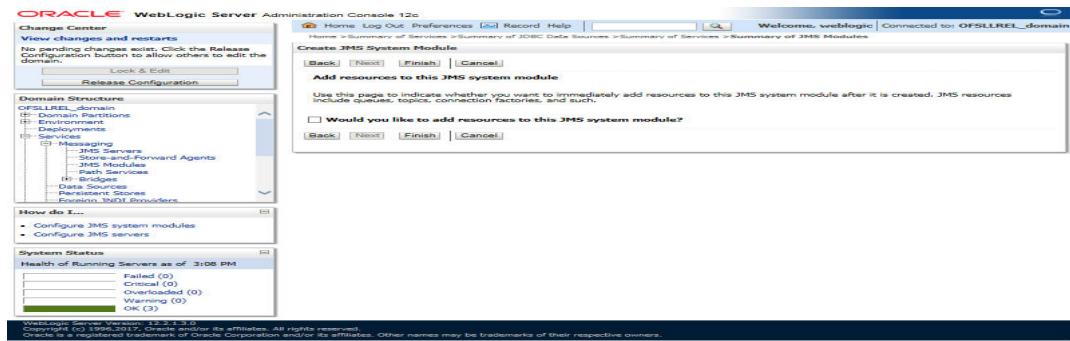
- Name: AQJMSModule
- Descriptor File Name: AQJMSModule

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

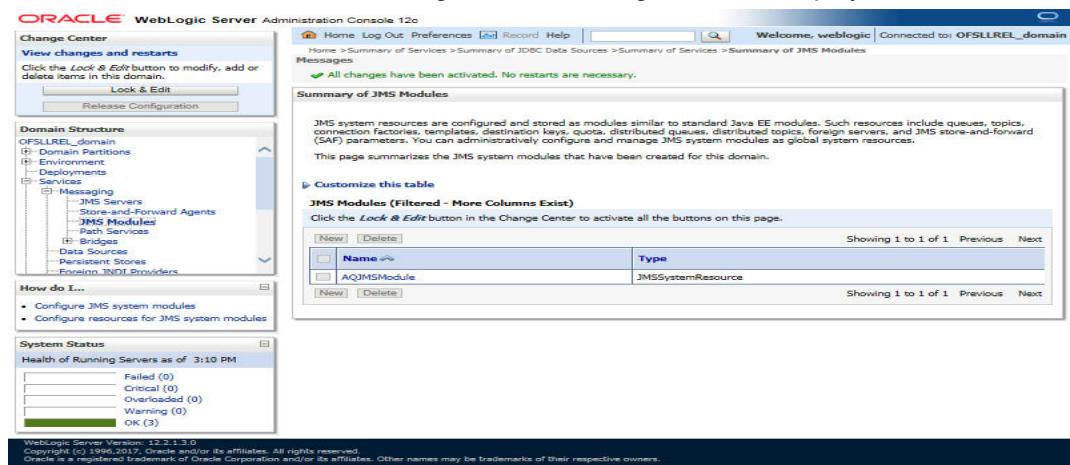


7. Select target servers as 'OFSLL\_ManagedServer'.

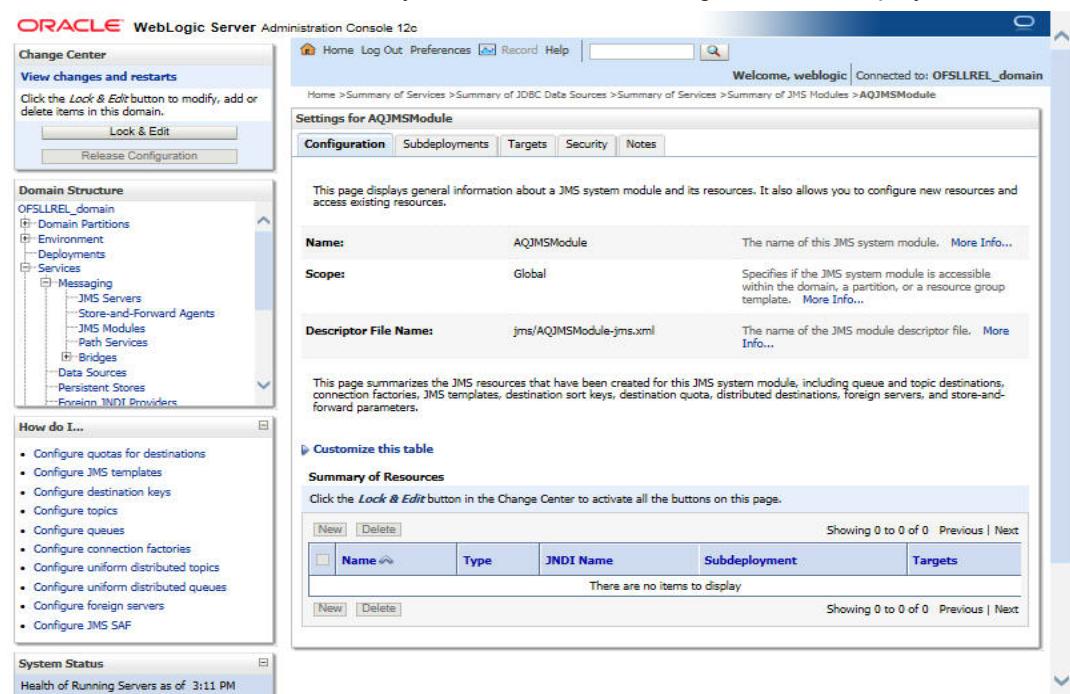
8. Click 'Next'. The following window is displayed.



9. Click 'Finish' to activate the changes. The following window is displayed.



10. Click on the JMS Module that you created. The following window is displayed.



11. Click 'New' in 'Summary of Resources' section. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar shows the 'Domain Structure' for 'OFSLLREL\_domain' with 'Services' expanded, and 'Messaging' selected. The right pane shows the 'Create a New JMS System Module Resource' window. The 'Foreign Server' option is selected, and its description is visible: 'Defines foreign messaging providers or remote WebLogic Server instances that are not part of the current domain.' Below the description are 'More Info...' and 'Next' buttons.

12. Select 'Foreign Server' as the option for type of resource to be created and click 'Next'. The following window is displayed.

The screenshot shows the 'Foreign Server Properties' window. The 'Name' field is filled with 'AQForeignServer'. Below the field are 'Back', 'Next', 'Finish', and 'Cancel' buttons. The background shows the same 'Create a New JMS System Module Resource' window as the previous screenshot.

13. Specify the name of the Foreign Server as 'AQForeignServer' and click 'Next'. The following window is displayed.

The screenshot shows the 'Advanced Targeting' window. The 'Servers' list contains 'OFSLL\_ManagedServer'. Below the list are 'Back', 'Next', 'Finish', 'Advanced Targeting', and 'Cancel' buttons. The background shows the same 'Create a New JMS System Module Resource' window as the previous screenshots.

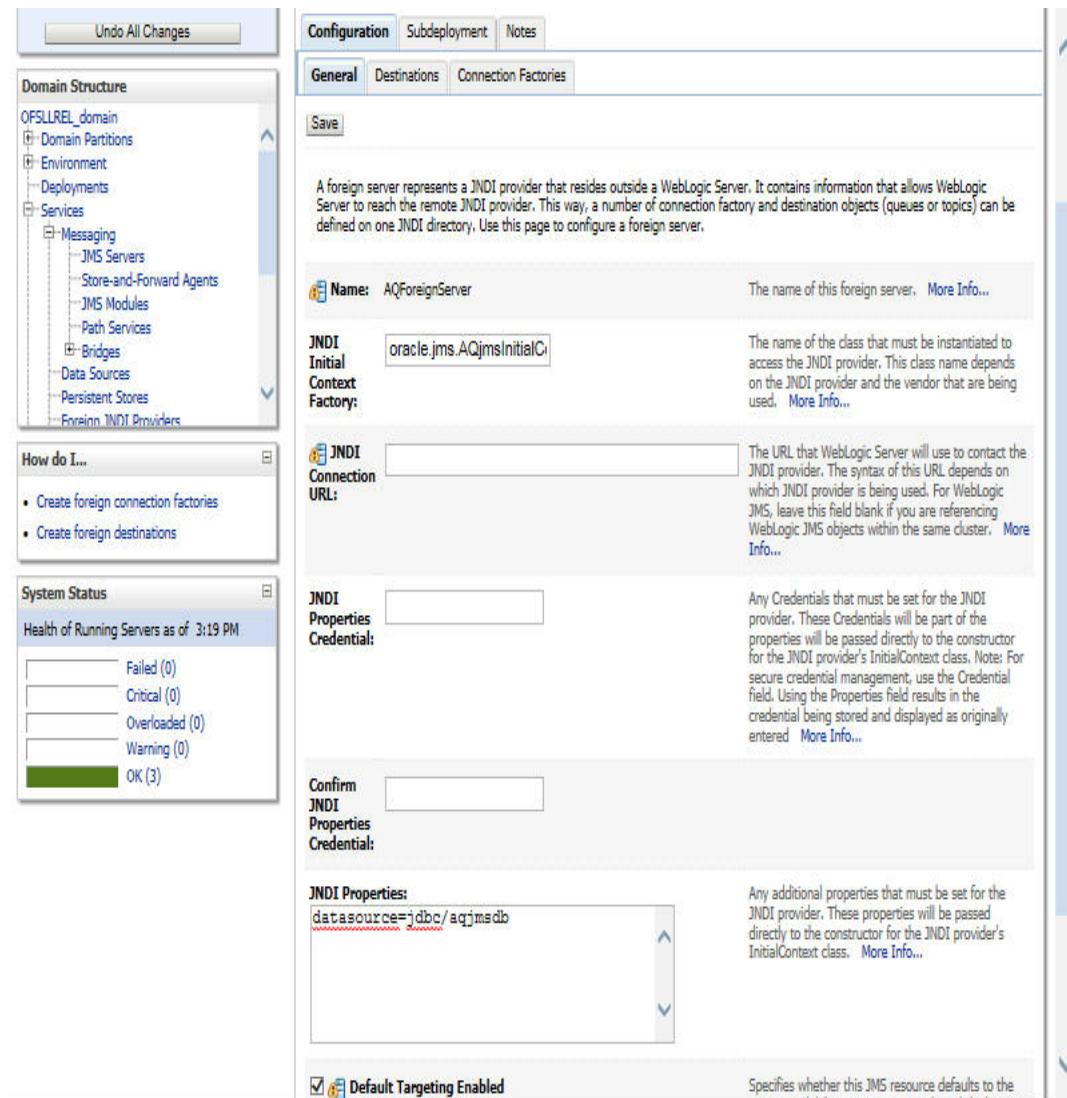
14. Click 'Finish' and activate the changes. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console 12c. The main title bar reads "ORACLE WebLogic Server Administration Console 12c". The top navigation bar includes "Home", "Log Out", "Preferences", "Record", "Help", and a search bar. The top right corner shows "Welcome, weblogic" and "Connected to: OFSLLREL\_domain". The left sidebar, titled "Domain Structure", shows the "OFSLLREL\_domain" structure with "Services" expanded, including "Messaging" (JMS Servers, Store-and-Forward Agents, JMS Modules, Path Services, Bridges), "Data Sources", "Persistent Stores", and "Foreign JNDI Providers". A "How do I..." panel on the left lists various configuration steps. The main content area is titled "Settings for AQJMSModule" and contains tabs for "Configuration", "Subdeployments", "Targets", "Security", and "Notes". The "Configuration" tab displays the module's name (AQJMSModule), scope (Global), and descriptor file name (jms/AQJMSModule-jms.xml). It also includes a summary of resources table:

Summary of Resources				
<a href="#">New</a>	<a href="#">Delete</a>	Showing 1 to 1 of 1 Previous   Next		
<input type="checkbox"/> Name	Type	JNDI Name	Subdeployment	Targets
<input type="checkbox"/> AQForeignServer	Foreign Server	N/A	Default Targeting	OFSLL_ManagedServer

A message at the top right of the main content area says "The foreign server was created successfully." The bottom left corner shows "System Status" and "Health of Running Servers as of 3:17 PM".

15. Click on the Foreign Server that you created. The following window is displayed.

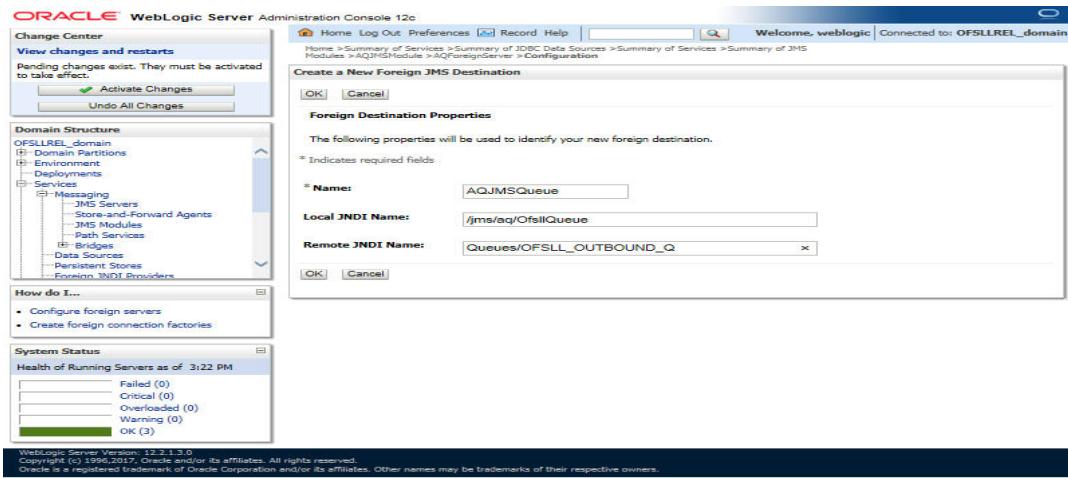


16. Specify the following details:

- Enter JNDI Initial Context Factory as 'oracle.jms.AQjmsInitialContextFactory'.
- JNDI Properties as 'datasource=jdbc/aqjmsdb'.
- Ensure 'Default Targetting Enabled' option is selected.

17. Click 'Save'.

18. Select 'Destinations' Tab and click 'New' to create new destination. The following window is displayed.

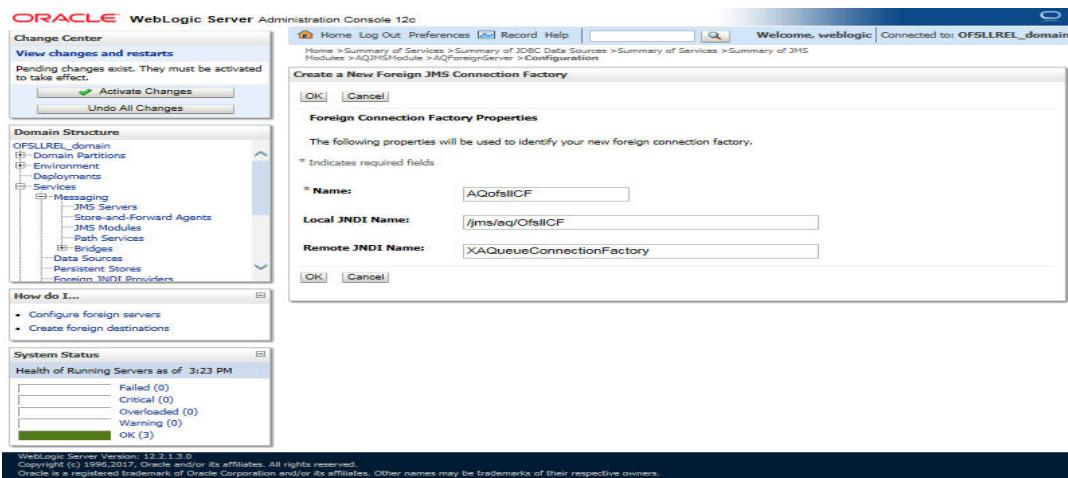


19. Specify the following details:

- Name: AQJMSQueue
- LocalJNDI Name: /jms/eq/OfsllQueue
- Remote JNDI Name: Queues/OFSLLOUTBOUND\_Q

20. Click 'OK' and save the changes.

21. Select 'Connection Factories' Tab and click 'New' to add new connection factory. The following window is displayed.



22. Specify the following details:

- Name: AQofsllCF
- Local JNDI Name: /jms/eq/OfsllCF
- Remote JNDI Name: XAQueueConnectionFactory

23. Click 'OK' and save the changes.

## 9.3 AQ-JMS Topic Setup

AQ-JMS Topic Bridge facilitates for group publishing to set of subscribed users. In a configured setup, a published message is sent to all the interested subscribers. Accordingly zero to many subscribers will receive a copy of the same message.

### 9.3.1 Create AQ-JMS Topic Bridge

To configure the AQ JMS Topic from Weblogic console, do the following:

1. Login to Oracle Weblogic 12c console (<http://hostname:port/console>).
2. On the left pane, select Services > Messaging > JMS Modules. The following window is displayed.

Name	Type	JNDI Name	Subdeployment	Targets
AQJMSModule	JMSSystemResource			

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

Name	Type	JNDI Name	Subdeployment	Targets
AQForeignServer	Foreign Server	N/A	Default Targeting	OFSLL_ManagedServer

4. In the Summary of Resources section, click 'New'. The following window is displayed.

5. Select 'Foreign Server' as the option for type of resource to be created and click 'Next'. The following window is displayed.

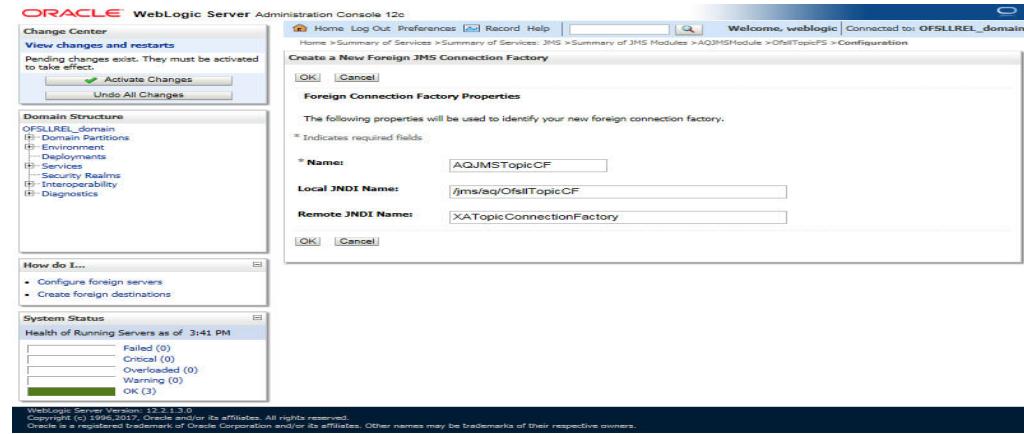
6. Specify the name of the Foreign Server as 'OfsITopicFS' and click 'Next'. The following window is displayed.

- Click 'Finish' and activate the changes.
- Click on the Foreign Server that you created. The following window is displayed.

- Specify the following details and click 'Save'.
  - Enter JNDI Initial Context Factory as 'oracle.jms.AQjmsInitialContextFactory'.
  - JNDI Properties as 'datasource=jdbc/aqjmsdb'.
  - Ensure 'Default Targetting Enabled' checkbox is selected.
- Select 'Destinations' tab and click 'New' to create new destination. The following window is displayed.

- Specify the following details and click 'OK' to save the changes.
  - Name: AQJMSTopic
  - LocalJNDI Name: /jms/aq/OfsllTopic
  - Remote JNDI Name: Topics/OFSLLOUTBOUND\_TOPIC

12. Select 'Connection Factories' tab and click 'New' to add new connection factory. The following window is displayed.



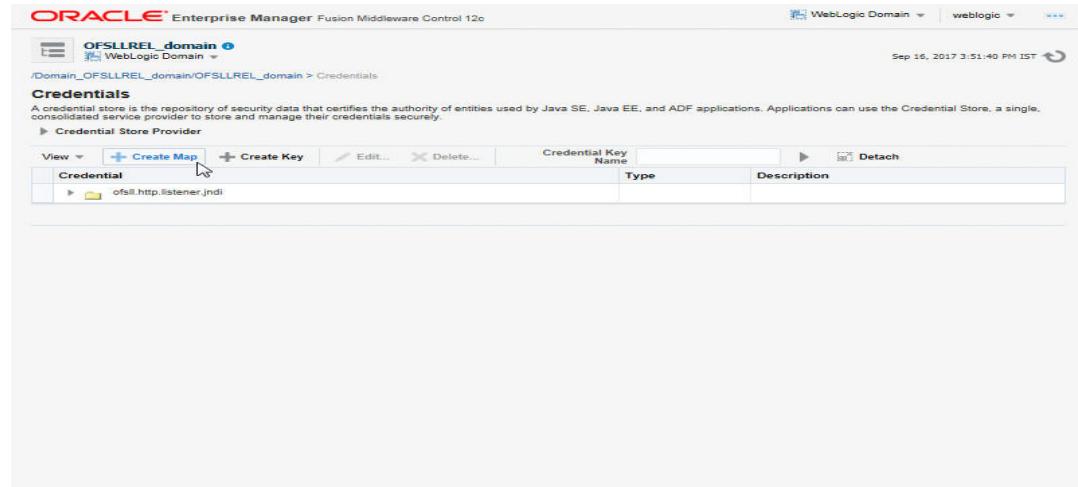
13. Specify the following details and Click 'OK' to save the changes.

- Name: AQJMSTopicCF
- Local JNDI Name: /jms/aq/OfsllTopicCF
- Remote JNDI Name: XATopicConnectionFactory

## 9.4 Create Credentials and System Policies

In order Configure MDB flow, you need to create credentials and system policies. The credentials are accessed through CSF framework which is managed by Oracle Weblogic Server. The keys are managed by Maps and Maps need to be given with Permissions.

1. Login to Oracle Enterprise Manager (<http://hostname:port/em>).
2. On the left panel, right click on OFSLLREL\_domain and select Security > System Policies > Credentials. The following window is displayed.

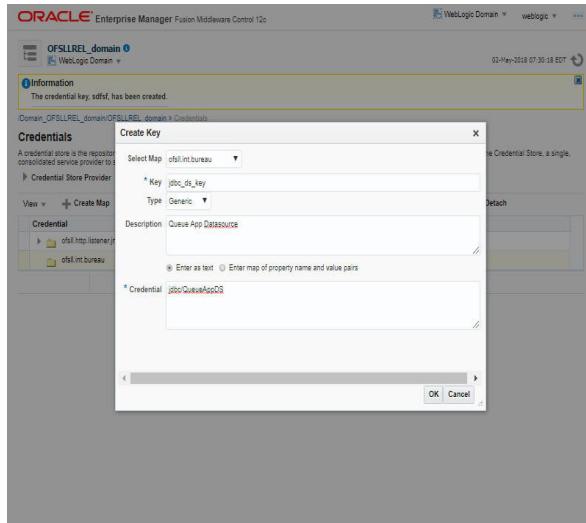


3. Click 'Create Map'. The following window is displayed.



4. Enter Map Name as 'ofsll.int.bureau' and click 'OK'.

5. Click 'Create Key'. The following window is displayed.



6. Specify the following details:

- Select Map as 'ofsll.int.bureau' from the drop down list.
- Specify Key as 'jdbc\_ds\_key'
- Select Type as 'Generic' from the drop down list.
- Specify the Credential as 'jdbc/QueueAppDS'.

7. Click 'OK'.

8. Similarly you need to create the following Maps and corresponding keys as indicated in following table.

Maps	Keys	Description
ofsll.int.bureau		This map is used to setup keys for all credit bureau interfaces
	ProxyServer	Name of the proxyServer to be configured
	ProxyPort	Port to which ProxyServer is running.
	ExpEcalsURL	The Experian Connection URL to be configured.
	ExpDirectExperianEnabled	If you set value as true, then you would be setting ecals response URL. Else, the Ecals request URL
	ExpCertPath	The location of .jks file which contains the valid certificate for Experian Credit Bureau.
	ExpBusUserNamePassword	Login Credentials to be configured for Experian Business reports.
	ExpConUserNamePassword	Login Credentials to be configured for Experian Consumer reports.
	EfxURL	The Equifax Connection URL to be configured.
	EfxCertPath	The location of .jks file which contains the valid certificate for Equifax Credit Bureau.

Maps	Keys	Description
	EfxUserNamePassword	Login credentials to be configured for accessing Equifax Reports.
	TucCertPath	The location of .p12 file which contains valid certificate for Transunion Bureau.
	TucCertPassword	The password that requires to read the valid .p12 certificate for the Transunion Bureau.
	TucUserNamePassword	Login credentials to be configured for accessing Transunion reports
	TucConnectionURL	The Transunion URL to be configured.
	jdbc_ds_key	Datasource configured to retrieve data for bureau.
	source	Configured as EXTERNAL for actual call.
ofsll.int.out bound		This map is used to setup keys for the RouteOne and Dealer track call back from OFSLL.
	roUserNamePassword	Login Credentials used at the time of call back from OFSLL to RouteOne Interface.
	dtUsernamePassword	Login Credentials used at the time of Call back from OFSLL to Dealer Track Interface.
	jdbc_ds_key	Datasource configured to retrieve data for out-bound Resources.
	roPostDealerUsername-Passwd	Credentials required to upload the dealer details to Route One Portal
	roPostDealerWbsURL	Route One Post Dealer Web Service url
	roDealerUploadURL	Route One URL to upload the Dealer details
	dtPostDealerUsername-Passwd	Credentials required to upload the dealer details to Dealer Track Portal
	dtPostDealerWbsURL	Dealer Track Post Dealer Web Service url
	dtDealerUploadURL	Dealer Track URL to upload the Dealer details
	VertexUserNamePassword	Credentials required to connect to VERTEX web service
	VertexTrustedId	ID required to connect to VERTEX web service
	TorqueItsUserName-Password	Credentials required to connect to TorqueIts web service
	TorqueItsURL	TorqueIts Decision service URL
	ProxyHost	Name of the proxyServer to be configured.
	ProxyPort	Port to which ProxyServer is running.

Maps	Keys	Description
ofsll.int.bip		This Map is used to setup all the Keys required to setup interface with BIP to generate reports.
	local_top_dir	Define the path of the local BIP server where you would like place the generated BIP reports.
	email_from_addr	Define the From Email address to be used while sending email for the generated BIP reports.
	emailBodyContentPath	<p>The path for 'file.properties' file that contains the content of the subject and body required while sending letter, report or correspondence as mail to the applicant or producer.</p> <p>For example; /tmp/file.properties</p> <p>*Refer to note below for details on 'file.properties' file creation for email configuration.</p>
	fax_server	Configure the name of Fax server to be used to fax the generated BIP reports.
	jdbc_ds_key	Datasource configured to retrieve data for BIP.
ofsll.int.file transfer		This map is used to setup keys for all credit bureau interfaces
	sftp_key	Credentials to login to SFTP server(Username/ Password)
	sftp_top_dir	Top root directory for SFTP server
	sftp_servers	SFTP server names
ofsll.int.security	bip_key	This is BIP login credentials
ofsll.int.gri	GriURL	GRI web service URL to be configured.
	GriAPIKey	GRI API key to be configured
	ProxySet	<p>System Level Proxy Enabled/Disabled. Value can be either true or false.</p> <p>True= proxy required</p> <p>False = proxy not required</p>
	ProxyHost	Name of the proxyServer to be configured. Set only if ProxySet =true.
	ProxyPort	Port on which ProxyServer is running. Set only if ProxySet =true.
	jdbc_ds_key	Datasource configured to retrieve the request XML for GRI.

Maps	Keys	Description
	GriCertPath	The location of .jks file which contains the valid certificate for GRI. Configure only when a valid certificate is available.
ofsll.int.common		This map is used to setup keys for common JMS Queue
	OfsllJMSQueueJNDI	The JMS queue JNDI name to be configured
	OfsllJMSQueueCF	The JMS queue connection factory to be configured
	OfsllJMSServerURL	The JMS server url to be configured. Ex: t3://<JMS server host>:<JMS server port>

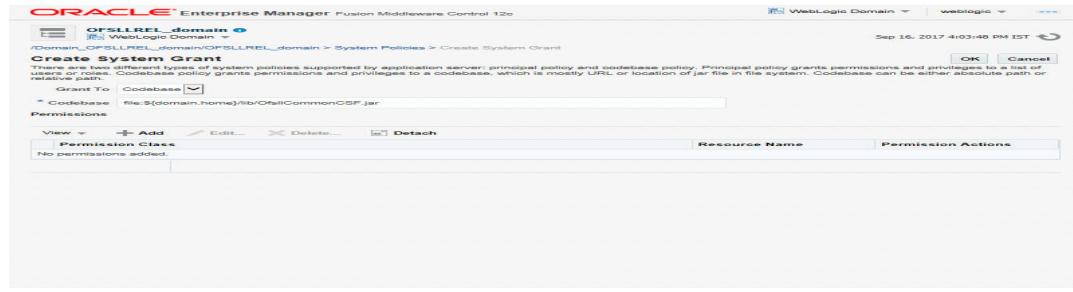
\* A new file(file.properties) needs to be created and copied to the application server in the same path as mentioned in the value corresponding to the key 'emailBodyContentPath' under the map 'ofsll.int.bip'. The file should have the following contents:

- letter\_subject='Text that is configurable and would be the subject of the mail'
- letter\_body='Text that is configurable and would be the body of the mail'
- correspondence\_subject='Text that is configurable and would be the subject of the mail'
- correspondence\_body='Text that is configurable and would be the body of the mail'
- report\_subject='Text that is configurable and would be the subject of the mail'
- report\_body='Text that is configurable and would be the body of the mail'

9. On the left panel, right click on OFSLLREL\_domain and select Security > System Policies. The following window is displayed.

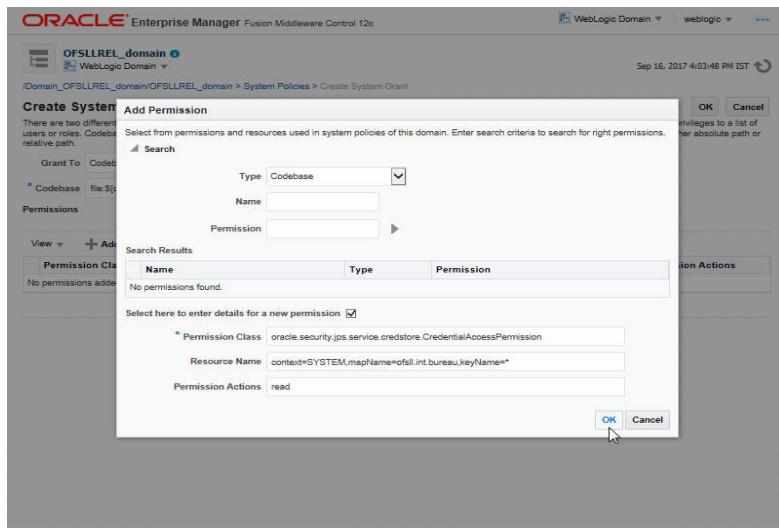
The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface. The top navigation bar includes 'WebLogic Domain' and 'weblogic'. The main title is 'ORACLE® Enterprise Manager Fusion Middleware Control 12c'. The current path is '/Domain\_OFSSLREL\_domain/OFSSLREL\_domain > System Policies'. The page header 'System Policies' is displayed, with a sub-instruction: 'System policies are the system-wide policies applied to all applications deployed to current management domain. You can grant special permissions and privileges to principal or codebase.' Below this, there is a 'Policy Store Provider' section and a 'Search' section. The 'Search' section contains a 'Type' dropdown set to 'Codebase', a 'Name' search field with 'Starts With' dropdown, and a 'Create...' button highlighted with a cursor. The main content area shows a table with a single row: 'Name' and 'No security policies found.'

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



11. Enter the codebase as 'file:\${domain.home}/lib/OfsllCommonCSF.jar'

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



13. Select the check box 'Select here to enter details for a new permission'.

14. Specify the following details as the first permission class.

Permission Class	Resource Name	Permission Actions
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.bureau,keyName=*	read
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.filetransfer,keyName=*	read
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.outbound,keyName=*	read
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.bip,keyName=*	read
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.gri,keyName=*	read
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.common,keyName=*	read

Permission Class	Resource Name	Permission Actions
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.http.listener.jndi,KeyName=*	read

15. Click 'OK'.

## 9.5 JMS Queue Configuration

JMS queue is used to hold webservice invocation exception messages. It provides a mechanism for third parties to handle communication related failures.

Perform the following steps to configure JMS queue in application server.

- [Create JMS Server](#)
- [Create JMS Module](#)
- [Subdeployment](#)
- [Create JMS Connection Factory](#)
- [Create JMS Queue](#)

### 9.5.1 Create JMS Server

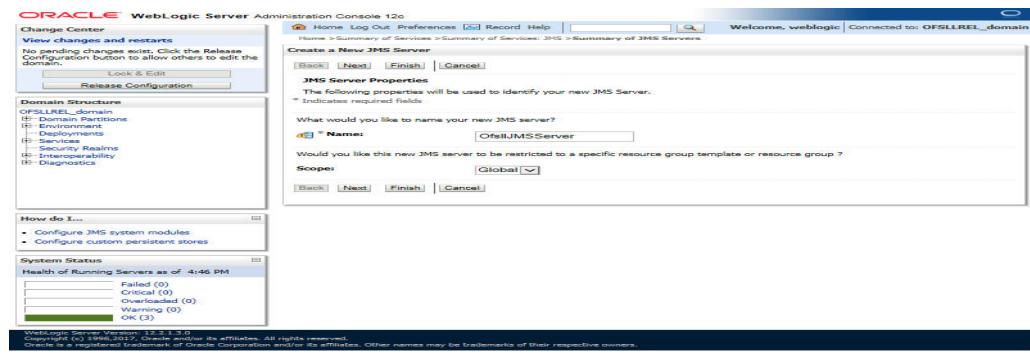
1. Login to WebLogic Server 12c console (<http://hostname:port/console>). The following screen is displayed.



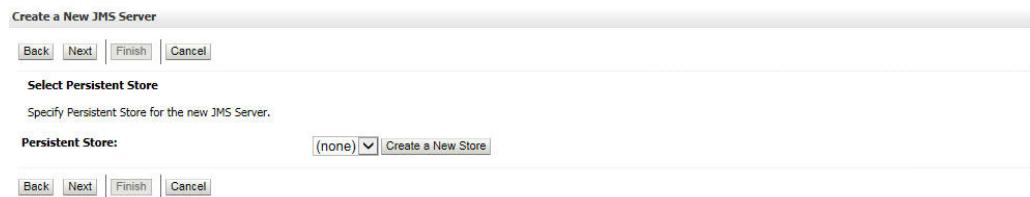
2. Specify the Weblogic administrator user name and password and click 'Log In'. The Oracle Weblogic home page is displayed.

3. Click Domain Name > Services > Messaging > JMS Server.  
 4. In the main window, click 'Lock & Edit'. The following window is displayed.

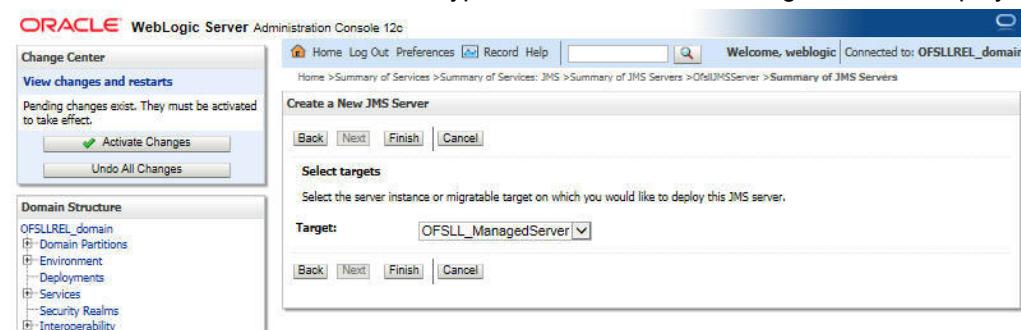
5. Click 'New'. The following window is displayed.



6. Specify the JMS Server Name as 'OfsllJMServer'. Click 'Next', the following window is displayed.

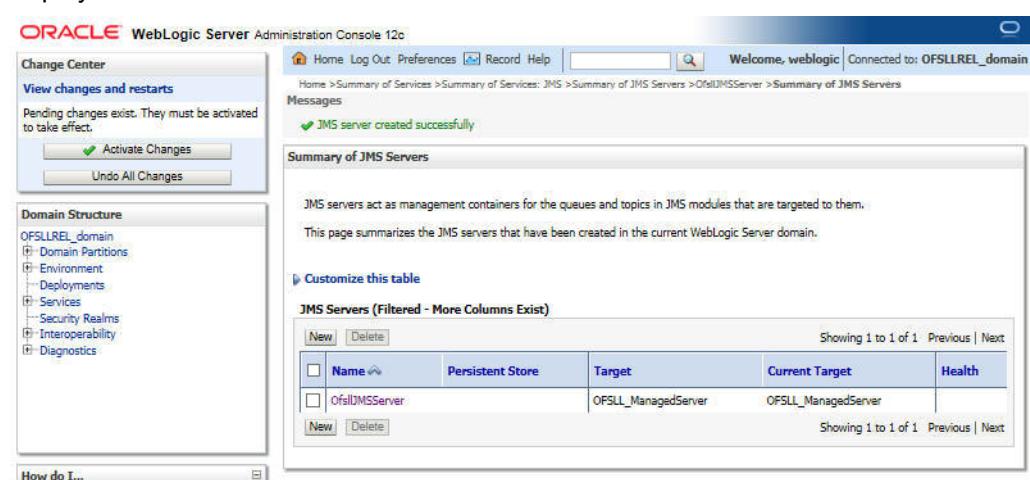


7. Select 'None' as the Persistent Store type. Click 'Next', the following window is displayed.



8. Select the target managed server and click 'Finish'.

9. Click 'Activate Changes' under Change Center. Once done, the following window is displayed:



## 9.5.2 Create JMS Module

1. Login to WebLogic Server 12c console (<http://hostname:port/console>) by specifying the Weblogic administrator user name and password.

2. Click Domain Name > Services > Messaging > JMS Modules. The following window is displayed.

Name	Type	Scope	Domain Partitions
AQMModule	JMSSystemResource	Global	

3. Click 'New'. The following screen is displayed.

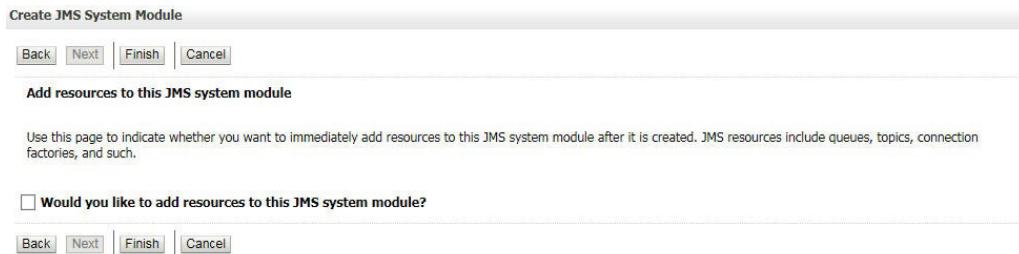
4. Specify the following details:

- Enter the System Module Name as 'OfslIJMSModule'
- Enter the Description File Name as 'OfslIJMSModule'

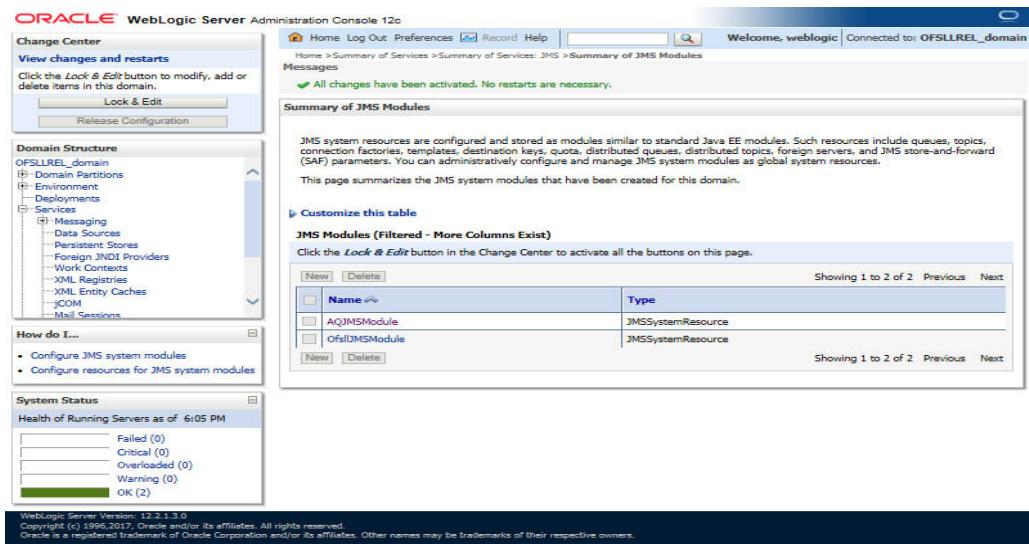
5. Click 'Next'. The following screen is displayed.

Servers
<input type="checkbox"/> AdminServer
<input checked="" type="checkbox"/> OFSLI_ManagedServer
<input type="checkbox"/> WS_ManagedServer

6. Select the target server and click 'Next'. The following window is displayed.

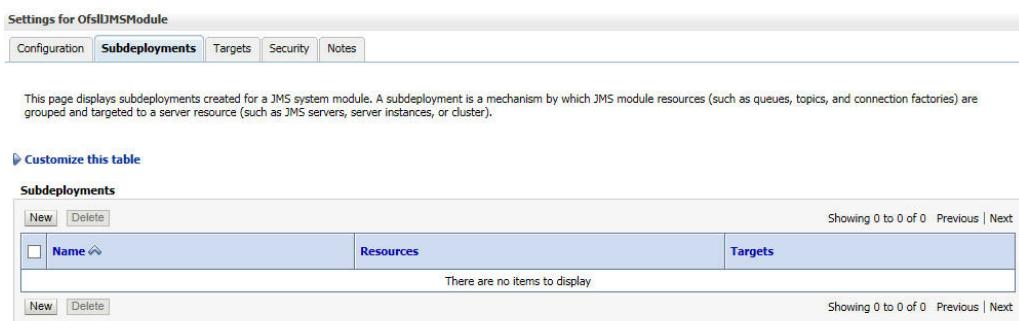


7. Click 'Finish' to save and activate the changes. Once done, the following window is displayed.

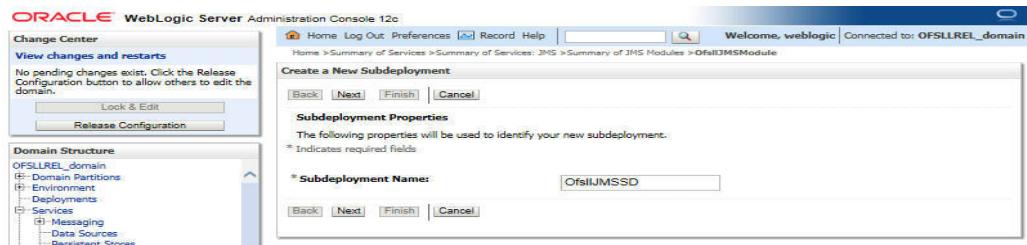


### 9.5.3 Subdeployment

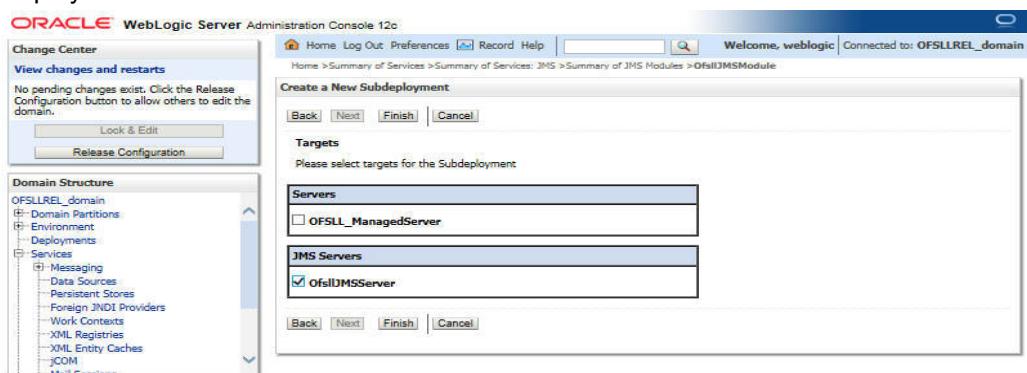
1. Login to WebLogic Server 12c console (<http://hostname:port/console>) by specifying the Weblogic administrator user name and password.
2. Click Domain Name > Services > Messaging > JMS Modules. The main window displays the list of JMS modules available.
3. Select the created JMS module 'OfallJMSModule' and click 'Subdeployments' tab. The following window is displayed.



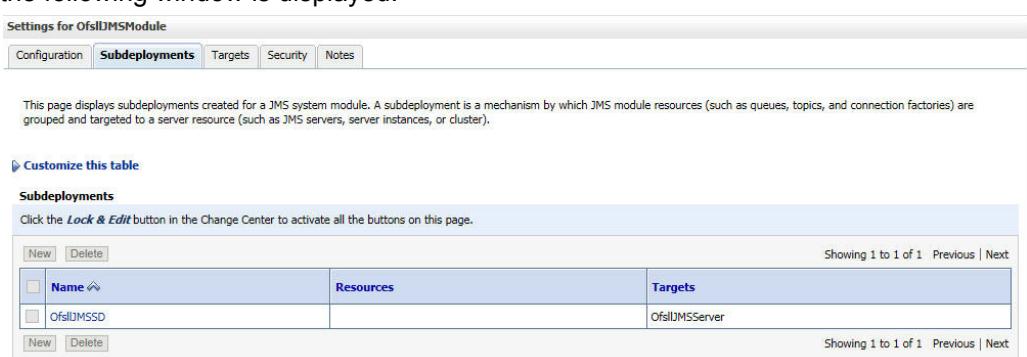
4. Click 'New'. The following screen is displayed.



5. Specify the Subdeployment Name as 'OfslIJMSSD'. Click 'Next', the following window is displayed.



6. Select the check box against the newly created JMS Server and click 'Finish'. Once done, the following window is displayed.



You can further click 'New' to create more Queues and repeat the steps explained above.

#### 9.5.4 Create JMS Connection Factory

1. Login to WebLogic Server 12c console (<http://hostname:port/console>) by specifying the Weblogic administrator user name and password.
2. Click Domain Name > Services > Messaging > JMS Modules. The main window displays the list of JMS modules available.

3. Select the newly created JMS module 'OfslIJMSModule'. The following window is displayed.

Name	Type
AQJMSModule	JMSSystemResource
<b>OfslIJMSModule</b>	<b>JMSSystemResource</b>

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

Name	Type	JNDI Name	Subdeployment	Targets
There are no items to display				

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

<input checked="" type="radio"/> Connection Factory	Defines a set of connection configuration parameters that are used to create connections for JMS clients. <a href="#">More Info...</a>
<input type="radio"/> Queue	Defines a point-to-point destination type, which are used for synchronous peer communications. A message is sent to a queue and distributed to only one consumer. <a href="#">More Info...</a>
<input type="radio"/> Topic	Defines a publish/subscribe destination type, which are used for asynchronous peer communications. A message is sent to a topic and distributed to all topic consumers. <a href="#">More Info...</a>
<input type="radio"/> Distributed Queue	Defines a set of queues that are distributed on multiple JMS servers, but which are accessible as a single, logical queue to JMS clients. <a href="#">More Info...</a>
<input type="radio"/> Distributed Topic	Defines a set of topics that are distributed on multiple JMS servers, but which are accessible as a single, logical topic to JMS clients. <a href="#">More Info...</a>
<input type="radio"/> Foreign Server	Defines foreign messaging providers or remote WebLogic servers. <a href="#">More Info...</a>

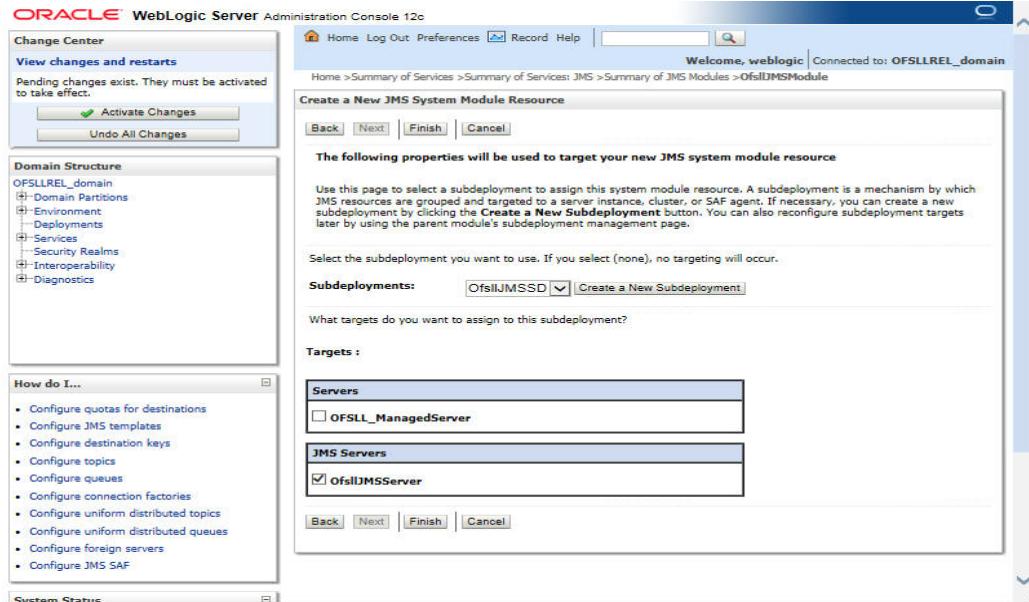
6. Select 'Connection Factory' option and click 'Next'. The following window is displayed.

7. Specify the following details:

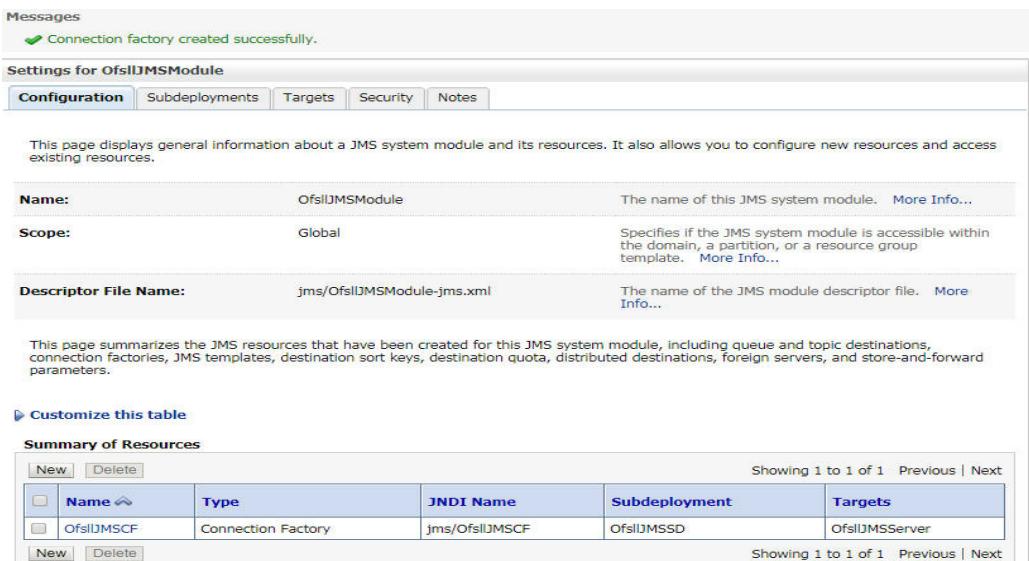
- Enter the Name of the Connection Factory as 'OfsIJMSCF'
- Enter the JNDI Name as 'jms/OfsIJMSCF'
- Select the check box 'XA Connection Factory Enabled'

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

9. Click 'Advanced Targeting'. The following window is displayed.



10. Select the Subdeployments as 'OfslIJMSSD' from the drop down list.  
 11. Under JMS Servers, select the check box against 'OfslIJMSServer'.  
 12. Click 'Finish' to save and activate the changes. Once done, the following window is displayed.



### 9.5.5 Create JMS Queue

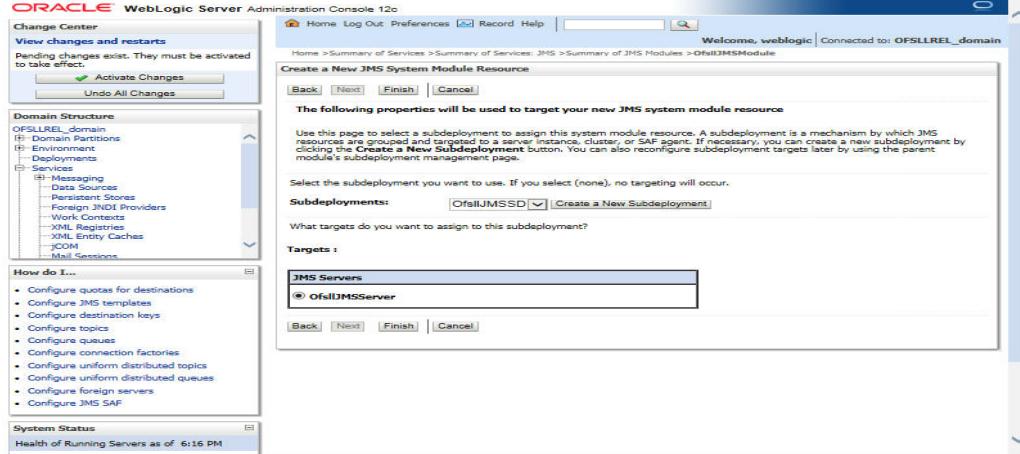
1. Login to WebLogic Server 12c console (<http://hostname:port/console>) by specifying the Weblogic administrator user name and password.
2. Click Domain Name > Services > Messaging > JMS Modules. The main window displays the list of JMS modules available.

3. Select the newly created JMS module 'OfsIJMSModule'. The following window is displayed.

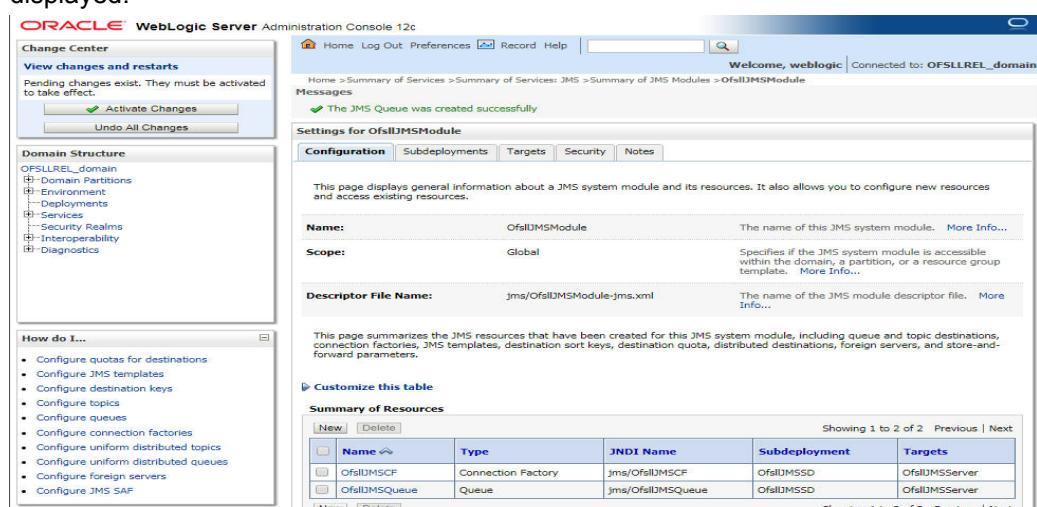
4. Click 'New'. The following window is displayed.

5. Select the 'Queue' option and click 'Next'. The following window is displayed.

- Specify the following details while creating new JMS System Module Resources:
  - Enter the Name of the Queue as 'OfsIIJMSQueue'
  - Enter the JNDI Name as 'jms/OfsIIJMSQueue'
  - Select the Template as 'None'
- Click 'Next'. The following window is displayed.



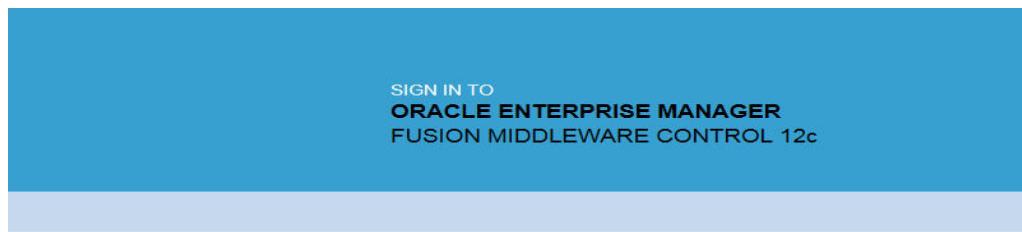
- Select the Subdeployments as 'OfsIIJMSSD' from the drop-down list.
- Click 'Finish' to save and activate the changes. Once done, the following window is displayed.



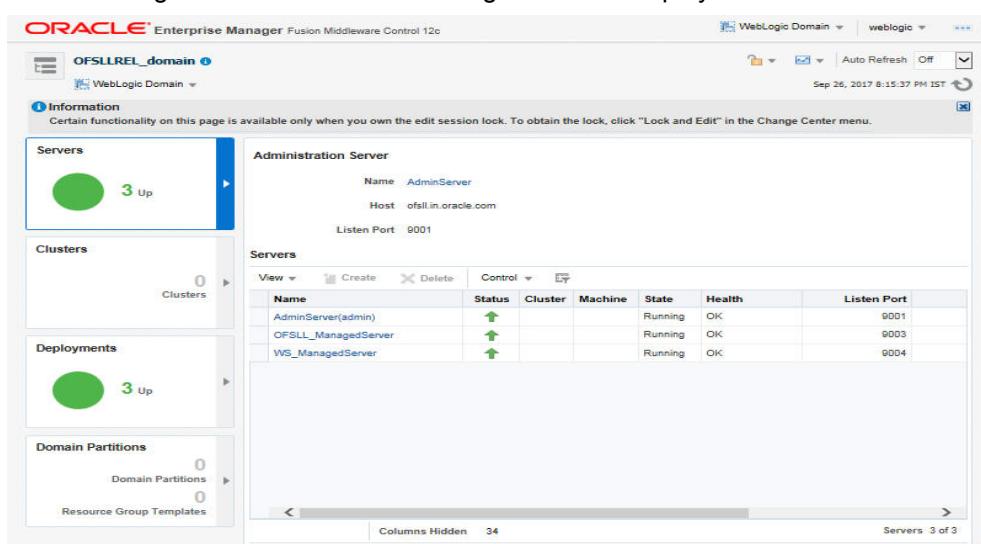
You can further click 'New' to create more Queues and repeat the steps explained above.

## 9.6 Deploy MDB EJB

1. Login to Web Logic application server enterprise manager (e.g.:<http://hostname:port/em>)



2. Enter valid login credentials. The following window is displayed.



3. Select 'Lock & Edit' option in the lock drop-down list available in the header.

4. Click 'Deployment' in the left panel. The following window is displayed.

Name	Status	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	Up			Running	OK	9001
OFSSL\_ManagedServer	Up			Running	OK	9003
WS\_ManagedServer	Up			Running	OK	9004

 The right sidebar shows a context menu with options like 'Edit Sessions', 'Lock & Edit', 'View Change List', 'View & Resolve Conflicts', 'Release Configuration', 'Activate Changes', 'Undo All Changes', 'View Restart Checklist', 'Preferences', and 'Help'."/>

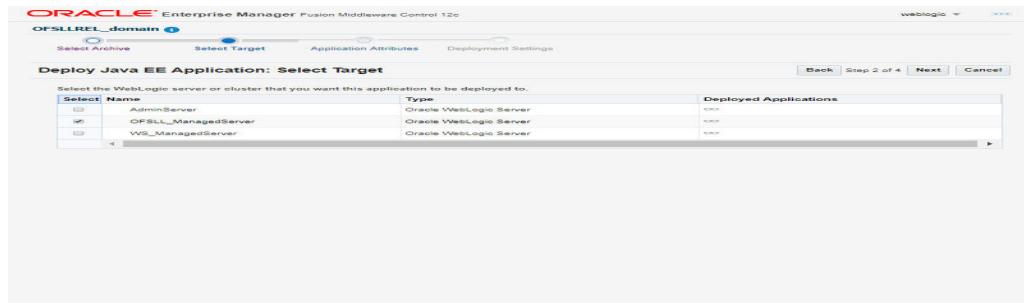
5. Select 'Deploy' from the Deployment drop-down list. The following window is displayed.

Name	Status	State	Health	Type	Domain Partition	Targets
ofssl145(V14)	Up (2)			Enterprise Application		OFSSLREL\_ManagedServer
opss-rest	Up (2)			Web Application		OFSSLREL\_AdminServer

 The right sidebar shows a context menu with options like 'Deploy', 'Redeploy', 'Undeploy', and 'Fetch Deployment Plan'."/>

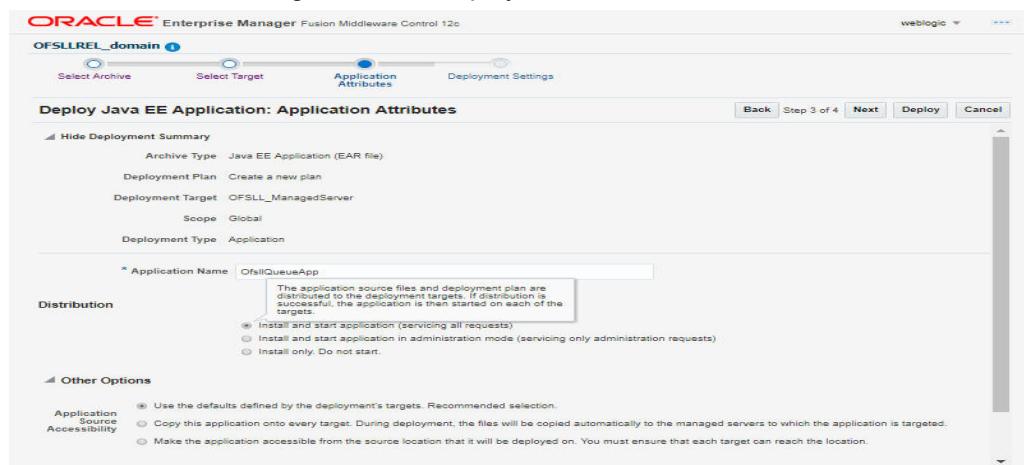
6. The following window is displayed.

7. Browse to the folder containing the MDB EJB. Eg: C:/OfsllQueueApp.ear
8. Click 'Next'. The following window is displayed.



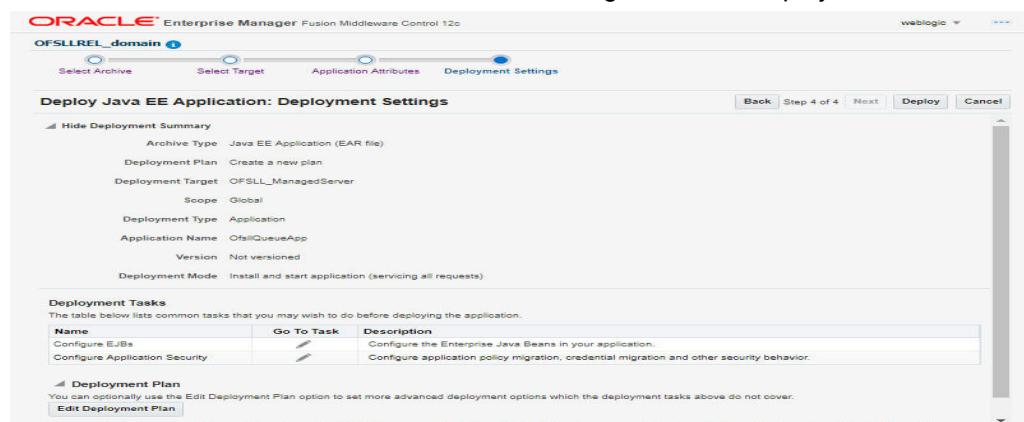
9. Select the server on which the MDB EJB needs to be deployed.

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

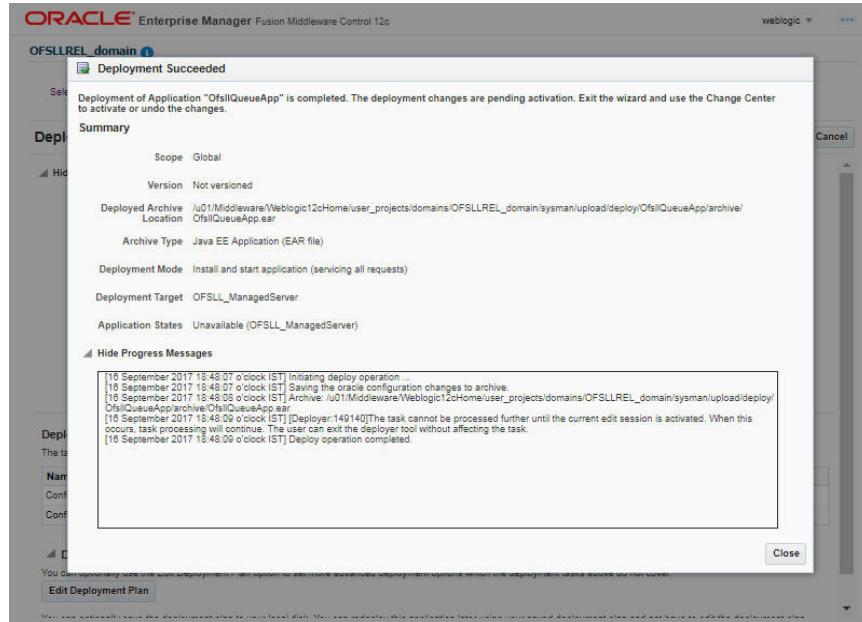


11. Select the option 'Install and start application (servicing all requests)'.

12. Check the context root and click 'Next'. The following window is displayed.



13. Click 'Deploy'. On successful deployment, the following window is displayed.



14. Click 'Close'. Post deployment, you need to activate the changes by selecting 'Active Changes' option from 'Edit Session' drop-down list as indicated in step 4 above.

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#### Note

While starting the 'OFSSLREL\_ManagedServer', always start with option '-DUseSunHttpHandler=true' to enforce the weblogic server to uses SUN SSL implementation.

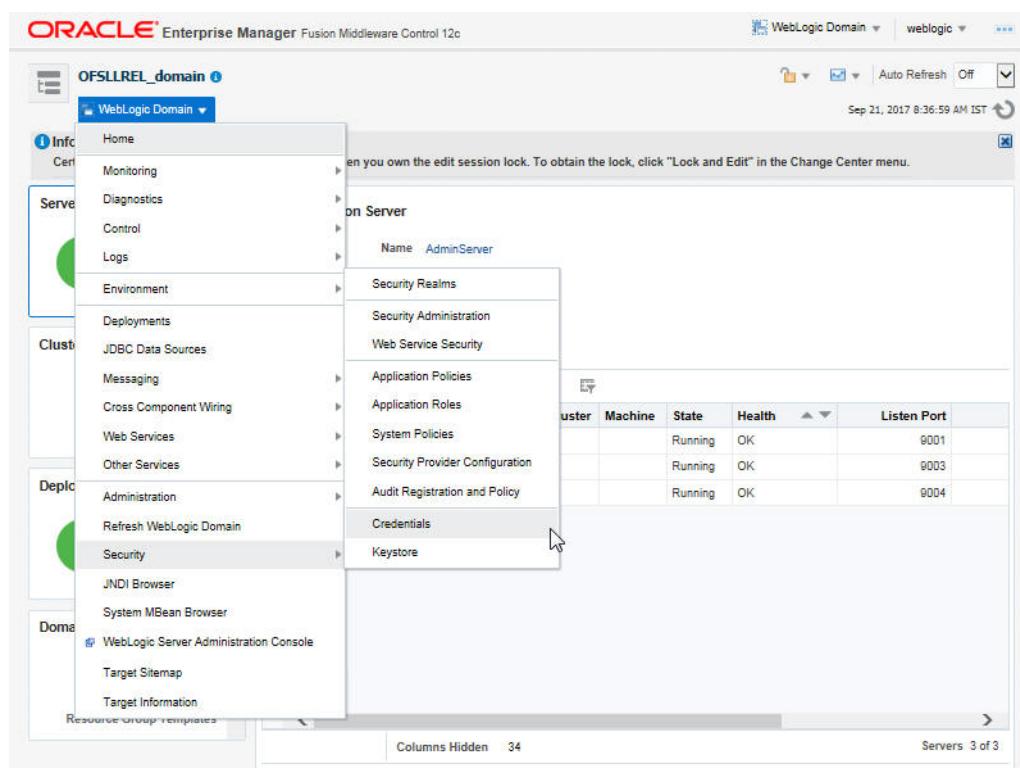
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## 10. Configuring Oracle BI Publisher for Application

1. Copy the OfsllCommonCSF.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}  
-Dofsll.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.



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

The screenshot shows the Oracle Enterprise Manager interface. The top navigation bar includes 'WebLogic Domain' and 'weblogic'. The main content area is titled 'Credentials' under 'OFSLLREL\_domain'. A sub-menu 'Credential Store Provider' is open, showing a list of credentials: 'ofssl.http.listener.jndi' and 'ofssl.int.bureau'. A red box highlights the 'Create Map' button in the toolbar above the list.

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

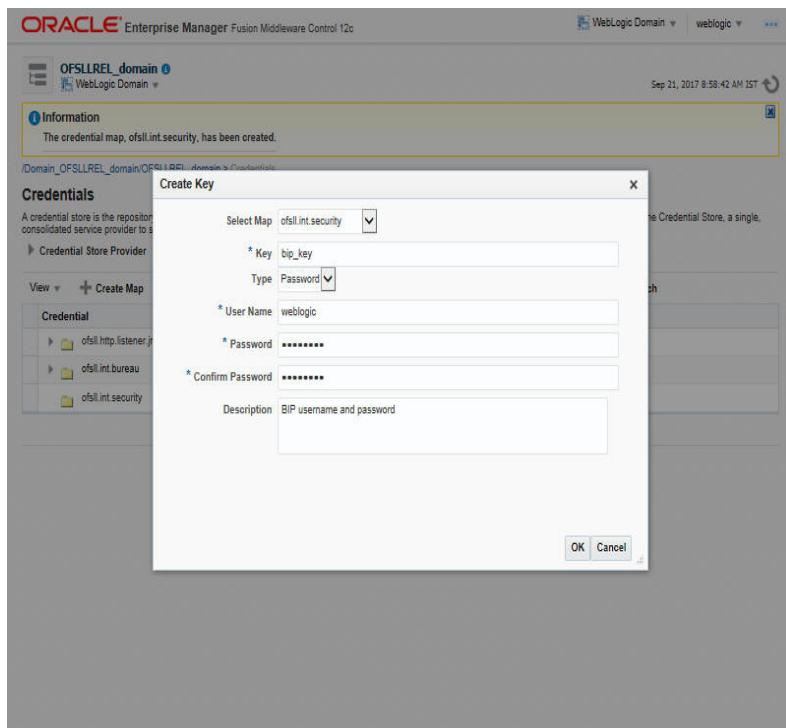
The screenshot shows the 'Create Map' dialog box. It has a 'Map Name' field containing 'ofssl.int.security'. Below the field are 'OK' and 'Cancel' buttons. The background shows the 'Credentials' page of the Oracle Enterprise Manager interface.

6. Click 'OK'.

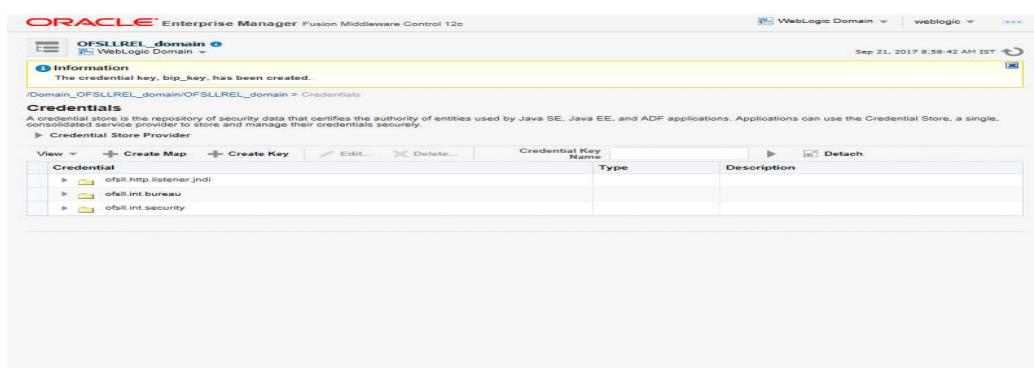
The screenshot shows the Oracle Enterprise Manager interface after creating the credential map. A yellow box highlights an 'Information' message: 'The credential map, ofssl.int.security, has been created.' Below this message, the 'Credentials' page is visible, showing the newly created map 'ofssl.int.security' in the list of credentials.

7. Click 'Create Key' Button.

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



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



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

The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface. The left navigation pane is open, showing the 'OFSLL\_domain' WebLogic Domain. The 'Security' menu is expanded, and the 'System Policies' option is highlighted with a mouse cursor. To the right of the menu, a table titled 'System Policies' is displayed, showing columns for 'Initial Key Name', 'Type', and 'Description'. The table is currently empty.

11. Click 'Create'.

The screenshot shows the 'System Policies' list in the Oracle Enterprise Manager interface. The 'Create' button is highlighted with a mouse cursor. The table below shows no results found.

Name
No security policies found.

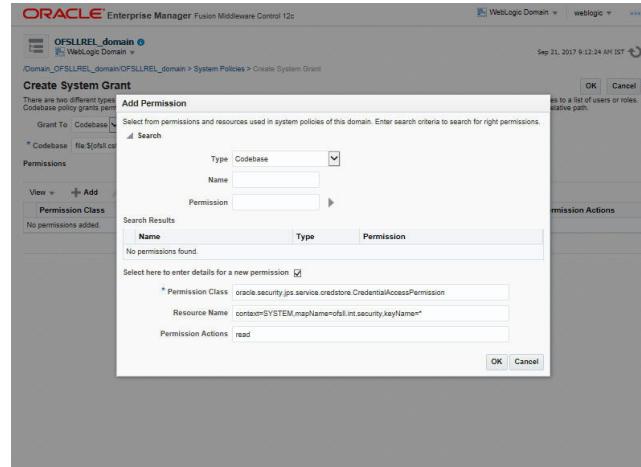
12. The following window is displayed. Enter the codebase as 'file:\${ofsll.csf.path}/lib/OfsllCommonCSF.jar' and click 'Add'.

The screenshot shows the 'Create System Grant' dialog in the Oracle Enterprise Manager interface. The 'Grant To' dropdown is set to 'Codebase'. The 'Codebase' field contains the value 'file:\${ofsll.csf.path}/lib/OfsllCommonCSF.jar'. The 'Add' button is highlighted with a mouse cursor.

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.

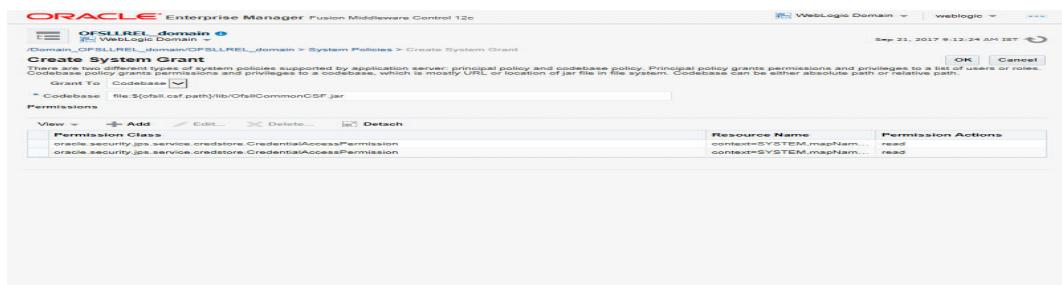
- Permission Class: `oracle.security.jps.service.credstore.CredentialAccessPermission`
- Resource Name: `context=SYSTEM,mapName=ofsll.int.security,keyName=*`

- Permission Actions: read



### 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=ofsl1.http.listener.jndi,keyName=\*
  - Permission Actions: read
2. Click 'OK'. The following window is displayed.



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

ORACLE Enterprise Manager Fusion Middleware Control 12c

WebLogic Domain weblogic Sep 21, 2017 9:18:01 AM IST

Information  
A new security grant has been added successfully.

/Domain\_OFSSLREL\_domain/OFSSLREL\_domain > System Policies

**System Policies**

System policies are the system-wide policies applied to all applications deployed to current management domain. You can grant special permissions and privileges to principal or codebase.

Policy Store Provider

Search

Select a grant type and enter search keyword for codebase or principal to query system security grants.

Type: Codebase

Name: Starts With

View: Create... Create Like... Edit... Delete... Detach

Name

No security policies found.

# 11. Launching Application

## Verifying Successful Application Deployment and Launching Application

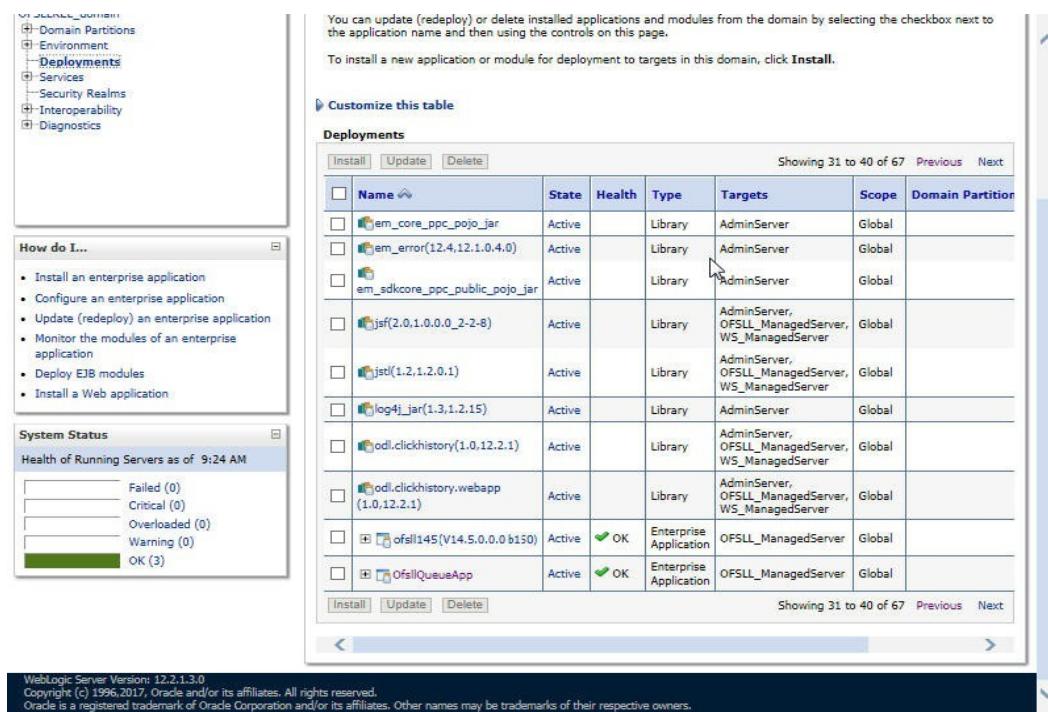
Successful Application deployment can be verified by following:

- Making sure that the state is ACTIVE and health is 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'.

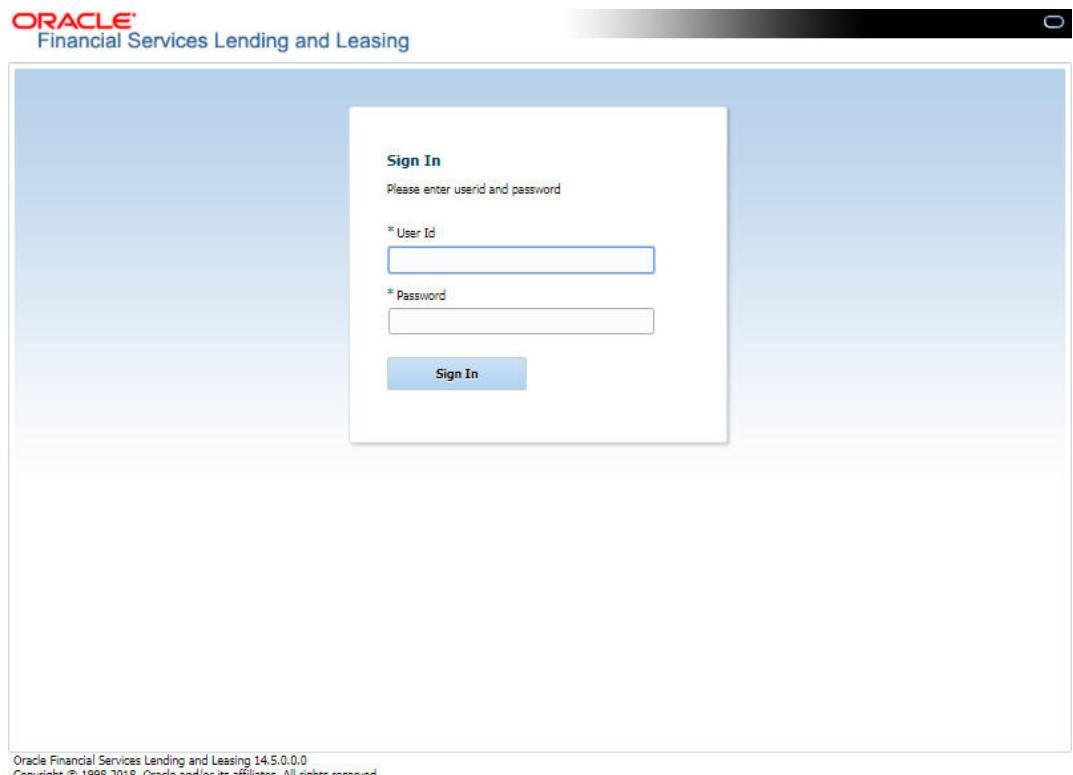


Name	State	Health	Type	Targets	Scope	Domain Partition
em_core_ppc_pojo_jar	Active		Library	AdminServer	Global	
em_error(12.4,12.1.0.4.0)	Active		Library	AdminServer	Global	
em_sdkcore_ppc_public_pojo_jar	Active		Library	AdminServer	Global	
jsf(2.0.1.0.0.0_2-2-8)	Active		Library	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global	
jstl(1.2.1.2.0.1)	Active		Library	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global	
log4j_jar(1.3.1.2.15)	Active		Library	AdminServer	Global	
odl.clickhistory(1.0.12.2.1)	Active		Library	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global	
odl.clickhistory.webapp(1.0.12.2.1)	Active		Library	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global	
ofssl145(V14.5.0.0.0 b150)	Active	OK	Enterprise Application	OFSLL_ManagedServer	Global	
OfsllQueueApp	Active	OK	Enterprise Application	OFSLL_ManagedServer	Global	

WebLogic Server Version: 12.2.1.3.0  
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Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

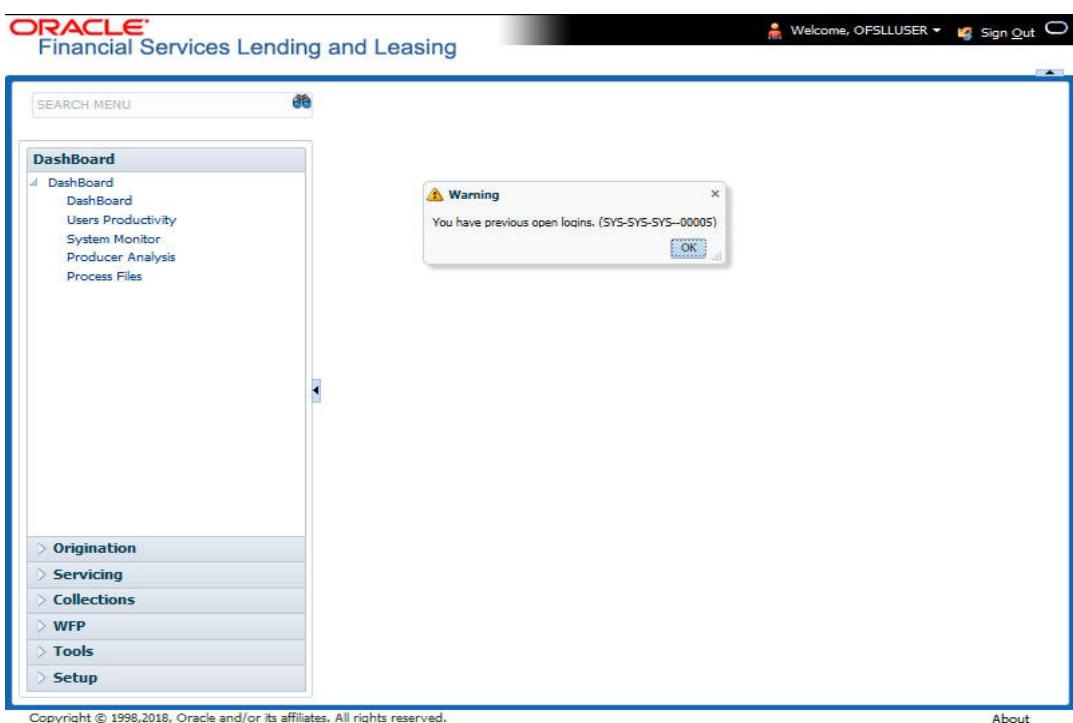
2. The URL of the OFSLL application will be of the format - https://<hostname>:<Port>/<ContextName>/faces/pages/OfsllSignIn.jsf (Example: https://localhost:7003/ofssl/faces/pages/OfsllSignIn.jsf)

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



The screenshot shows the 'Sign In' page of the Oracle Financial Services Lending and Leasing application. The page has a light blue header with the 'ORACLE' logo and the text 'Financial Services Lending and Leasing'. Below the header is a large white 'Sign In' form. The form contains the following fields: 'User Id' (marked with an asterisk) and 'Password' (also marked with an asterisk). Below the password field is a 'Sign In' button. At the bottom of the page, there is a small copyright notice: 'Oracle Financial Services Lending and Leasing 14.5.0.0.0 Copyright © 1998-2018, Oracle and/or its affiliates. All rights reserved.'

4. After successful login, the following screen is displayed



The screenshot shows the Oracle Financial Services Lending and Leasing dashboard after a successful login. The dashboard has a dark blue header with the 'ORACLE' logo, the text 'Financial Services Lending and Leasing', and a 'Welcome, OFSLLUSER' message. On the right side of the header are 'Sign Out' and a user icon. The main area of the dashboard features a 'DashBoard' sidebar with options like 'DashBoard', 'Users Productivity', 'System Monitor', 'Producer Analysis', and 'Process Files'. Below this is a 'SEARCH MENU' bar. To the right of the sidebar is a 'Warning' dialog box with a yellow exclamation mark icon. The dialog box contains the text 'You have previous open logins. (SYS-SYS-SYS-00005)' and an 'OK' button. At the bottom of the dashboard, there is a copyright notice: 'Copyright © 1998-2018, Oracle and/or its affiliates. All rights reserved.' and a 'About' link.

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## 12. Installing Upgrade

There is an infrastructure upgrade required (from 12.2.1.0.0 fusion middleware to 12.2.1.3.0 fusion middleware) when upgrading from OFSLL 14.3.1.0.0 to OFSLL 14.5.0.0.0.

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### Note

If you have deployed OFSLL 14.4.0.0.0 on Fusion Middleware 12.2.1.0.0, please upgrade to Fusion Middleware 12.2.1.3.0. Once done, refer to 'Prerequisites' section for additional information on the same.

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