

Application Installation Guide

Oracle Financial Services Lending and Leasing

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Application Installation Guide
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Oracle Financial Services Lending and Leasing User Documentation

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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, OAS (Oracle Analytic Server) 5.9.0.

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 JMS Queue](#)
- [Configure Oracle JET](#)
- [Configuring Oracle Analytics Publisher for Application](#)
- [Launching Application](#)

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 jdk1.8.0_281 or above (<https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>)
 2. Oracle WebLogic Server 12c Version 12.2.1.4.0 (<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 12.2.1.4.0 with the following patch numbers are to be applied - 31960985 and 32097167.

Note

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

1.2 Audience

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

1.3 Conventions Used

Term	Refers to
Application	Oracle Financial Services Lending and Leasing

2. Installing Software

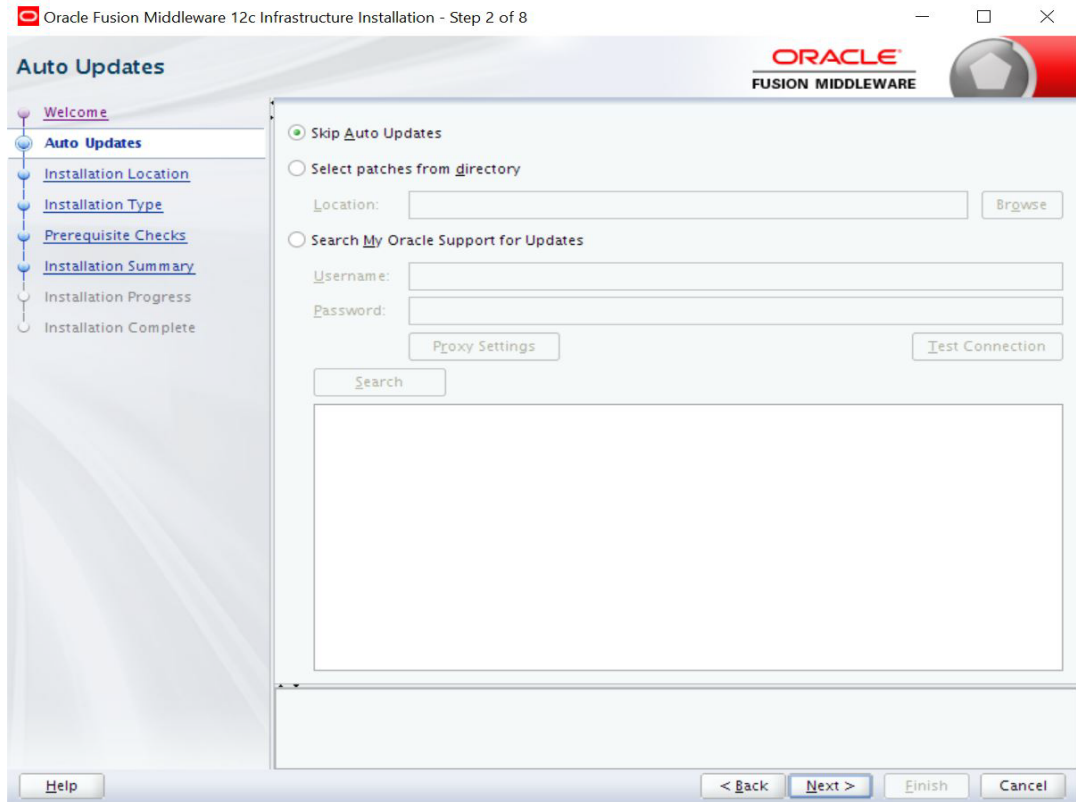
2.1 Installing Oracle WebLogic Server 12c

To install using generic Weblogic installer

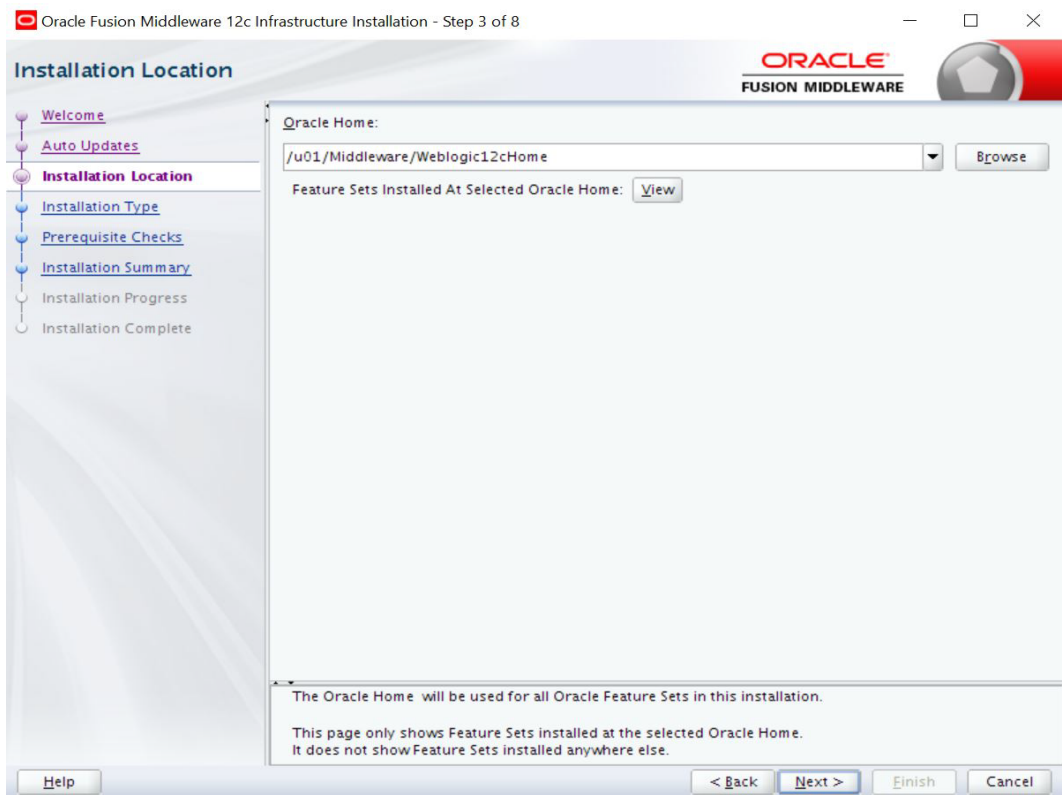
1. Run the command `> java -jar fmw_12.2.1.4.0_infrastructure.jar`
2. Welcome screen is displayed as shown below. Click Next.



3. The following window is displayed.

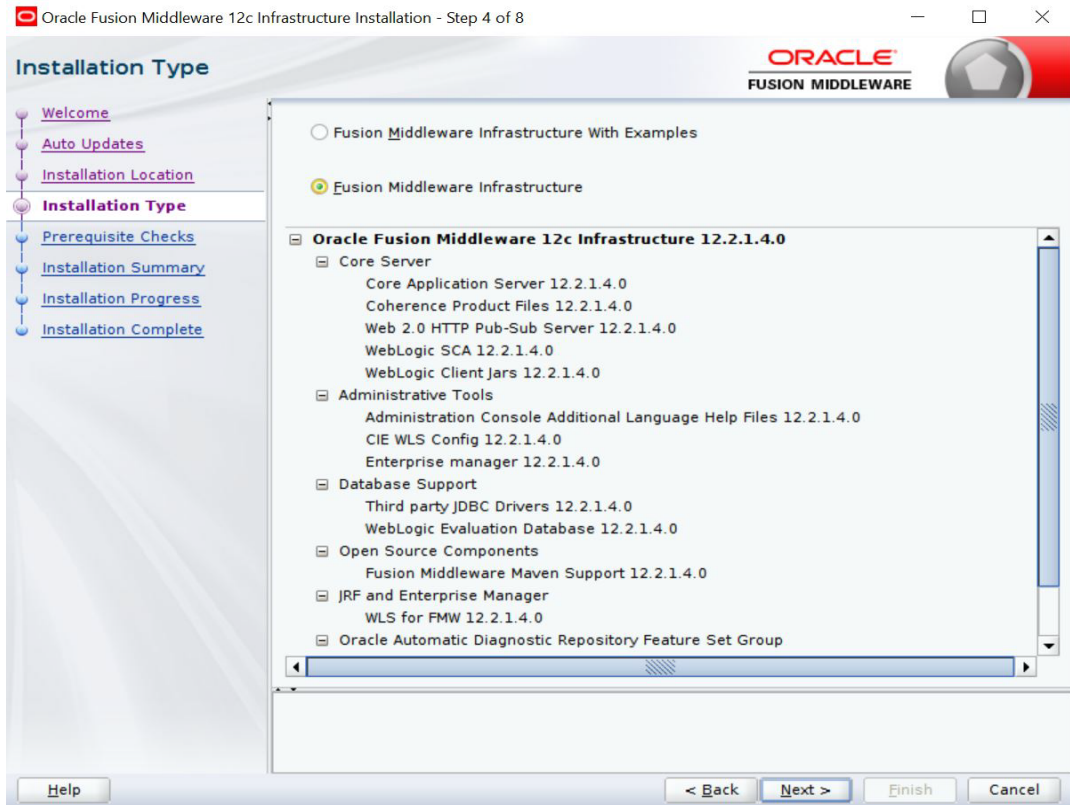


4. Select 'Skip Auto Updates' and Click 'Next'.

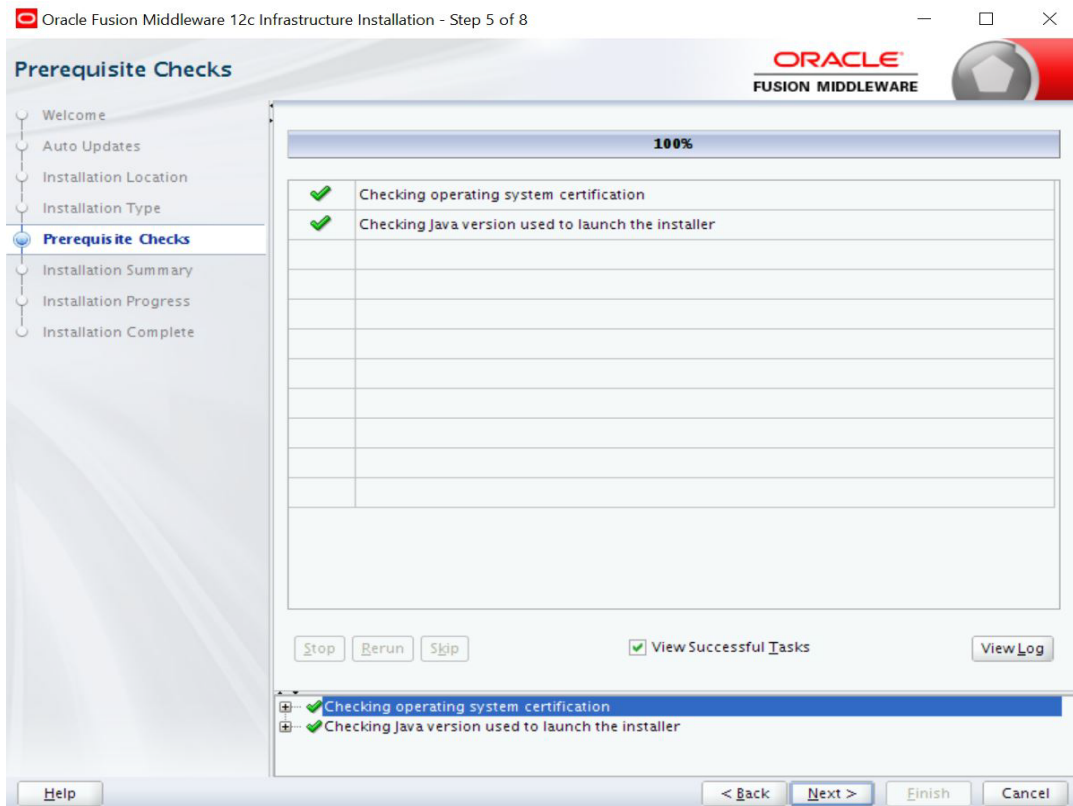


5. Specify the path for Middleware Home Directory.

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



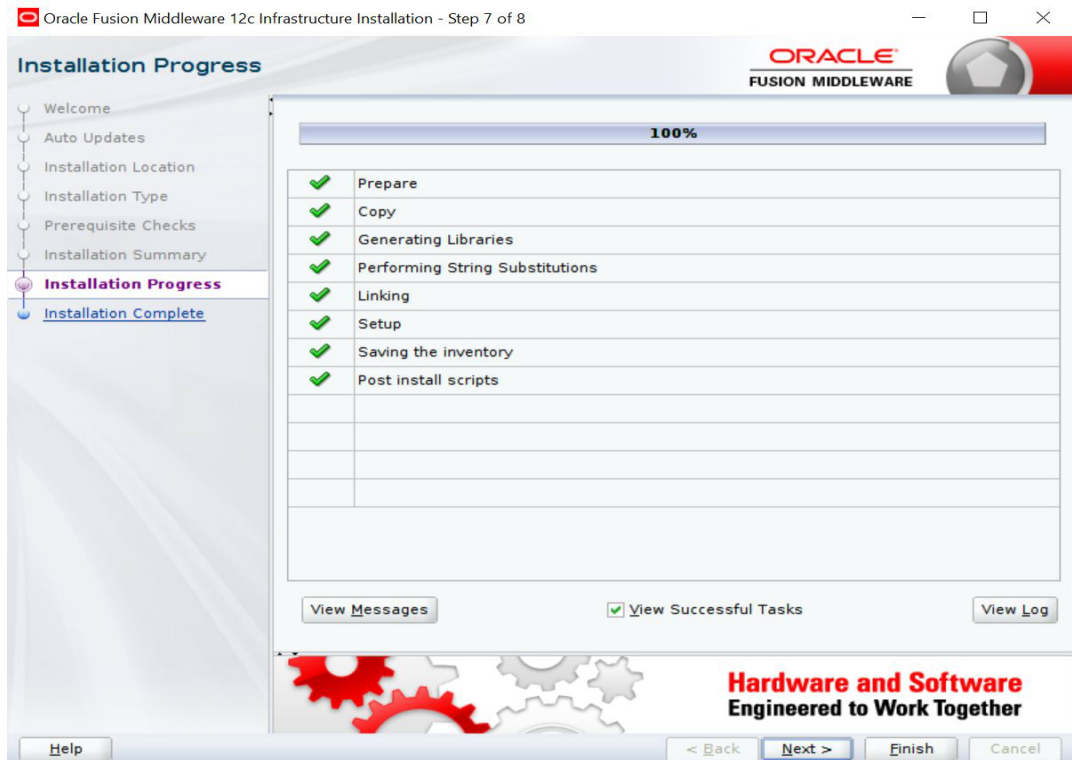
7. Select the option 'Fusion Middleware Infrastructure'. Click 'Next'.



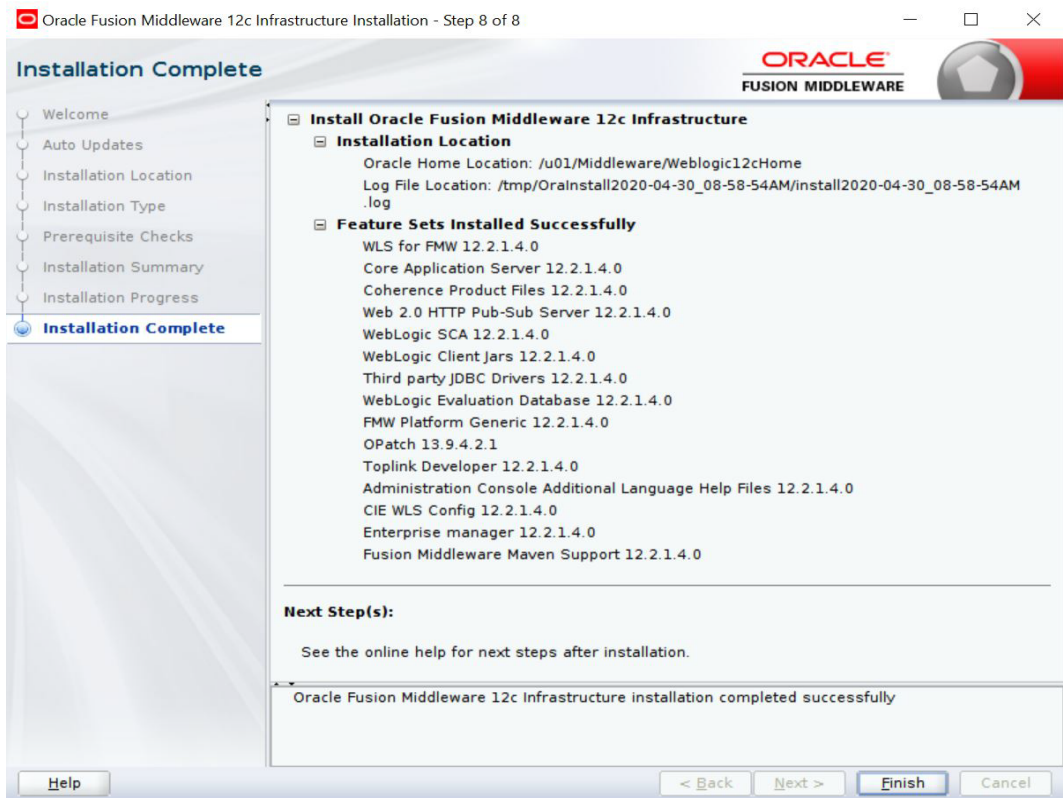
8. Click 'Next'. The following window is displayed.



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



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

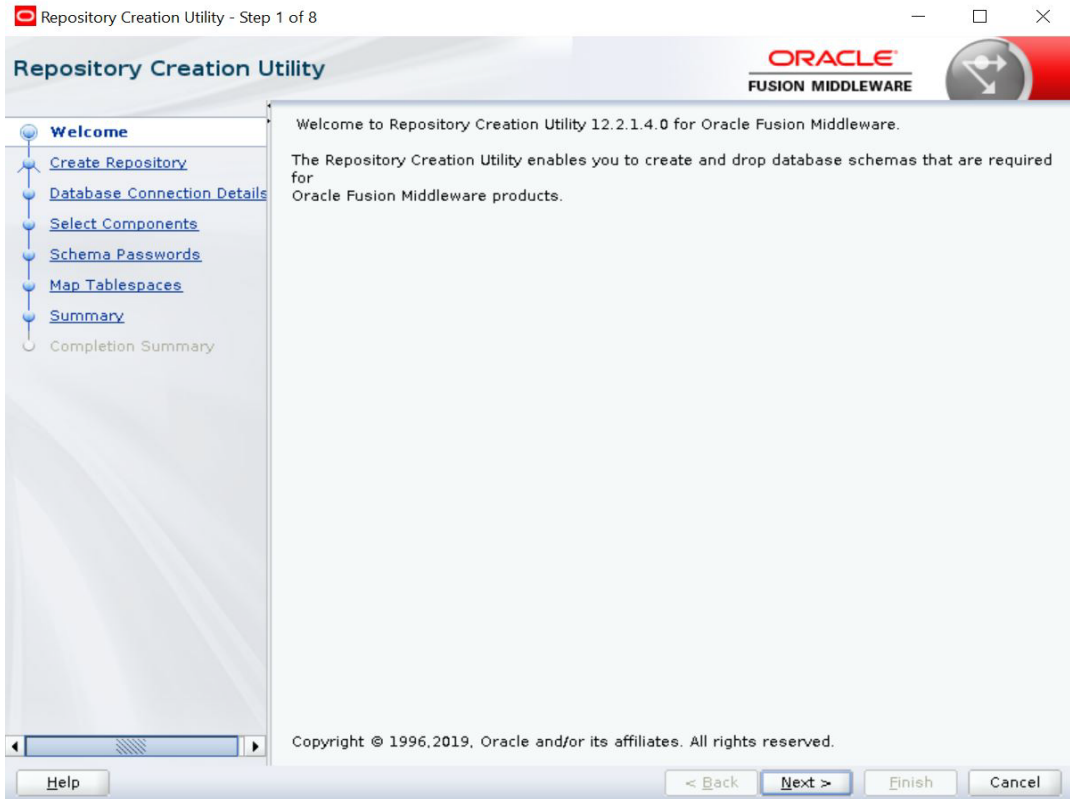


11. Click 'Finish' to close the window.

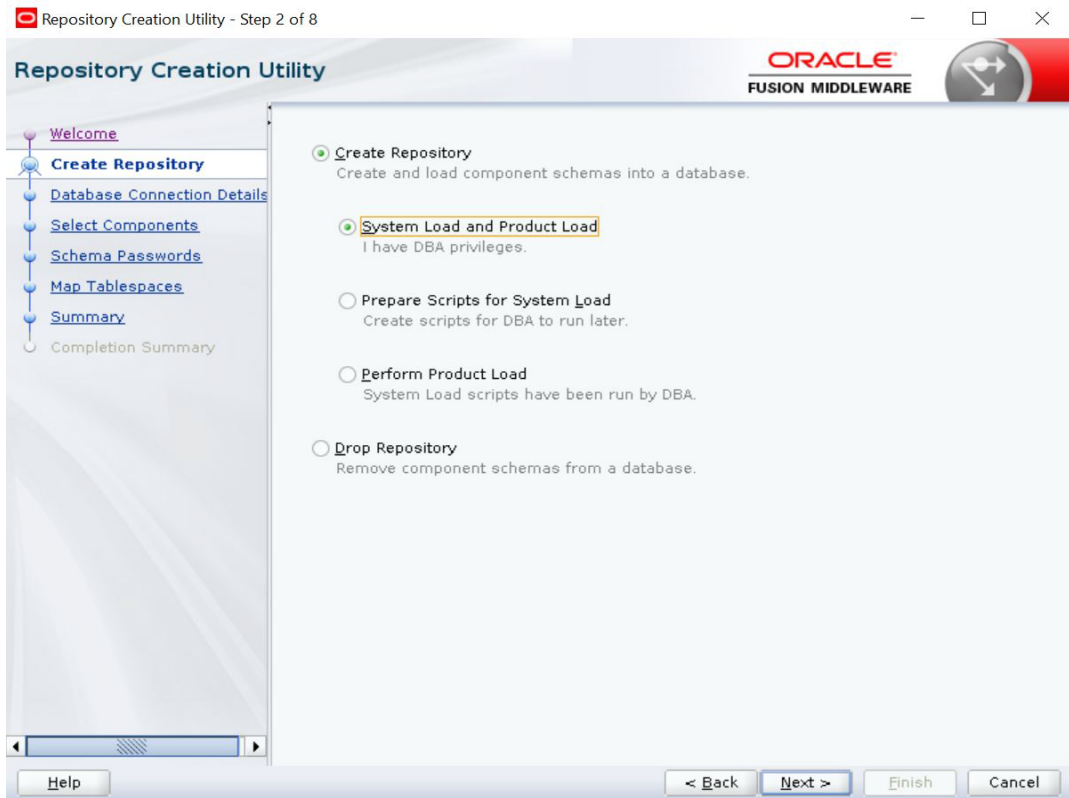
3. Creating Domains, Repositories, Data Sources

3.1 Creating Schemas using Repository Creation Utility

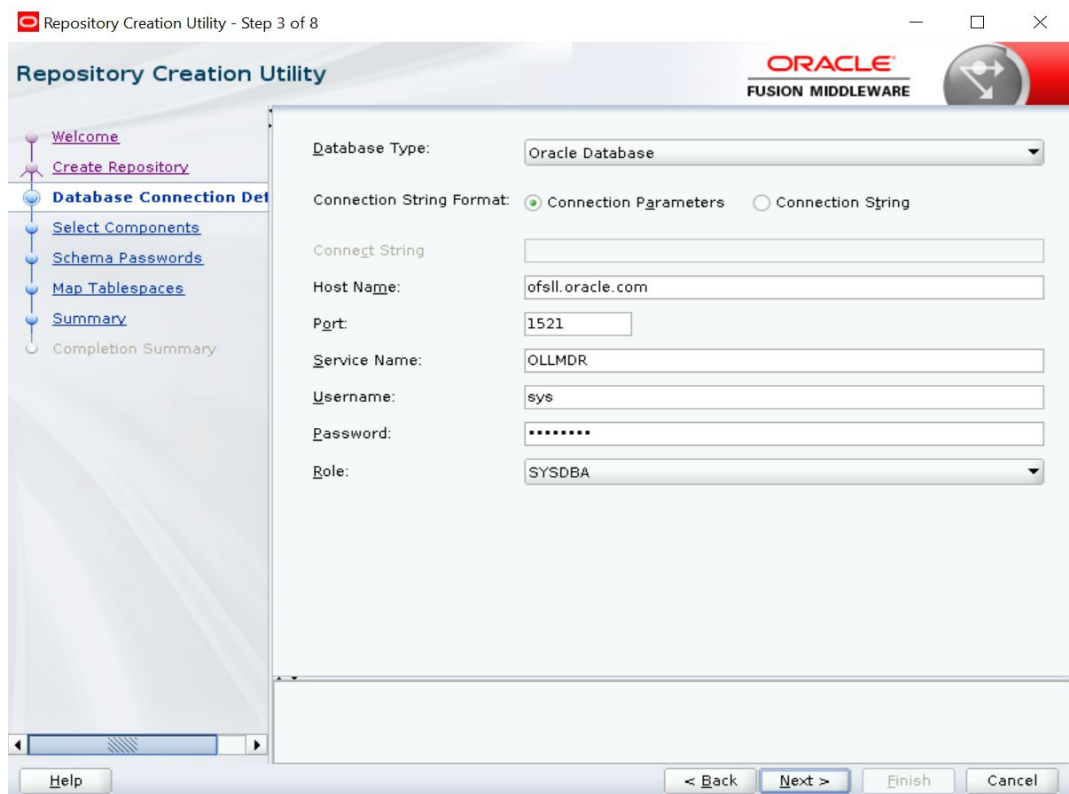
1. Open command prompt on Unix and browse to <WL_HOME>/oracle_common/bin and run ./rcu. The following window is displayed.



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.

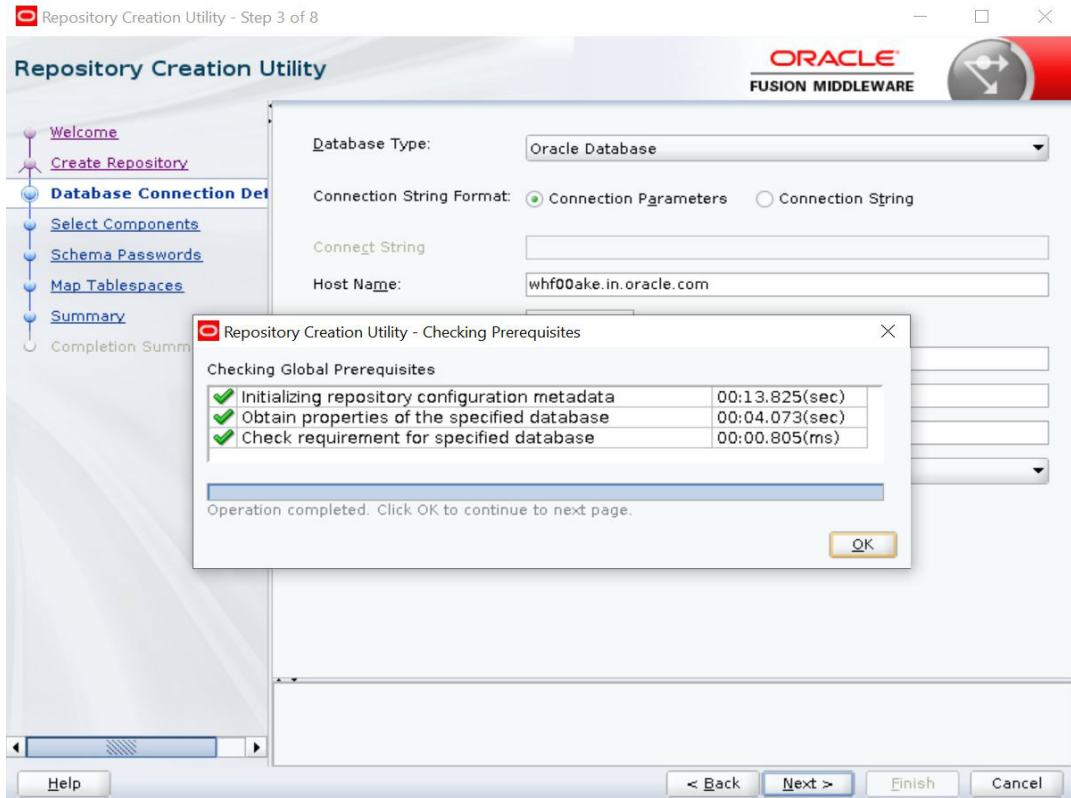


4. Provide database details where you want to create schemas, as shown in the above screen.

Note

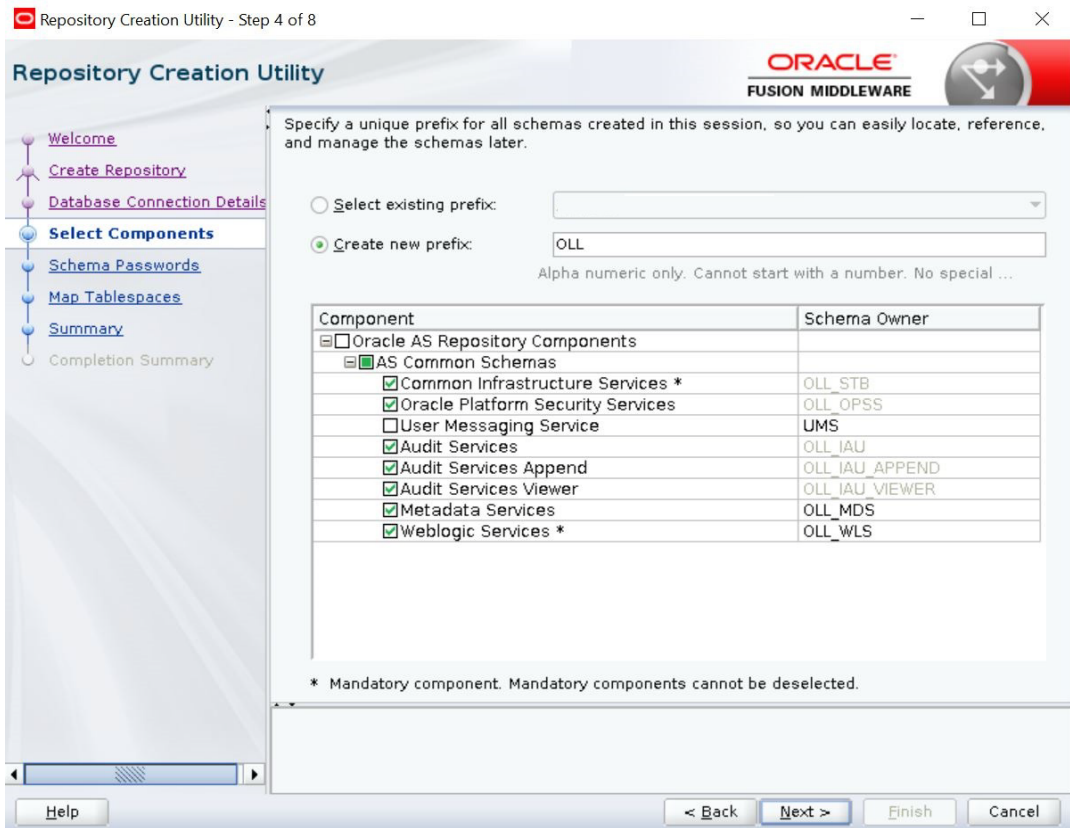
You will require a user with SYSDBA role to create schemas.

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



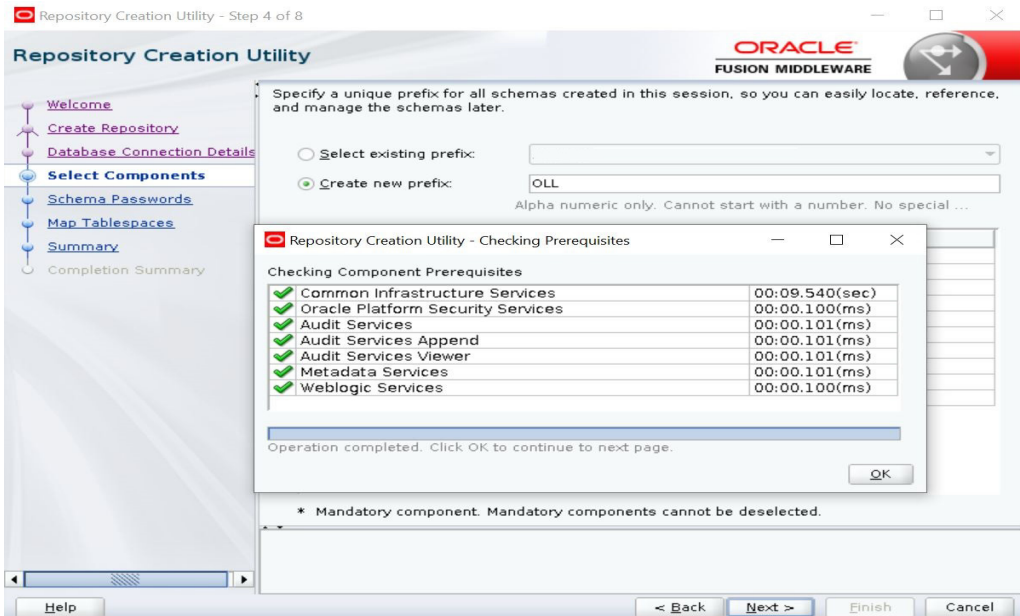
6. Click 'OK' in the confirmation dialog.

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

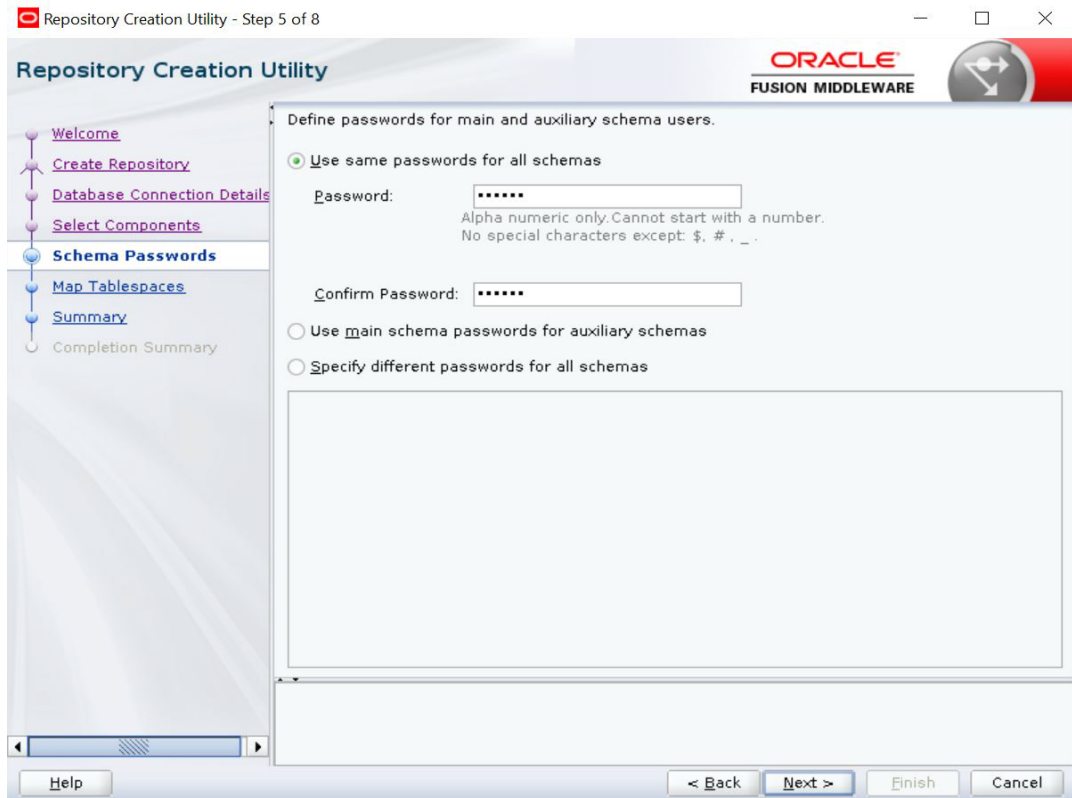


8. Select 'Create new Prefix' option and specify the value. For example, OLL.

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



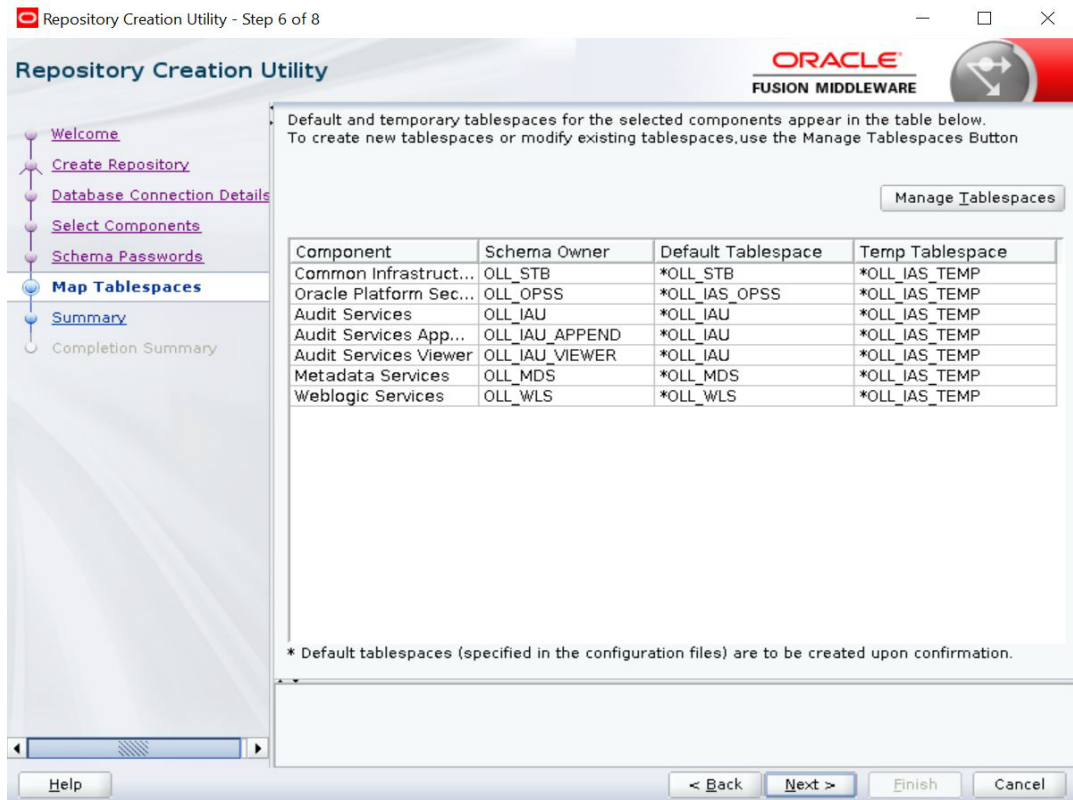
10. Click 'Next'. The following window is displayed.



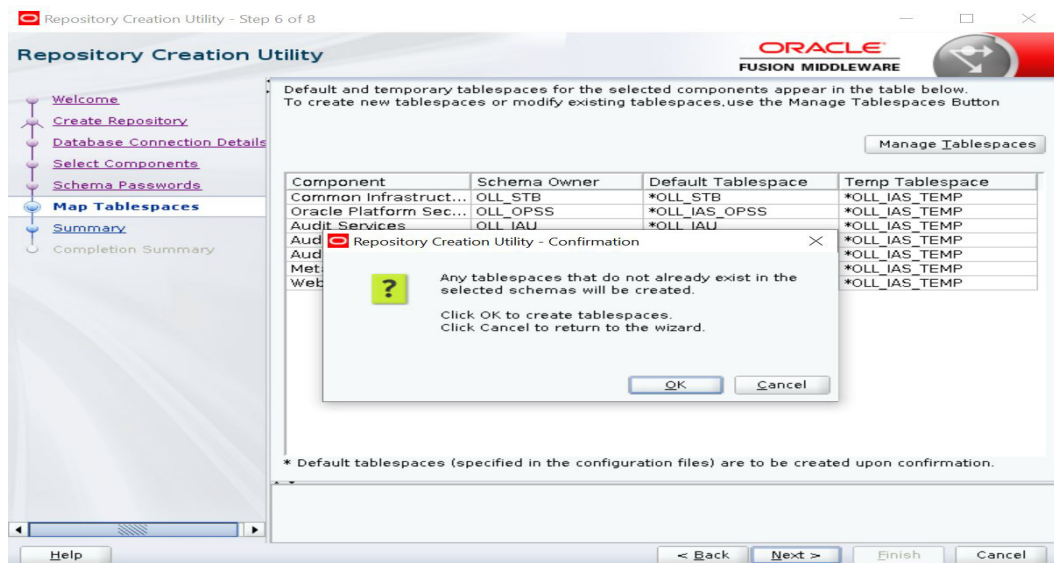
11. You can select one of the following:

- 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.

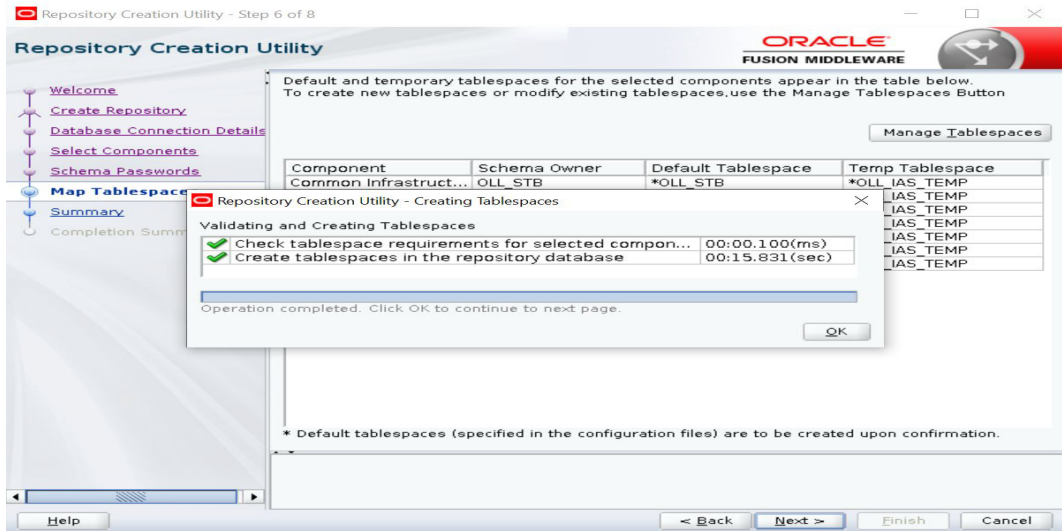


13. Click 'Next'. The following window is displayed.

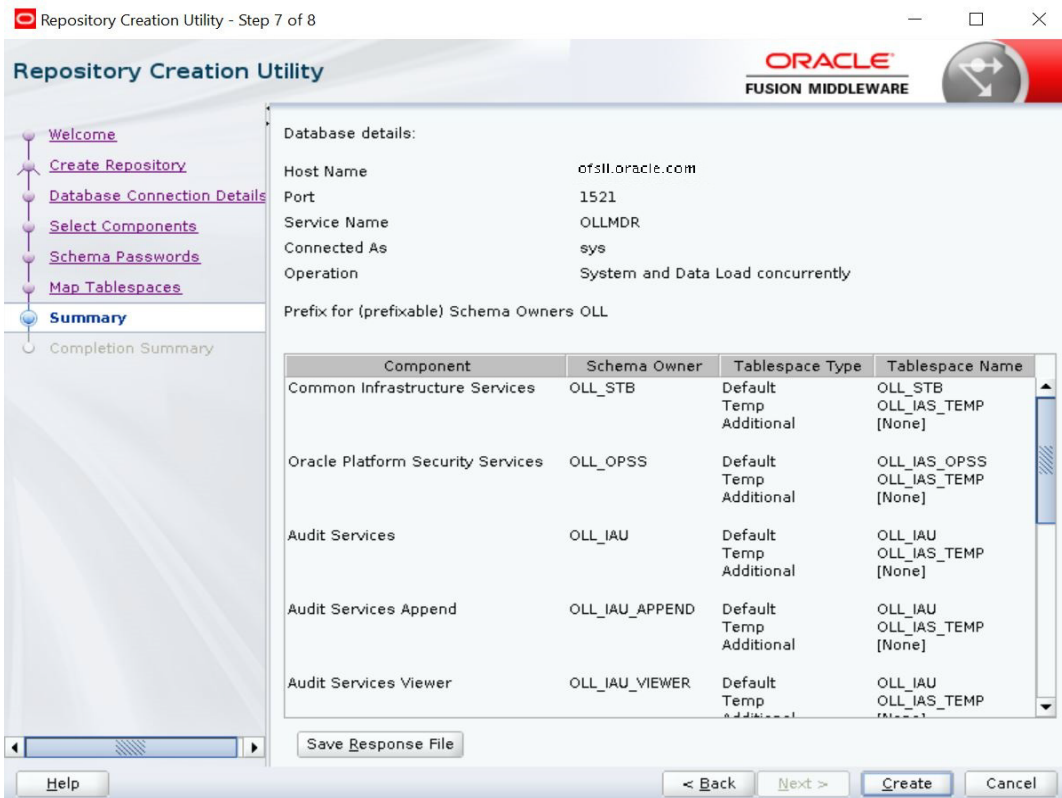


14. Click 'OK' in the confirmation dialog.

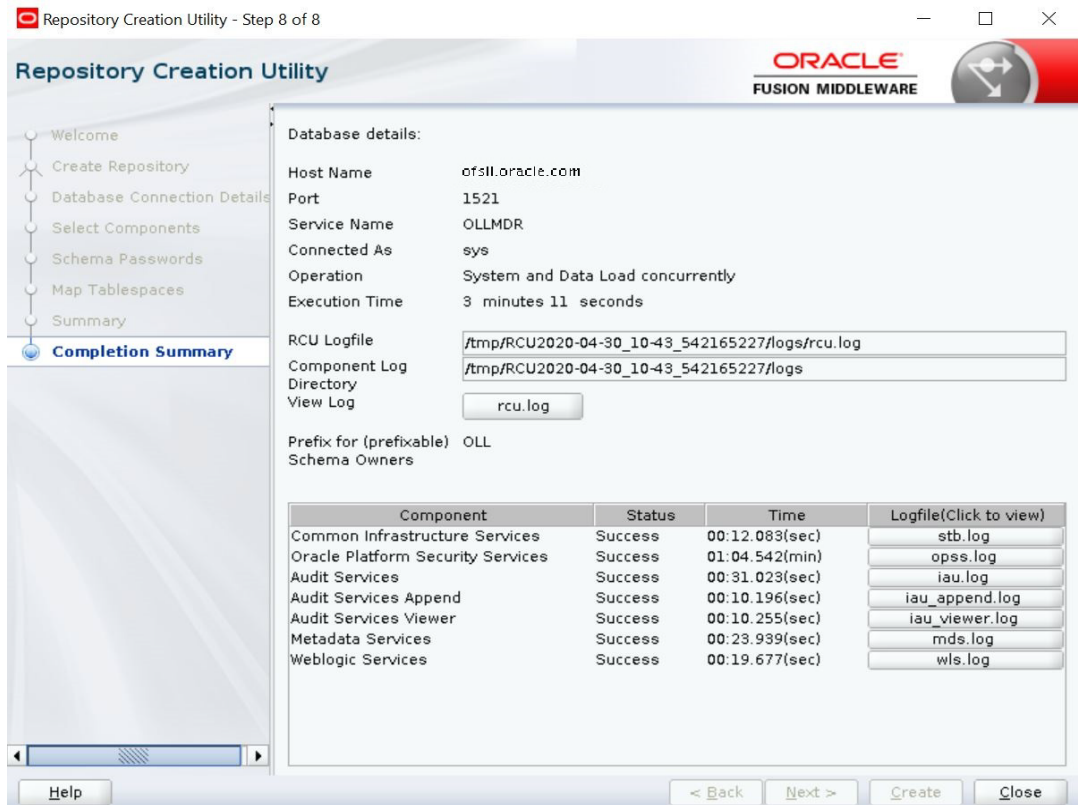
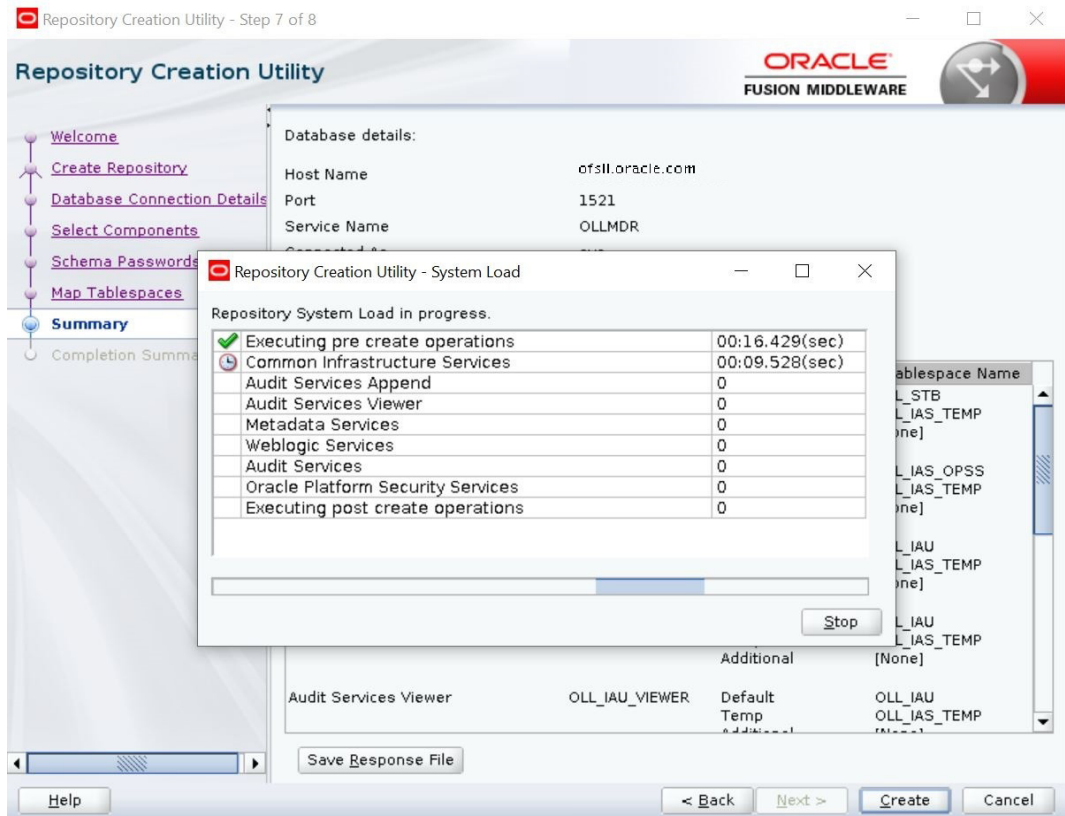
15. Click 'Next'. The following window is displayed.



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



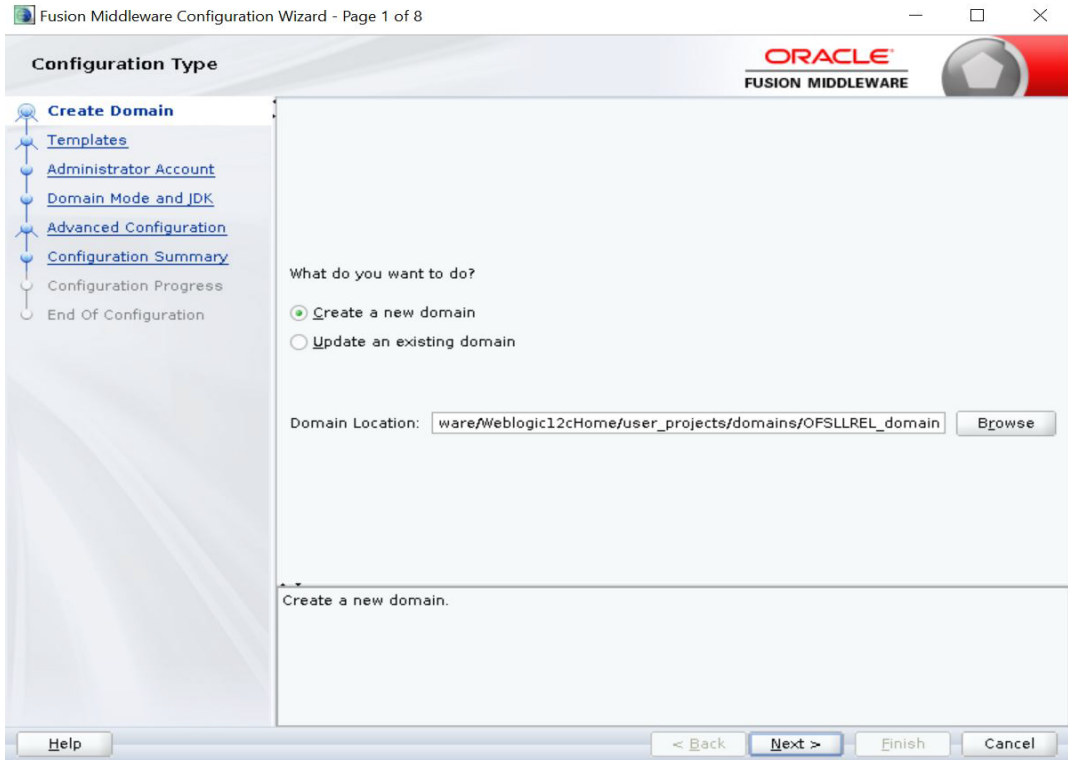
17. Click 'Create'. The following windows are displayed.



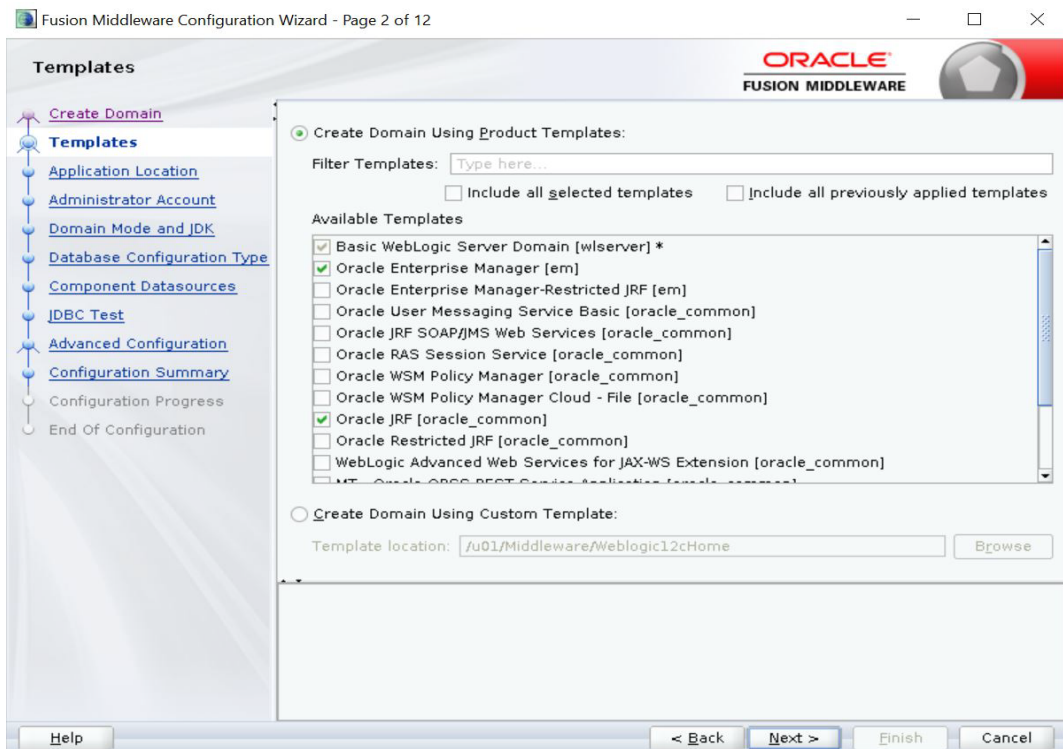
18. Click 'Close' to close the window.

3.2 Creating Domain and Servers

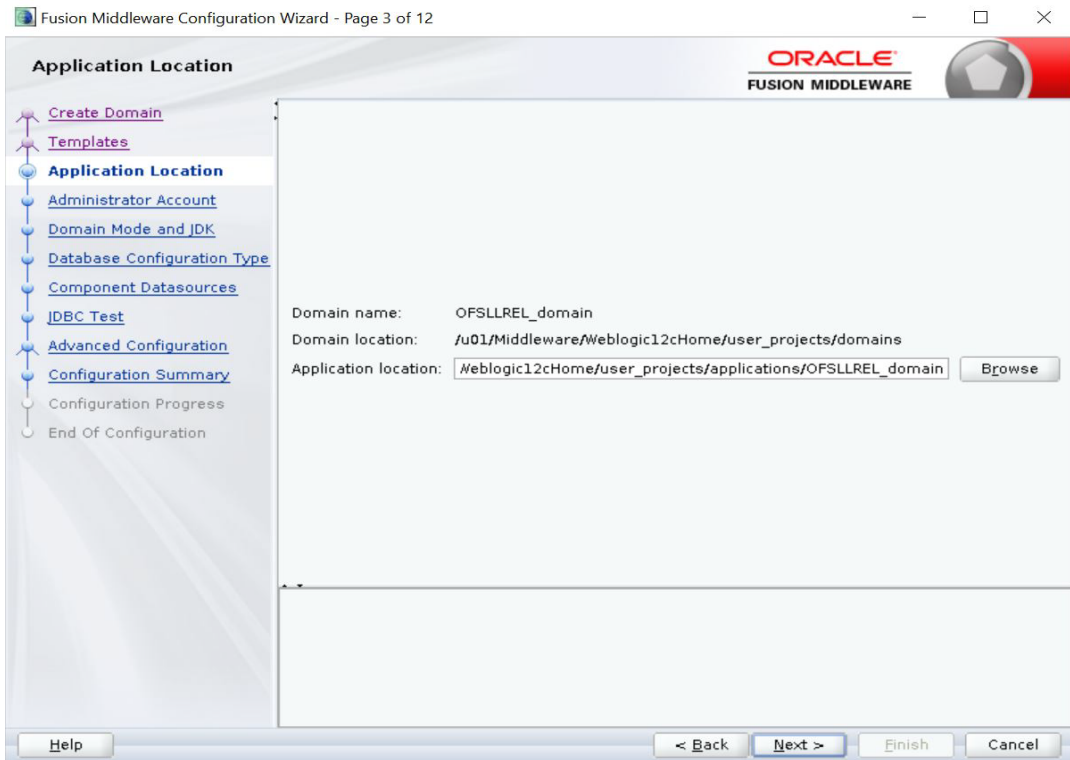
1. In Unix/Linux machine, once the Oracle WebLogic Server is installed, navigate to the following path - <WL_HOME>/oracle_common/common/bin.
2. In Unix, run 'config.sh'



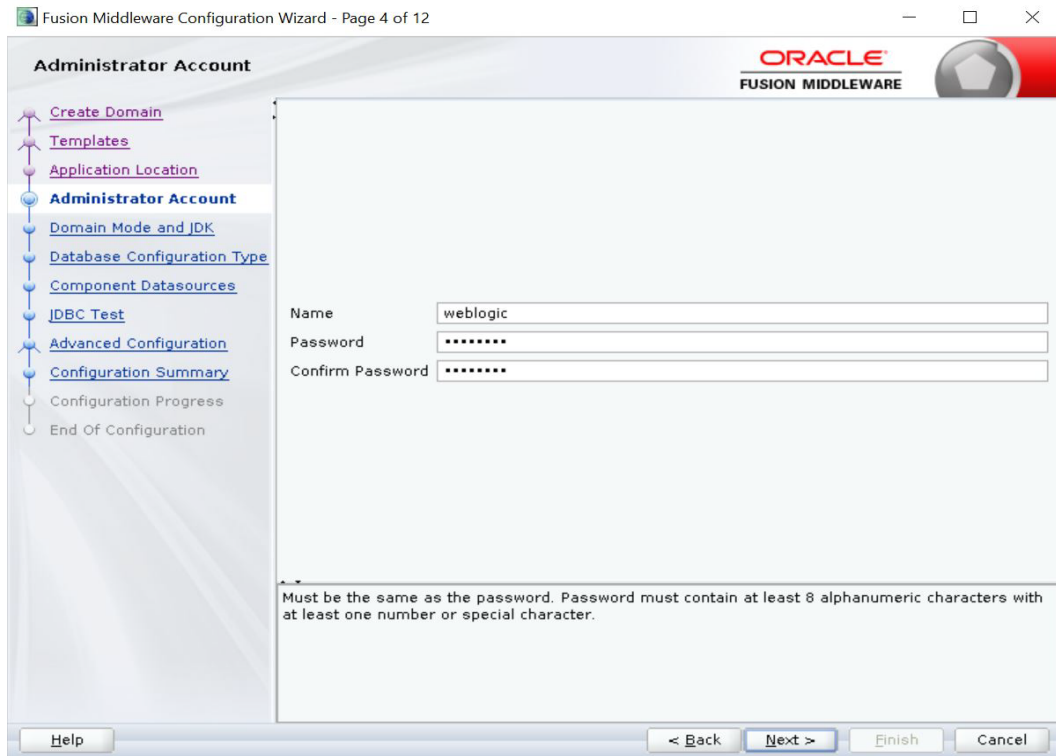
3. Select 'Create a new domain' and specify the Domain Location.
4. Click 'Next'. The following window is displayed.



5. Select the option 'Create Domain Using Product Templates' in the list of available templates and select 'Oracle Enterprise Manager [em]'. On selection, the following options are auto-selected:
 - Oracle JRF [oracle_common]
 - Weblogic coherence cluster Extension [wlserver]
6. Click 'Next'. The following window is displayed.



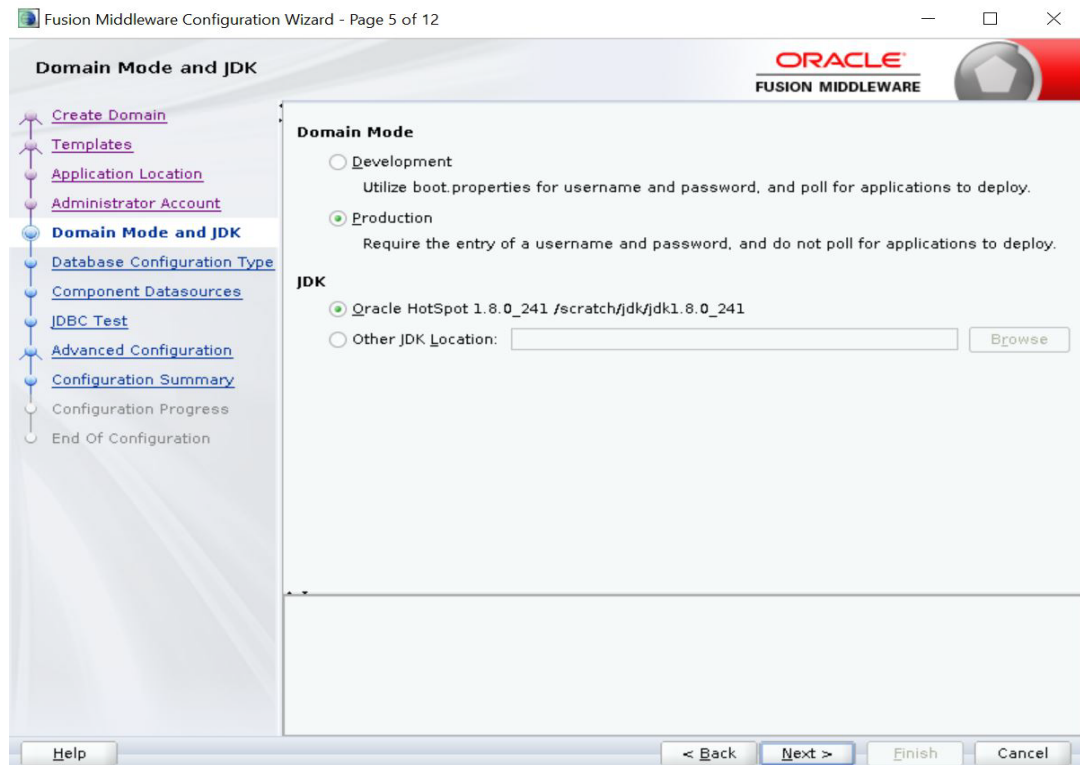
- Specify the Domain Name in the 'Application location' field. You can click browse to directly select the path (if required). Click 'Next'. The following window is displayed.



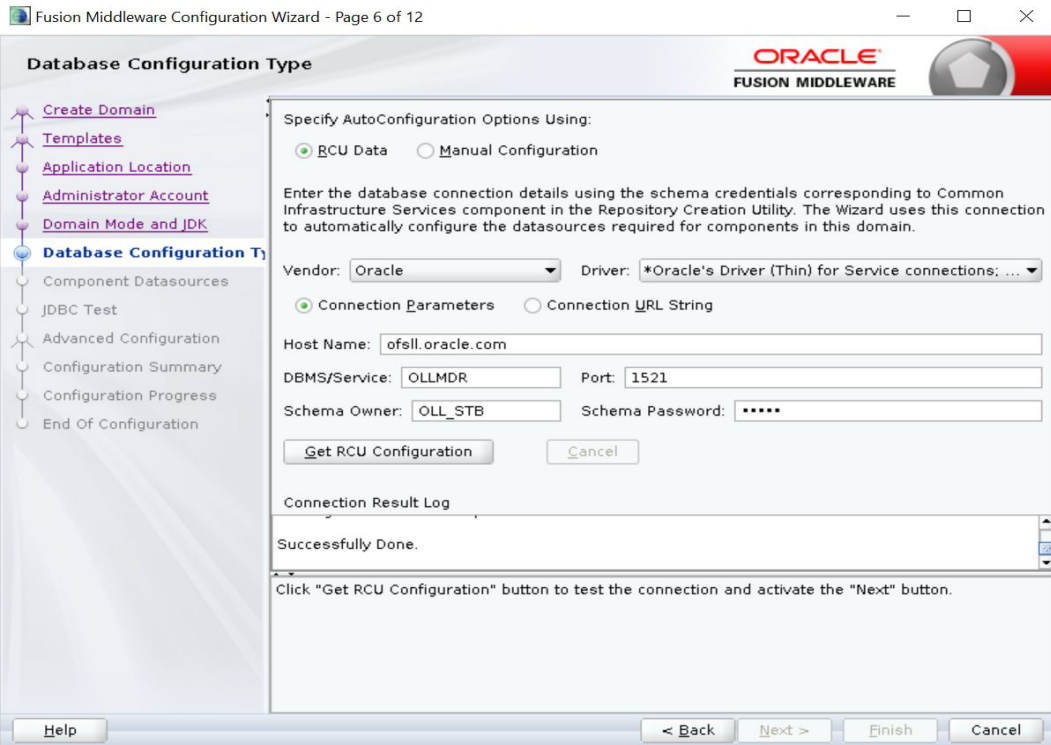
- Enter credentials for the following:

- Name
- Password
- Confirm Password

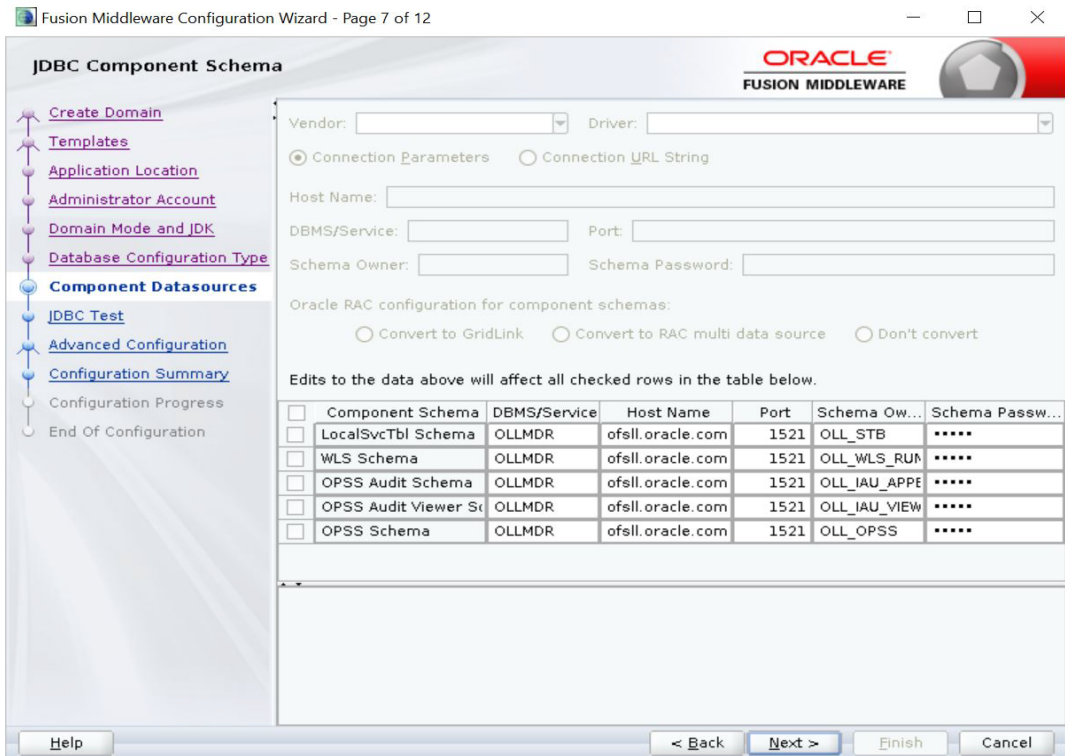
- Click 'Next'. The following window is displayed.



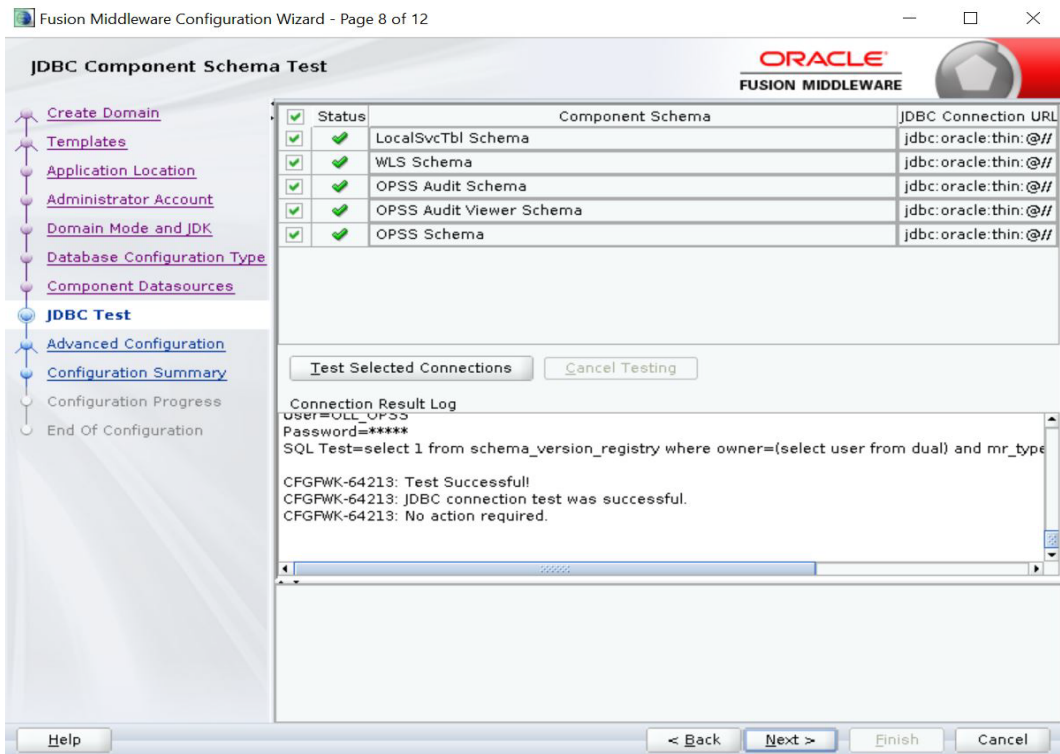
- Select the Domain Mode as 'Production' and 'JDK' from Available JDKs. You can also select any other JDK by selecting 'Other JDK Location' option. Click 'Next'. The following window is displayed.



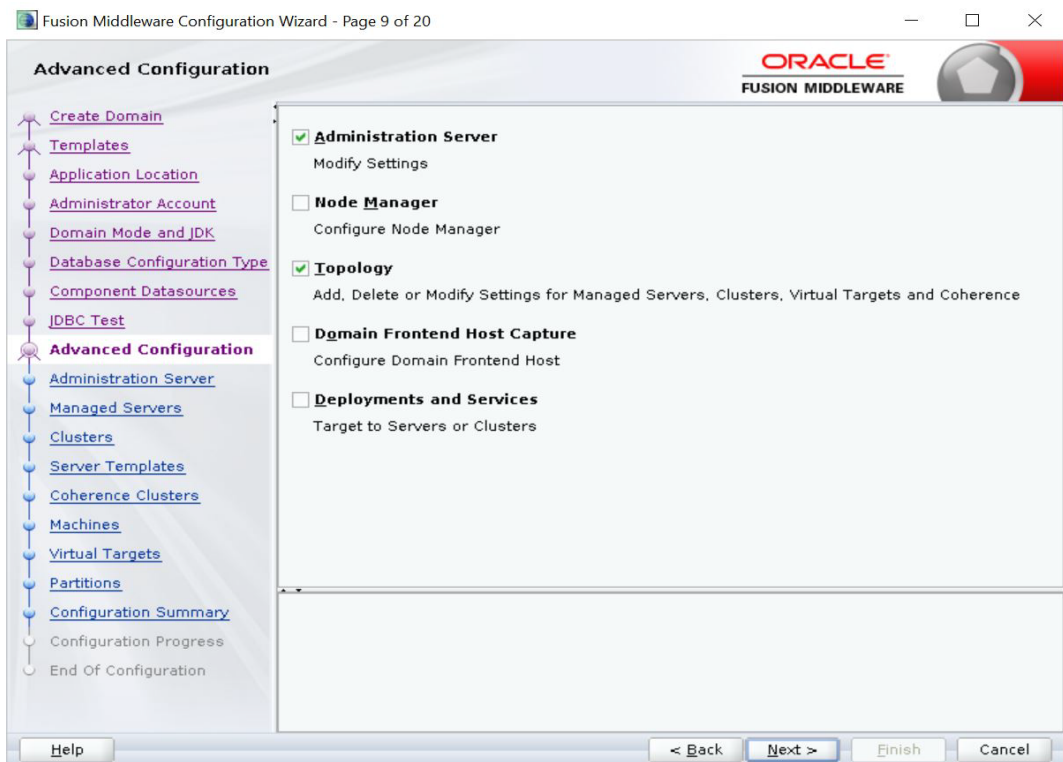
- Specify the RCU data and click on 'Get RCU Configuration'. The following window is displayed.



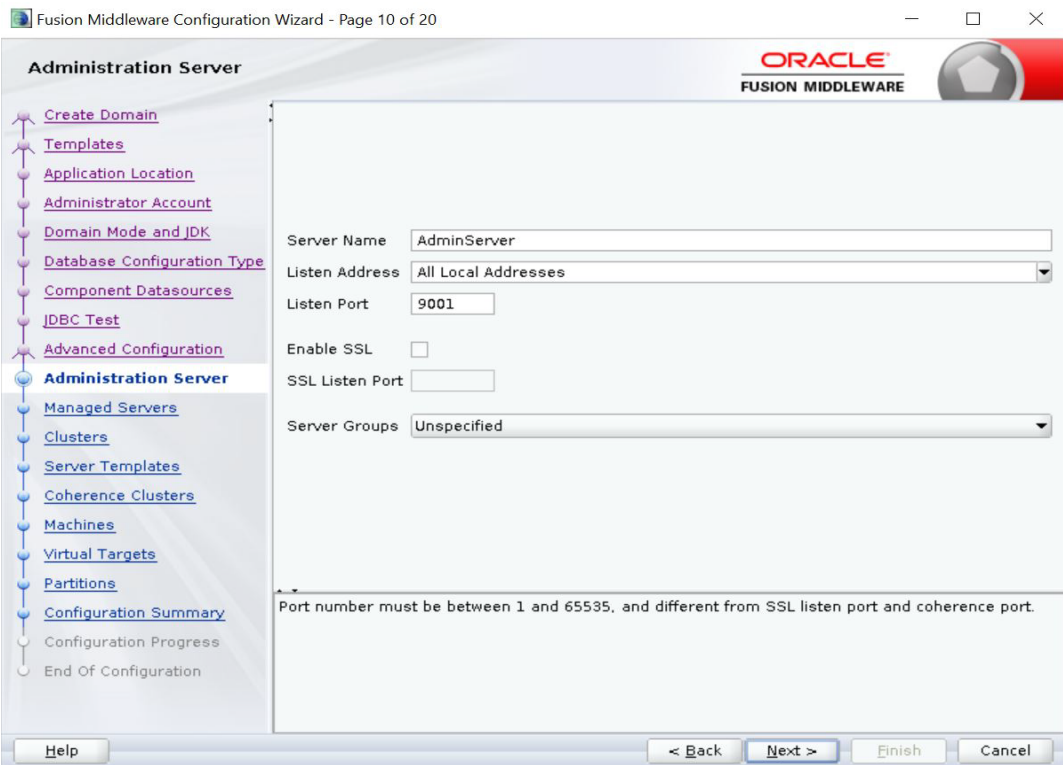
12. Click 'Next'. The following window is displayed.



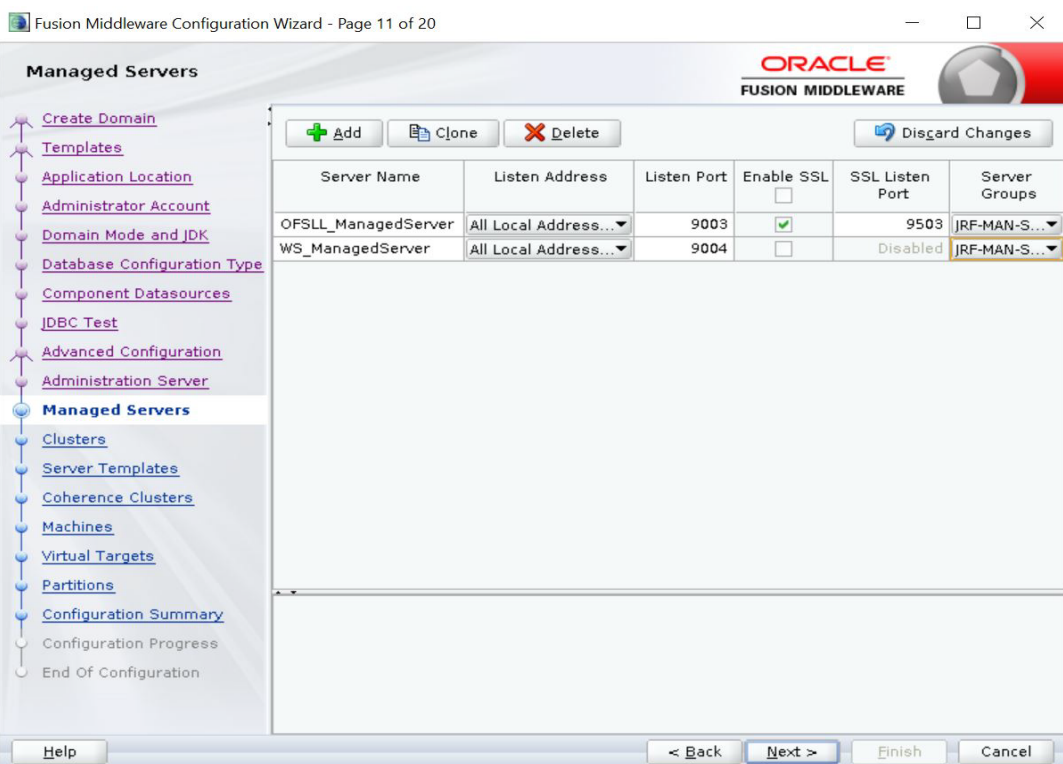
13. Click 'Next'. The following window is displayed.



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



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

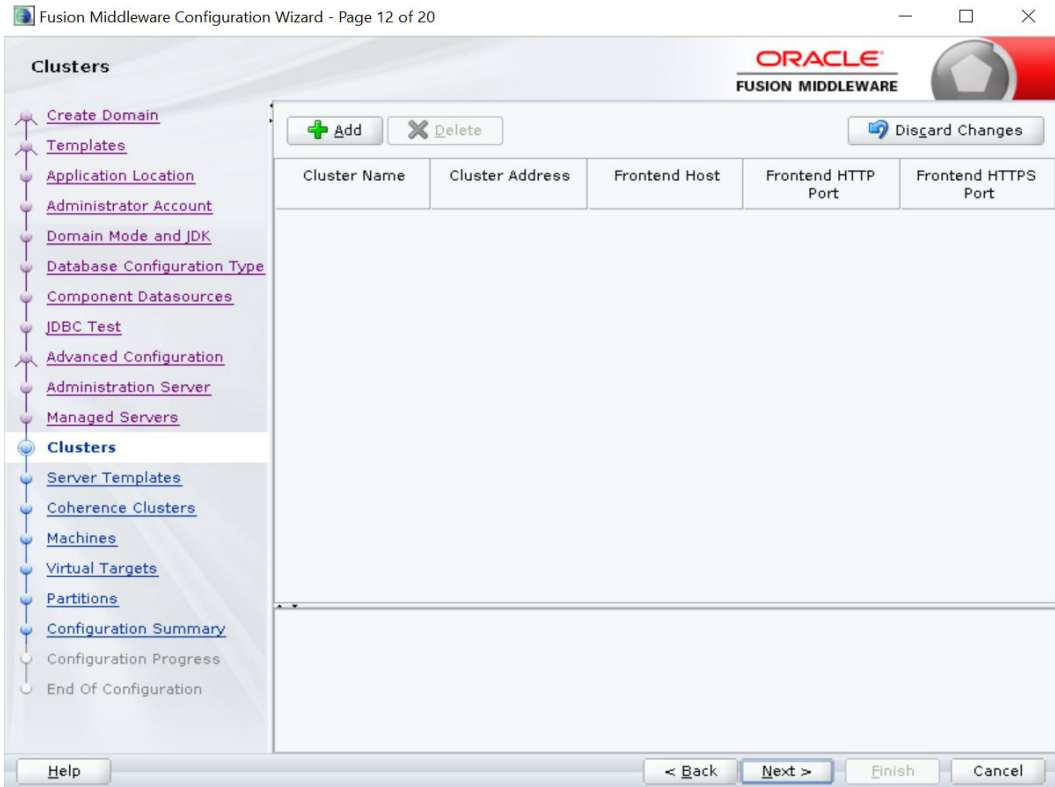


- Click 'Add' button to create 'ManagedServer'.
- Select the Server Group as 'JRF-MAN-SVR'. *Selecting this server group ensures that the Oracle JRF services are targeted to the specific Managed Servers created.*

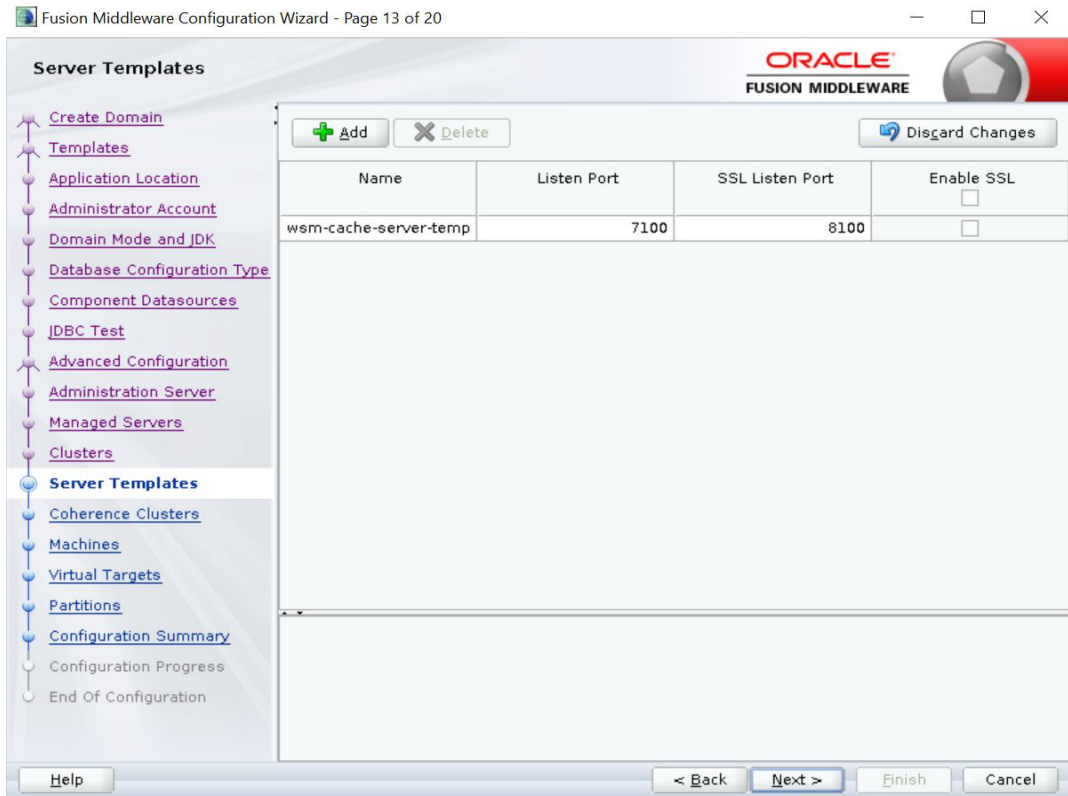
Note

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

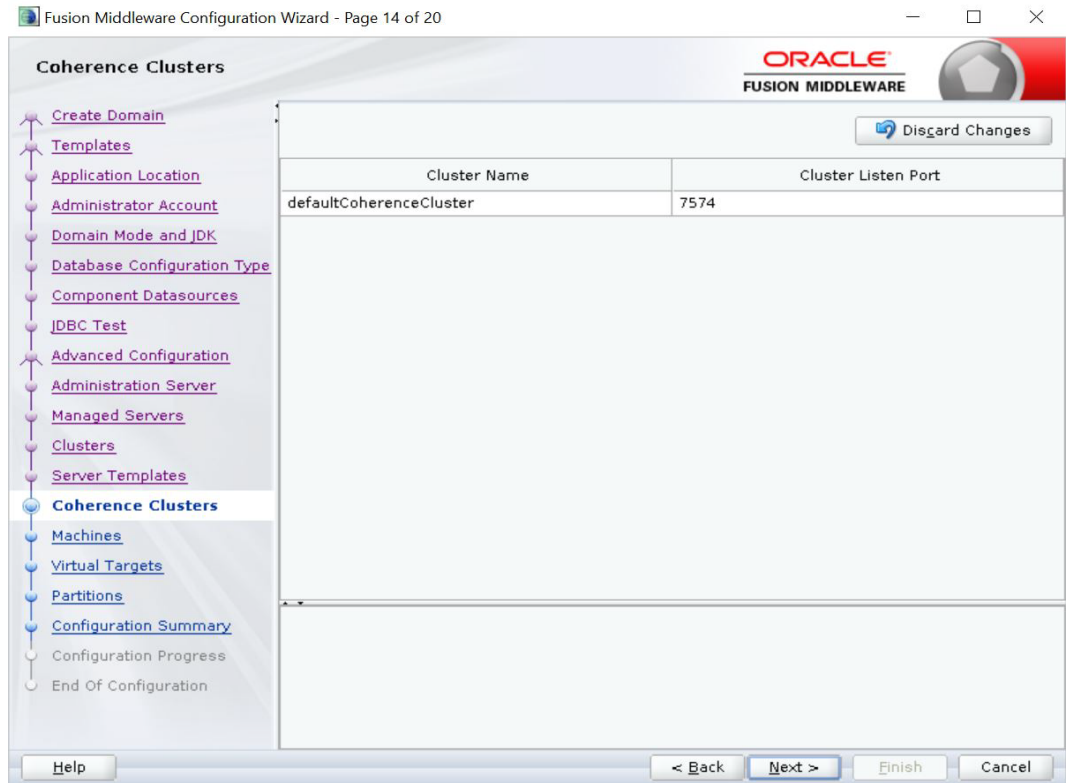
18. Click 'Next'. The following window is displayed.



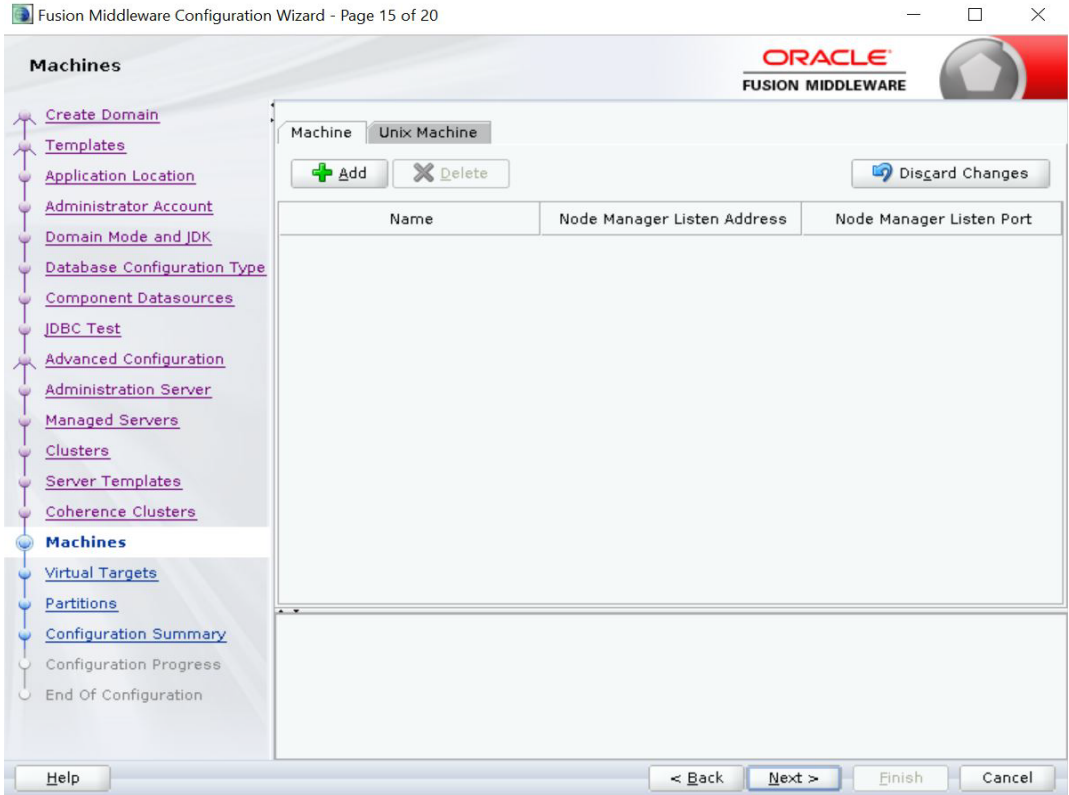
19. Configure as required and click 'Next'. The following window is displayed.



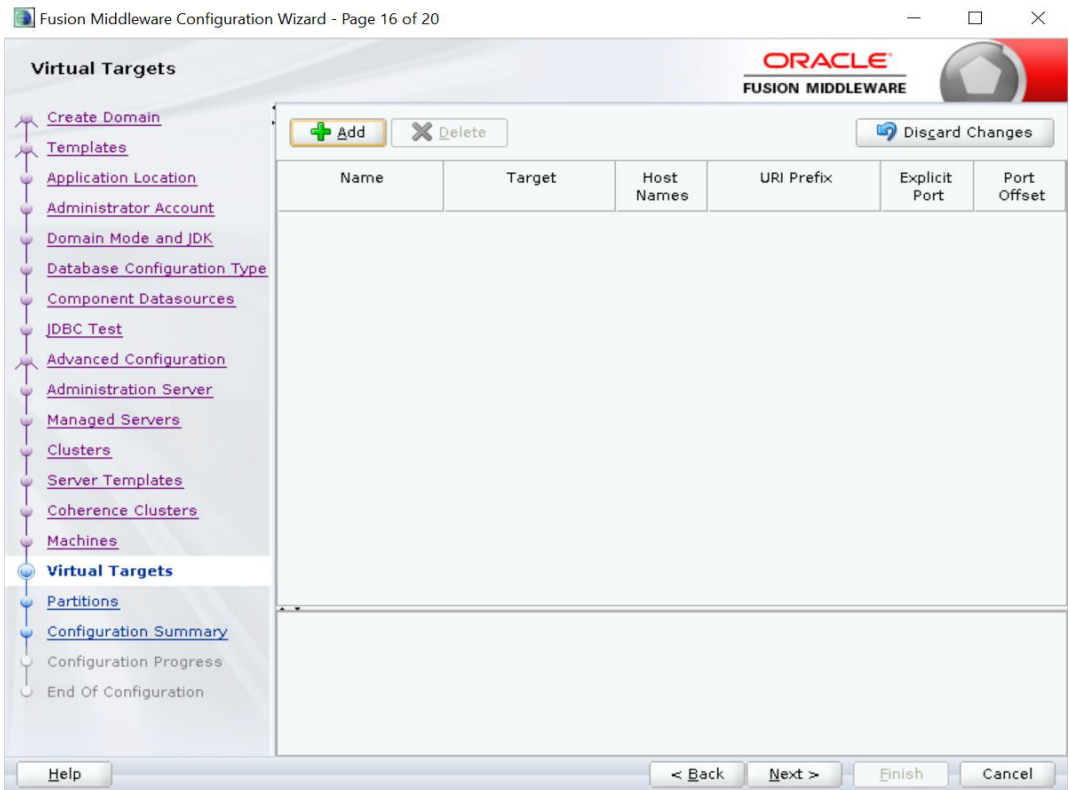
20. Configure as required and click 'Next'. The following window is displayed.



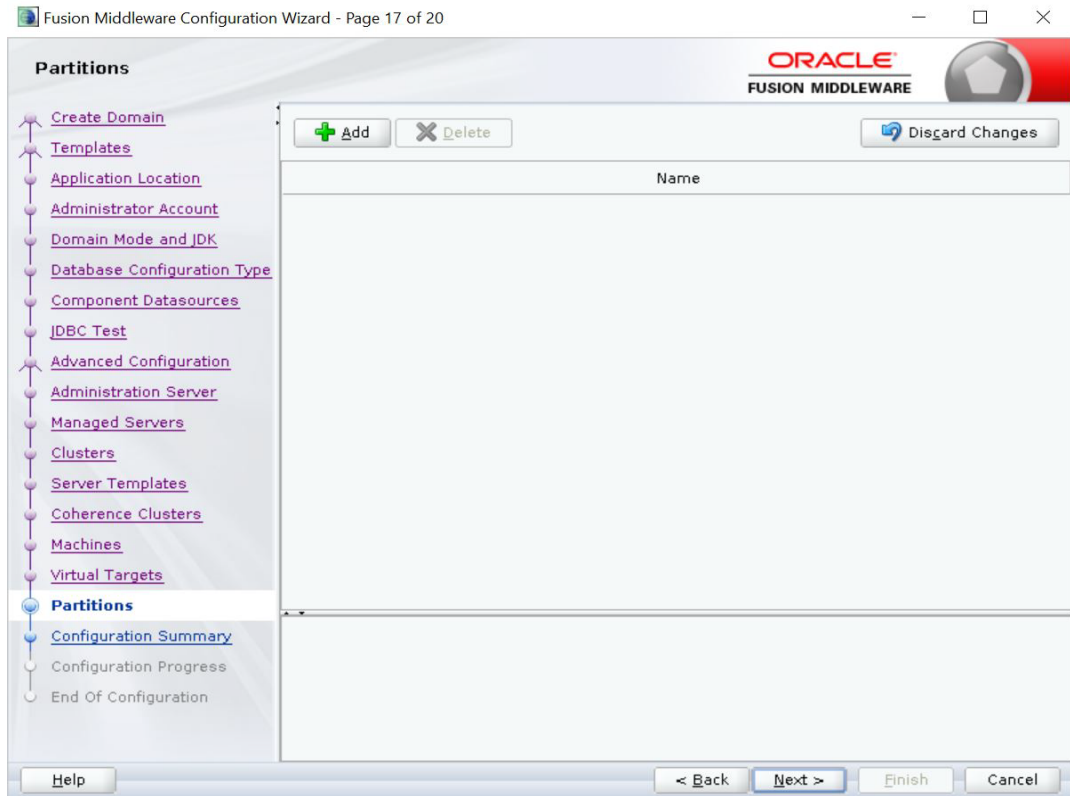
21. Configure as required and click 'Next'. The following window is displayed.



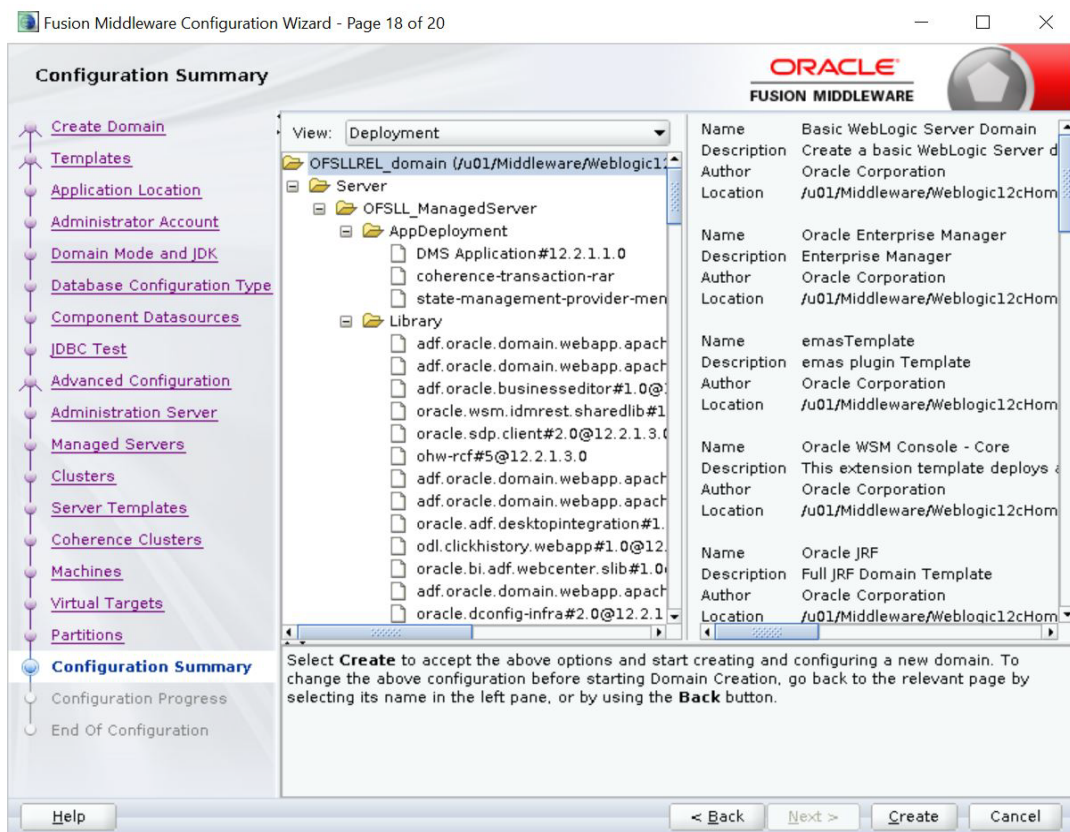
22. Click 'Create'. The following window is displayed.



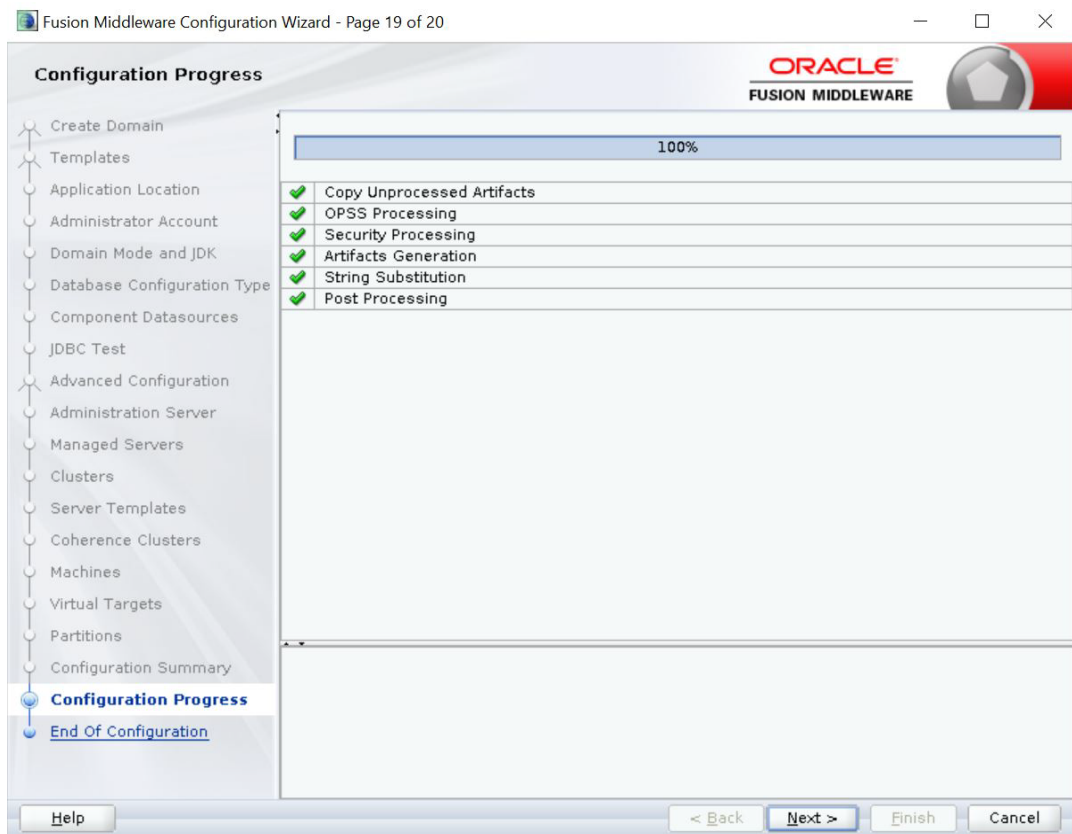
23. Click 'Next'. The following window is displayed.



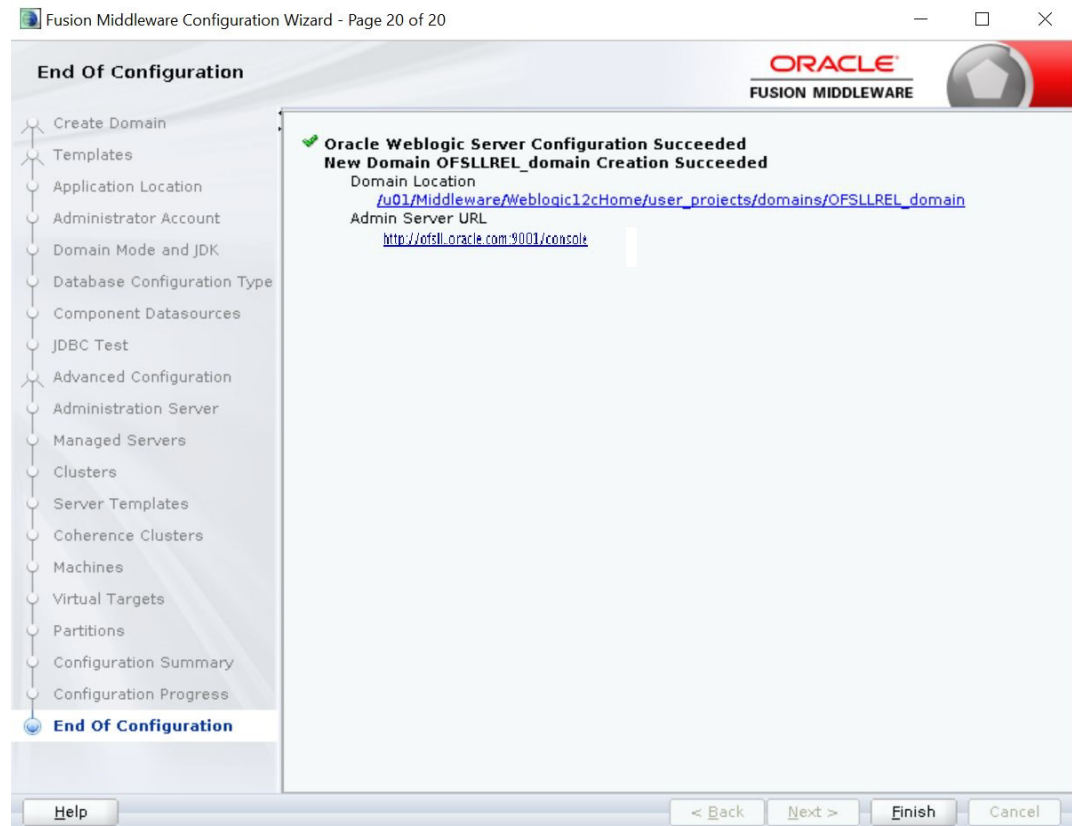
24. Click 'Next'. The following window is displayed.



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
- $ ./<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 ./<MW_HOME>/user_projects/domains/<mydomain>/bin/
  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 -
Dweblogic.mdb.message.MinimizeAQSessions=true -
Dweblogic.ejb.container.MDBDestinationPollIntervalMillis=6000 -
XX:StringTableSize=100003 -XX:ReservedCodeCacheSize=1g -XX:+UseStringCache

-XX:+OptimizeStringConcat -XX:+UnlockCommercialFeatures -XX:+FlightRecorder -Doracle.adfm.useSharedTransactionForFrame=false

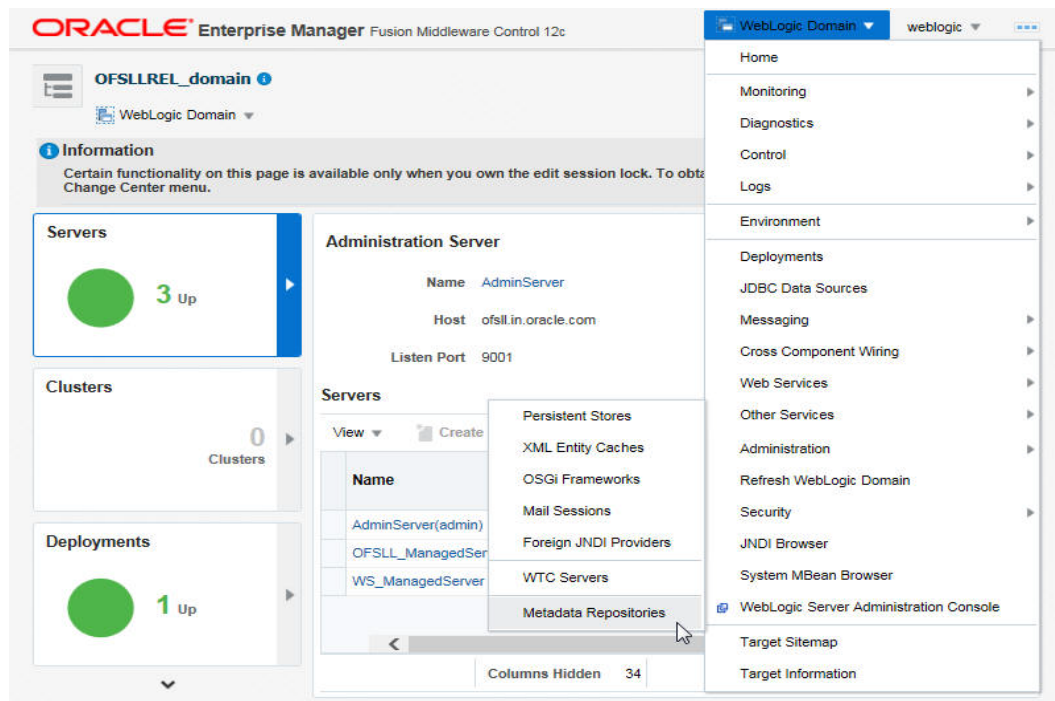
- For managed server where web services are deployed:

-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

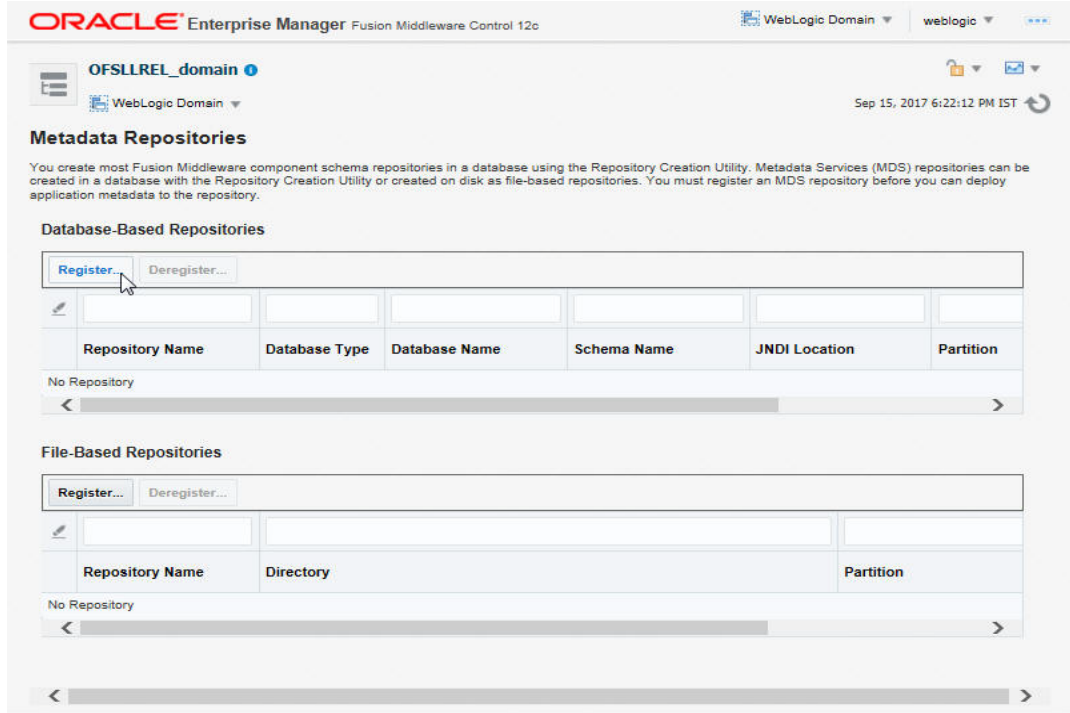
Assuming that **OLL_MDS** schema is created using Oracle Repository Creation Utility (RCU) as mentioned in [Creating Schemas using Repository Creation Utility](#) section, follow the below steps to create the repository.

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

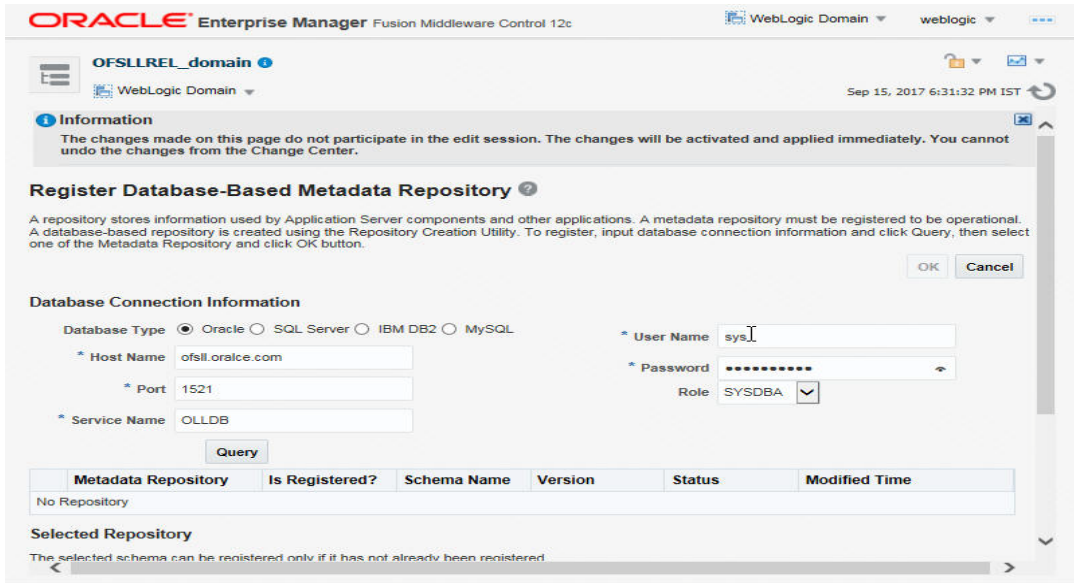


2. Click on domain name OFSLREL_domain on the left side panel.
3. Expand Weblogic domain OFSLREL_domain and click 'Metadata Repositories' option, as shown in the above screen.

4. The following window is displayed.



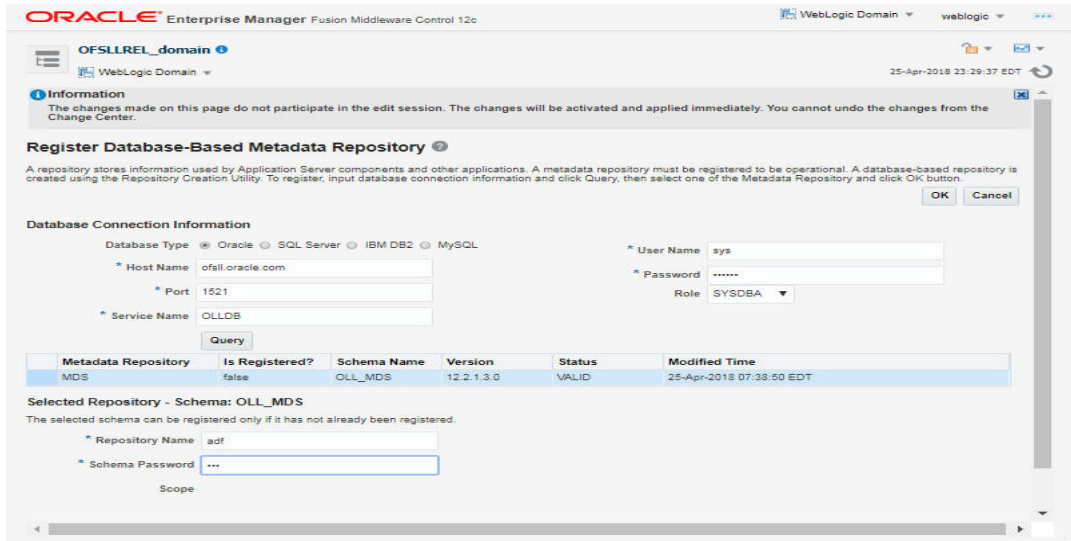
5. Click 'Register' button. The following window is displayed.



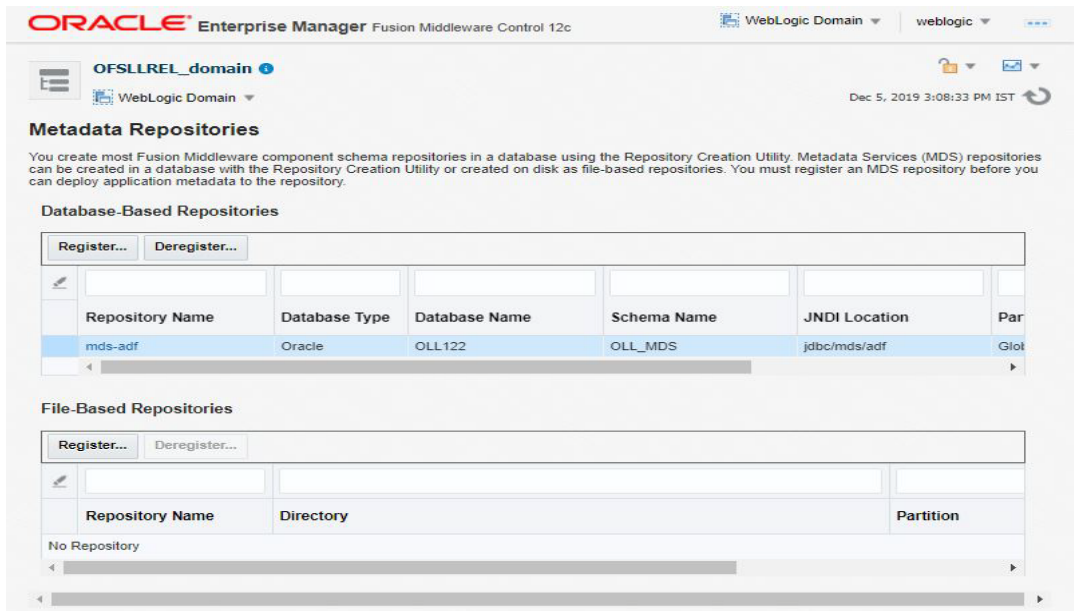
6. Enter database instance details under Database Connection Information section and click 'Query'. All available schemas in the given database instance are listed.

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.



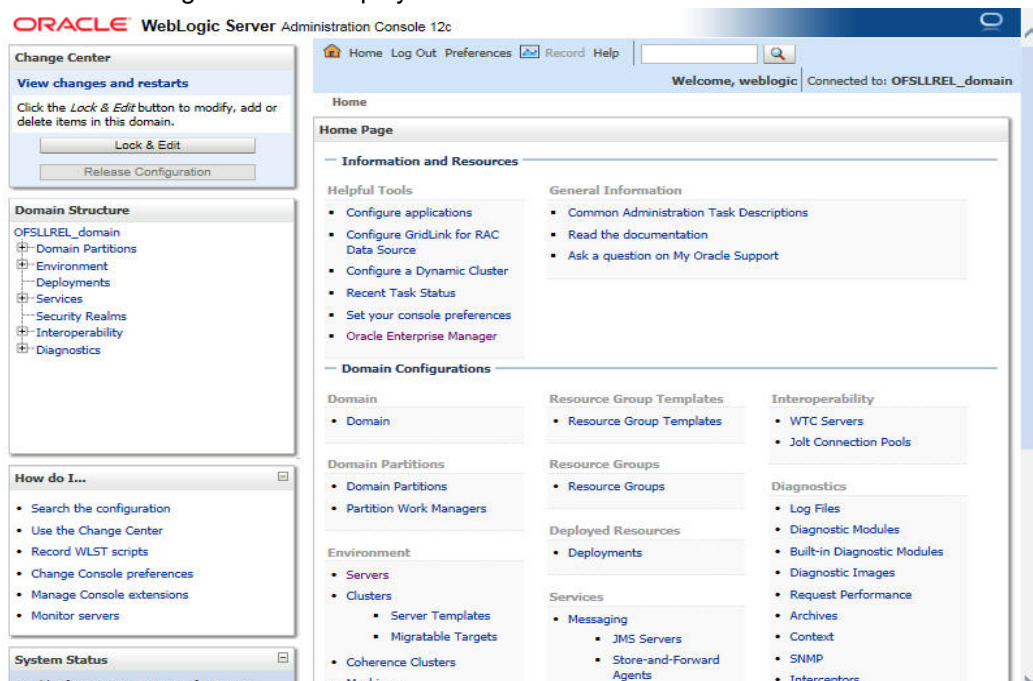
10. Click 'Add' and target to AdminSever and OFSLL_ManagedServer as on right panel.

3.4 Creating Data Source

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

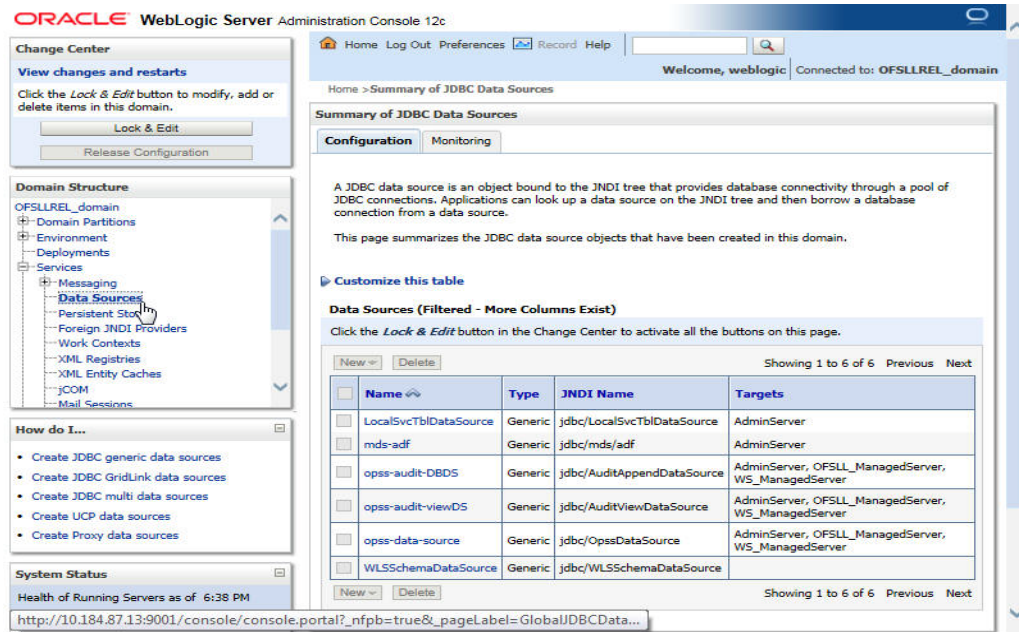


2. The following window is displayed.

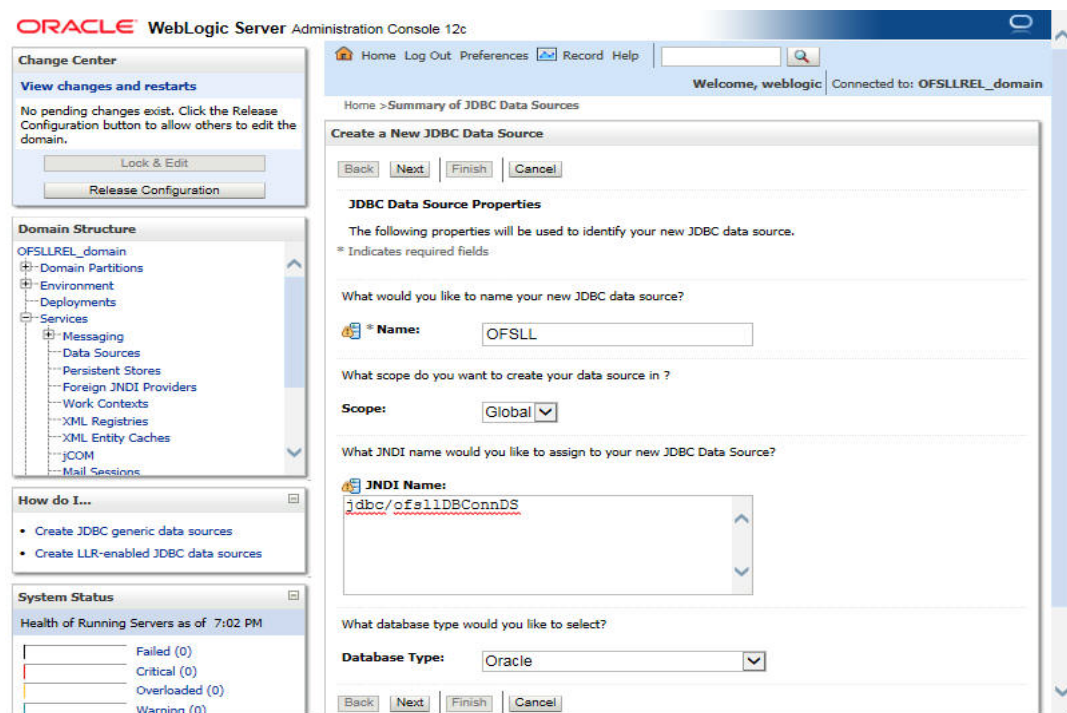


3. Click Domain Name > Services > Data Sources.

4. The following window is displayed.

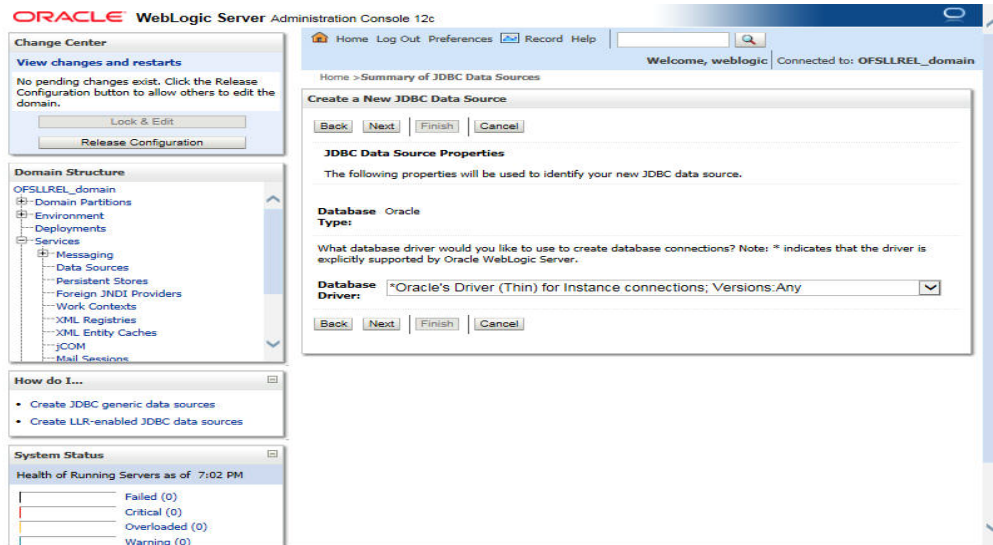


5. Click 'Lock & Edit' button on the left panel. Click 'New' on right panel and select Generic Data Source.



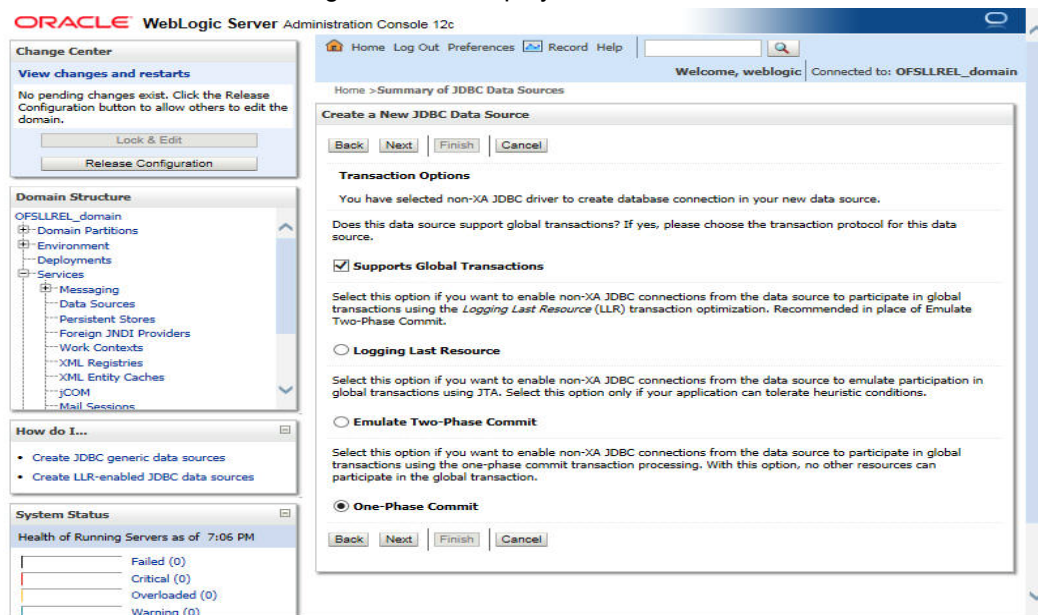
6. Enter Data source 'Name', JNDI Name as 'jdbc/ofslIDBConnDS' and select 'Oracle' as Database Type.

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.

ORACLE WebLogic Server Administration Console 12c

Home > Summary of JDBC Data Sources

Welcome, weblogic | Connected to: OFSSLREL_domain

Create a New JDBC Data Source

Back | **Next** | Finish | Cancel

Connection Properties

Define Connection Properties.

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

Database Name:

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

Host Name:

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

Port:

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

Database User Name:

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

Password:

Confirm Password:

Additional Connection Properties:

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

ORACLE WebLogic Server Administration Console 12c

Home > Summary of JDBC Data Sources

Welcome, weblogic | Connected to: OFSSLREL_domain

Create a New JDBC Data Source

Test Configuration | Back | Next | Finish | Cancel

Test Database Connection

Test the database availability and the connection properties you provided.

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

Driver Class Name:

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

URL:

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

Database User Name:

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

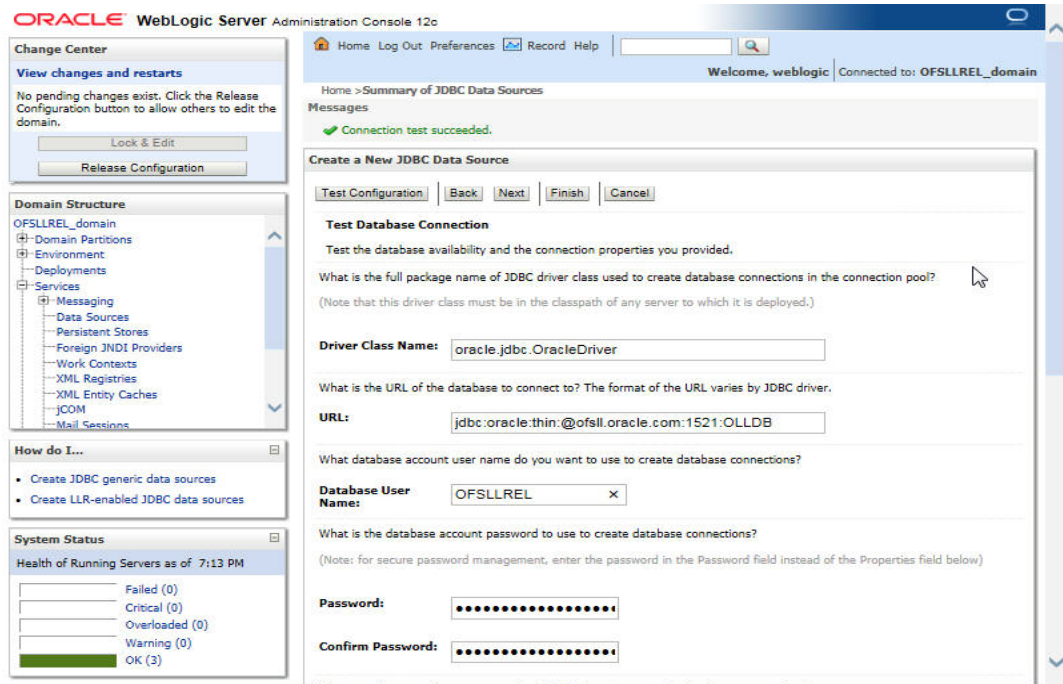
Password:

Confirm Password:

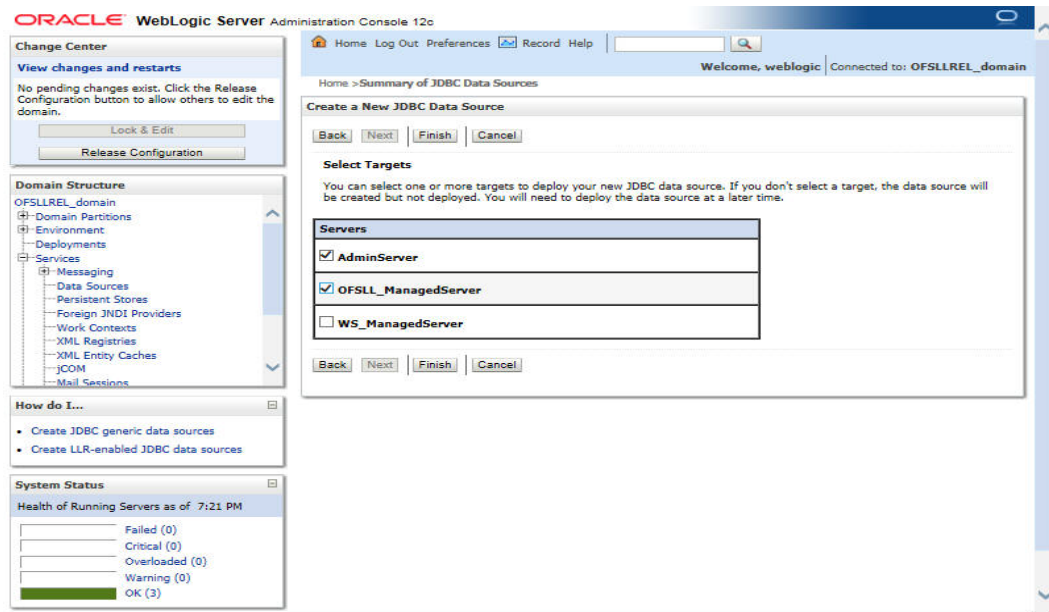
What are the properties to pass to the JDBC driver when creating database connections?

Properties:

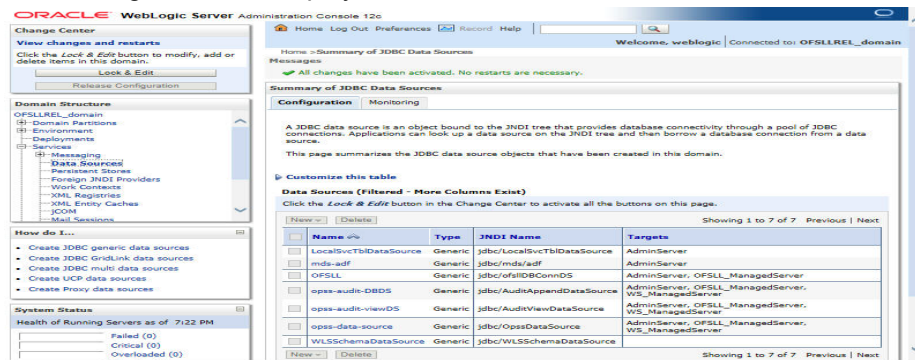
12. Click 'Test Configuration'. The following window is displayed.



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.



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'.

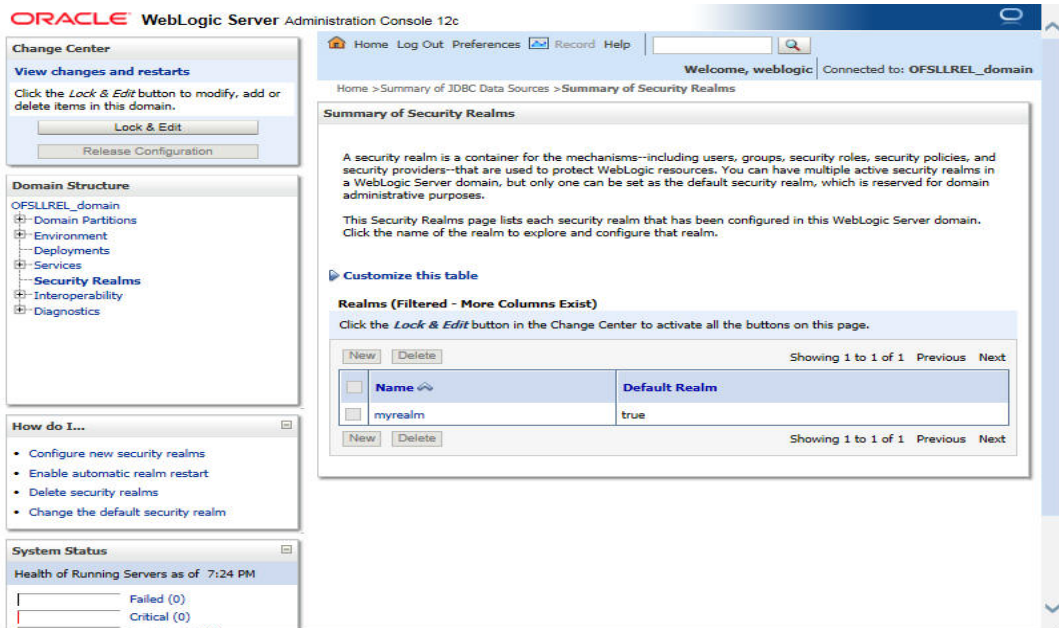
Note

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:

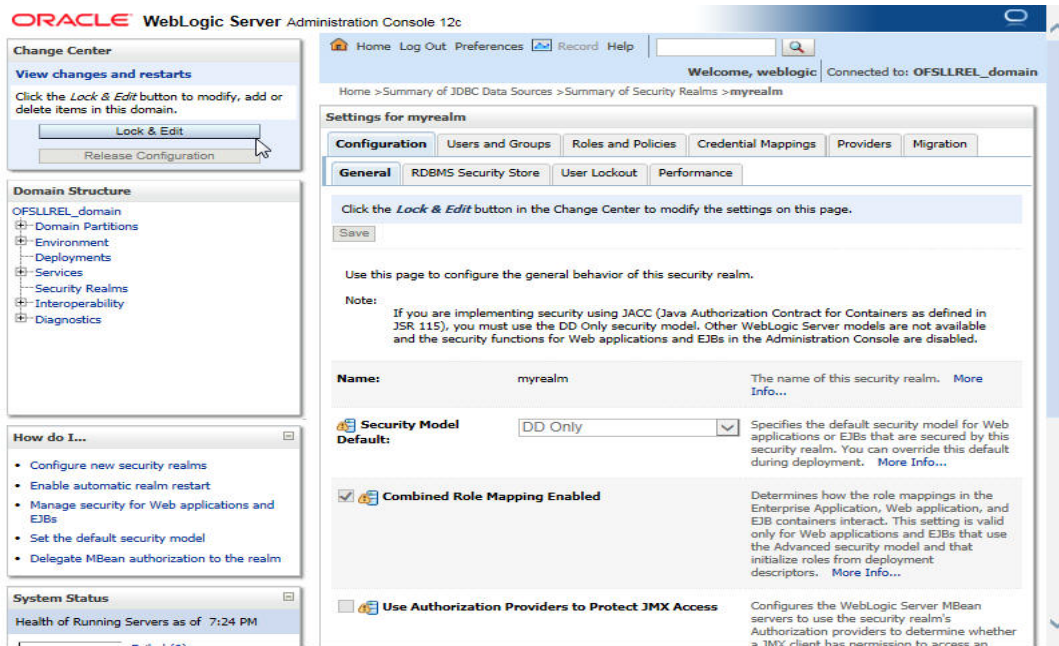
- 3.5 Creating SQL Authentication Provider
 - 3.6 Creating User Groups and Users
 - 3.7 Implementing JMX Policy for Change Password
 - 4.1 Configuring Password Policy for SQL Authenticator
 - 4.2 Configuring User Lockout Policy
-

3.5 Creating SQL Authentication Provider

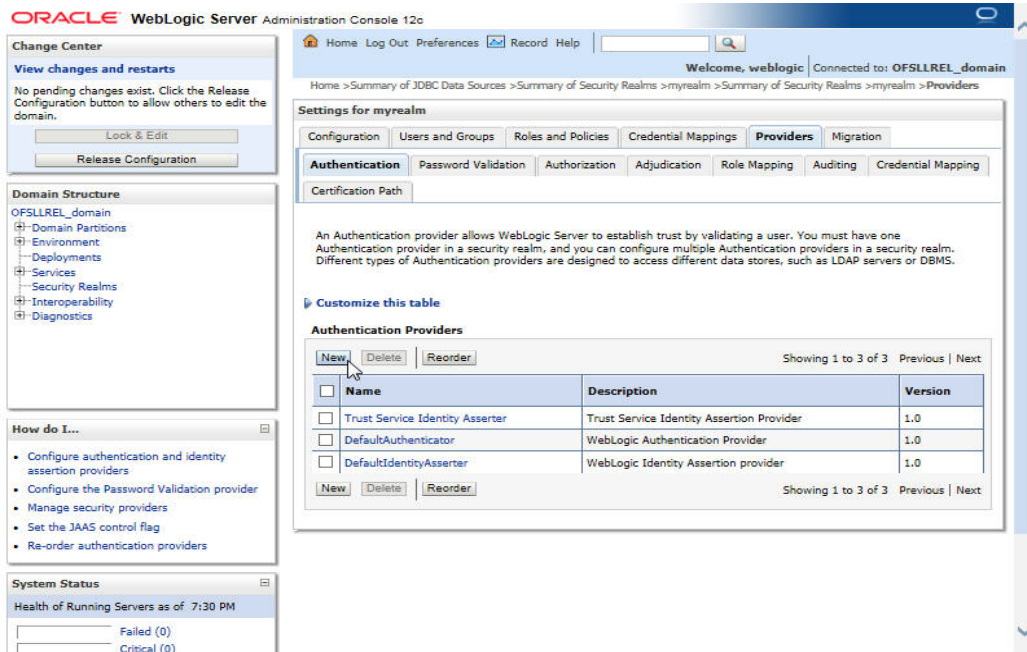
1. Login to WebLogic server administration console and click 'Security Realms' in left panel. The following window is displayed.



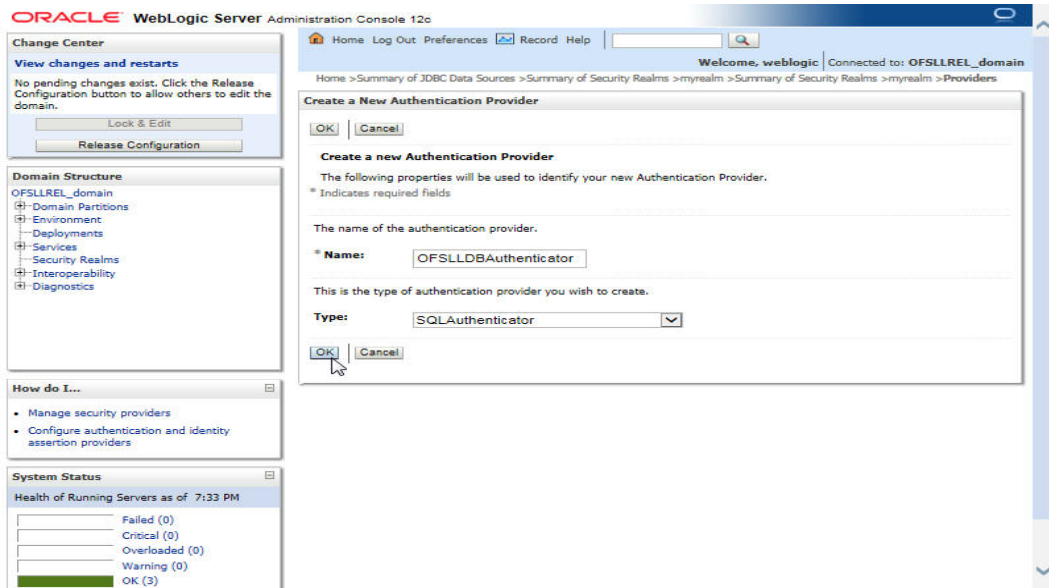
2. Click 'myrealm' on right panel. The following window is displayed.



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



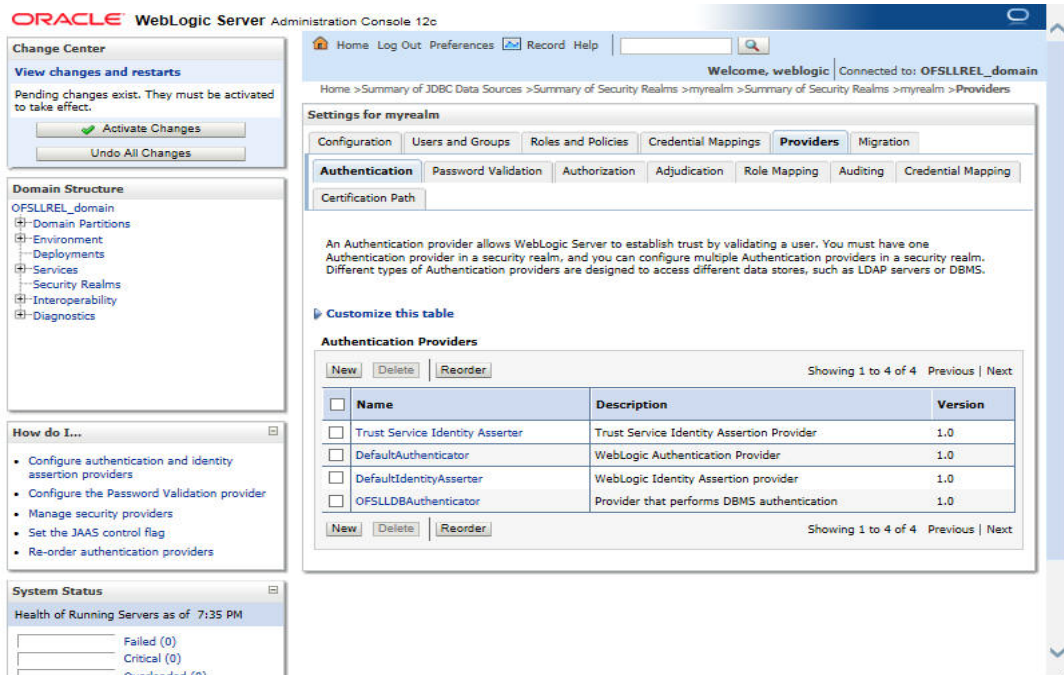
4. Click 'Lock & Edit' to unlock the screen and click 'New' button in Authentication Providers sub tab. The following window is displayed.



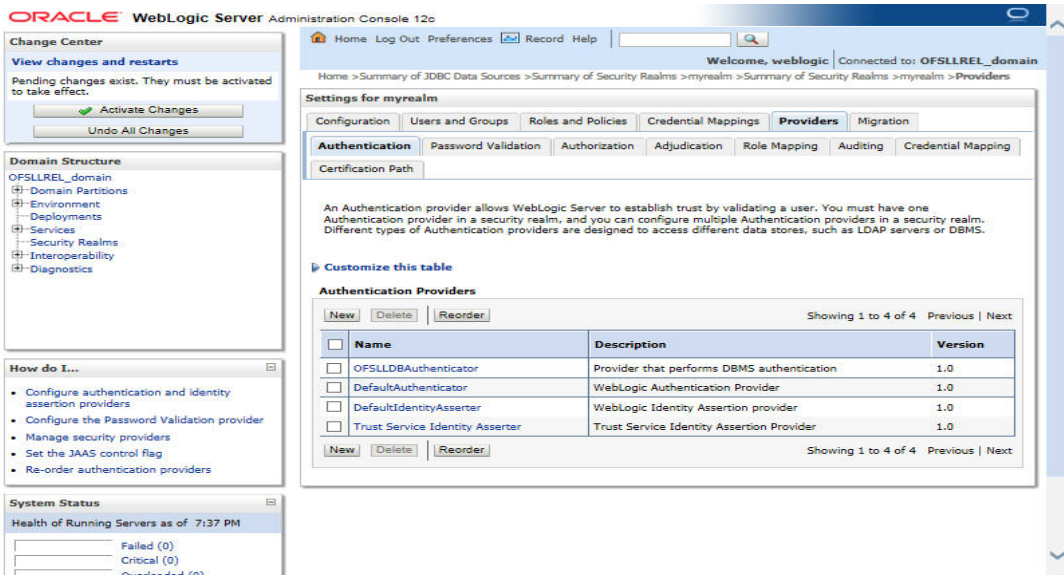
5. Create Authentication provider with following values:

- Name: OFSLLDAuthenticator
- Type: SQLAuthenticator

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

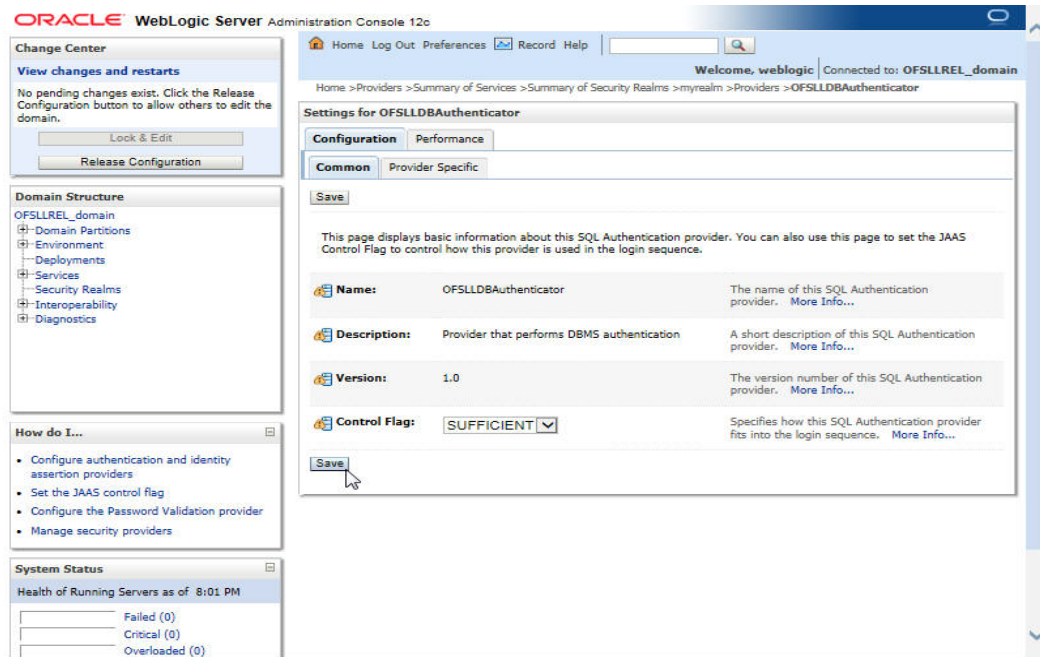


7. Click on 'Activate Changes'. The following window is displayed.



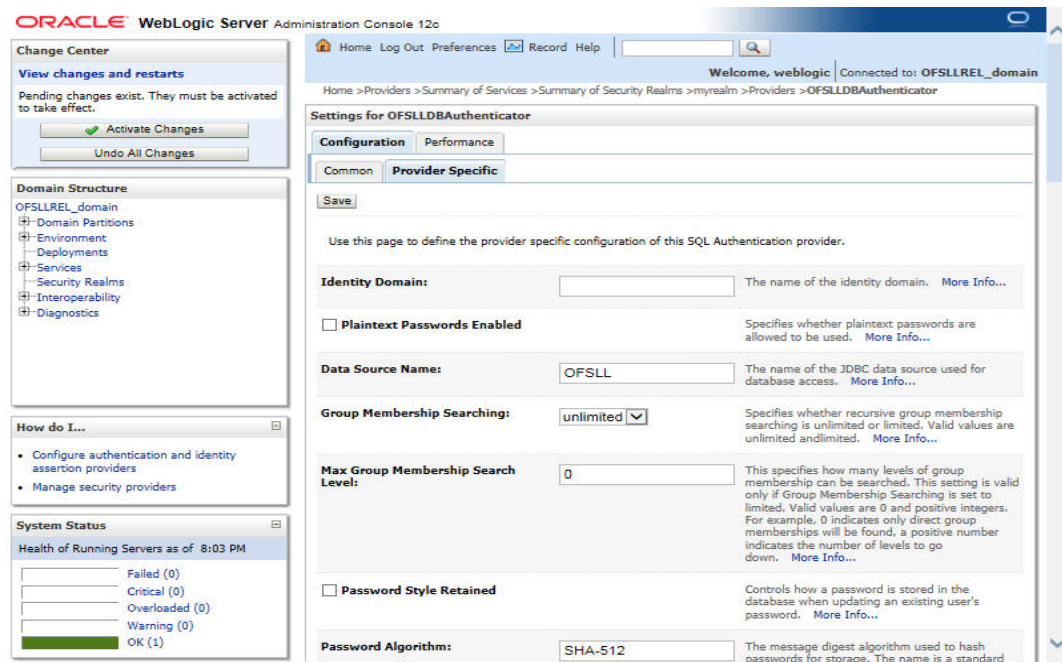
Authentication order should be maintained as mentioned in the above screen. 'OFSLDDBAuthenticator' will be displayed as above.

8. Click on 'OFSLDBAuthenticator'. 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: OFSSL
- Password Style Retained: Uncheck
- Password Algorithm: SHA-512
- Password Style: SALTEDHASHED

- Provide the SQL Queries from the column Corresponding SQL Queries as per OFSLL Tables as given below.

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

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...
<input checked="" type="checkbox"/> 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...
SQLSet User Description:	RE UAU_USR_CODE = ?	
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...
<input type="button" value="Save"/>		

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 script' to create OFSSL 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: OFSSLREL
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 OFSSL App user Id you
Want to create user: DEMOSUPR
Enter the First Name for this user: DEMO
Enter the Last Name for this user: SUPR
Enter the Phone Number for this user: 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..

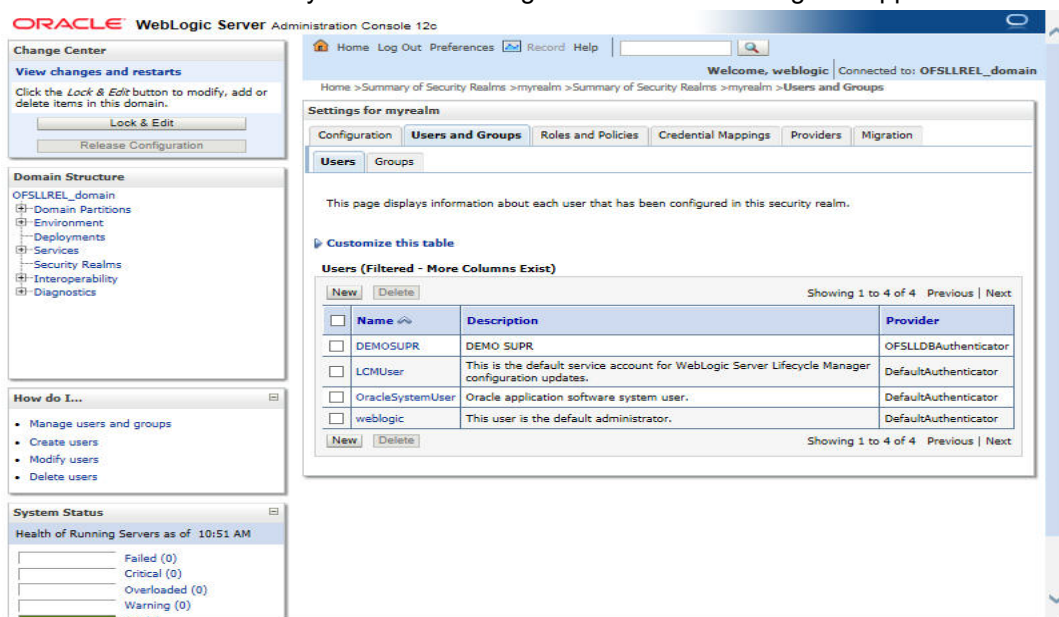
The screenshot displays the Oracle WebLogic Server Administration Console. The left-hand navigation pane shows the 'Domain Structure' tree with 'Security Realms' selected. The main content area is titled 'Summary of Security Realms' and contains a table with the following data:

Name	Default Realm
myrealm	true

The table also includes 'New' and 'Delete' buttons for each row. The console interface includes a 'Change Center' on the left, a 'How do I...' section, and a 'System Status' section at the bottom left.

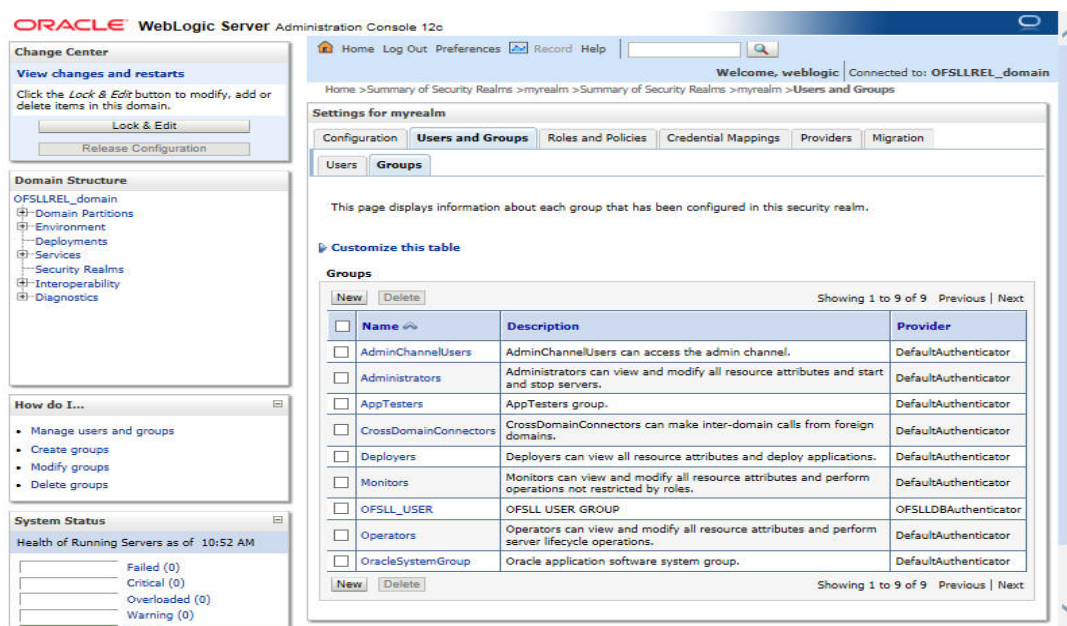
4. Select 'Users' tab under Users and Groups.

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



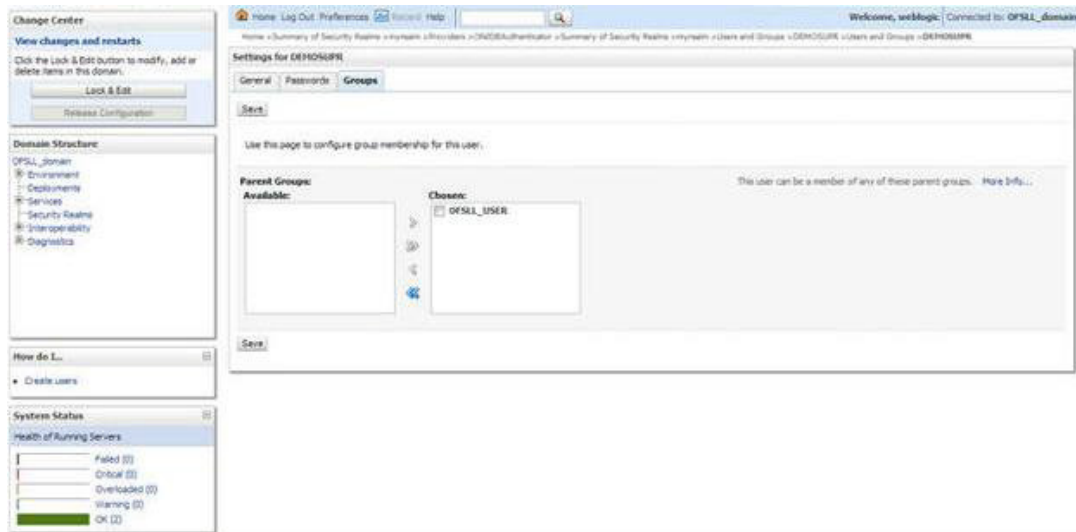
3.6.2 Creating User Groups

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



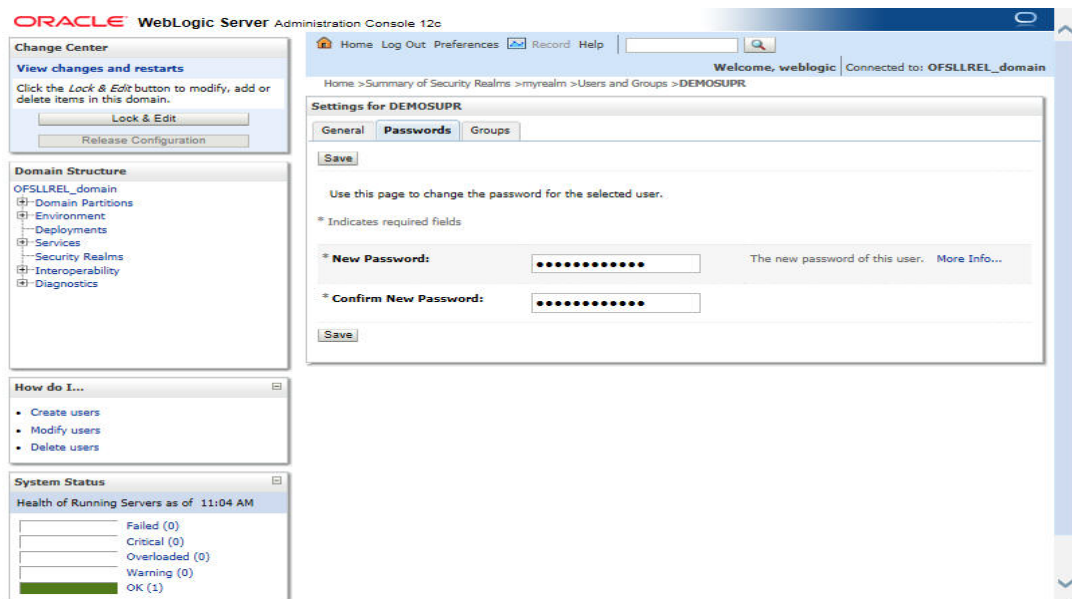
3.6.3 Assigning Users to Groups

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

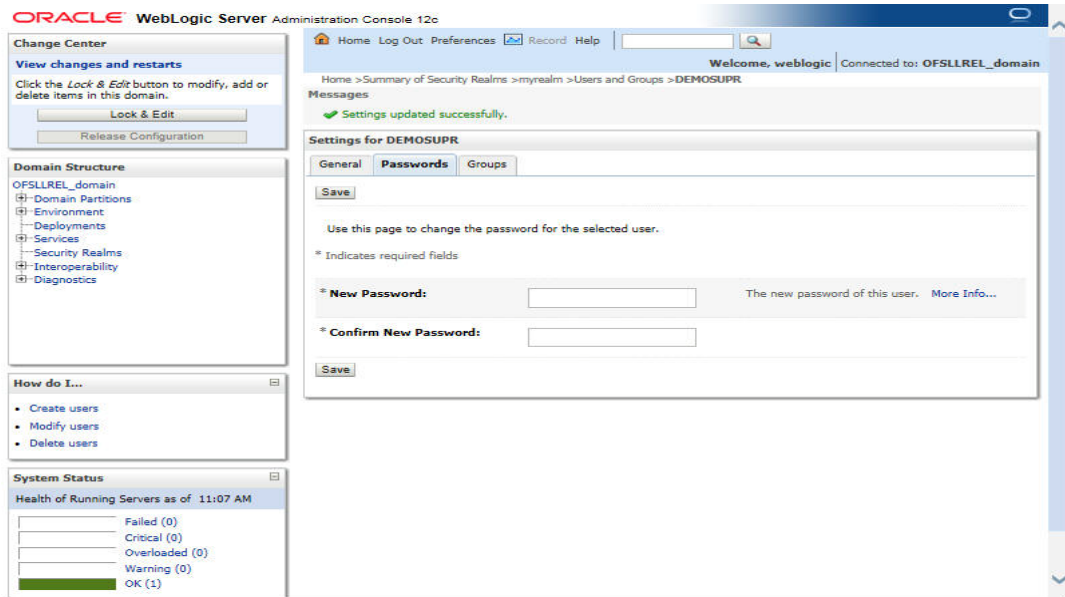


3.6.4 Resetting password via weblogic console

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



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



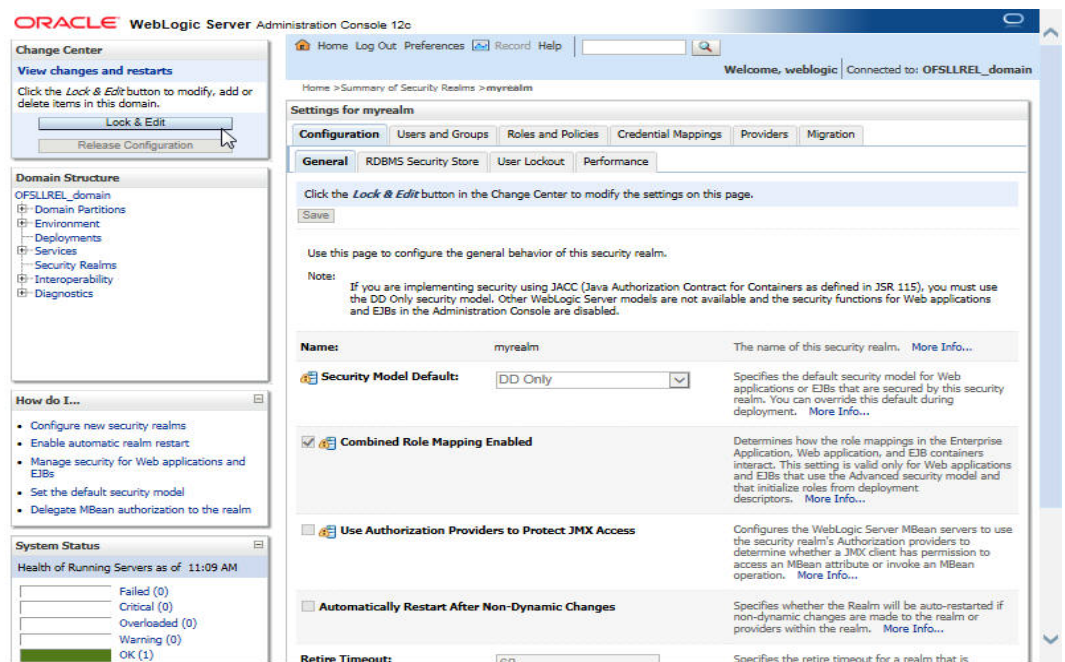
3.7 Implementing JMX Policy for Change Password

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

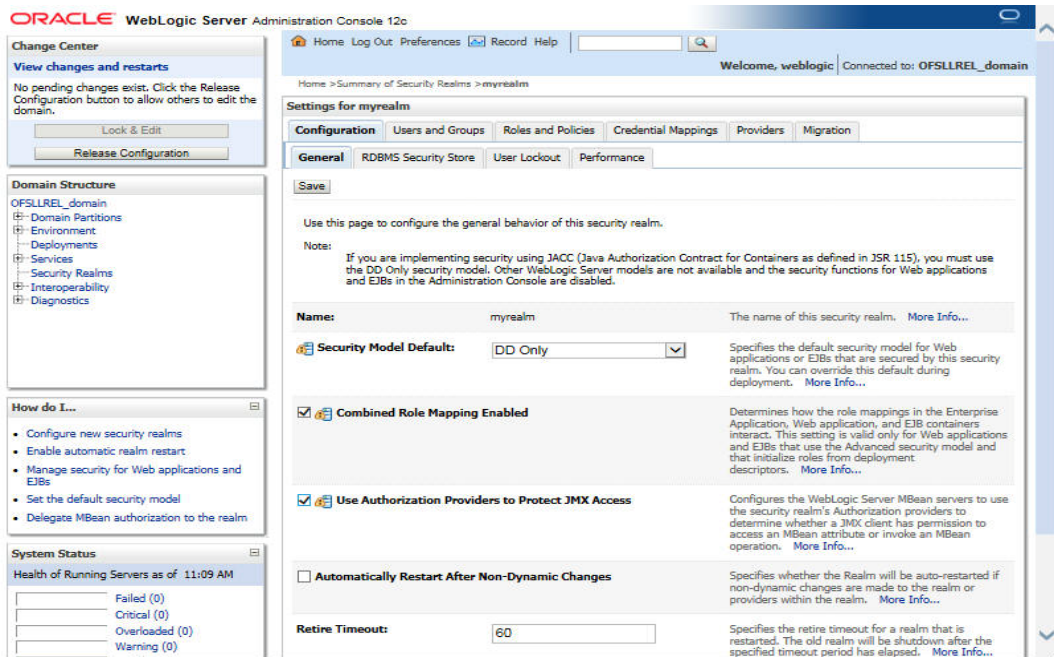
Note

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

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



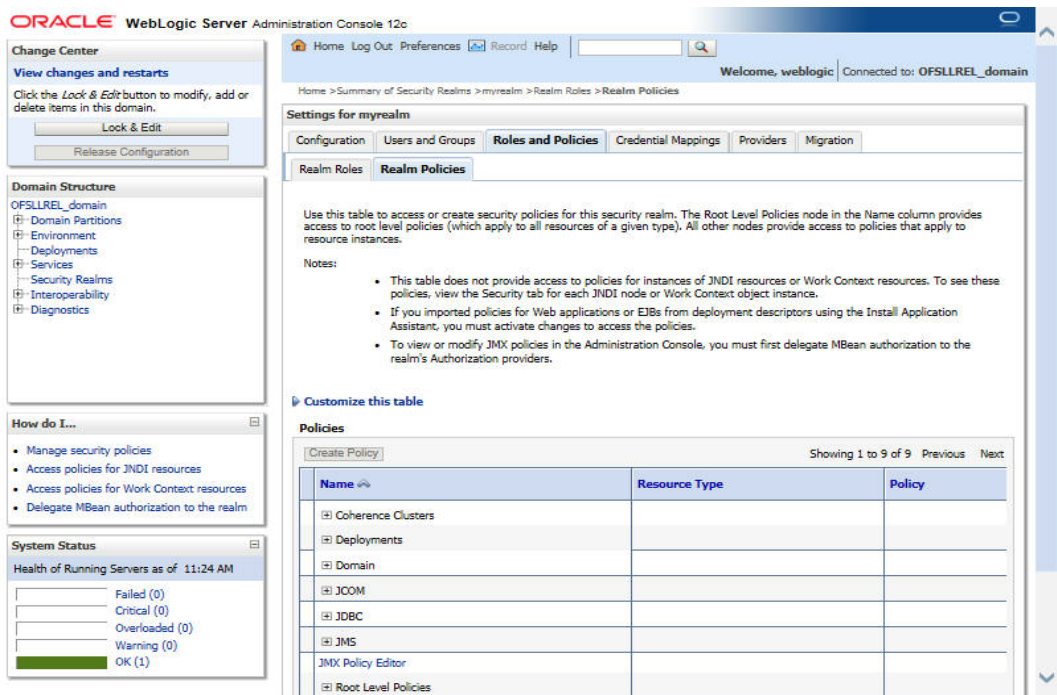
- To enable JMX policy select the 'Use Authorization Providers to Protect JMX Access' check box on the right panel



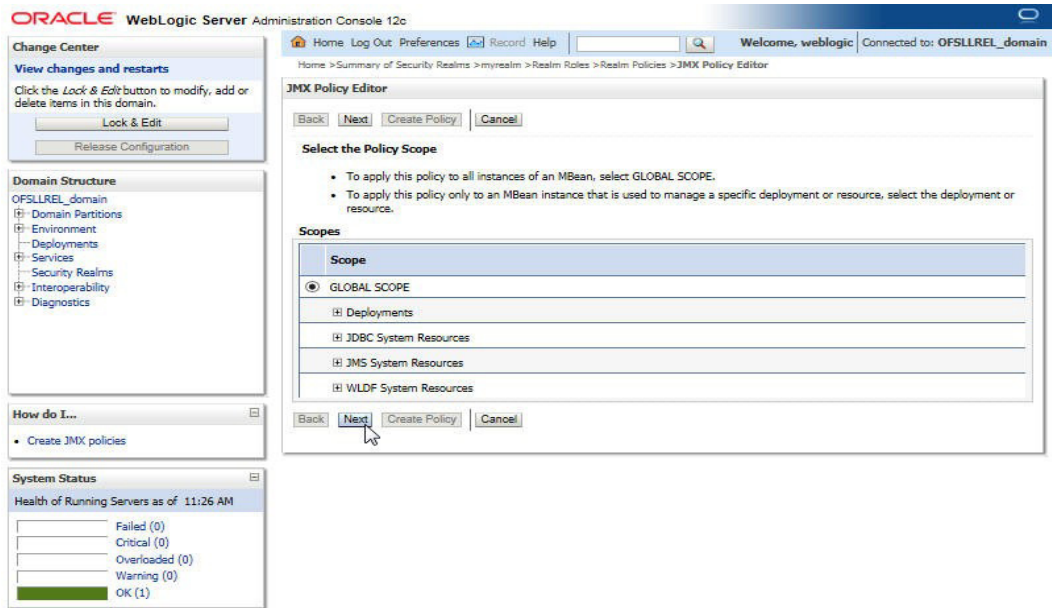
- Click 'Save' and restart the server.
- Re-login to console.
- Click Domain > Security > myrealm > Roles and Policies > Realm Policies

Note

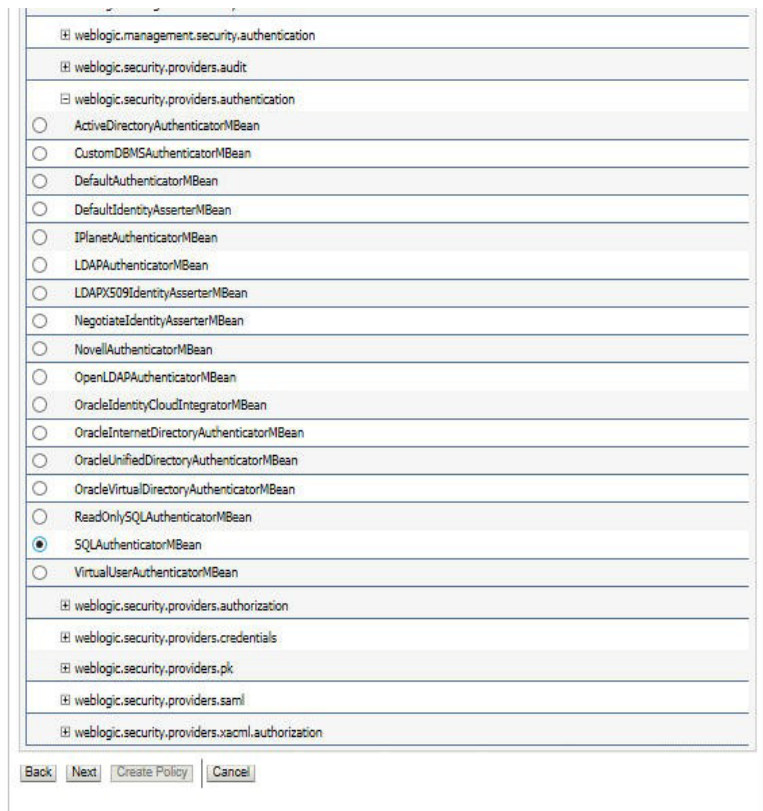
If server is not restarted, JMX Policy Editor option will not appear



7. Click on JMX Policy Editor to configure

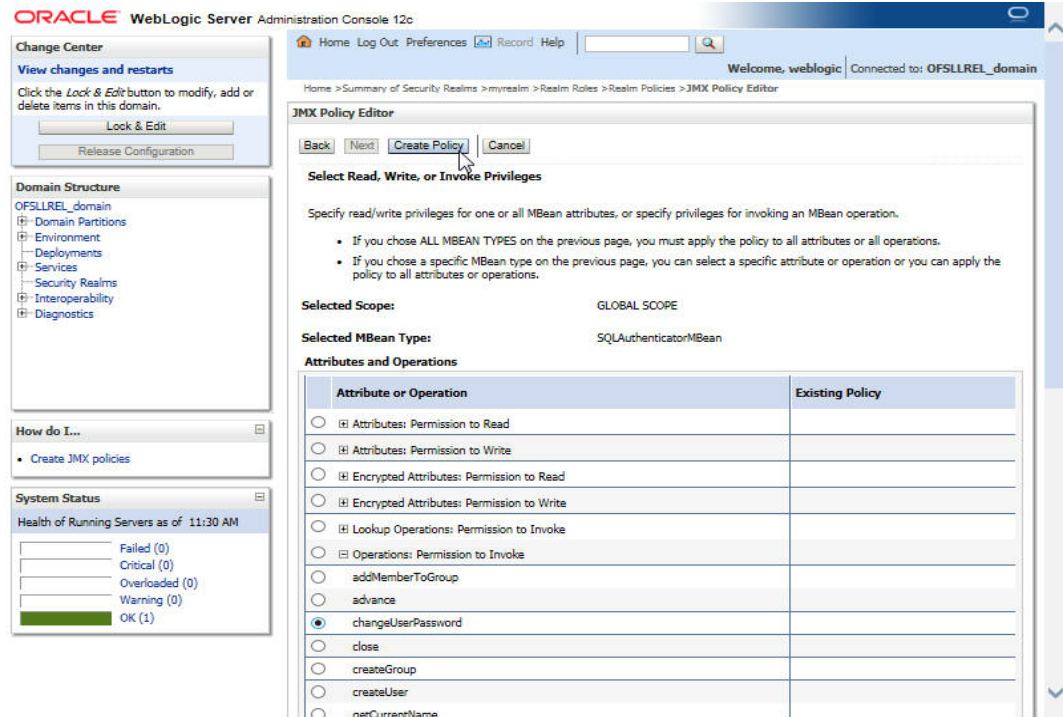


8. Select 'GLOBAL SCOPE' and click 'Next'.



9. Select weblogic.security.providers.authentication.

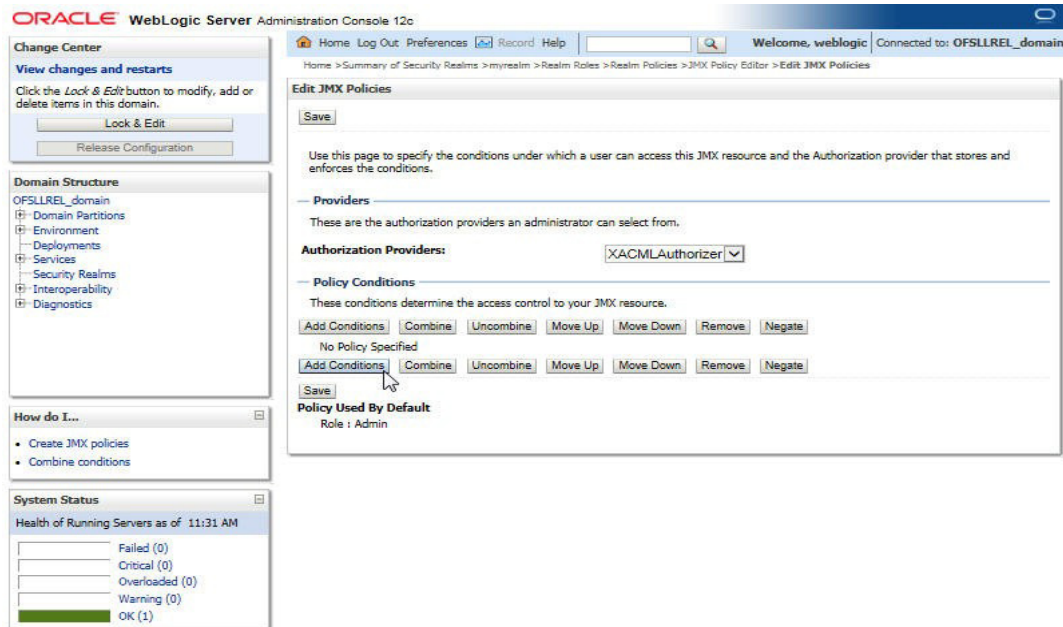
10. Select 'SQLAuthenticatorMBean'. Click 'Next'.



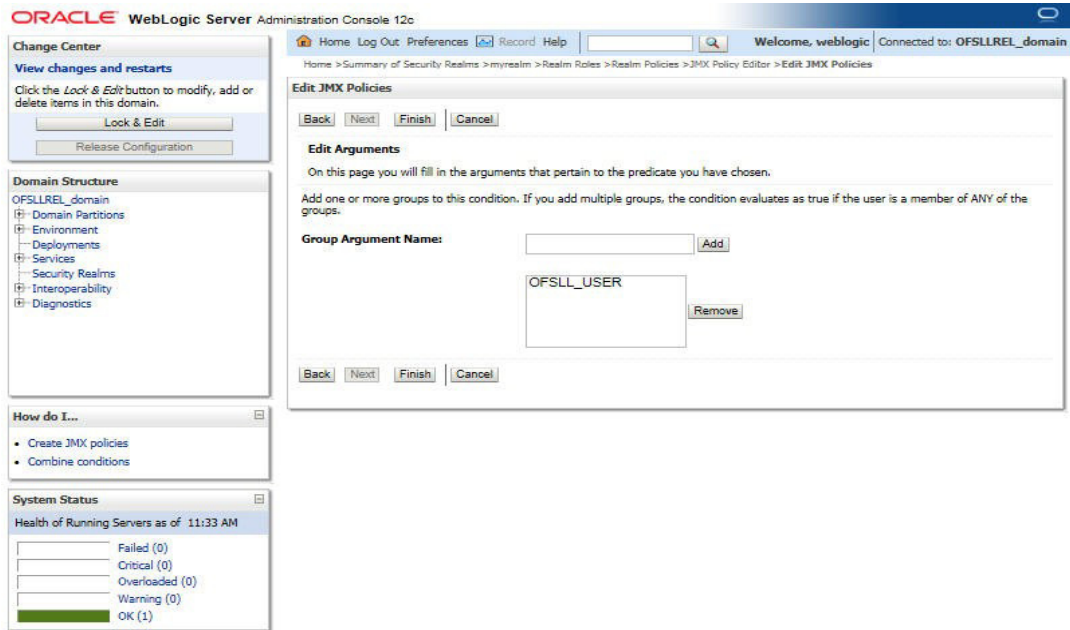
11. Expand 'Operations: Permissions to Invoke' and select 'ChangeUserPassword'.

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

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

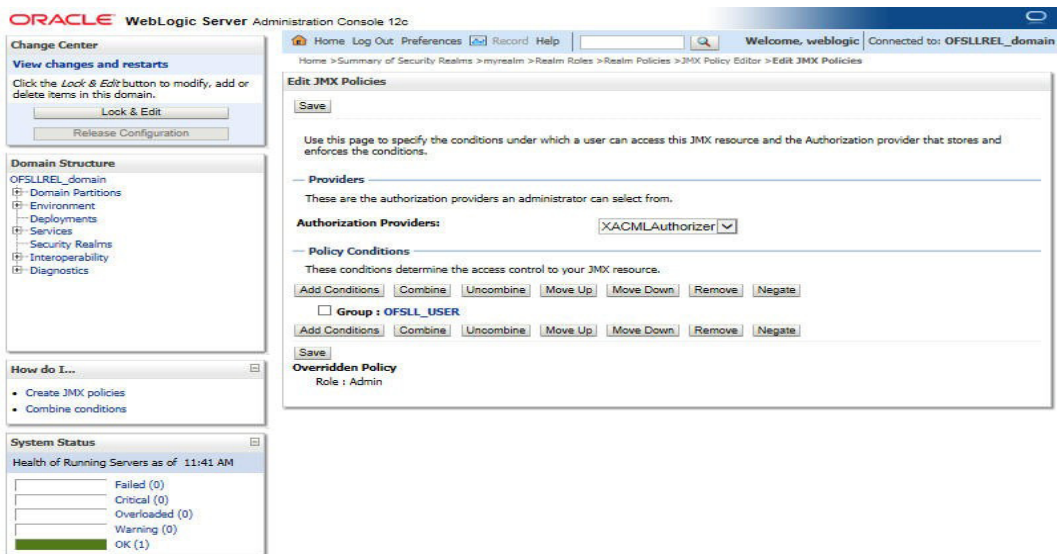


14. For Predicate List, select Group for configuration. Click 'Next'.



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. The left sidebar contains sections for Change Center, Domain Structure, How do I..., and System Status. The main content area is titled 'Settings for myrealm' and includes tabs for Configuration, Users and Groups, Roles and Policies, Credential Mappings, Providers, and Migration. Under the Providers tab, the 'Password Validation' sub-tab is active. A table lists the Password Validation Providers:

Name	Description	Version
SystemPasswordValidator	Password composition checks	1.0

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

The screenshot shows the configuration page for the SystemPasswordValidator provider. The left sidebar is the same as in the previous screenshot. The main content area is titled 'Settings for SystemPasswordValidator' and includes a 'Configuration' tab with sub-tabs for Common and Provider Specific. The 'Common' sub-tab is active, displaying basic information about the provider:

Name:	SystemPasswordValidator	The name of this System Password Validation provider. More Info...
Description:	Password composition checks	A short description of the System Password Validator provider. More Info...
Version:	1.0	The version number of the System Password Validator provider. More Info...

4. Click **Provider Specific** Tab.

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

Reject if Password Contains the User Name Reversed To determine whether the password can contain or be equal to the reverse username. This check will be case insensitive. If the value is "true", the password must not contain or be equal to the reverse username. [More Info...](#)

Password Length Policies

Minimum Password Length: Specifies the minimum number of characters that the password may contain. Note: If the Default Authentication provider is configured in the realm, make sure that this number is consistent with the one configured for that provider. [More Info...](#)

Maximum Password Length: Specifies the maximum number of characters that the password may contain. To be accepted, the password may not contain a greater number of characters than the value specified. Specifying 0 results in no restriction on password length. [More Info...](#)

Character Policies

Maximum Instances of Any Character: Specifies the maximum number of times any one character may appear in the password. [More Info...](#)

Maximum Consecutive Characters: Specifies the maximum number of times that a character may appear consecutively in the password. [More Info...](#)

Minimum Number of Alphabetic Characters: Specifies the minimum number of alphabetic characters that a password must contain. [More Info...](#)

Minimum Number of Numeric Characters: Specifies the minimum number of numeric characters that must appear in the password. [More Info...](#)

Minimum Number of Lower Case Characters: Specifies the minimum number of lowercase characters that a password must contain. [More Info...](#)

Minimum Number of Upper Case Characters: Specifies the minimum number of uppercase characters that a password must contain. [More Info...](#)

Minimum Number of Non-Alphanumeric Characters: Specifies the minimum number of non-alphanumeric characters (also known as special characters, such as %, *, #, or ;) that must appear in the password. [More Info...](#)

Minimum Number of Non-Alphabetic Characters: Specifies the minimum number of numeric or special characters (such as %, *, #, or ;) that a password must contain. [More Info...](#)

- Click 'Save'.

4.2 Configuring User Lockout Policy

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

ORACLE WebLogic Server Administration Console 12c

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: OFSLLREL_domain

Home > Summary of Security Realms > myrealm

Settings for myrealm

Configuration Users and Groups Roles and Policies Credential Mappings Providers Migration

General RDBMS Security Store **User Lockout** Performance

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

Password guessing is a common type of security attack. In this type of attack, a hacker attempts to log in to a computer using various combinations of usernames and passwords. WebLogic Server provides a set of attributes to protect user accounts from intruders. This page allows us to define how user lockouts will be handled in this security realm.

Lockout Enabled Specifies whether the server locks users out when there are invalid login attempts on their account. [More Info...](#)

Lockout Threshold: The maximum number of consecutive invalid login attempts that can occur before a user's account is locked out. [More Info...](#)

Lockout Duration: The number of minutes that a user's account is locked out. [More Info...](#)

Lockout Reset Duration: The number of minutes within which consecutive invalid login attempts cause a user's account to be locked out. [More Info...](#)

Lockout Cache Size: The maximum number of invalid login records that the server can place in a cache. [More Info...](#)

Lockout GC Threshold: The maximum number of invalid login records that the server keeps in memory. [More Info...](#)

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

5. Deploying Application

5.1 Deploying Application

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



Domain Domain_OFSSLREL_domain

* User Name weblogic

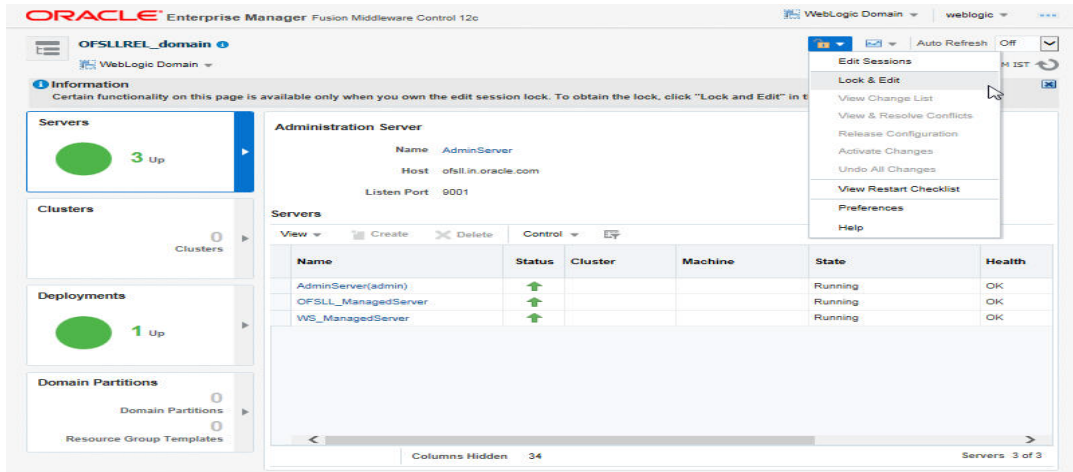
* Password *****

Login to Partition

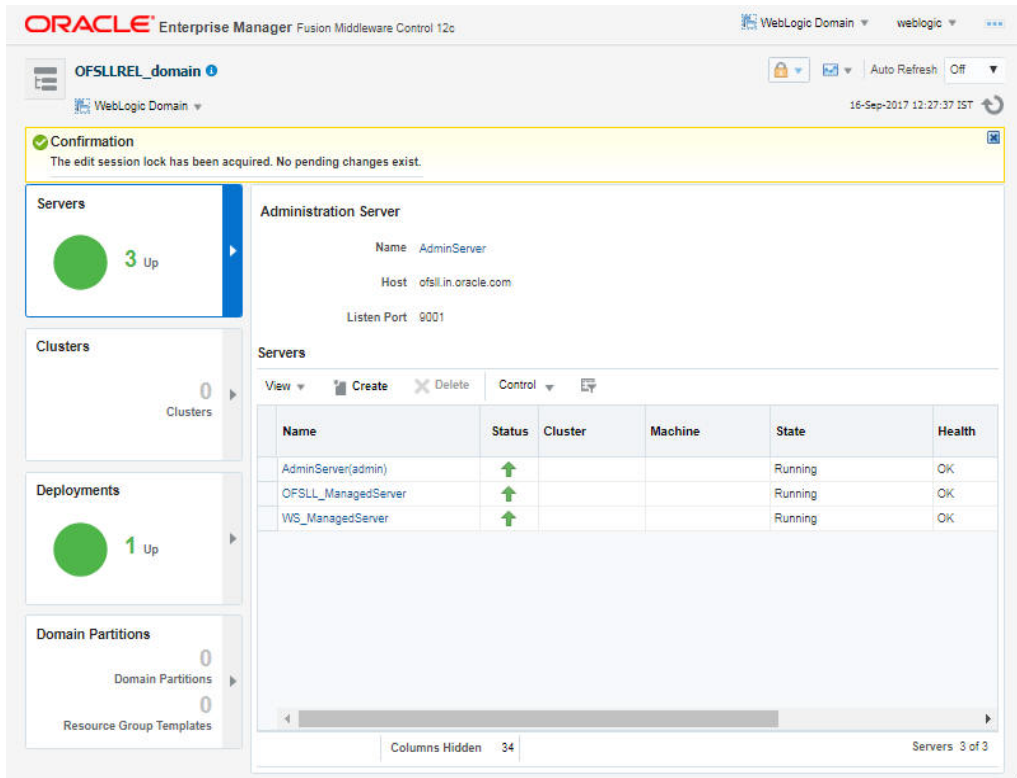
Sign in



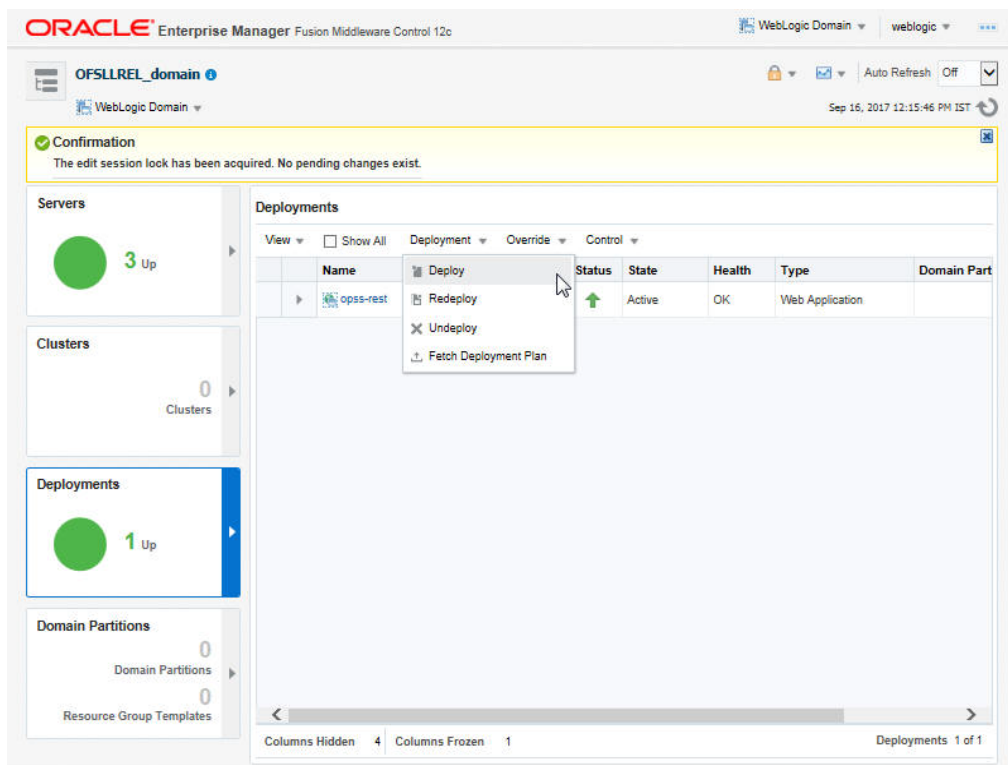
2. Click on 'Lock and Edit' as shown below.



3. The following window is displayed.



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



5. Click 'Choose File' button and select OFSLL application archive file i.e. ofsll_1411.ear. Choose the 'Deployment Plan' (if any).

ORACLE Enterprise Manager Fusion Middleware Control 12c

OFSLLREL_domain

Select Archive Select Target Application Attributes Deployment Settings

Deploy Java... Back Step 1 of 4 Next Cancel

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

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

Archive is on the machine where this Web browser is running.
Choose File: ofsll_1411.ear

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

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

Create a new deployment plan when deployment configuration is done.

Deployment plan is on the machine where this Web browser is running.
Choose File: No file chosen

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

Deployment Type

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

Note

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

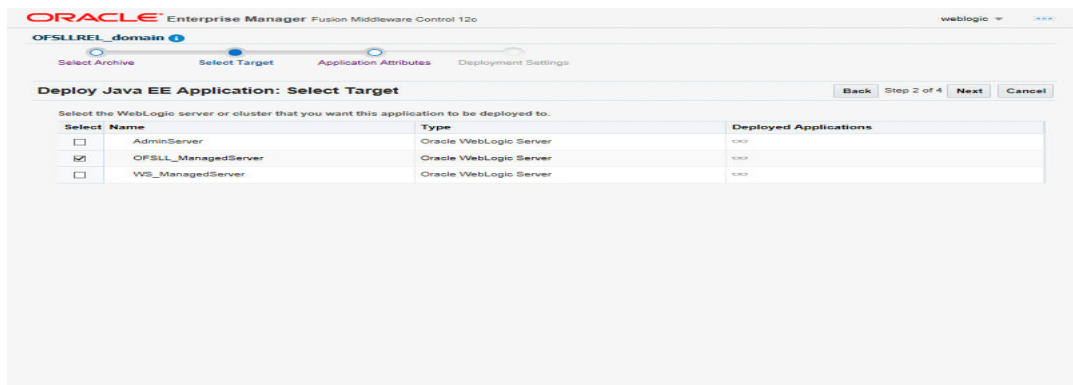
Sample plan.xml

```

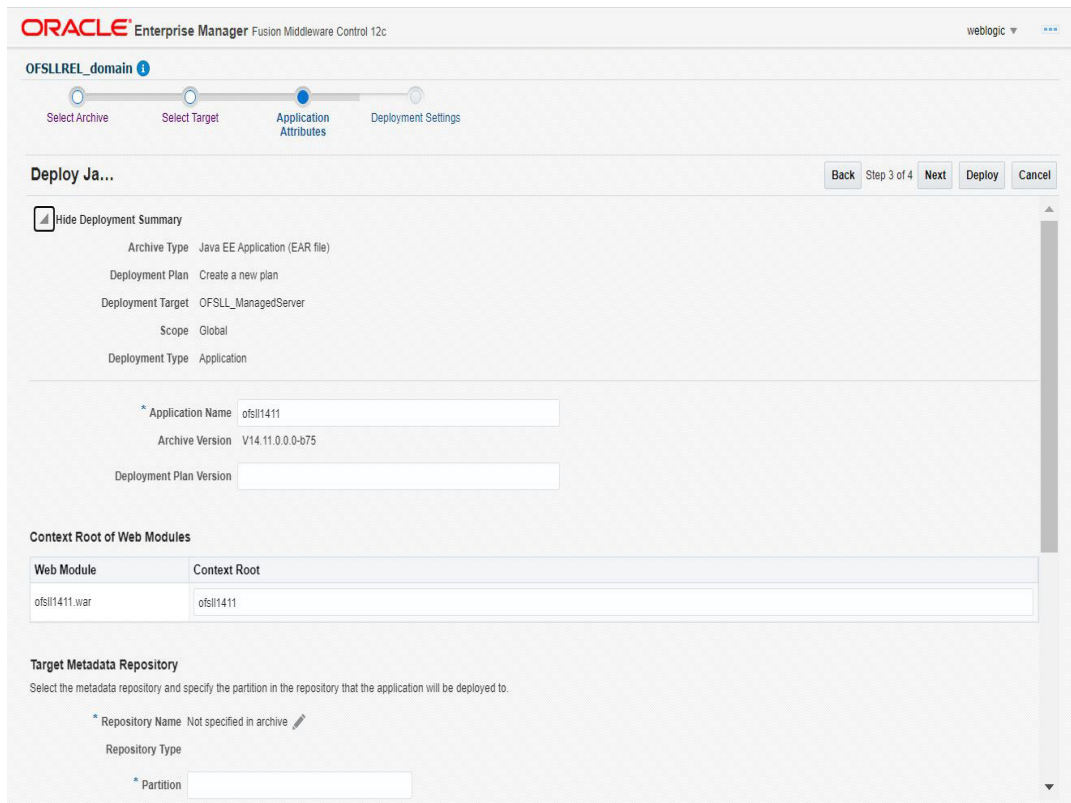
<?xml version='1.0' encoding='UTF-8'?>
<deployment-plan xmlns="http://xmlns.oracle.com/weblogic/deployment-plan" xmlns:xsi="http://www.w3.org/2001/XMLSchema"
<application-name>ofsslrel</application-name>
<variable-definition>
  <variable>
    <name>Web_ofsslrel_contextRoot</name>
    <value>ofsslrel</value>
  </variable>
</variable-definition>
<module-override>
  <module-name>ofsslrel.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_ofsslrel_contextRoot</name>
      <xpath>/application/module/web/[context-root="ofsslrel"]/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>ofsslrel.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>
<module-override>
  <module-name>empty.jar</module-name>
  <module-type>car</module-type>
  <module-descriptor external="true">
    <root-element>weblogic-application-client</root-element>
    <uri>META-INF/weblogic-application-client.xml</uri>
  </module-descriptor>
  <module-descriptor external="false">
    <root-element>application-client</root-element>
    <uri>META-INF/application-client.xml</uri>
  </module-descriptor>
</module-override>

```

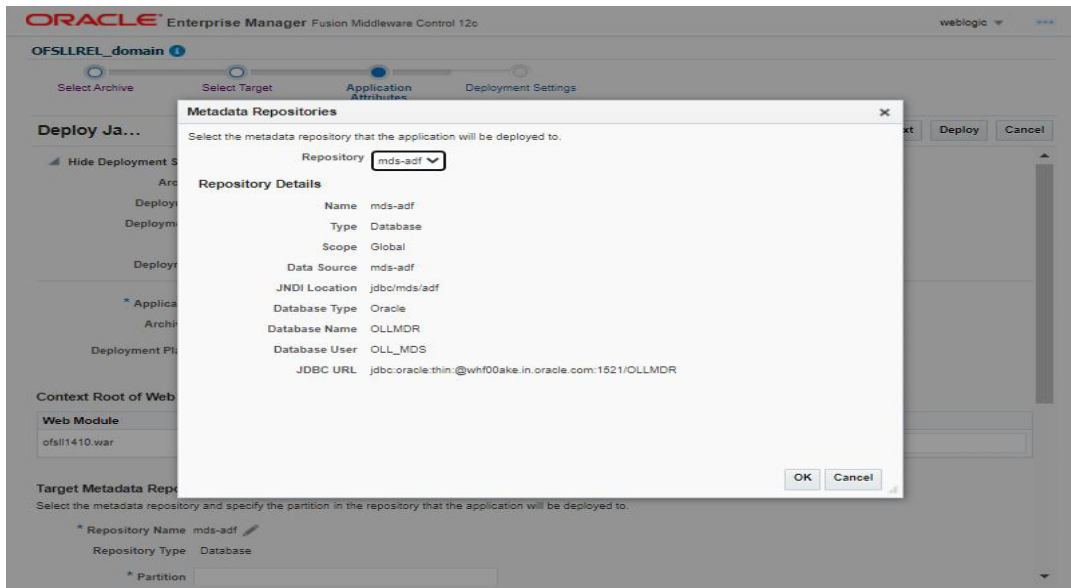
6. Click 'Next'. The following window is displayed.



7. Check target server as per the requirement 'OFSSL_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 Application (Step 3 of 4)

Application Attributes

- Application Name: ofsl1411
- Archive Version: V14.11.0.0.0-b75
- Deployment Plan Version: [Empty]

Web Module	Context Root
ofsl1411.war	ofsl1411

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: ofsl1411

Distribution

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

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

Deploy Java Application (Step 4 of 4)

Deployment Settings

Hide Deployment Summary

- Archive Type: Java EE Application (EAR file)
- Deployment Plan: Create a new plan
- Deployment Target: OFSLL_ManagedServer
- Scope: Global
- Deployment Type: Application
- Application Name: ofsl1411
- Version: V14.11.0.0.0-b75
- Context Root: ofsl1411
- 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.

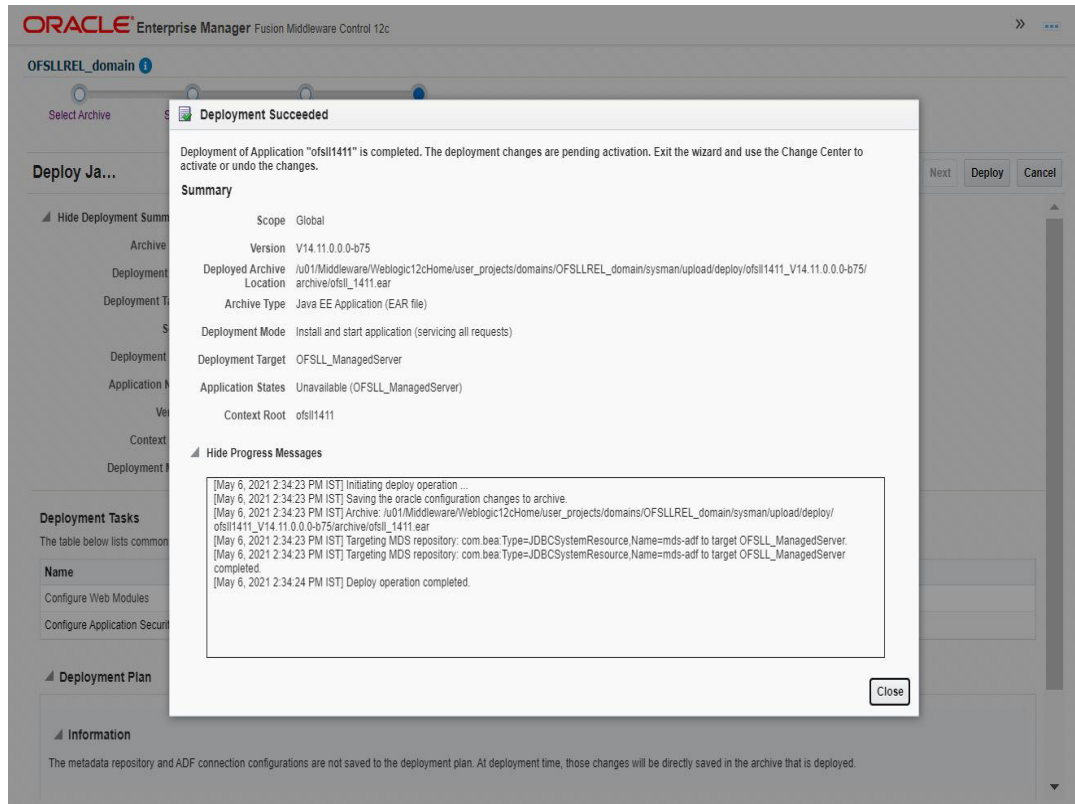
Name	Go To Task	Description
Configure Web Modules	[Edit]	Configure the Web modules in your application.
Configure Application Security	[Edit]	Configure application policy migration, credential migration and other security behavior.

Deployment Plan

Information

The metadata repository and ADF connection configurations are not saved to the deployment plan. At deployment time, those changes will be directly saved in the archive that is deployed.

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 displays the 'Settings for OFSSL_ManagedServer' configuration page. The 'General' tab is selected, and the 'SSL' sub-tab is active. The 'Listen Port Enabled' checkbox is checked, and the 'SSL Listen Port' is set to 9503. The 'Listen Port' is set to 9003. The 'Machine' is set to (None) and the 'Cluster' is set to (Stand-Alone). The 'Listen Address' field is empty. The 'Client Cert Proxy Enabled' checkbox is unchecked.

Property	Value	Description
Name	OFSSL_ManagedServer	An alphanumeric name for this server instance. More Info...
Template	(No value specified) Change	The template used to configure this server. More Info...
Machine	(None)	The WebLogic Server host computer (machine) on which this server is meant to run. More Info...
Cluster	(Stand-Alone)	The cluster, or group of WebLogic Server instances, to which this server belongs. More Info...
Listen Address		The IP address or DNS name this server uses to listen for incoming connections. For example, enter 12.34.5.67 or mymachine, respectively. More Info...
Listen Port Enabled	<input checked="" type="checkbox"/>	Specifies whether this server can be reached through the default plain-text (non-SSL) listen port. More Info...
Listen Port	9003	The default TCP port that this server uses to listen for regular (non-SSL) incoming connections. More Info...
SSL Listen Port Enabled	<input checked="" type="checkbox"/>	Indicates whether the server can be reached through the default SSL listen port. More Info...
SSL Listen Port	9503	The TCP/IP port at which this server listens for SSL connection requests. More Info...
Client Cert Proxy Enabled	<input type="checkbox"/>	Specifies whether the HttpClusterServlet proxies the client certificate in a special header. More Info...

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

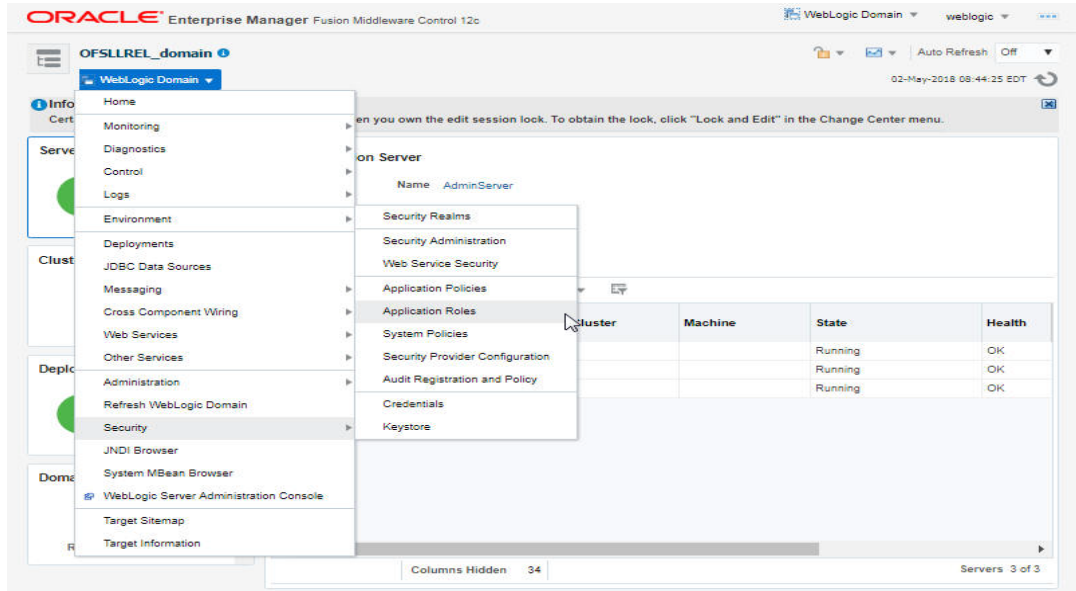
Note

It is recommended to disable http protocol.

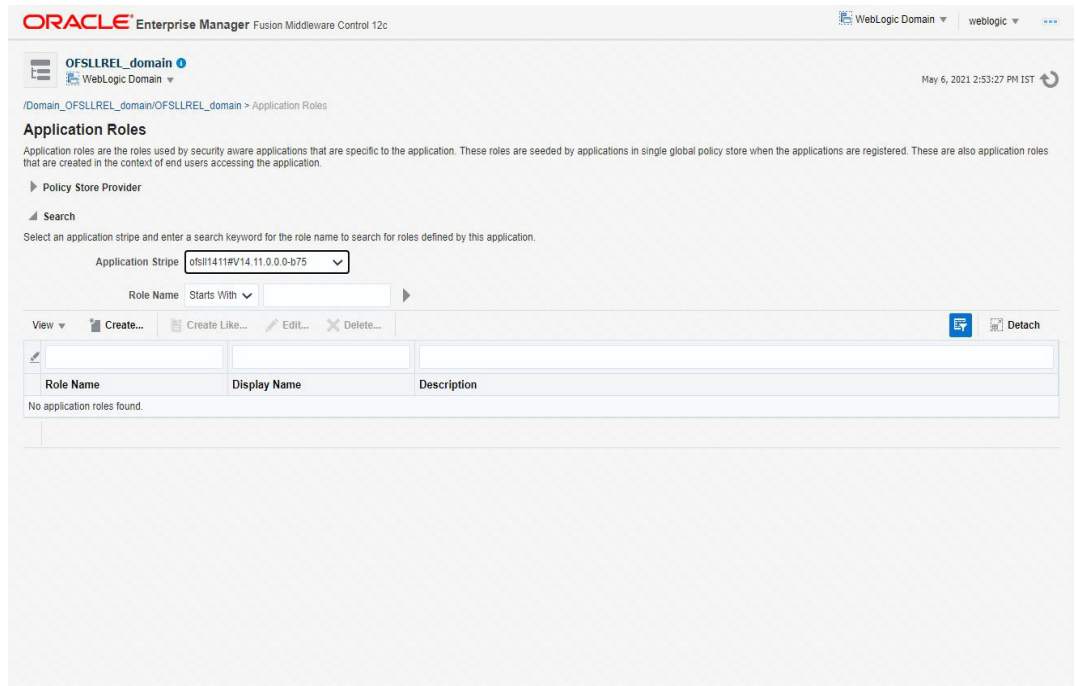
7. Mapping Enterprise Group with Application Role

Follow the below steps to add a user to the group

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



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



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

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: ofsl1411#V14.11.0.0.0-b75

Role Name: Starts With

Role Name	Display Name	Description
OFSSL_USER	OFSSL USER	

Membership for OFSSL_USER

Principal	Display Name	Type	Description
DEMOSUPR		User	

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

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: ofsl1411#V14.11.0.0.0-b75

Role Name: OFSSL_USER

Display Name: OFSSL USER

Description:

Members

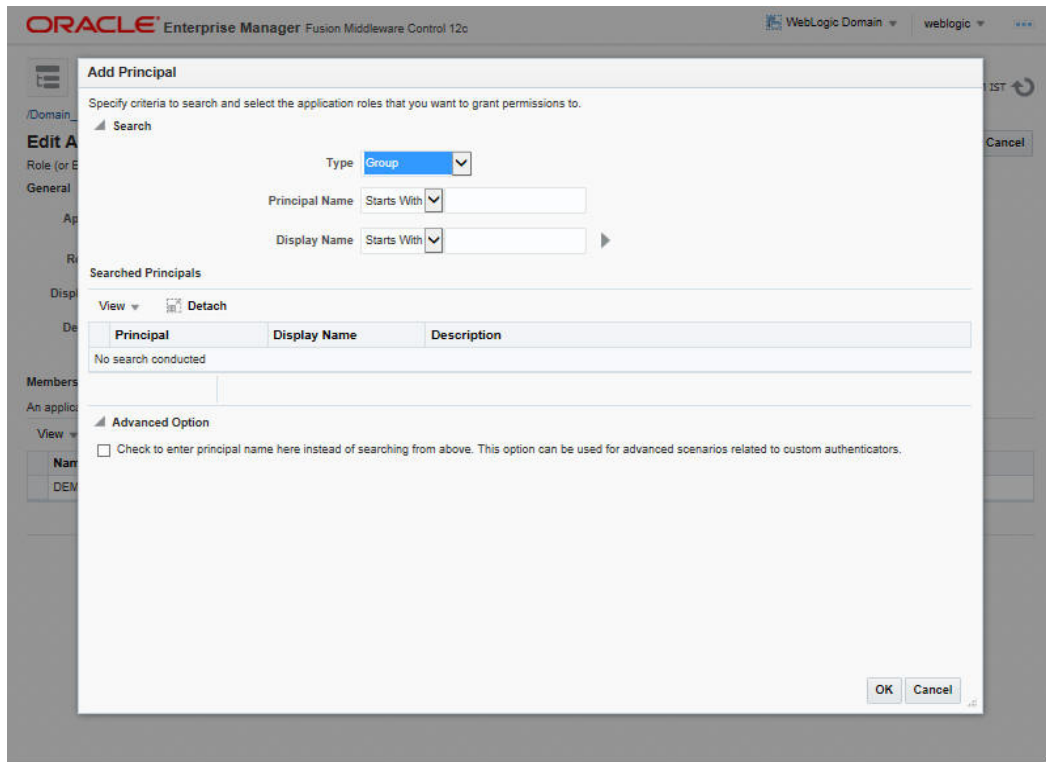
An application role may need to be mapped to users or groups defined in enterprise LDAP server, or the role can be mapped to other application roles.

View Add Delete Detach

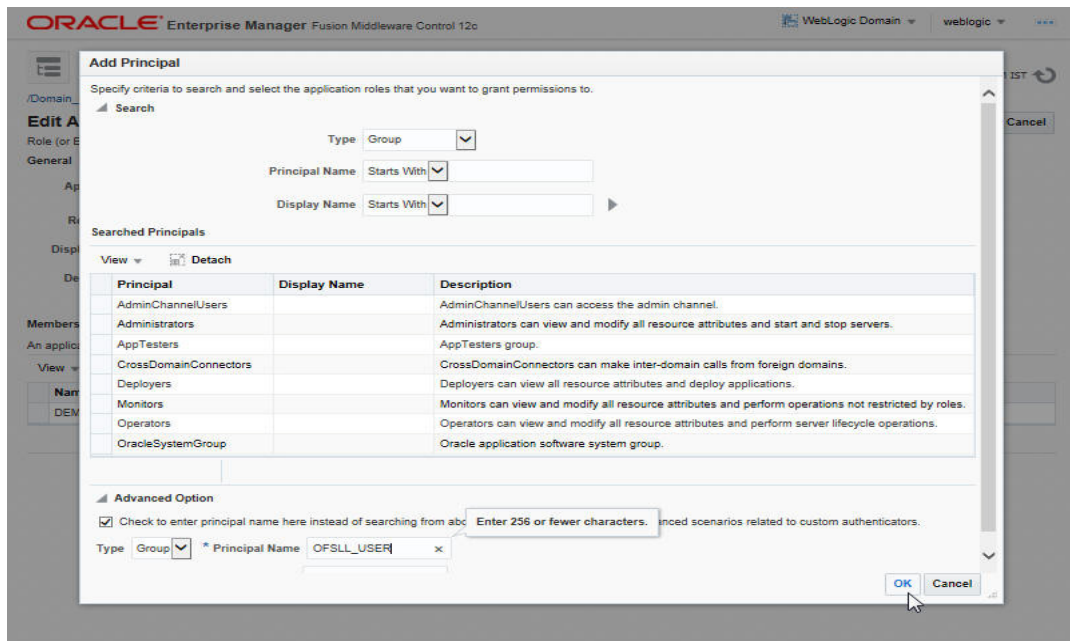
Name	Display Name	Type
DEMOSUPR		User

- 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

OFSSLREL_domain

May 6, 2021 2:58:46 PM IST

/Domain_OFSSLREL_domain/OFSSLREL_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 ofssl1411#V14.11.0.0.0-b75

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.

View + Add X Delete... Detach

Name	Display Name	Type
DEMOSUPR		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

OFSSLREL_domain

May 6, 2021 3:16:26 PM IST

Information

An application role OFSSL_USER has been updated.

/Domain_OFSSLREL_domain/OFSSLREL_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 ofssl1411#V14.11.0.0.0-b75

Role Name Starts With

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

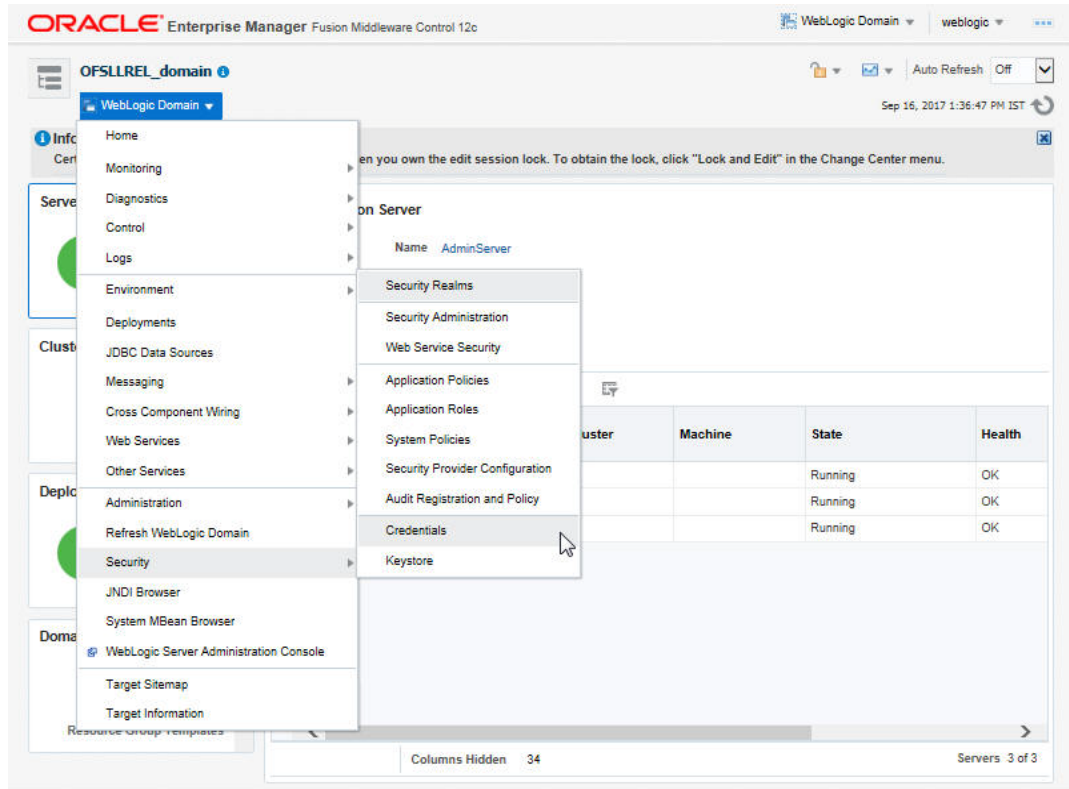
Role Name	Display Name	Description
OFSSL_USER	OFSSL_USER	

Membership for OFSSL_USER

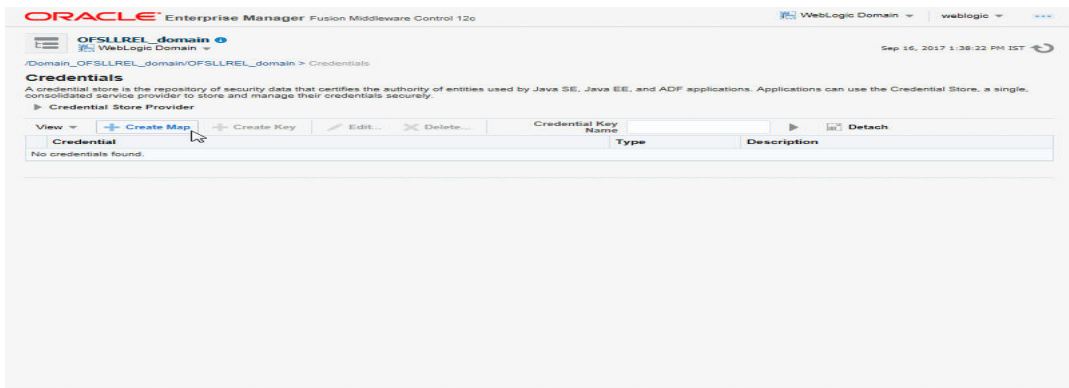
Principal	Display Name	Type	Description
DEMOSUPR		User	
OFSSL_USER		Group	

8. Configuring JNDI name for HTTP Listener

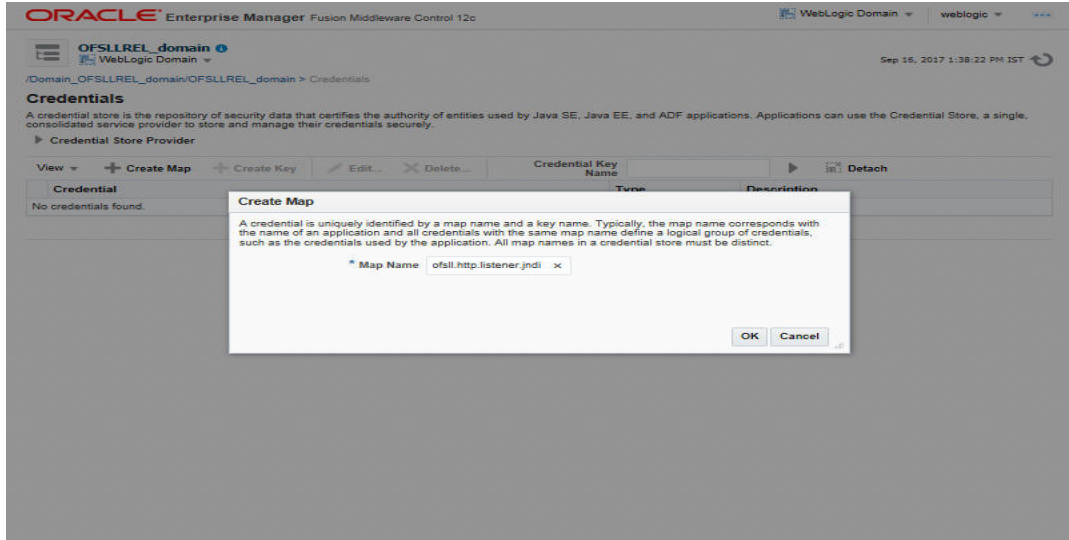
1. Click 'WebLogic Domain' on the right panel. Select Security > Credentials.



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

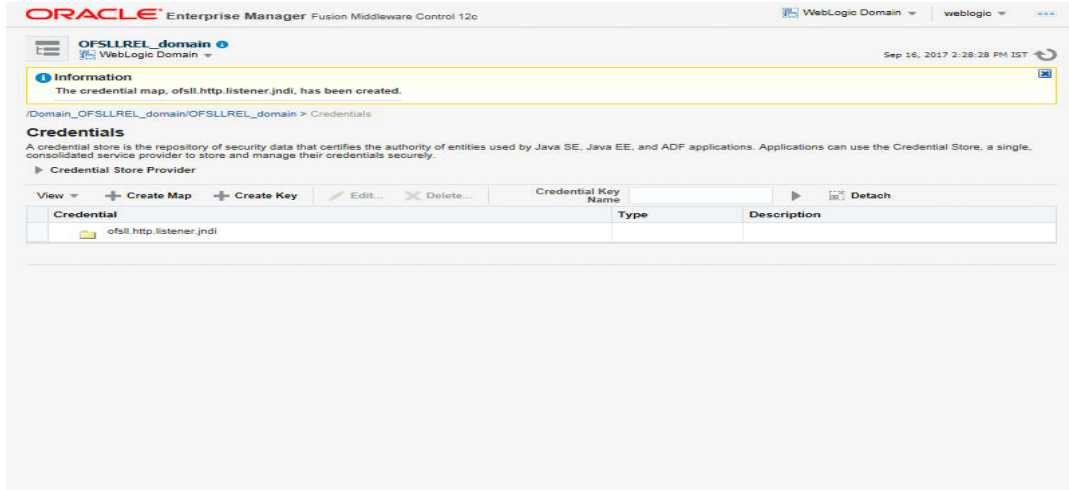


3. Click 'Create Map'. The following window is displayed.

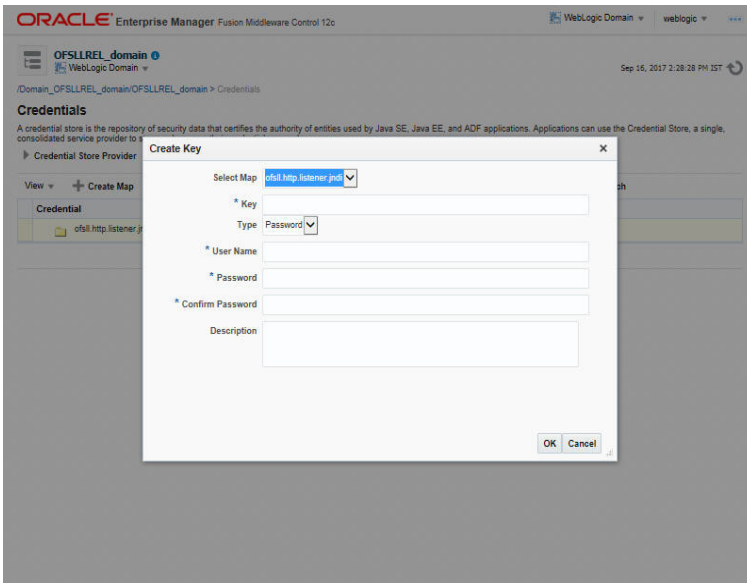


4. Enter Map name as 'ofssl.http.listener.jndi'.

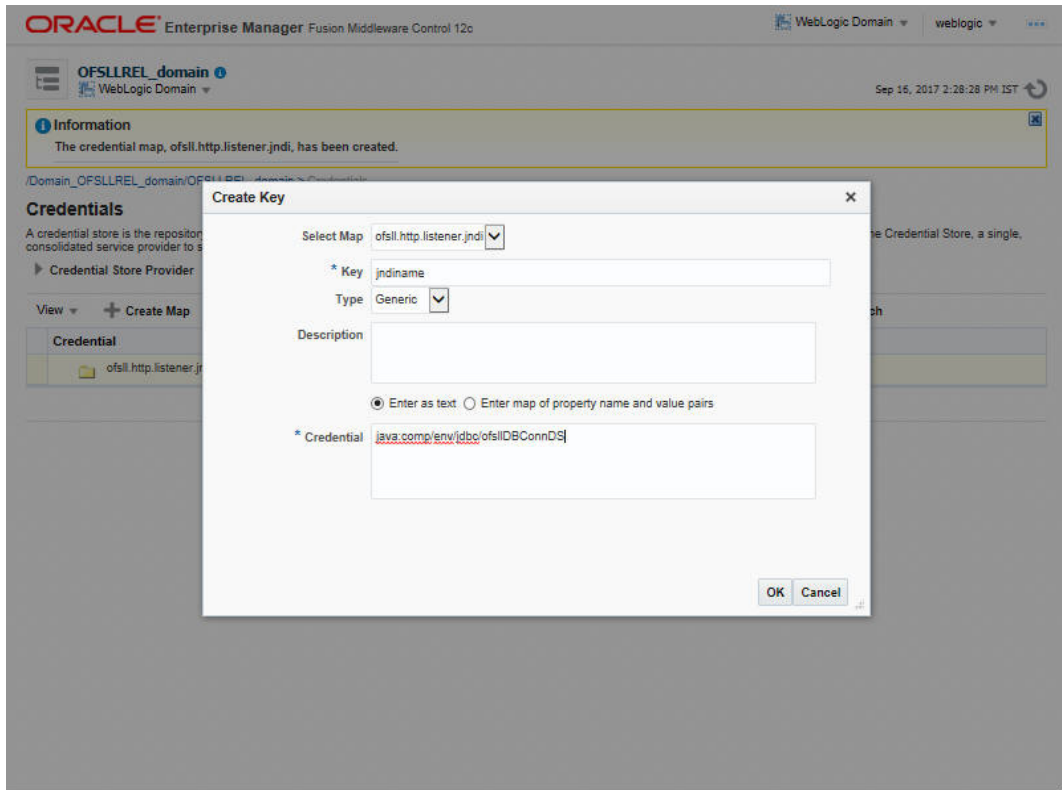
5. Click 'OK'. The following window is displayed.



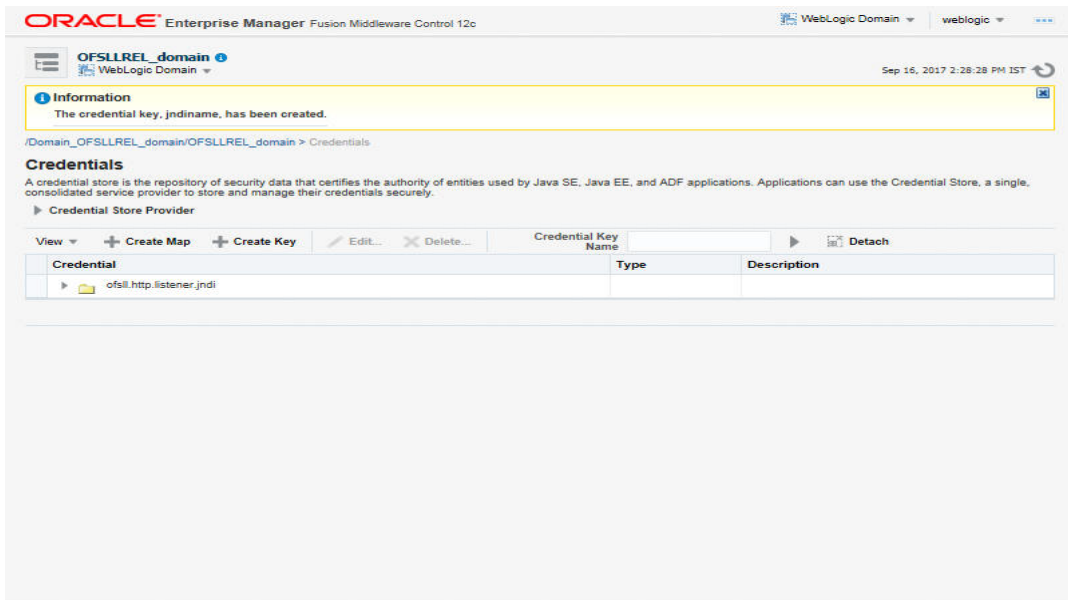
6. Click 'Create Key' Button. The following window is displayed.



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



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



9. Configure JMS Queue

The following steps are to be performed to configure the JMS Queue through the Weblogic Console:

- [Create Data Sources for JMS Queue](#)
- [AQ-JMS Queue Configuration](#)
- [Outbound Queue Configuration](#)
- [Configure External Client Certificates](#)
- [Create Credentials and System Policies](#)
- [Deploy MDB EJB](#)

Note

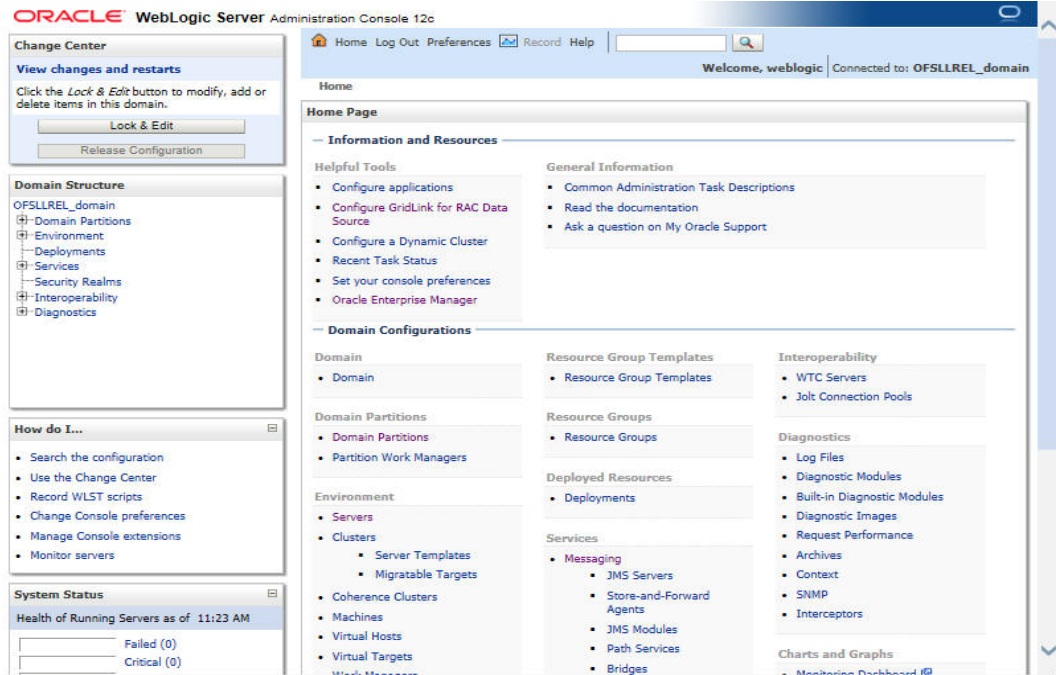
Ensure that MDB EJB is not configured and deployed (i.e. OfslQueueApp.ear deployment) on the same server on which the other WebServices are deployed.

9.1 Create Data Sources for JMS Queue

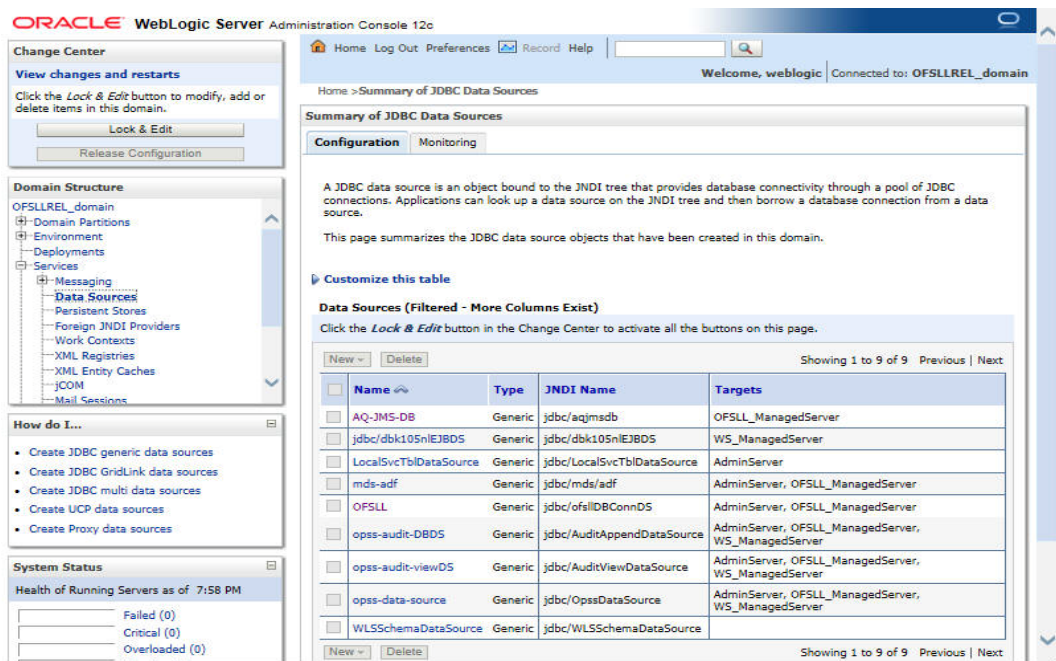
1. Login to Oracle Weblogic 12c console (<http://hostname:port/console>).



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



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



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

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Change Center' panel has 'Lock & Edit' selected. The 'Domain Structure' tree shows 'Data Sources' expanded. The main area displays the 'Summary of JDBC Data Sources' page with a table of existing data sources. A 'New' button is hovering over the 'Generic Data Source' option in the table.

Generic Data Source	Type	JNDI Name	Targets
GridLink Data Source	Generic	jdbc/aq/msdb	OFSLL_ManagedServer
Multi Data Source	Generic	jdbc/dbk105n1EJBDS	WS_ManagedServer
Proxy Data Source	Generic	jdbc/LocalSvcTblDataSource	AdminServer
UCP Data Source	Generic	jdbc/mds/adf	AdminServer, OFSLL_ManagedServer
OFSLL	Generic	jdbc/ofslDBConnDS	AdminServer, OFSLL_ManagedServer
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/OpssDataSource	AdminServer, OFSLL_ManagedServer, WS_ManagedServer
WLSSchemaDataSource	Generic	jdbc/WLSSchemaDataSource	

- The following window is displayed.

The screenshot shows the 'Create a New JDBC Data Source' wizard. The 'Name' field is 'QueueAppDS' and the 'JNDI Name' field is 'jdbc/QueueAppDS'. The 'Database Type' is set to 'Oracle'.

JDBC Data Source Properties

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

* Indicates required fields

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

Name: QueueAppDS

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

Scope: Global

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

JNDI Name: jdbc/QueueAppDS

What database type would you like to select?

Database Type: Oracle

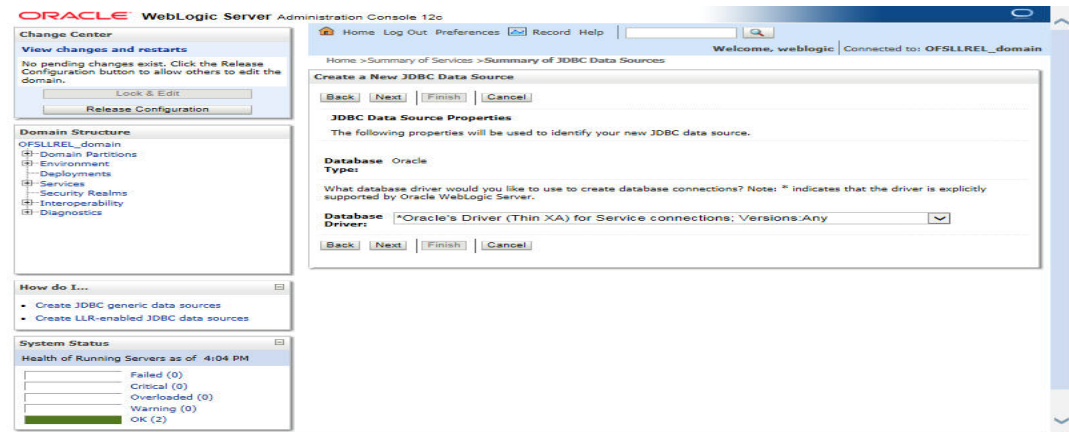
- Specify the following details:
 - Enter Data source Name: QueueAppDS
 - Enter the JNDI Name as 'jdbc/QueueAppDS'.

Note

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

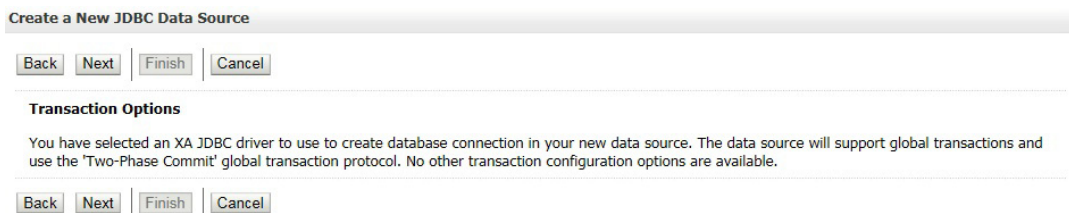
- Select 'Oracle' as Database Type.

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.

The screenshot displays the Oracle WebLogic Server Administration Console interface. The main window is titled "Create a New JDBC Data Source" and is part of the "Summary of JDBC Data Sources" page. The interface includes a navigation bar at the top with "Home", "Log Out", "Preferences", "Record", and "Help" options. The user is logged in as "weblogic" and is connected to the "OFSSLREL_domain".

The "Create a New JDBC Data Source" wizard is currently on the "Connection Properties" step. The wizard includes a "Back", "Next", "Finish", and "Cancel" navigation bar. The "Connection Properties" section is titled "Define Connection Properties." and contains the following fields:

- Database Name:** OLLDB
- Host Name:** ofssl.oracle.com
- Port:** 1521
- Database User Name:** OFSSLREL
- Password:** (masked with dots)
- Confirm Password:** (masked with dots)

The "Additional Connection Properties" section is also visible, showing the property "oracle.jdbc.DRCPConnectionClass" with an empty value field.

On the left side of the console, there are several panels:

- Change Center:** Shows "View changes and restarts" and "No pending changes exist. Click the Release Configuration button to allow others to edit the domain." Buttons for "Lock & Edit" and "Release Configuration" are present.
- Domain Structure:** A tree view showing the hierarchy of the domain, including "OFSSLREL_domain", "Domain Partitions", "Environment", "Deployments", "Services", "Messaging", "Data Sources", "Persistent Stores", "Foreign JNDI Providers", "Work Contexts", "XML Registries", "XML Entity Caches", "jCOM", and "Mail Sessions".
- How do I...:** A list of links for "Create JDBC generic data sources" and "Create LLR-enabled JDBC data sources".
- System Status:** Shows the "Health of Running Servers as of 8:07 PM" with a bar chart indicating the status of servers: Failed (0), Critical (0), Overloaded (0), Warning (0), and OK (3).

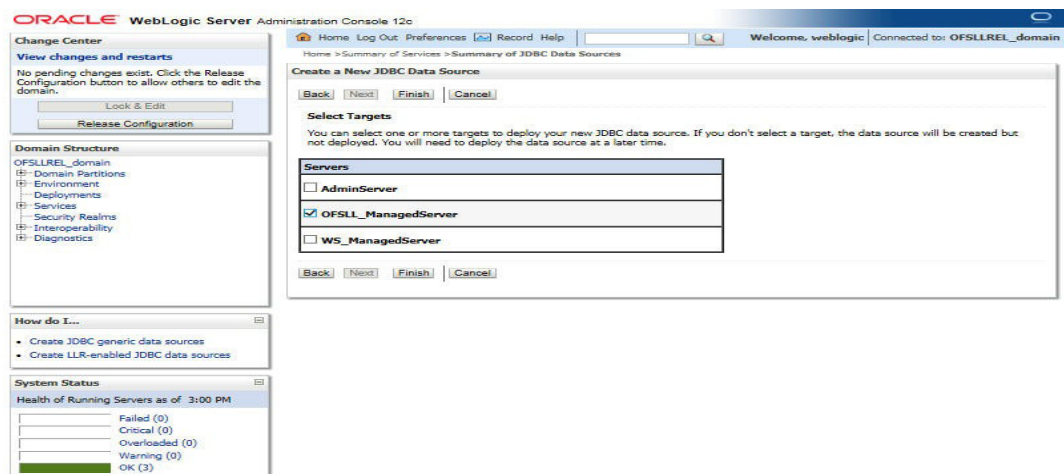
11. Enter the Database details.

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 QueueAppDS 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. To Enable GRI (Generic Recovery Interface) CLOB logging from MDB to DB, click Advanced button and deselect the 'Wrap Data Types' check box.
4. Click Advanced button and update the 'Inactive Connection Timeout' to 300 seconds.
5. Click 'Save' and restart the Data source.

9.2 AQ-JMS Queue Configuration

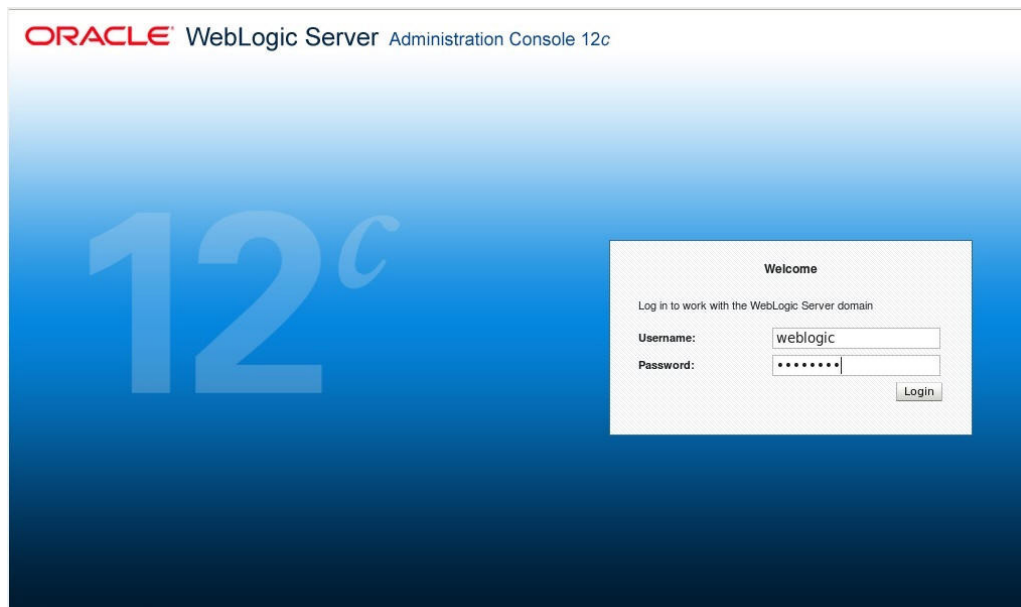
AQ-JMS queue is used to hold webservice invocation exception messages. It provides a mechanism for third parties to handle communication related failures.

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

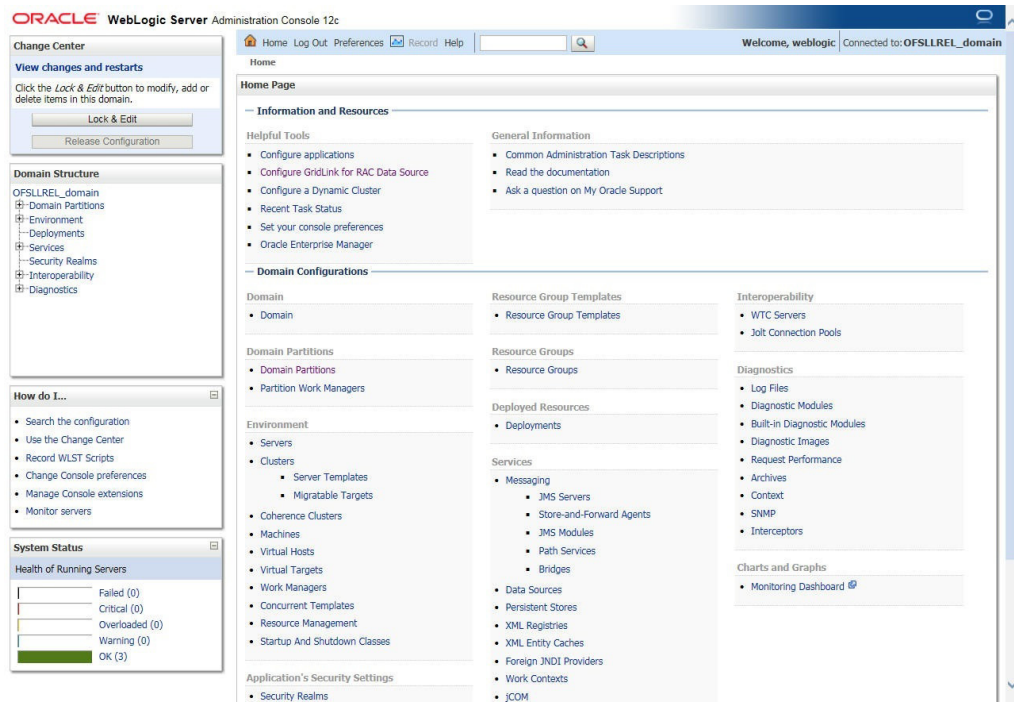
- [Create JMS Server](#)
- [Create JMS Module](#)
- [Subdeployment](#)
- [Create JMS Connection Factory](#)
- [Create JMS Queue](#)

9.2.1 Create JMS Server

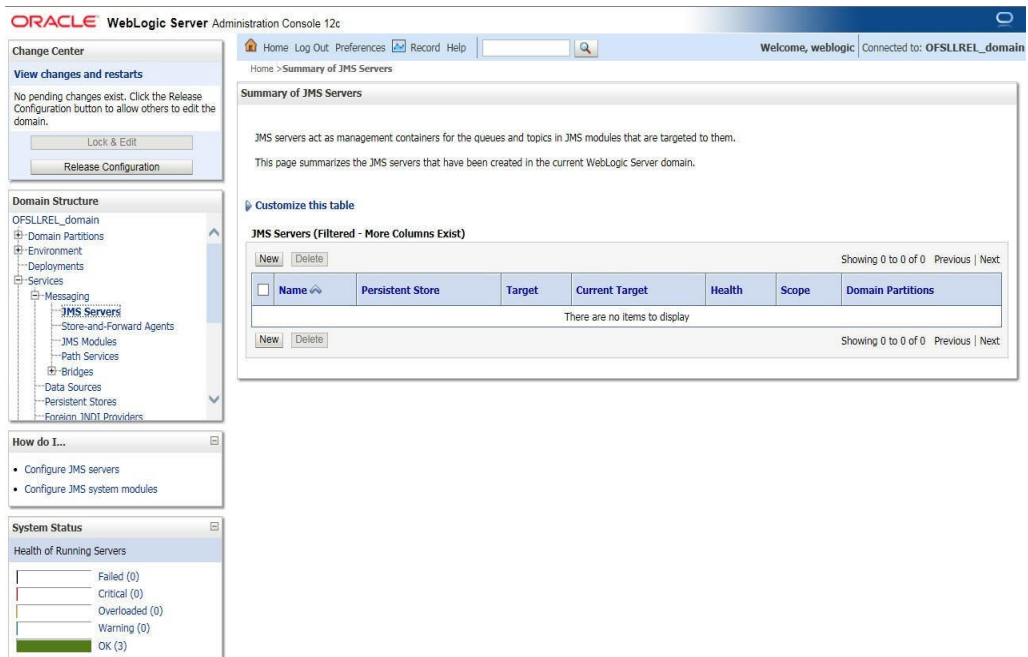
1. Login to WebLogic Server 12c console (<http://hostname:port/console>). The following screen is displayed.



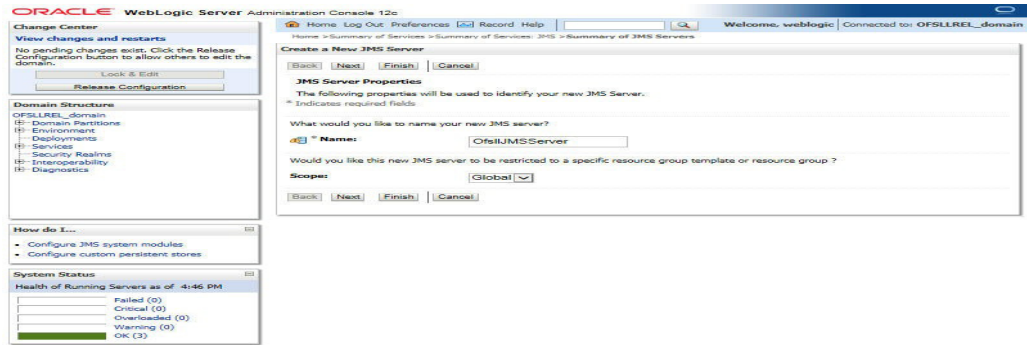
- Specify the Weblogic administrator user name and password and click 'Log In'. The Oracle Weblogic home page is displayed.



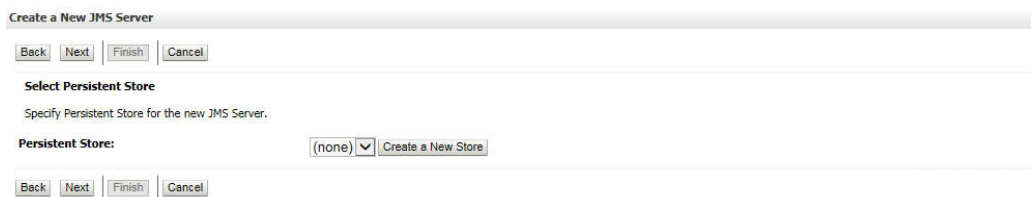
- Click Domain Name > Services > Messaging > JMS Server.
- In the main window, click 'Lock & Edit'. The following window is displayed.



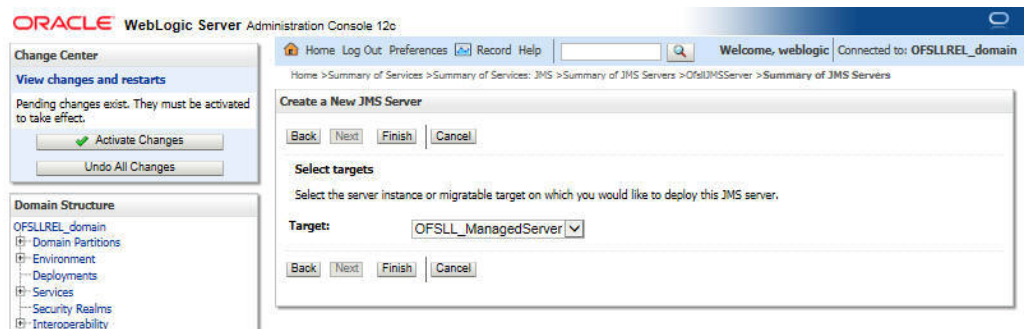
- Click 'New'. The following window is displayed.



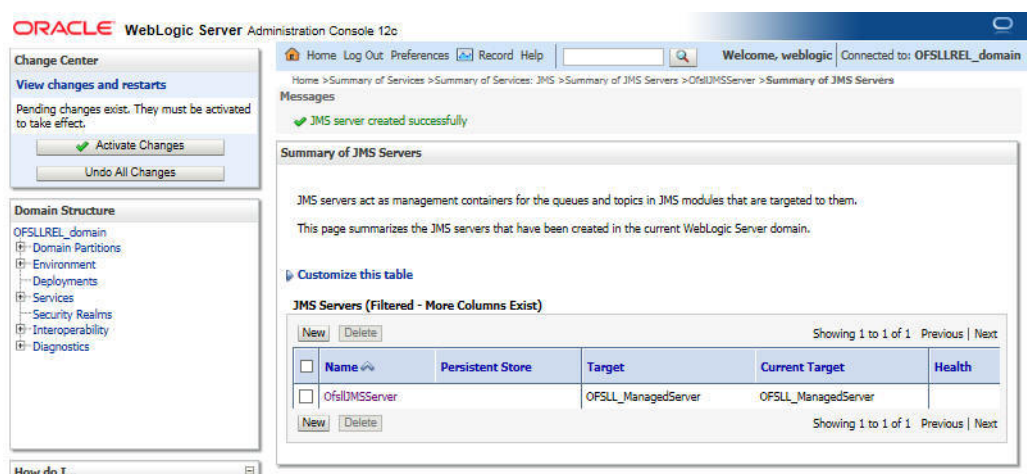
- Specify the JMS Server Name as 'OfsllJMServer'. Click 'Next', the following window is displayed.



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



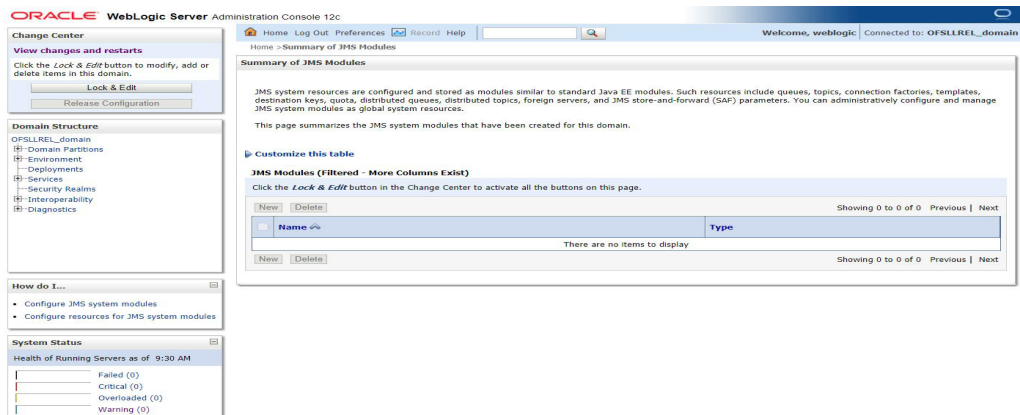
- Select the target managed server and click 'Finish'.
- Click 'Activate Changes' under Change Center. Once done, the following window is displayed:



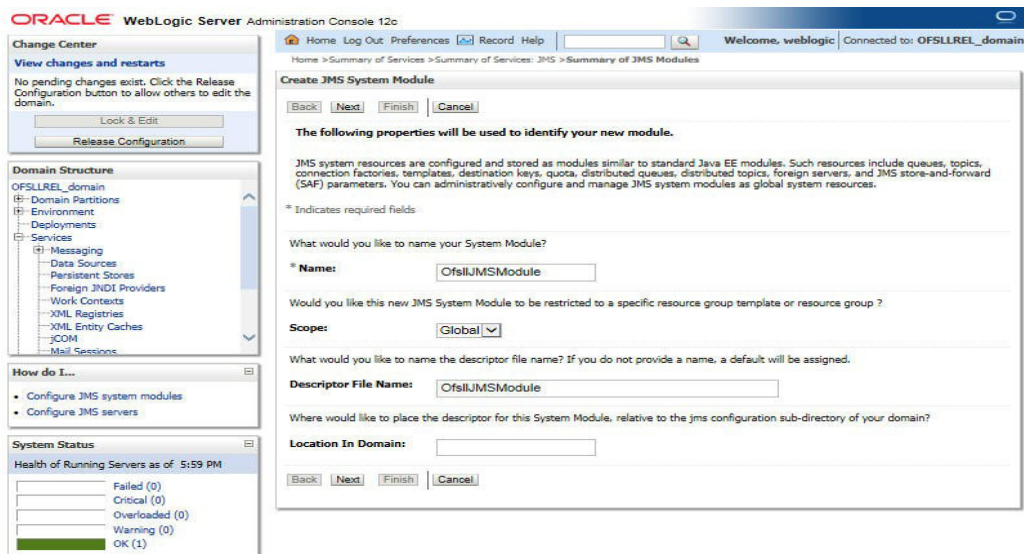
9.2.2 Create JMS Module

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

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

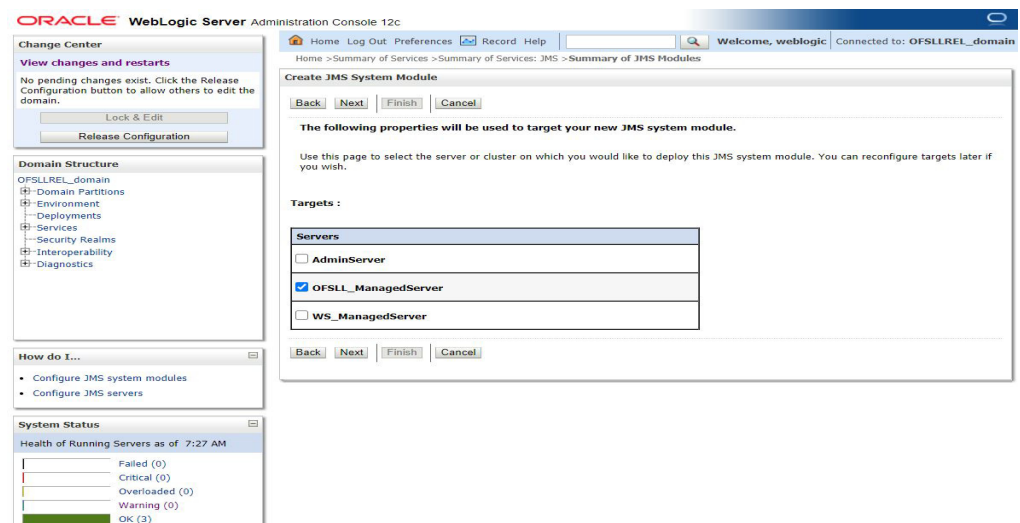


- Click 'New'. The following screen is displayed.



- Specify the following details:
 - Enter the System Module Name as 'OfsllJMSModule'
 - Enter the Description File Name as 'OfsllJMSModule'

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



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

Create JMS System Module

Back Next Finish Cancel

Add resources to this JMS system module

Use this page to indicate whether you want to immediately add resources to this JMS system module after it is created. JMS resources include queues, topics, connection factories, and such.

Would you like to add resources to this JMS system module?

Back Next Finish Cancel

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

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of JMS Modules

Messages

All changes have been activated. No restarts are necessary.

Summary of JMS Modules

JMS system resources are configured and stored as modules similar to standard Java EE modules. Such resources include queues, topics, connection factories, templates, destination keys, quota, distributed queues, distributed topics, foreign servers, and JMS store-and-forward (SAF) parameters. You can administratively configure and manage JMS system modules as global system resources.

This page summarizes the JMS system modules that have been created for this domain.

Customize this table

JMS Modules (Filtered - More Columns Exist)

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

Name ↕	Type
OfsllJMSModule	JMSSystemResource

9.2.3 Subdeployment

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

Settings for OfsslJMSModule

Configuration **Subdeployments** Targets Security Notes

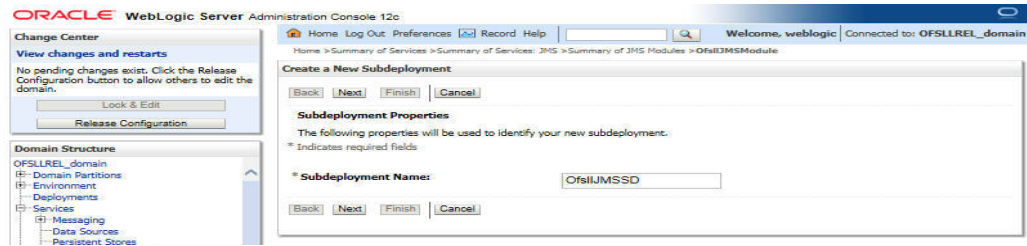
This page displays subdeployments created for a JMS system module. A subdeployment is a mechanism by which JMS module resources (such as queues, topics, and connection factories) are grouped and targeted to a server resource (such as JMS servers, server instances, or cluster).

Customize this table

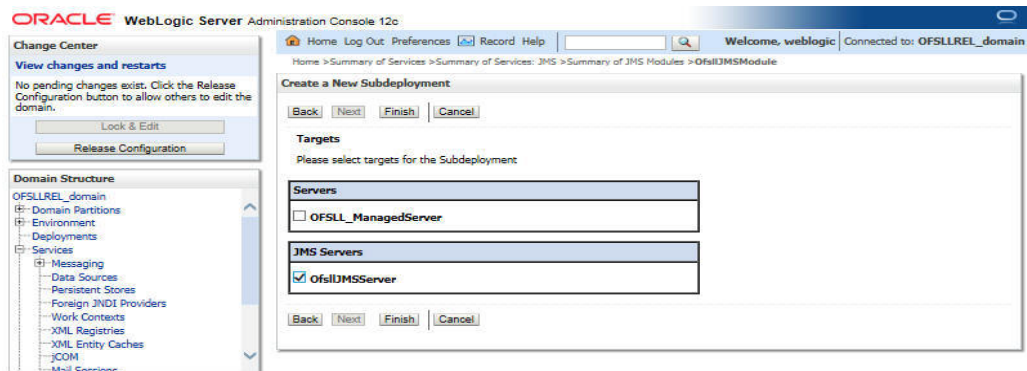
Subdeployments

Name ↕	Resources	Targets
There are no items to display		

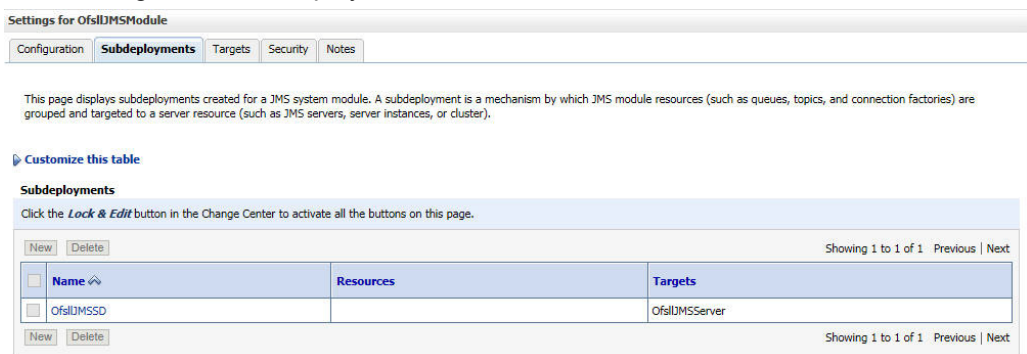
- Click 'New'. The following screen is displayed.



- Specify the Subdeployment Name as 'OfsllJMSSD'. Click 'Next', the following window is displayed.



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

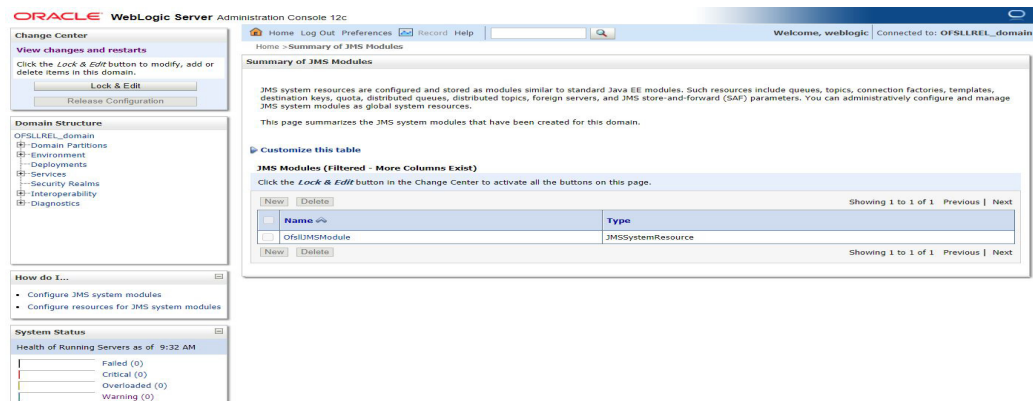


You can further click 'New' to create more Queues and repeat the steps explained above.

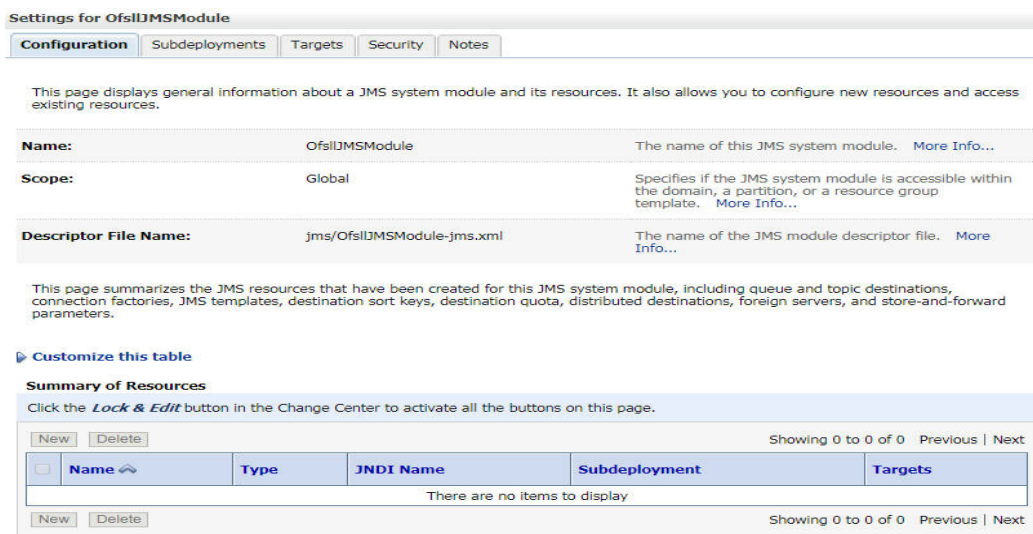
9.2.4 Create JMS Connection Factory

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

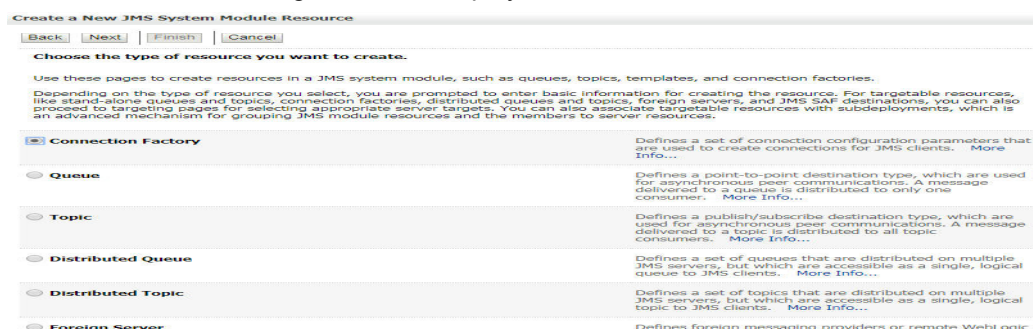
- Select the newly created JMS module 'OfsllJMSModule'. The following window is displayed.



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



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



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

The screenshot shows the 'Create a New JMS System Module Resource' window. On the left, there is a 'Domain Structure' tree with 'OFSSLREL_domain' expanded, showing 'Domain Partitions', 'Environment', 'Deployments', 'Services', 'Security Realms', 'Interoperability', and 'Diagnostics'. Below this is a 'How do I...' section with a list of configuration tasks, including 'Configure connection factories'. At the bottom left is a 'System Status' section showing 'Health of Running Servers as of 6:22 PM' with counts for Failed (0), Critical (0), and Overloaded (0) servers.

The main content area is titled 'Create a New JMS System Module Resource' and has buttons for 'Back', 'Next', 'Finish', and 'Cancel'. The 'Next' button is highlighted. Below the title is the 'Connection Factory Properties' section. It states: 'The following properties will be used to identify your new connection factory. The current module is OfslIJMSModule. * Indicates required fields.' It asks 'What would you like to name your new connection factory?' with a text box containing 'OfslIJMSCF'. It asks 'What JNDI Name would you like to use to look up your new connection factory?' with a text box containing 'jms/OfslIJMSCF'. It asks 'The Connection Factory Subscription Sharing Policy. Subscribers can be used to control which subscribers can access new subscriptions. Should subscriptions created using this factory be sharable?' with a dropdown menu set to 'Exclusive'. It asks 'The Client ID Policy indicates whether more than one JMS connection can use the same Client ID. Oracle recommends setting the Client ID policy to Unrestricted if sharing durable subscribers. Subscriptions created with different Client ID policies are always treated as independent subscriptions. What Client ID Policy would you like to use?' with a dropdown menu set to 'Restricted'. It asks 'A connection factory can limit the number of messages that can be queued for an asynchronous session. Should this connection factory impose a limit?' with a text box containing '10'. It asks 'Should this connection factory create sessions that are JTA aware, and create XA queues and XA topics?' with a checked checkbox for 'XA Connection Factory Enabled'. It asks 'Should the authenticated user name be attached to sent messages if the JMS destination is configured to support this behavior?'.

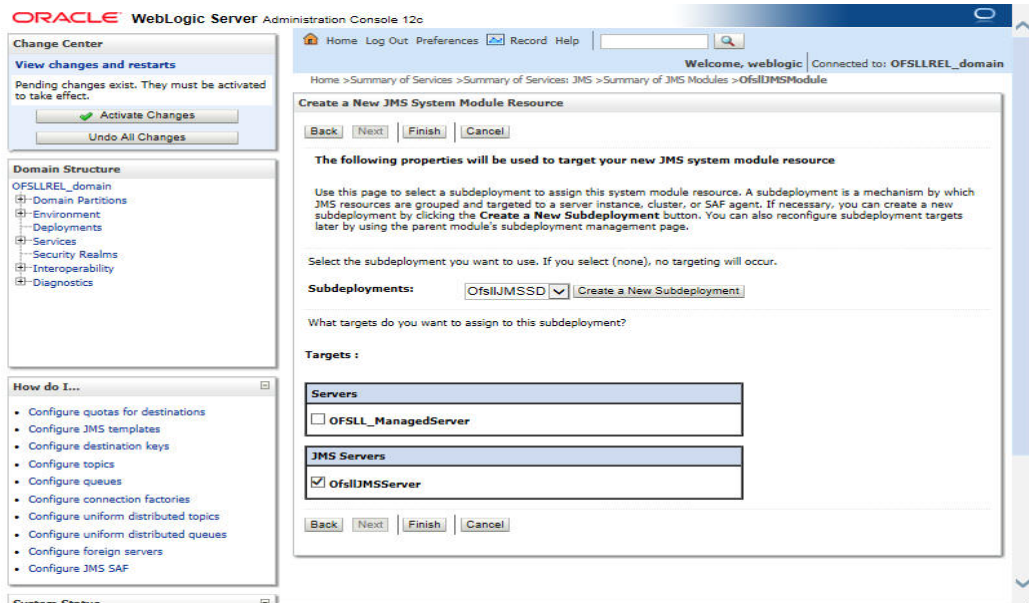
7. Specify the following details:

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

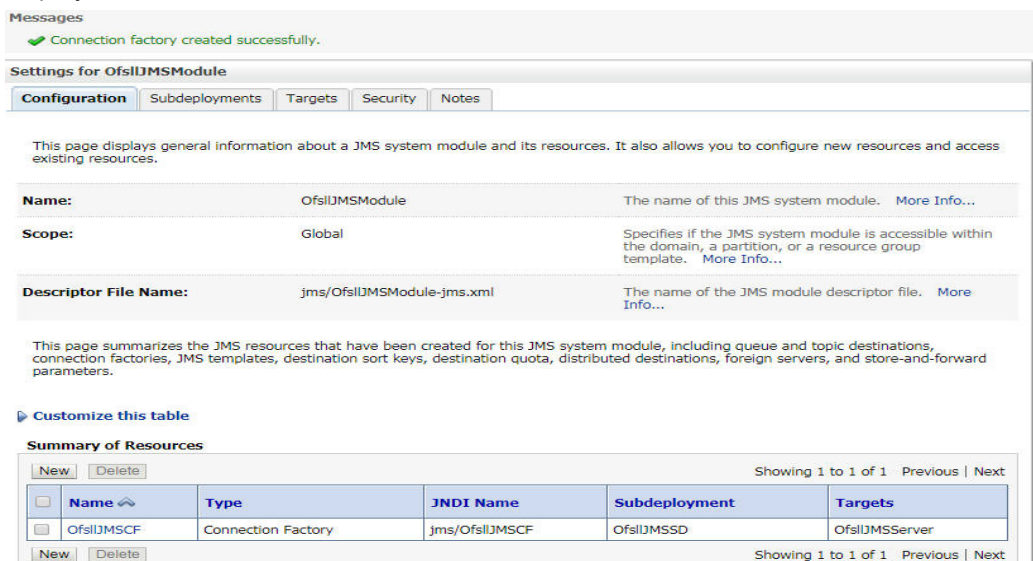
8. Click 'Next'. The following window is displayed.

The screenshot shows the 'Create a New JMS System Module Resource' window with the 'Advanced Targeting' button highlighted. The title is 'Create a New JMS System Module Resource' and buttons for 'Back', 'Next', 'Finish', 'Advanced Targeting', and 'Cancel' are visible. Below the title is the text: 'The following properties will be used to target your new JMS system module resource'. It follows with a paragraph: 'Use this page to view and accept the default targets where this JMS resource will be targeted. The default targets are based on the parent JMS system module targets. If you do not want to accept the default targets, then click **Advanced Targeting** to use the subdeployment mechanism for targeting this resource.' Below this is another paragraph: 'The following JMS module targets will be used as the default targets for your new JMS system module resource. If the module's targets are changed, this resource will also be retargeted appropriately.' Below that is the 'Targets :' section, which contains a table with a header 'Servers' and one row with a checked checkbox and the text 'OFSSLREL_ManagedServer'. At the bottom, buttons for 'Back', 'Next', 'Finish', 'Advanced Targeting', and 'Cancel' are visible.

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



- Select the Subdeployments as 'OfsllJMSSD' from the drop down list.
- Under JMS Servers, select the check box against 'OfsllJMSServer'.
- Click 'Finish' to save and activate the changes. Once done, the following window is displayed.



9.2.5 Create JMS Queue

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

- Select the newly created JMS module 'OfsllJMSModule'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled 'Settings for OfsslJMSModule'. It has tabs for 'Configuration', 'Subdeployments', 'Targets', 'Security', and 'Notes'. The 'Configuration' tab is active, displaying general information about the JMS system module. Below this is a 'Summary of Resources' table with columns for Name, Type, JNDI Name, Subdeployment, and Targets. The table contains one entry: 'OfsslJMSSCF' of type 'Connection Factory' with JNDI Name 'jms/OfsslJMSSCF', Subdeployment 'OfsslJMSSO', and Target 'OfsslJMSServer'.

Name	Type	JNDI Name	Subdeployment	Targets
OfsslJMSSCF	Connection Factory	jms/OfsslJMSSCF	OfsslJMSSO	OfsslJMSServer

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

The screenshot shows the 'Create a New JMS System Module Resource' dialog. It lists several resource types with their descriptions:

- Connection Factory**: Defines a set of connection configuration parameters that are used to create connections for JMS clients.
- Queue** (Selected): Defines a point-to-point destination type, which are used for asynchronous peer communications. A message delivered to a queue is distributed to only one consumer.
- Topic**: Defines a publish/subscribe destination type, which are used for asynchronous peer communications. A message delivered to a topic is distributed to all topic consumers.
- 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.
- 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.
- Foreign Server**: Defines foreign messaging providers or remote WebLogic Server instances that are not part of the current domain.
- Quota**: Controls the allotment of system resources available to destinations.
- Destination Sort Key**: Defines a unique sort order that destinations can apply to arriving messages.
- JMS Template**: Defines a set of default configuration settings for multiple destinations.

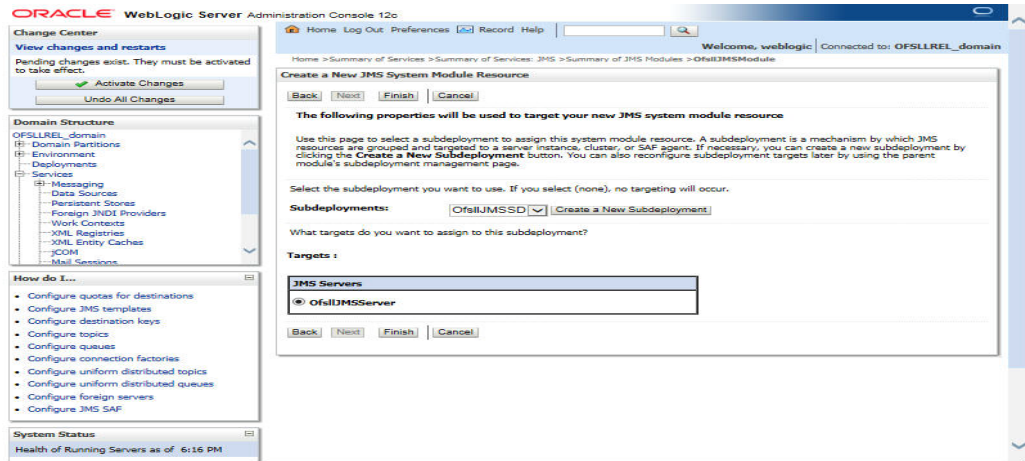
- Select the 'Queue' option and click 'Next'. The following window is displayed.

The screenshot shows the 'JMS Destination Properties' dialog. It contains the following fields:

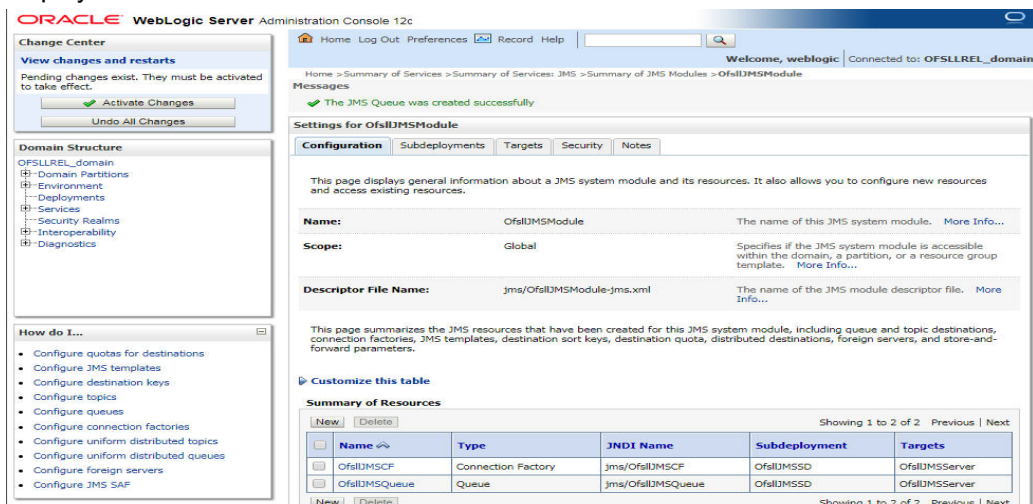
- Name**: OfsslJMSQueue
- JNDI Name**: jms/OfsslJMSQueue
- Template**: None

 The 'Next' button is highlighted.

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



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



9.3 Outbound Queue Configuration

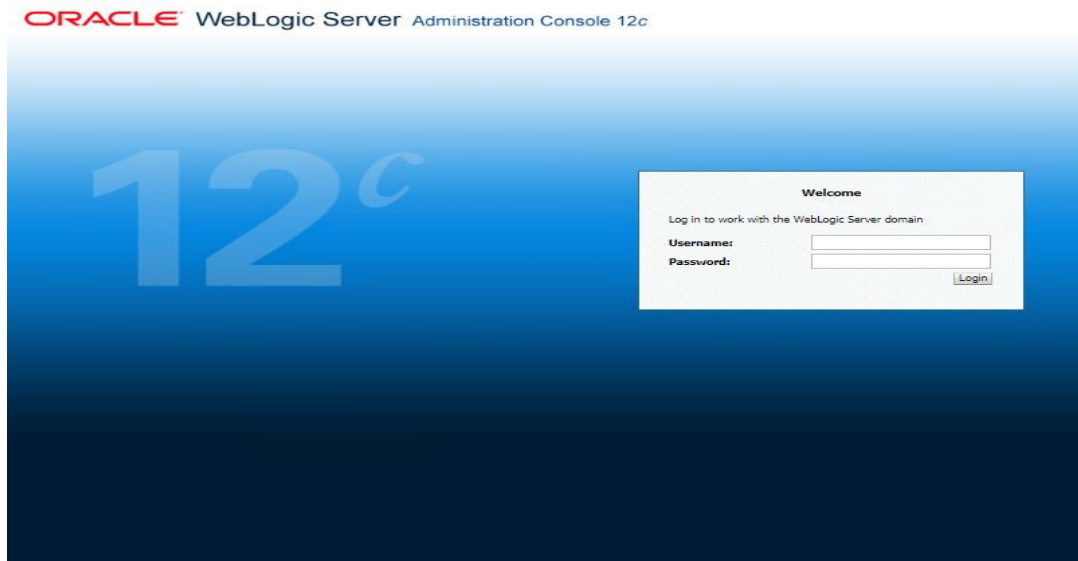
Outbound Queue provides a mechanism to consume AQ messages from the database and send those messages to MDBs.

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

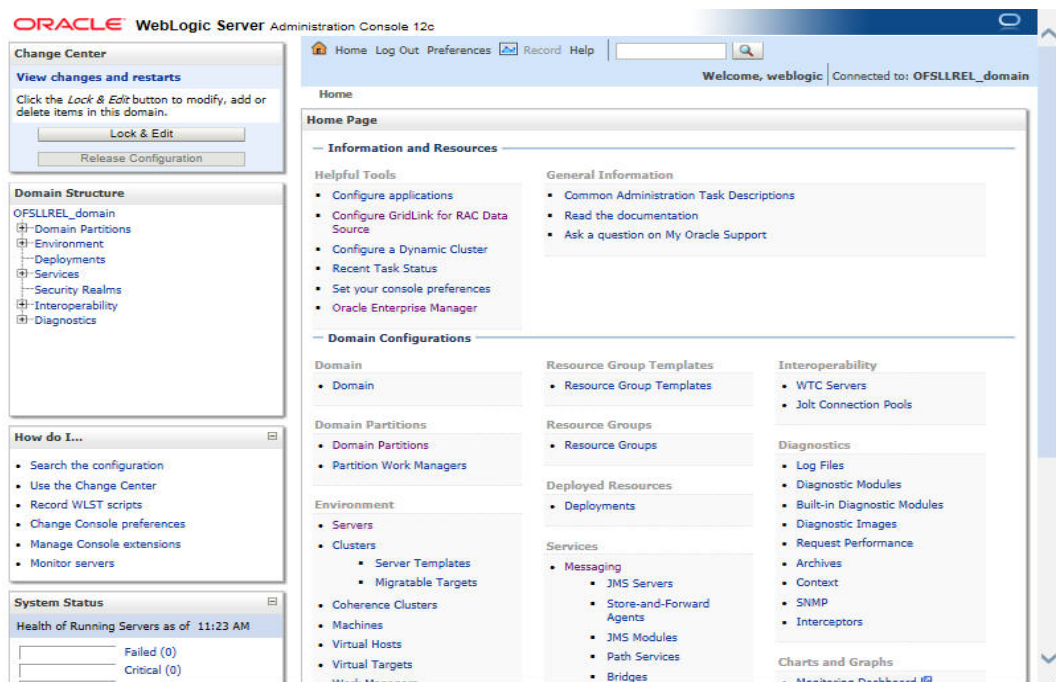
- [Create Persistent Stores](#)
- [Create JMS Server](#)
- [Create JMS Module](#)
- [SubDeployment](#)
- [Create JMS Connection Factory](#)
- [Create JMS Queue](#)

9.3.1 Create Persistent Stores

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 > Persistent Stores

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Services

Summary of Services

Use these sections of the Administration Console to configure WebLogic Server services.

Section	Description
Messaging	WebLogic JMS is an enterprise-class messaging system that fully supports the JMS specification, and which also provides numerous extensions that go above and beyond the standard JMS APIs. It is tightly integrated into the WebLogic Server platform, allowing you to build highly secure Java EE applications that can be easily monitored and administered through the WebLogic Server console. In addition to fully supporting XA transactions, WebLogic JMS also features high availability through its clustering and service migration features while also providing seamless interoperability with other versions of WebLogic Server and third-party messaging vendors.
Data Sources	Data sources enable you to configure database connectivity in your WebLogic domain. Data sources provide database connection pooling and connection management. Multi data sources provide load balancing and failover between data sources, which can be connected to different backend resources.
Persistent Stores	A persistent store is a physical repository for storing subsystem data, such as persistent JMS messages. It can be either a JDBC-accessible database or a disk-based file.
Foreign JNDI Providers	A foreign JNDI provider represents a JNDI tree that resides outside of a WebLogic Server environment. This could be a JNDI tree in a different server environment or within an external Java program. By setting up a foreign JNDI provider you can lookup and use a remote object with the same ease as using an object bound in your WebLogic server instance.
Work Contexts	Work Contexts allow developers to define properties which implicitly flow across remote requests and allow downstream components to work in the context of the invoking client.
XML Registries	The XML Registry is a facility for configuring and administering the XML resources of an instance of WebLogic Server. XML resources in WebLogic Server include the parser used by an application to parse XML data, the transformer used by an application to transform XML data, external entity resolution, and caching of external entities.
XML Entity Caches	XML Entity Caches store external entities that are referenced with a URL or a pathname relative to the main directory of the EAR archive. Caching external entities saves remote access time and provides a local backup in the event that the Administration Server cannot be accessed while an XML document is being parsed.
jCOM	WebLogic jCOM is a software bridge that allows bidirectional access between Java/Java EE objects deployed in WebLogic Server, and Microsoft ActiveX components available within Microsoft Office family of products, Visual Basic and C++ objects, and other Component Object Model/Distributed Component Object Model (COM/DCOM) environments.
Mail Sessions	WebLogic Server includes the JavaMail API version 1.1.3 reference implementation from Sun Microsystems. Using the JavaMail API, you can add e-mail capabilities to your WebLogic Server applications. JavaMail provides access from Java applications to IMAP- and SMTP-capable mail servers on your network or the Internet.
File T3	The WebLogic file (T3) service (deprecated) allows you to provide high-speed, client-side access to native operating system files on the server. Use the client API to extend the capabilities of java.io.InputStream and java.io.OutputStream.
JTA	One of the most fundamental features of WebLogic Server is transaction management. Transactions are a means to guarantee that database changes are completed accurately and that they take on all the ACID properties of a high-performance transaction.

4. Click 'Lock & Edit' button on the left panel. Click 'New' on right panel and select 'Create JDBCStore'

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Services > Summary of Persistent Stores > Summary of Services > Summary of JDBC Data Sources > Summary of Services > Summary of Persistent Stores

Summary of Persistent Stores

A persistent store is a physical repository for storing subsystem data, such as persistent JMS messages. It can be a JDBC-accessible database, disk-based file, or replicated memory storage. This page summarizes the persistent stores that have been created for this domain.

Customize this table

Persistent Stores (Filtered - More Columns Exist)

Create FileStore Showing 0 to 0 of 0 Previous | Next

Create JDBCStore

Type	Target
There are no items to display	

New w Delete Showing 0 to 0 of 0 Previous | Next

Change Center

View changes and restarts

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

Lock & Edit

Release Configuration

Domain Structure

ofslrel_domain

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

How do I...

- Configure Messaging
- Configure database connectivity
- Configure the default persistent store for transaction recovery service migration
- Create a foreign JNDI provider
- Create Work Context resources
- Configure XML Resources
- Enable jCOM
- Configure access to JavaMail
- Configure concurrent managed object templates
- Create file systems
- Configure JTA

System Status

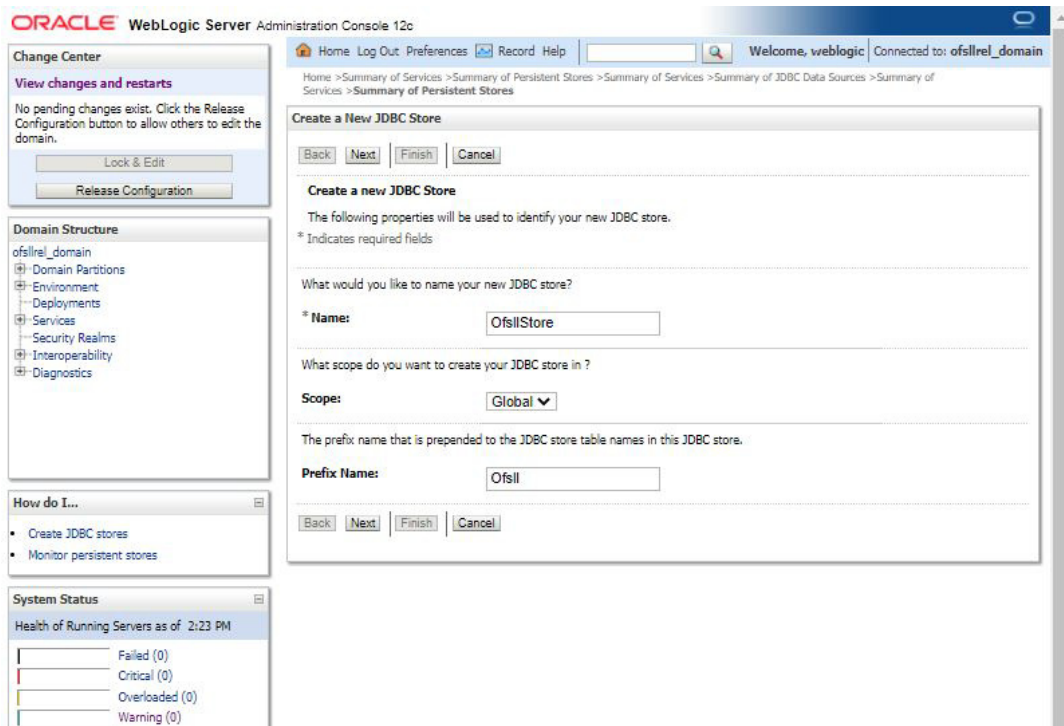
Health of Running Servers as of: 2:22 PM

- Failed (0)
- Critical (0)
- Overloaded (0)
- Warning (0)

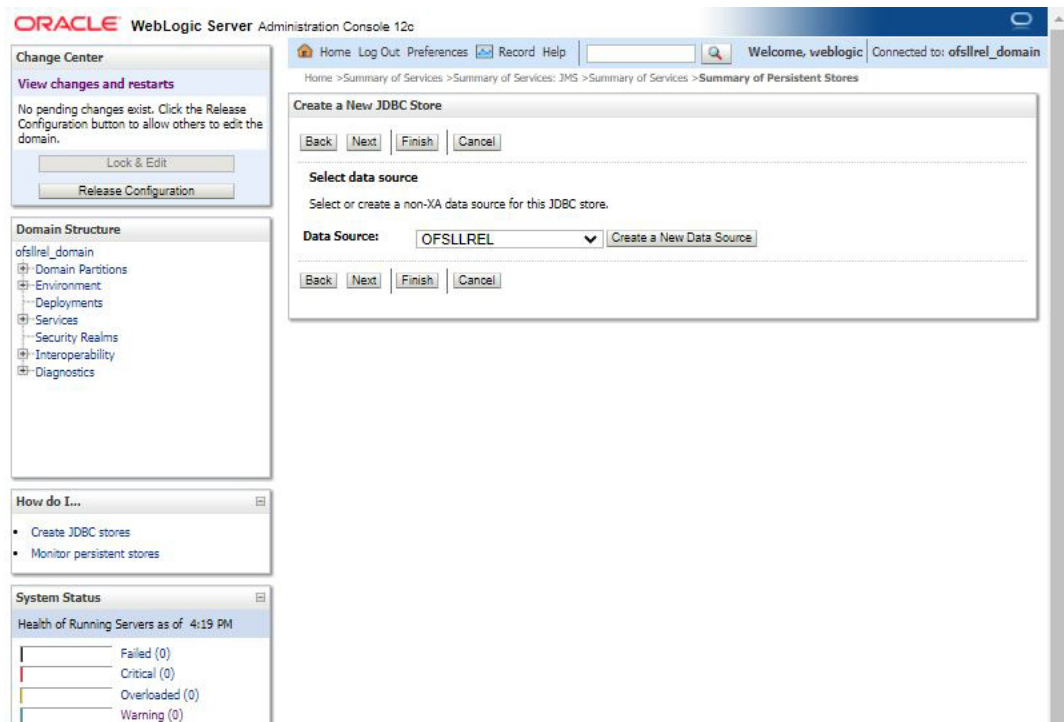
5. Specify the following details:

- Name: OfsIStore

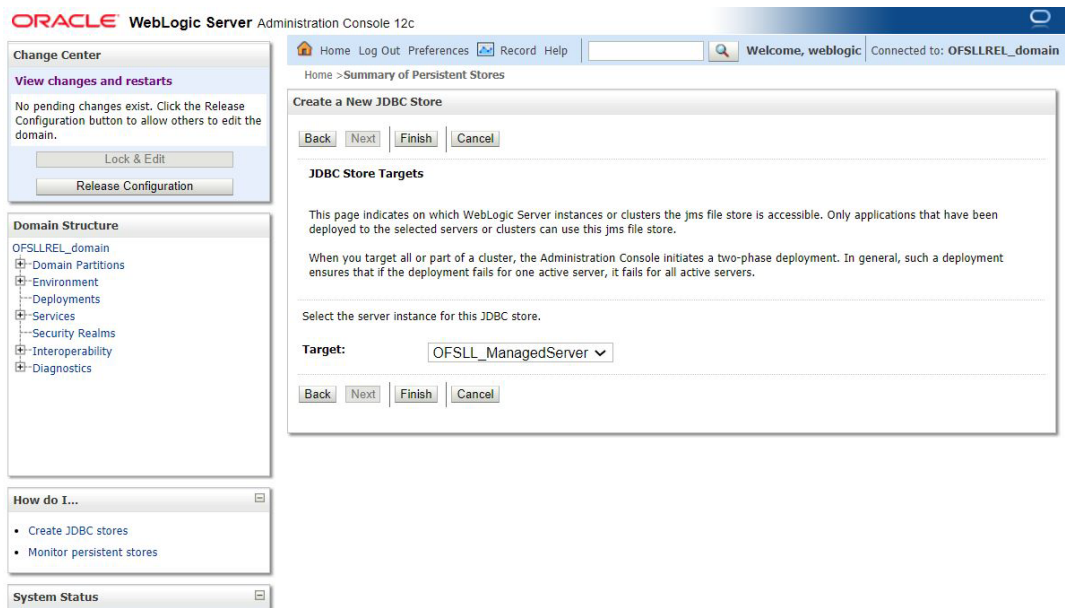
- Prefix Name: OfslI



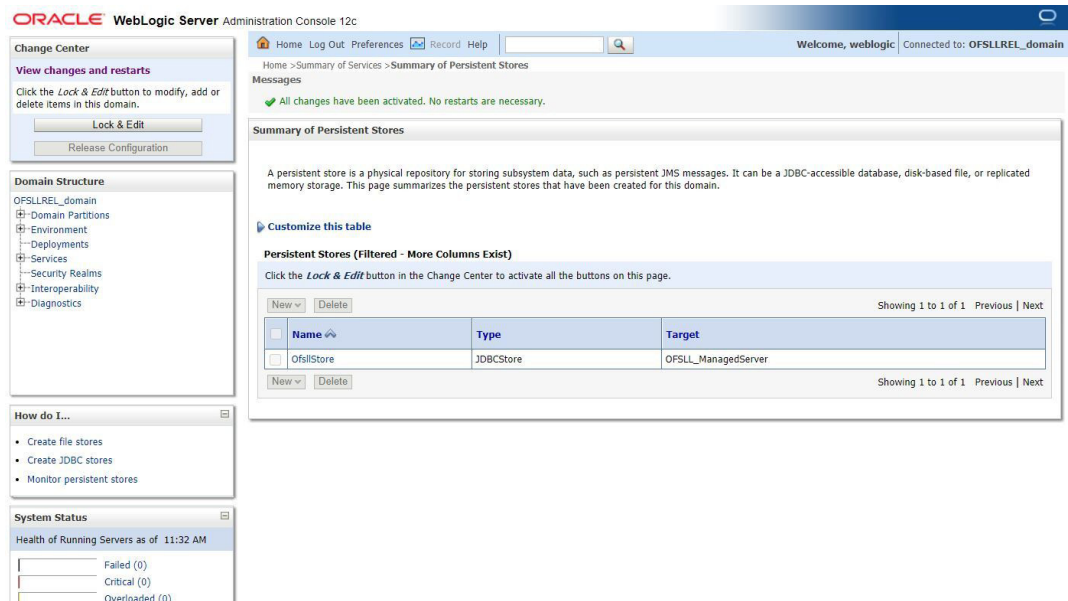
6. Click 'Next'. The following window is displayed.



7. Select 'OFSSLREL' Data source from the drop-down list. Click 'Next'. The following window is displayed.



8. Select the Target as OFSSL_ManagedServer from the drop-down list. Click 'Next'. The following window is displayed.



9. Click 'Finish' to activate the changes.

In case you are creating a cluster setup, continue the below steps:

10. Click Domain Name > Environment > Clusters. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled "Summary of Clusters". It contains a table with the following data:

Name	Cluster Address	Cluster Messaging Mode	Migration Basis	Default Load Algorithm	Replication Type	Cluster Broadcast Channel	Servers
app_cluster		Unicast	Database	Round Robin	(None)		app_mgdsvr1, app_mgdsvr2, app_mgdsvr3, app_mgdsvr4

The interface also includes a "Change Center" sidebar on the left with "Lock & Edit" and "Release Configuration" buttons, and a "Domain Structure" tree showing the navigation path: ofslrel_domain > Environment > Clusters.

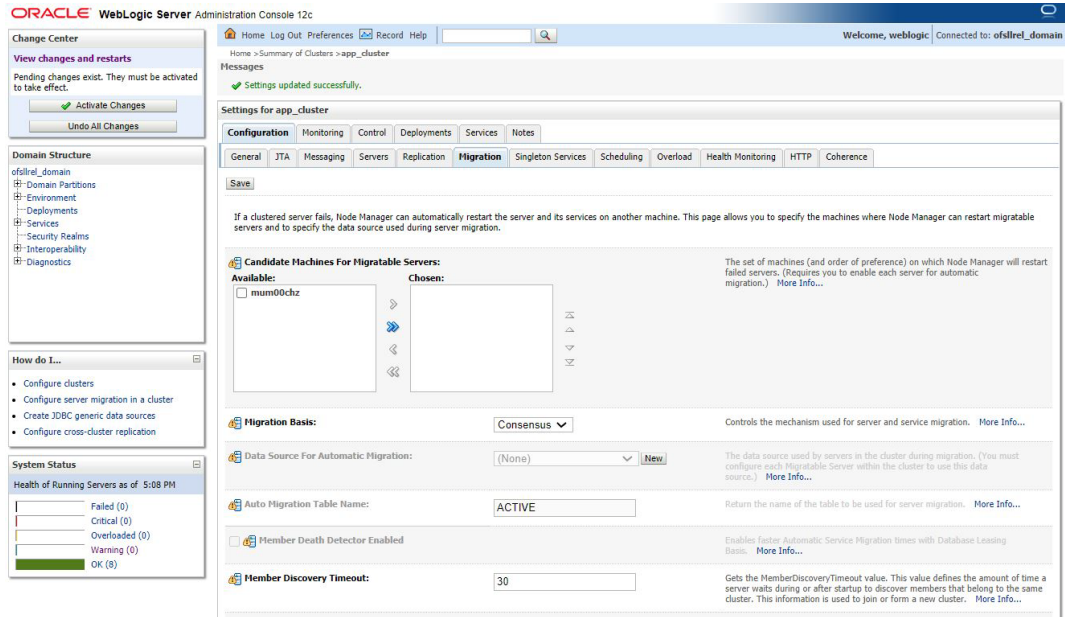
11. Click 'app_cluster'. The following window is displayed.

The screenshot shows the "Settings for app_cluster" page in the Oracle WebLogic Server Administration Console. The page is divided into several sections:

- Configuration:** Includes tabs for General, JTA, Messaging, Servers, Replication, Migration, Singleton Services, Scheduling, Overload, Health Monitoring, HTTP, and Coherence.
- Name:** Set to "app_cluster".
- Default Load Algorithm:** Set to "round-robin".
- Cluster Address:** An empty text field.
- Number of Servers In Cluster Address:** Set to "3".
- Enable Transaction Affinity:** A checkbox that is currently unchecked.
- Enable Concurrent Single Activation:** A checkbox that is currently unchecked.

The left sidebar shows the "Change Center" with "Lock & Edit" and "Release Configuration" buttons, and the "Domain Structure" tree with the path: ofslrel_domain > Environment > Clusters > app_cluster.

12. Click 'Lock & Edit' button on the left panel. The following window is displayed.

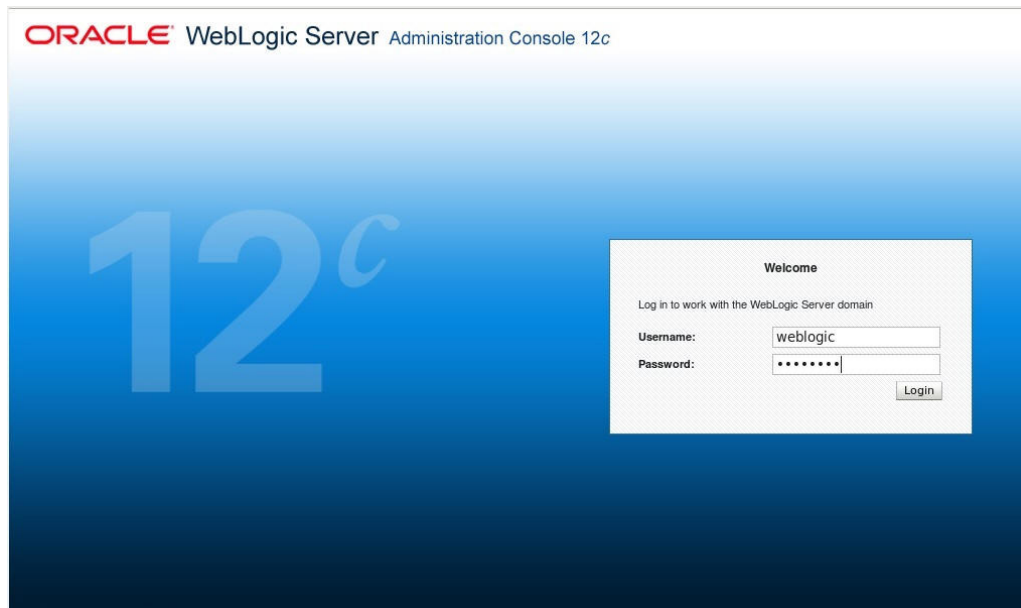


13. Click 'Migration' tab and choose Migration Basis as 'Consensus' from the drop-down list.

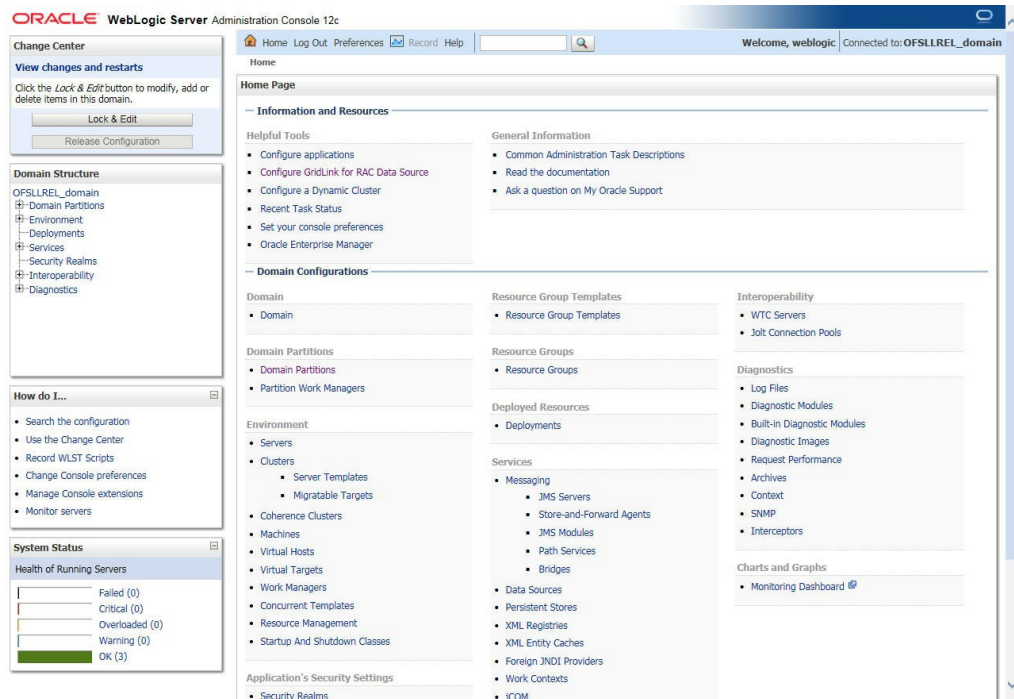
14. Click 'Save' to activate the changes.

9.3.2 Create JMS Server

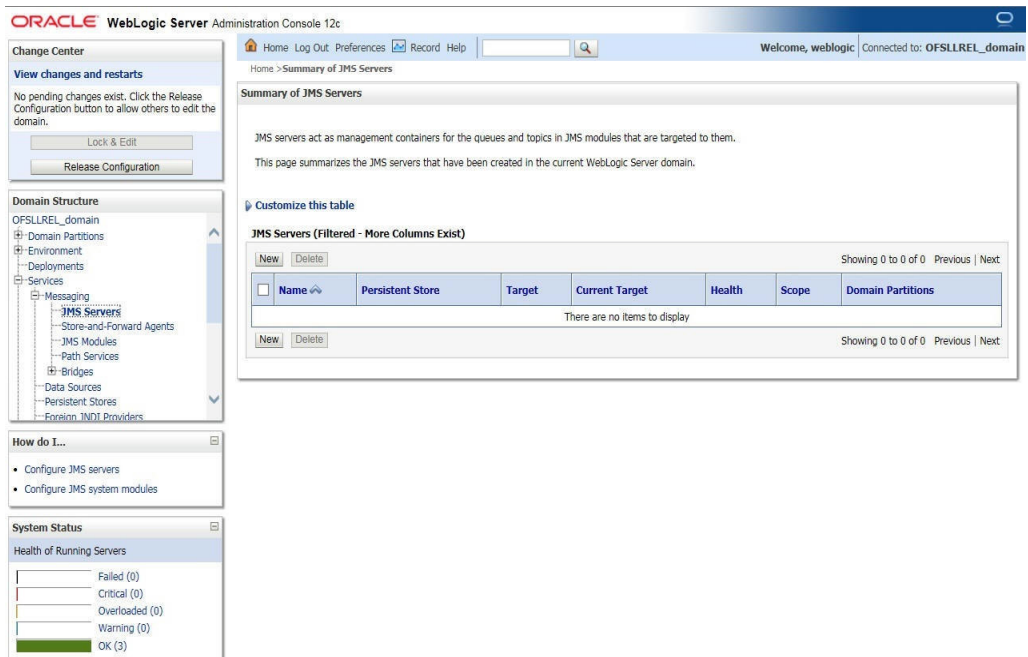
1. Login to WebLogic Server 12c console (<http://hostname:port/console>). The following screen is displayed.



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



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



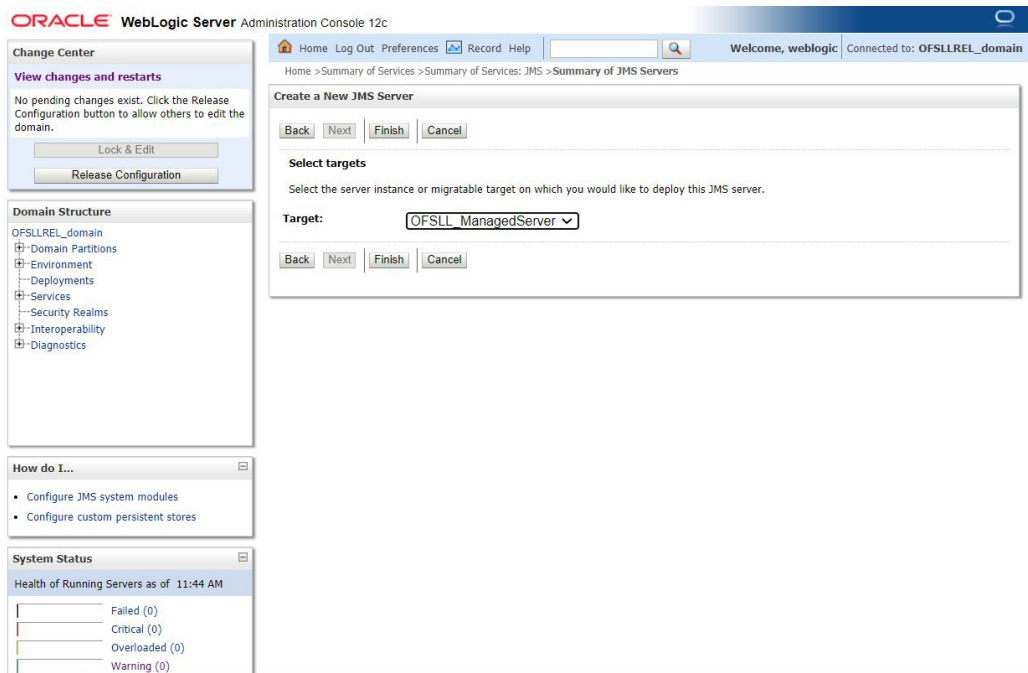
5. Click 'New'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled 'Create a New JMS Server'. On the left, there are several panels: 'Change Center' with 'View changes and restarts' and 'Release Configuration' buttons; 'Domain Structure' showing a tree view of the domain; 'How do I...?' with links to 'Configure JMS system modules' and 'Configure custom persistent stores'; and 'System Status' showing 'Health of Running Servers as of 11:42 AM' with bars for Failed (0), Critical (0), Overloaded (0), and Warning (0). The main content area shows the 'JMS Server Properties' section. It includes a 'Name' field with the value 'OfsllOutboundServer' and a 'Scope' dropdown menu set to 'Global'. There are 'Back', 'Next', 'Finish', and 'Cancel' buttons at the top and bottom of the wizard.

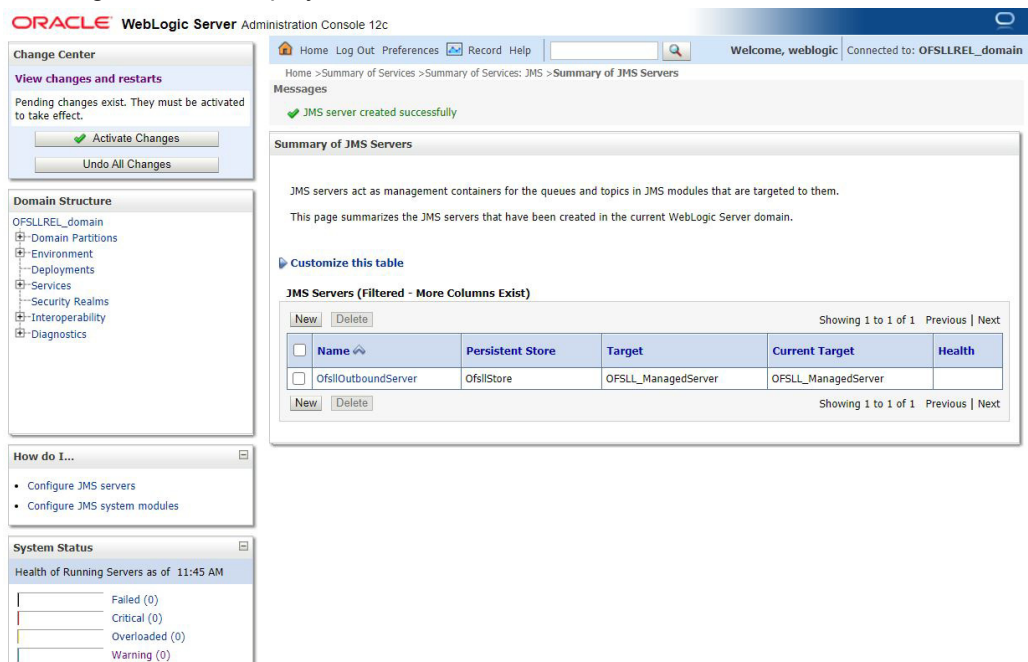
6. Specify the JMS Server Name as 'OfsllOutboundServer'. Click 'Next', the following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled 'Create a New JMS Server'. On the left, there are several panels: 'Change Center' with 'View changes and restarts' and 'Release Configuration' buttons; 'Domain Structure' showing a tree view of the domain; 'How do I...?' with links to 'Configure JMS system modules' and 'Configure custom persistent stores'; and 'System Status' showing 'Health of Running Servers as of 11:42 AM' with bars for Failed (0), Critical (0), Overloaded (0), and Warning (0). The main content area shows the 'Select Persistent Store' section. It includes a 'Persistent Store' dropdown menu with 'OfsllStore' selected and a 'Create a New Store' button. There are 'Back', 'Next', 'Finish', and 'Cancel' buttons at the top and bottom of the wizard.

7. Select 'OfsllStore' 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 section in LHS menu. Once done, the following window is displayed:



10. Once done the following window is displayed:

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The main content area is titled "Summary of JMS Servers". It includes a "Change Center" on the left with "Lock & Edit" and "Release Configuration" buttons. Below it is the "Domain Structure" tree showing the path: OFSLREL_domain > Services > JMS Servers. The "How do I..." section lists "Configure JMS servers" and "Configure JMS system modules". The "System Status" section shows "Health of Running Servers as of 11:45 AM" with zero counts for Failed, Critical, Overloaded, and Warning states.

The "Summary of JMS Servers" section contains the following text:

JMS servers act as management containers for the queues and topics in JMS modules that are targeted to them.

This page summarizes the JMS servers that have been created in the current WebLogic Server domain.

Below this is a "Customize this table" section with a "JMS Servers (Filtered - More Columns Exist)" heading. A note says: "Click the Lock & Edit button in the Change Center to activate all the buttons on this page."

The table below shows one server:

Name	Persistent Store	Target	Current Target	Health
OfslOutboundServer	OfslStore	OFSL_ManagedServer	OFSL_ManagedServer	OK

The table has "New" and "Delete" buttons above and below it, and pagination shows "Showing 1 to 1 of 1".

9.3.3 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.

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface for "Summary of JMS Modules". The "Change Center" and "Domain Structure" sections are similar to the previous screenshot. The "How do I..." section lists "Configure JMS system modules" and "Configure resources for JMS system modules". The "System Status" section shows "Health of Running Servers as of 9:30 AM" with zero counts for Failed, Critical, Overloaded, and Warning states.

The "Summary of JMS Modules" section contains the following text:

JMS system resources are configured and stored as modules similar to standard Java EE modules. Such resources include queues, topics, connection factories, templates, destination keys, quotas, distributed queues, distributed topics, foreign servers, and JMS store-and-forward (SAF) parameters. You can administratively configure and manage JMS system modules as global system resources.

This page summarizes the JMS system modules that have been created for this domain.

Below this is a "Customize this table" section with a "JMS Modules (Filtered - More Columns Exist)" heading. A note says: "Click the Lock & Edit button in the Change Center to activate all the buttons on this page."

The table below is empty:

Name	Type
There are no items to display	

The table has "New" and "Delete" buttons above and below it, and pagination shows "Showing 0 to 0 of 0".

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

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Services > Summary of Services: JMS > Summary of JMS Servers > Summary of Services > Summary of Services: JMS > Summary of JMS Modules

Create JMS System Module

Back Next Finish Cancel

The following properties will be used to identify your new module.

JMS system resources are configured and stored as modules similar to standard Java EE modules. Such resources include queues, topics, connection factories, templates, destination keys, quota, distributed queues, distributed topics, foreign servers, and JMS store-and-forward (SAF) parameters. You can administratively configure and manage JMS system modules as global system resources.

* Indicates required fields

What would you like to name your System Module?

* Name: OfsllOutboundModule

Would you like this new JMS System Module to be restricted to a specific resource group template or resource group ?

Scope: Global

What would you like to name the descriptor file name? If you do not provide a name, a default will be assigned.

Descriptor File Name: OfsllOutboundModule

Where would you like to place the descriptor for this System Module, relative to the jms configuration sub-directory of your domain?

Location In Domain:

Back Next Finish Cancel

- Specify the following details:
 - Enter the System Module Name as 'OfsllOutboundModule'
 - Enter the Description File Name as 'OfsllOutboundModule'
- Click 'Next'. The following screen is displayed.

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Services > Summary of Services: JMS > Summary of JMS Servers > Summary of Services > Summary of Services: JMS > Summary of JMS Modules

Create JMS System Module

Back Next Finish Cancel

The following properties will be used to target your new JMS system module.

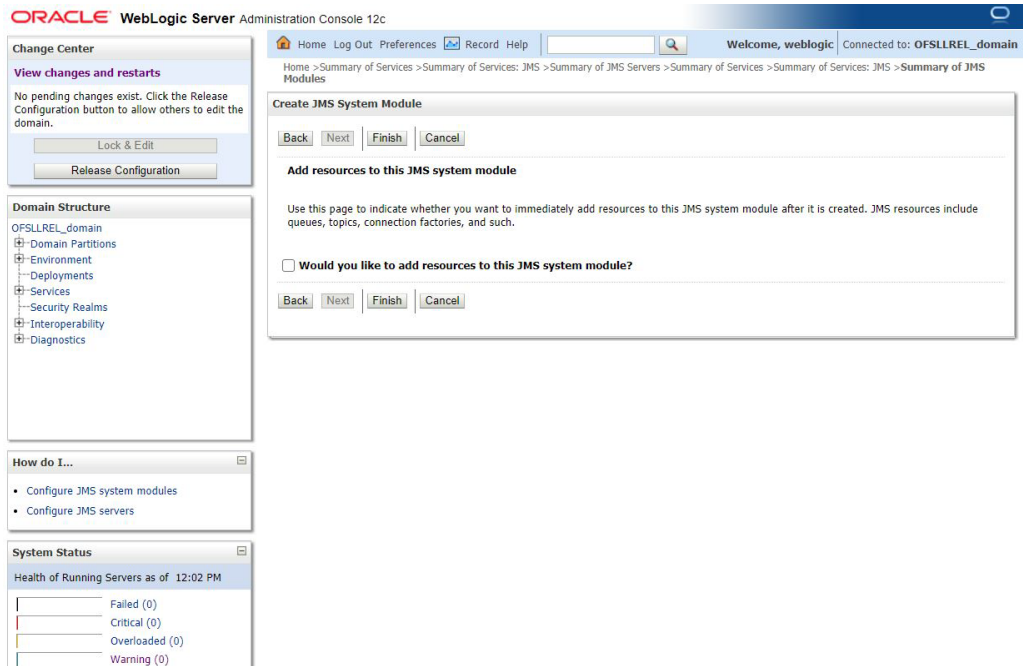
Use this page to select the server or cluster on which you would like to deploy this JMS system module. You can reconfigure targets later if you wish.

Targets :

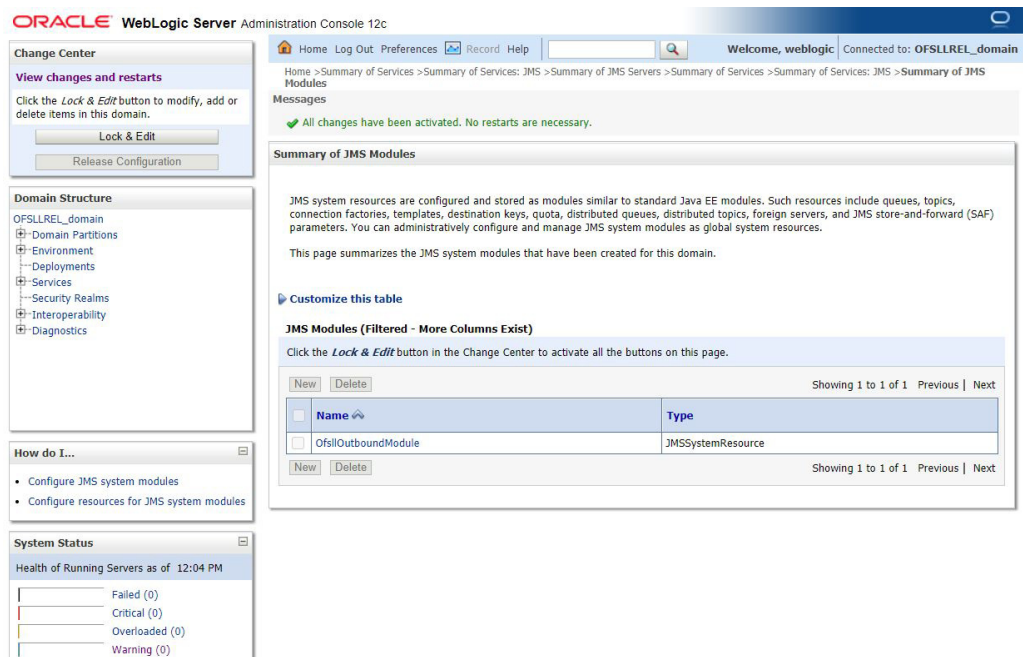
Servers
<input type="checkbox"/> AdminServer
<input checked="" type="checkbox"/> OFSLL_ManagedServer
<input type="checkbox"/> WS_ManagedServer

Back Next Finish Cancel

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



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



9.3.4 SubDeployment

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

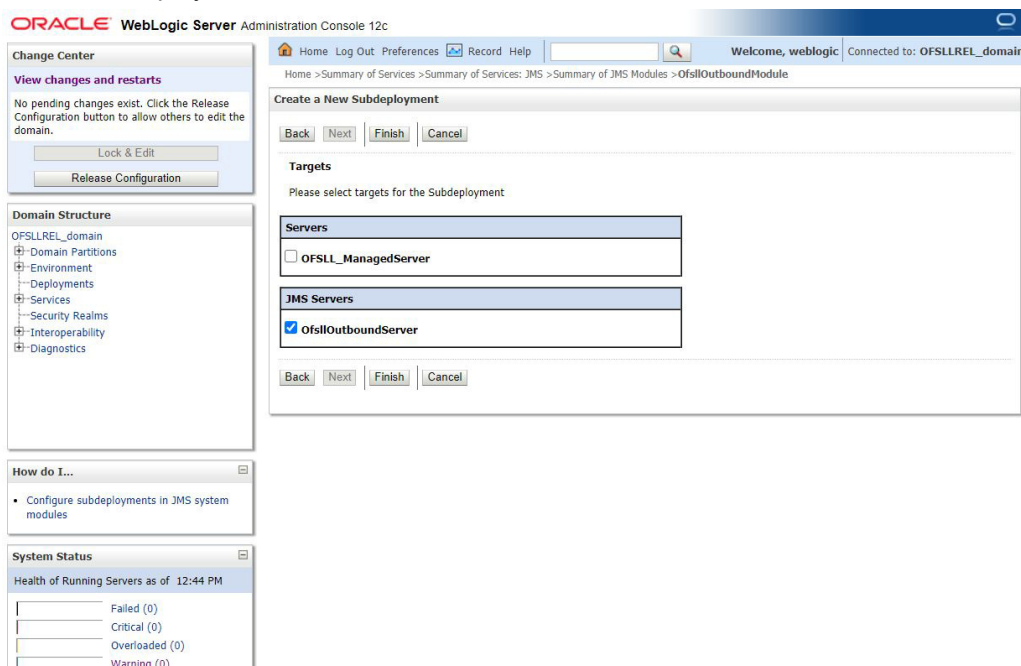
- Select the created JMS module 'OfsllOutboundModule' and click 'Subdeployments' tab. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled 'Settings for OfsslOutboundModule' and has tabs for 'Configuration', 'Subdeployments', 'Targets', 'Security', and 'Notes'. The 'Subdeployments' tab is active. Below the tabs, there is a text block explaining subdeployments. A table titled 'Subdeployments' is shown with columns for 'Name', 'Resources', and 'Targets'. The table is currently empty, displaying 'Showing 0 to 0 of 0' and 'There are no items to display'. On the left side, there are several panels: 'Change Center' with 'Lock & Edit' and 'Release Configuration' buttons; 'Domain Structure' showing a tree view; 'How do I...'; and 'System Status' showing health indicators for Failed (0), Critical (0), Overloaded (0), and Warning (0).

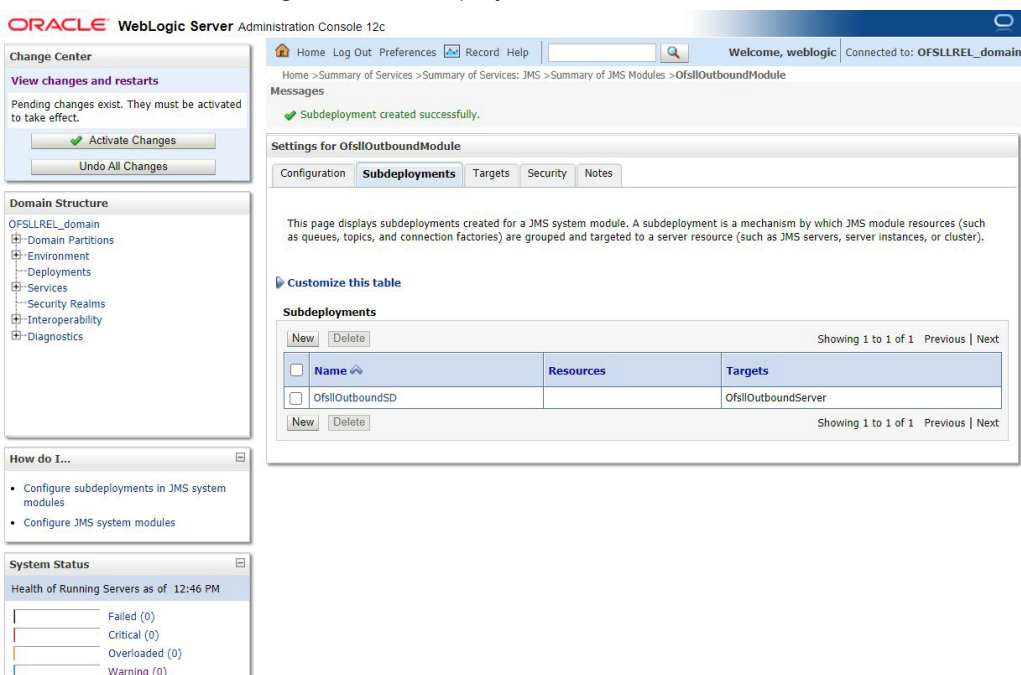
- Click 'New'. The following screen is displayed.

The screenshot shows the 'Create a New Subdeployment' dialog box. It has 'Back', 'Next', 'Finish', and 'Cancel' buttons at the top. Below the buttons, there is a section for 'Subdeployment Properties'. A text field labeled '* Subdeployment Name:' contains the value 'OfsllOutboundSD'. The dialog also includes 'Back', 'Next', 'Finish', and 'Cancel' buttons at the bottom. The background shows the same console interface as the previous screenshot, with the 'Change Center' panel now indicating 'No pending changes exist'.

- Specify the Subdeployment Name as 'OfsllOutboundSD'. Click 'Next', the following window is displayed.



- Select the check box against the newly created OfsllOutboundServer 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.

9.3.5 Create JMS Connection Factory

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

- Click Domain Name > Services > Messaging > JMS Modules. The main window displays the list of JMS modules available.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled "Summary of JMS Modules". It contains the following text:

JMS system resources are configured and stored as modules similar to standard Java EE modules. Such resources include queues, topics, connection factories, templates, destination keys, quota, distributed queues, distributed topics, foreign servers, and JMS store-and-forward (SAF) parameters. You can administratively configure and manage JMS system modules as global system resources.

This page summarizes the JMS system modules that have been created for this domain.

Below the text is a "Customize this table" section for "JMS Modules (Filtered - More Columns Exist)". It includes a "Lock & Edit" button and a table with the following data:

Name	Type
OfsllOutboundModule	JMSSystemResource

The left sidebar contains sections for "Change Center", "Domain Structure", "How do I...", and "System Status".

- Select the newly created JMS module 'OfsllOutboundModule'. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console with the "Settings for OfsslOutboundModule" page. The page has tabs for "Configuration", "Subdeployments", "Targets", "Security", and "Notes". The "Configuration" tab is active.

The page displays general information about the JMS system module and its resources. It includes the following fields:

- Name:** OfsslOutboundModule
- Scope:** Global
- Descriptor File Name:** jms/OfsslOutboundModule-jms.xml

Below the fields is a "Summary of Resources" section, which includes a table with the following columns: Name, Type, JNDI Name, Subdeployment, and Targets. The table is currently empty, with the message "There are no items to display".

The left sidebar contains sections for "Change Center", "Domain Structure", "How do I...", and "System Status".

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

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled 'Create a New JMS System Module Resource'. It features a navigation bar with 'Home', 'Log Out', 'Preferences', 'Record', and 'Help'. The breadcrumb trail is 'Home > Summary of JMS Modules > OfsslOutboundModule'. The page contains a 'Change Center' on the left, a 'Domain Structure' tree, and a 'How do I...' section. The main content area has a 'Back', 'Next', 'Finish', and 'Cancel' button bar. Below this, it says 'Choose the type of resource you want to create.' and provides instructions. A list of resource types is shown, with 'Connection Factory' selected. The other options are Queue, Topic, Distributed Queue, Distributed Topic, and Foreign Server.

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

The screenshot shows the 'Connection Factory Properties' dialog in the Oracle WebLogic Server Administration Console. The breadcrumb trail is 'Home > Summary of JMS Modules > OfsslOutboundModule'. The dialog has a 'Back', 'Next', 'Finish', and 'Cancel' button bar. It contains the following fields and options:

- 'What would you like to name your new connection factory?': * Name: OfsslOutboundCF
- 'What JNDI Name would you like to use to look up your new connection factory?': JNDI Name: jms/OfsslOutboundCF
- 'The Connection Factory Subscription Sharing Policy Subscribers can be used to control which subscribers can access new subscriptions. Should subscriptions created using this factory be sharable?': Subscription Sharing Policy: Exclusive
- 'The Client ID Policy indicates whether more than one JMS connection can use the same Client ID. Oracle recommends setting the Client ID policy to Unrestricted if sharing durable subscribers. Subscriptions created with different Client ID policies are always treated as independent. What Client ID Policy would you like to use?': Client ID Policy: Restricted
- 'A connection factory can limit the number of messages that can be queued for an asynchronous session. Should this connection factory impose a limit?': Maximum Messages per Session: 10

 At the bottom, there is a checkbox: 'Should this connection factory create sessions that are JTA aware, and create XA queues and XA topics?'.

- Specify the following details:
 - Enter the Name of the Connection Factory as 'OfsslOutboundCF'
 - Enter the JNDI Name as 'jms/OfsslOutboundCF'
 - Select the check box 'XA Connection Factory Enabled'

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

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Create a New JMS System Module Resource". It has a navigation bar with "Back", "Next", "Finish", "Advanced Targeting", and "Cancel" buttons. Below the navigation bar, there is a section titled "The following properties will be used to target your new JMS system module resource". This section contains two paragraphs of text explaining the default targets and the purpose of the "Advanced Targeting" button. Below the text, there is a "Targets:" section with a table:

Servers	
<input type="checkbox"/>	OFSLL_ManagedServer

At the bottom of the "Targets" section, there are "Back", "Next", "Finish", "Advanced Targeting", and "Cancel" buttons. The "Advanced Targeting" button is highlighted in the screenshot.

8. Click 'Advanced Targeting' button. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Create a New JMS System Module Resource". It has a navigation bar with "Back", "Next", "Finish", and "Cancel" buttons. Below the navigation bar, there is a section titled "The following properties will be used to target your new JMS system module resource". This section contains two paragraphs of text explaining the subdeployment mechanism and the purpose of the "Create a New Subdeployment" button. Below the text, there is a "Subdeployments:" section with a dropdown menu set to "OfsllOutboundSD" and a "Create a New Subdeployment" button. Below this, there is a "Targets:" section with a table:

Servers	
<input type="checkbox"/>	OFSLL_ManagedServer

JMS Servers	
<input checked="" type="checkbox"/>	OfsllOutboundServer

At the bottom of the "Targets" section, there are "Back", "Next", "Finish", and "Cancel" buttons. The "Advanced Targeting" button is highlighted in the screenshot.

9. Do the following:

- Select the Subdeployments as 'OfsllOutboundSD' from the drop down list.
- Under JMS Servers, select the check box against 'OfsllOutboundServer'.

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

The screenshot displays the Oracle WebLogic Server Administration Console interface. The main window shows the 'Settings for OfsllOutboundModule' configuration page. The page includes a 'Change Center' sidebar on the left with 'Lock & Edit' and 'Release Configuration' buttons. The main content area has tabs for 'Configuration', 'Subdeployments', 'Targets', 'Security', and 'Notes'. A message at the top states: 'All changes have been activated. No restarts are necessary.' Below this, there is a 'Summary of Resources' section with a table listing the resources for the module.

Name	Type	JNDI Name	Subdeployment	Targets
OfsllOutboundCF	Connection Factory	jms/OfsllOutboundCF	OfsllOutboundSD	OfsllOutboundServer

9.3.6 Create JMS Queue

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

This screenshot is identical to the one above, showing the Oracle WebLogic Server Administration Console configuration page for the 'OfsllOutboundModule' JMS system module. It includes the 'Change Center', 'Domain Structure', and 'Summary of Resources' sections with the same table of resources.

Name	Type	JNDI Name	Subdeployment	Targets
OfsllOutboundCF	Connection Factory	jms/OfsllOutboundCF	OfsllOutboundSD	OfsllOutboundServer

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

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled 'Create a New JMS System Module Resource'. It features a navigation bar with 'Home', 'Log Out', 'Preferences', 'Record', and 'Help'. The user is logged in as 'weblogic' and connected to the 'OFSLREL_domain'. The breadcrumb trail is 'Home > Summary of JMS Modules > OfslOutboundModule'. The dialog has 'Back', 'Next', 'Finish', and 'Cancel' buttons. Below the buttons, it asks to 'Choose the type of resource you want to create.' and provides instructions. A list of resource types is shown with radio buttons: 'Connection Factory', 'Queue', 'Topic', 'Distributed Queue' (selected), 'Distributed Topic', and 'Foreign Server'. Each type has a brief description and a 'More Info...' link.

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

The screenshot shows the 'JMS Distributed Destination Properties' dialog. It includes the same navigation bar and breadcrumb trail as the previous screenshot. The dialog has 'Back', 'Next', 'Finish', and 'Cancel' buttons. It states: 'The following properties will be used to identify your new Distributed Queue. The current module is OfslOutboundModule'. A note indicates that asterisks (*) denote required fields. The 'Name' field is filled with 'OfslOutboundQueue'. The 'JNDI Name' field is filled with 'jms/OfslOutboundQueue'. The 'Destination Type' dropdown is set to 'Uniform'. The 'Template' dropdown is set to 'None'. There are 'Back', 'Next', 'Finish', and 'Cancel' buttons at the bottom.

- Specify the following details while creating new JMS System Module Resources:
 - Enter the Name of the Queue as 'OfslOutboundQueue'
 - Enter the JNDI Name as 'jms/OfslOutboundQueue'
 - Select the Template as 'None'

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

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Create a New JMS System Module Resource". It features a navigation bar with "Back", "Next", "Finish", "Advanced Targeting", and "Cancel" buttons. Below the navigation bar, there is a section titled "The following properties will be used to target your new JMS system module resource". This section contains explanatory text and a "Targets" section with a table listing "Servers". The "OFSLI_ManagedServer" is listed with a checked checkbox. At the bottom of the "Targets" section, there are "Back", "Next", "Finish", "Advanced Targeting", and "Cancel" buttons.

- Click 'Advanced Targeting' button. The following window is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Create a New JMS System Module Resource". It features a navigation bar with "Back", "Next", "Finish", and "Cancel" buttons. Below the navigation bar, there is a section titled "The following properties will be used to target your new JMS system module resource". This section contains explanatory text and a "Subdeployments" section with a dropdown menu set to "OfsllOutboundSD" and a "Create a New Subdeployment" button. Below this, there is a "Targets" section with a table listing "Servers" and "JMS Servers". The "OfsllOutboundServer" is listed under "JMS Servers" with a checked checkbox. At the bottom of the "Targets" section, there are "Back", "Next", "Finish", and "Cancel" buttons.

- Select the Subdeployments as 'OfsllOutboundSD' from the drop-down list.

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

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled 'Settings for OfsslOutboundModule' and includes a 'Configuration' tab. Below the tab, there is a table with the following data:

Name	Type	JNDI Name	Subdeployment	Targets
OfsslOutboundCF	Connection Factory	jms/OfsslOutboundCF	OfsslOutboundSD	OfsslOutboundServer
OfsslOutboundQueue	Uniform Distributed Queue	jms/OfsslOutboundQueue	OfsslOutboundSD	OfsslOutboundServer

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

9.4 Configure External Client Certificates

The Webhook option in OFSLL extends the support of interfacing with third-party applications by sending REST API based notifications of changes through system generated Webhook event actions.

In a Webhook setup you can notify the changes that are done in OFSLL by triggering Webhook request as an event action and propagate the information to the dependant third-party applications (client) through specific https communication channel.

For webhook HTTPS communication, client certificates are to be imported in Weblogic OPSS keystore for each channel.

Follow the below steps to import the certificates.

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

2. Click on 'Weblogic Domain' drop-down list and navigate to Security > Keystore.

The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control interface. The breadcrumb navigation path is: OFSSLREL_domain > WebLogic Domain > weblogic. A dropdown menu is open under 'weblogic', showing a tree view of the navigation structure. The 'Security' option is highlighted, and a sub-menu is displayed with 'Keystore' selected at the bottom. The main content area shows the 'Administration Server' details and a table of servers.

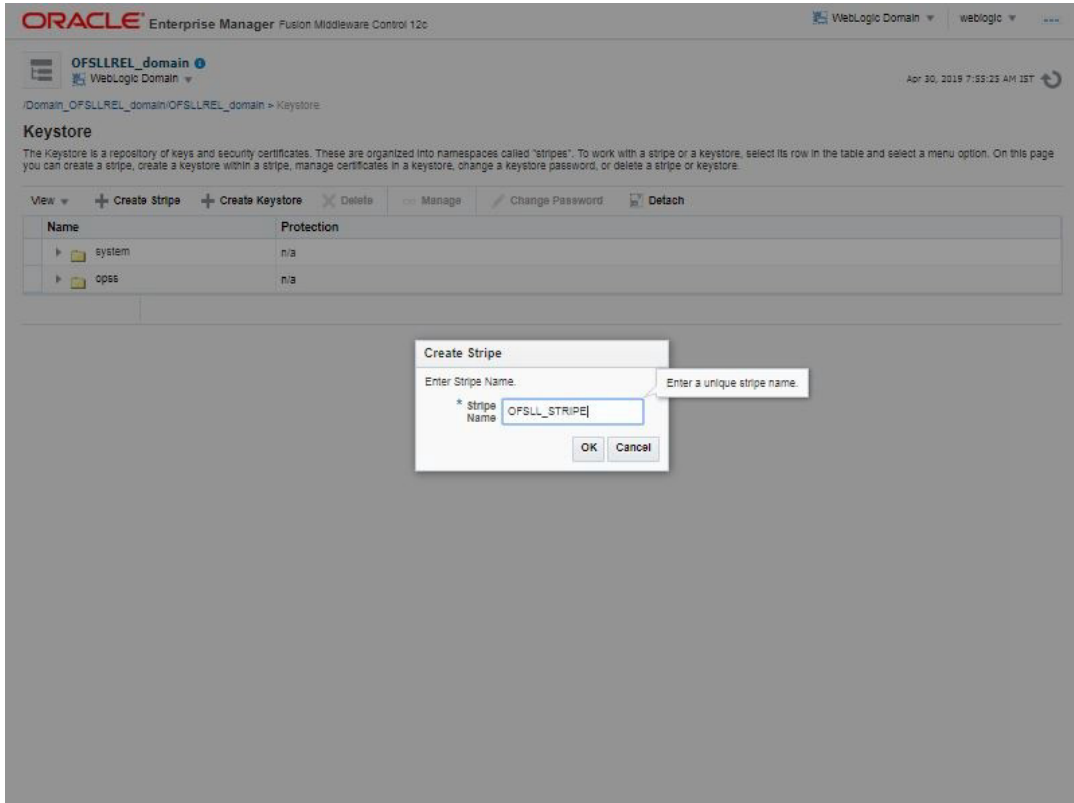
Name	Status	Cluster	Machine	State
AdminServer(admin)	↑			Running
OFSSL_ManagedServer	↑			Running
WS_ManagedServer	↑			Running

3. Click on 'Create Stripe'.

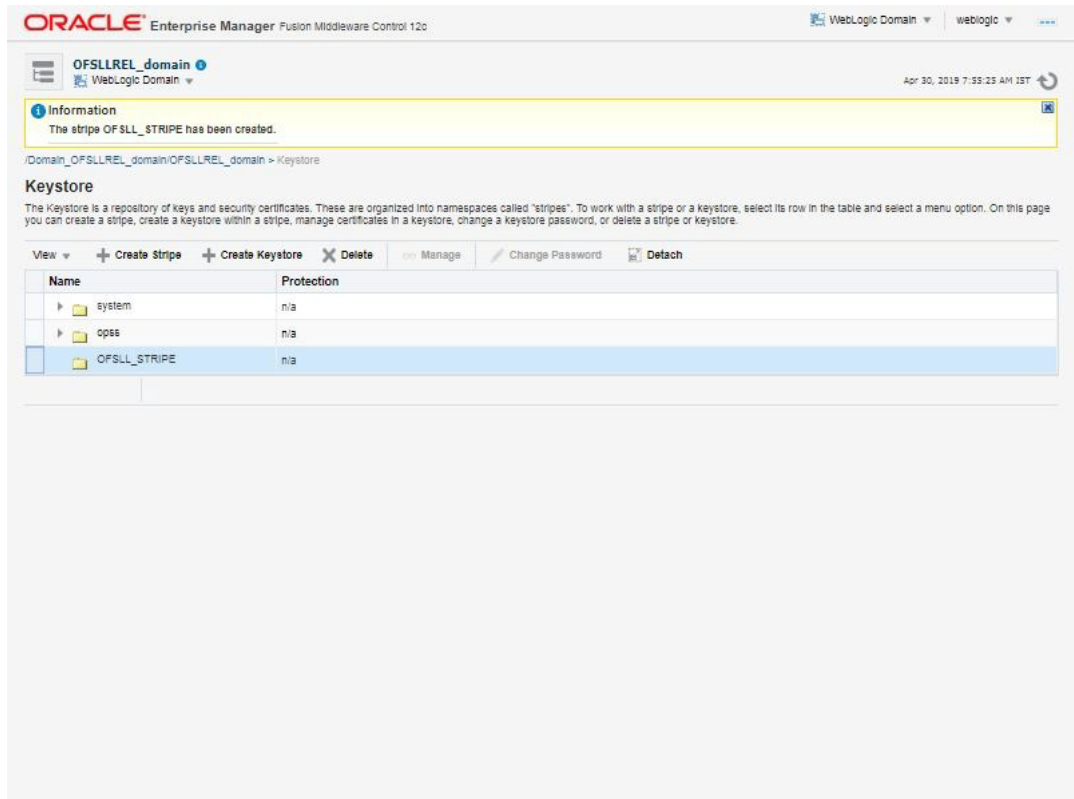
The screenshot shows the 'Keystore' configuration page in Oracle Enterprise Manager. The breadcrumb navigation path is: /Domain_OFSSLREL_domain/OFSSLREL_domain > Keystore. The page title is 'Keystore'. Below the title, there is a table with two columns: 'Name' and 'Protection'. The table contains two rows: 'system' and 'opss', both with 'n/a' in the 'Protection' column. Above the table, there are several action buttons: 'View', '+ Create Stripe', '+ Create Keystore', 'X Delete', 'Manage', 'Change Password', and 'Detach'. The '+ Create Stripe' button is highlighted with a blue border.

Name	Protection
system	n/a
opss	n/a

4. Enter the Stripe Name as 'OFSSL_STRIPE'.

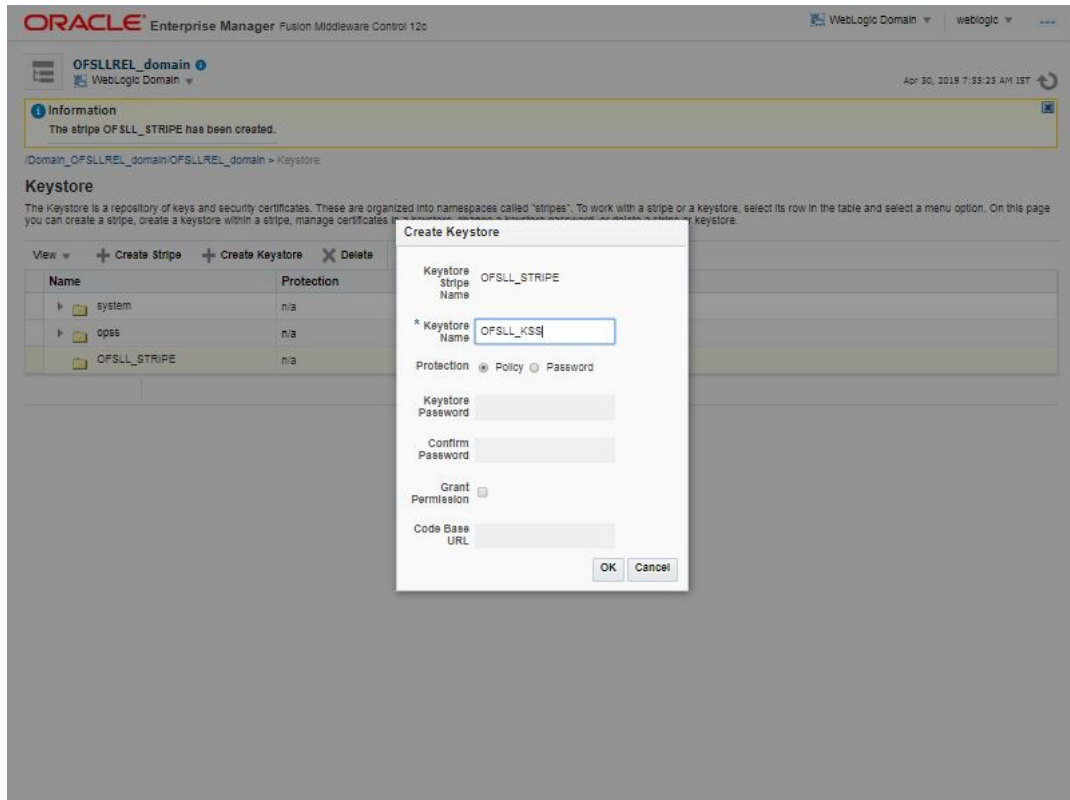


5. Click 'OK'. The following OFSSL_STRIPE is created.

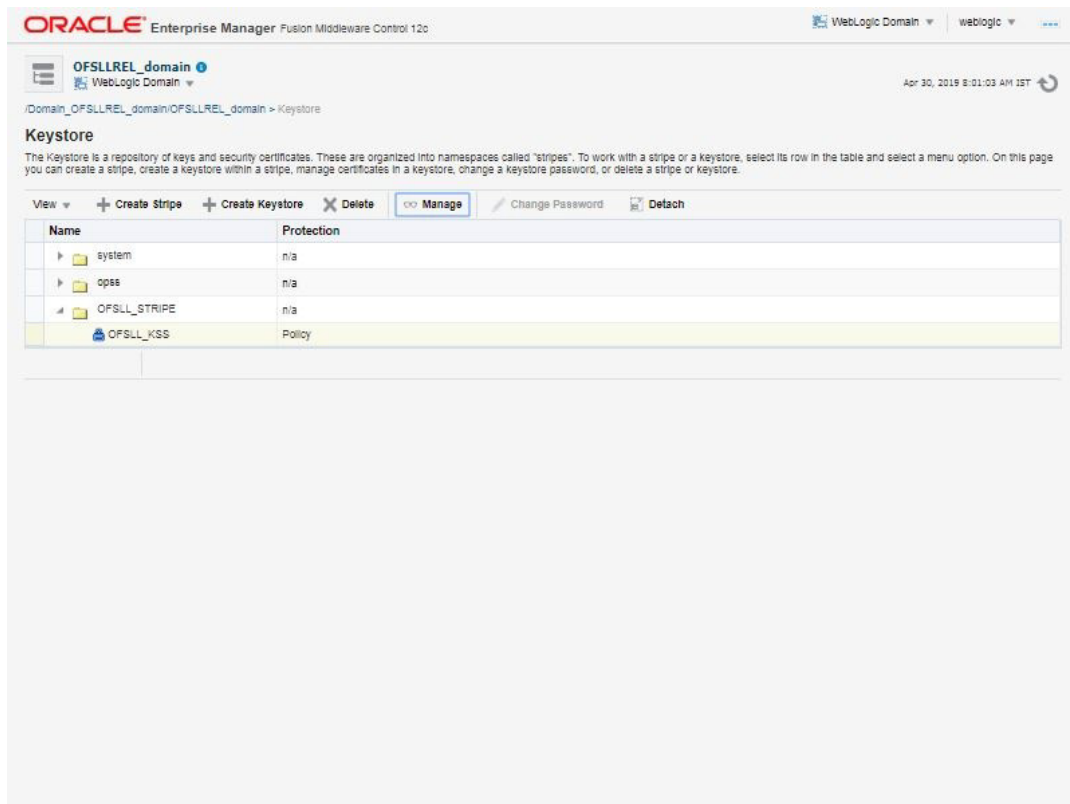


6. Select the newly created 'OFSSL_STRIPE' and click 'Keystore'.

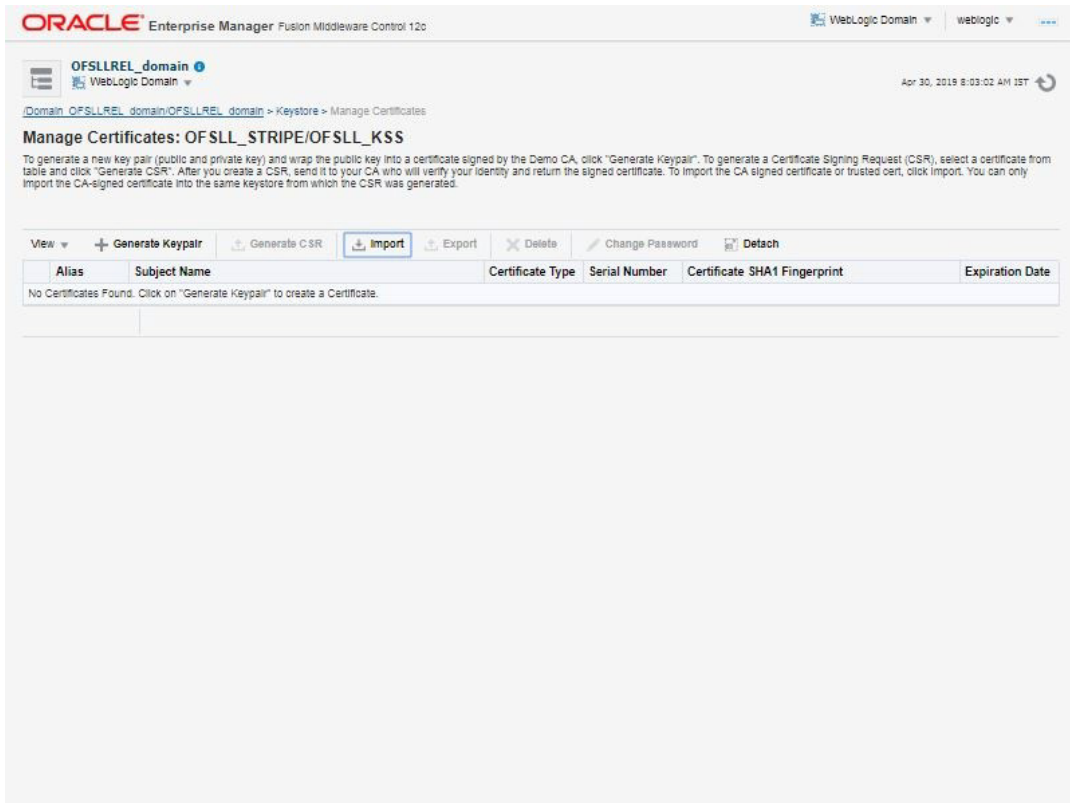
7. Enter the Keystore Name as 'OFSSL_KSS' and click 'OK'.



8. Select 'OFSSL_KSS' and click 'Manage'.

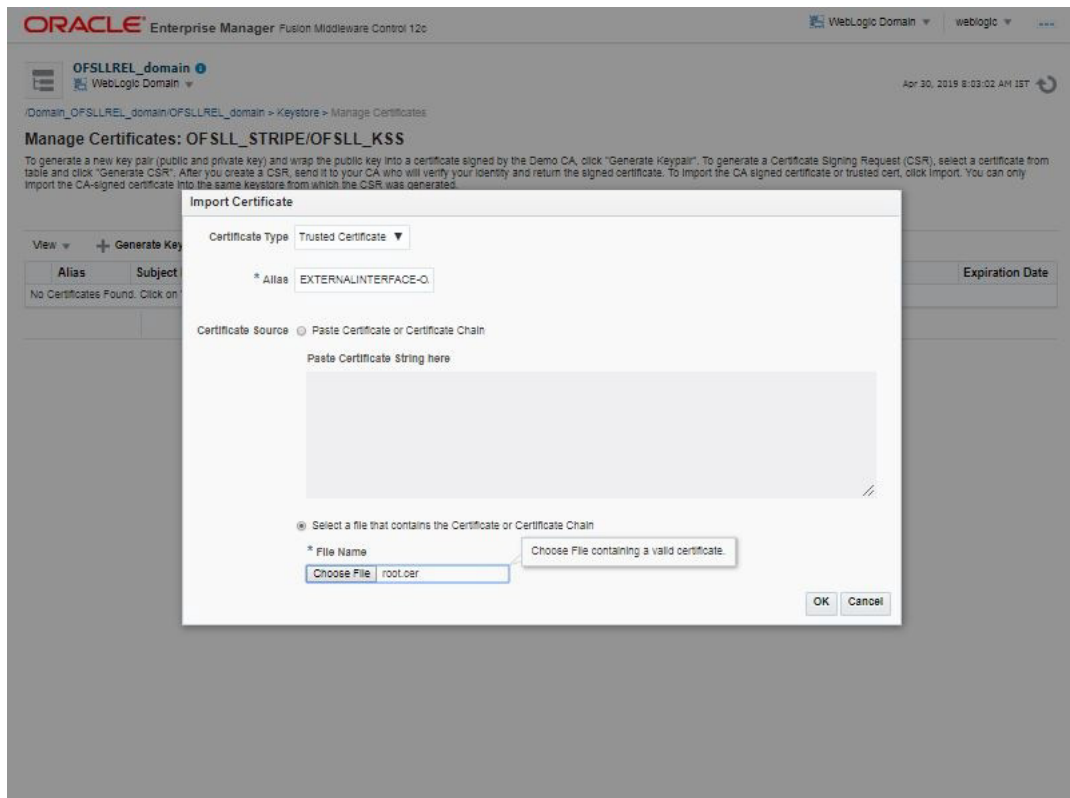


9. Click 'Import'.



10. In the below 'Import Certificate' screen, specify the following details:

- Certificate Type: Trusted Certificate
- Alias: webhook Channel Name
- Choose file: webhook channel certificate

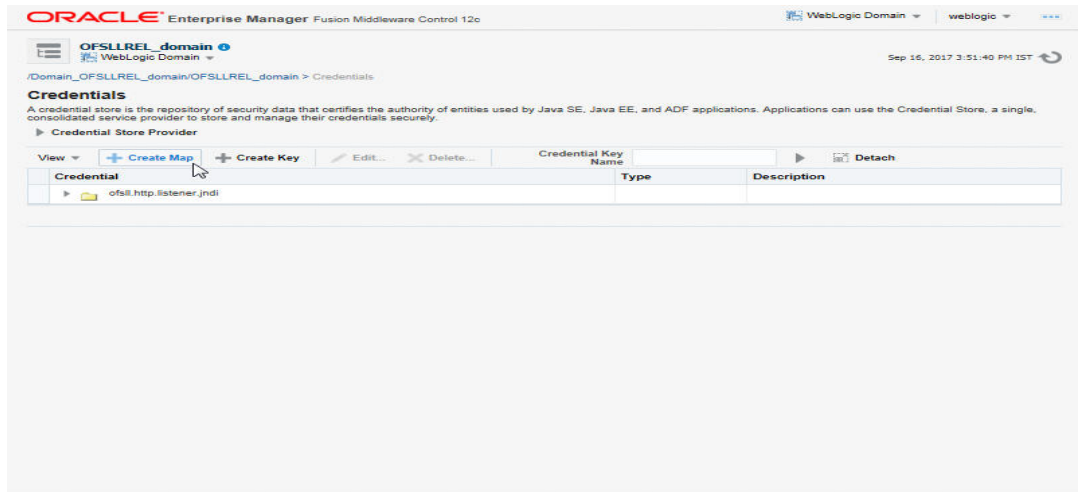


11. Click 'OK'.

9.5 Create Credentials and System Policies

In order to 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.

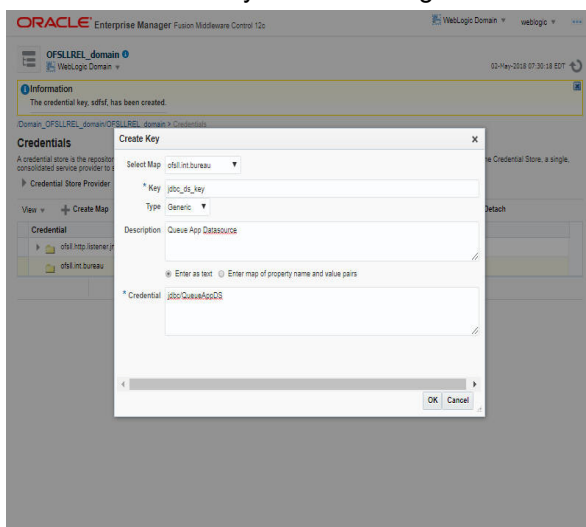
1. Login to Oracle Enterprise Manager (http://hostname:port/em).
2. On the left panel, right click on OFSLLREL_domain and select Security > System Policies > Credentials. The following window is displayed.



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



4. Enter Map Name as 'ofssl.int.bureau' and click 'OK'.
5. Click 'Create Key'. The following window is displayed.



6. Specify the following details:
 - Select Map as 'ofssl.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
ofssl.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.
	EfxUserNamePassword	Login credentials to be configured for accessing Equifax Reports.
	TucCertPath	The location of .jks file which contains valid certificate for Transunion Bureau.
	TucCertPassword	The password that requires to read the valid .jks 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.
ofssl.int.outbound		This map is used to setup keys for the Route-One and Dealer track call back from OFSSL.

Maps	Keys	Description
	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
	VertexUserNamePd	Credentials required to connect to VERTEX web service
	VertexTrustedId	ID required to connect to VERTEX web service
	TorqueltsUserName- Password	Credentials required to connect to Torquelts web service
	TorqueltsURL	Torquelts Decision service URL
	ProxyHost	Name of the proxyServer to be configured.
	ProxyPort	Port to which ProxyServer is running.
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	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. For example; /tmp/file.properties *Refer to note below for details on 'file.properties' file creation for email configuration.
	fax_server	Configure the name of Fax server to be used to fax the generated BIP reports.

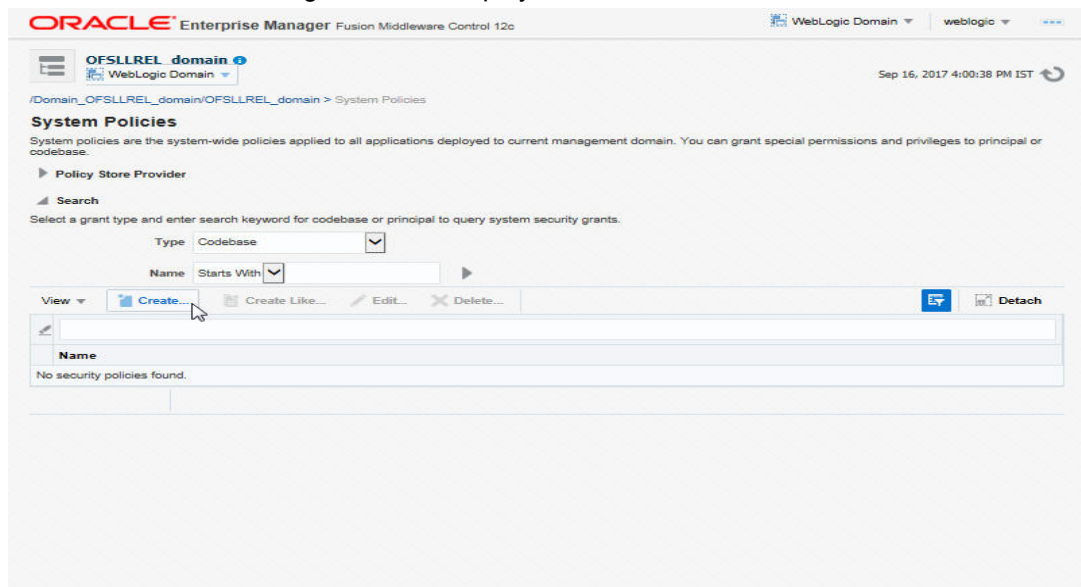
Maps	Keys	Description
	jdbc_ds_key	Datasource configured to retrieve data for BIP.
ofssl.int.file transfer		This map is used to setup keys for all credit bureau interfaces
	sftp_key	Credentials to login to SFTP server(Username/ Password)
	sftp_top_dir	Top root directory for SFTP server
	sftp_servers	SFTP server names
ofssl.int.se curity	bip_key	This is BIP login credentials
ofssl.int.gri	GriURL	GRI web service URL to be configured.
	GriAPIKey	GRI API key to be configured
	ProxySet	System Level Proxy Enabled/Disabled. Value can be either true or false. True= proxy required False = proxy not required
	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.
	GriCertPath	The location of .jks file which contains the valid certificate for GRI. Configure only when a valid certificate is available.
ofssl.int.co mmon		This map is used to setup keys for common JMS Queue
	OfsslJMSQueueJNDI	The JMS queue JNDI name to be configured
	OfsslJMSQueueCF	The JMS queue connection factory to be configured
	OfsslJMSServerURL	The JMS server url to be configured. Ex: t3://<JMS server host>:<JMS server port>
	outbound_jms_- queue_con_factory	The JMS connection factory to be configured. jms/OfsslOutboundCF
	outbound_jms_queue	The JMS queue to be configured. jms/OfsslOutboundQueue

Maps	Keys	Description
	weblogic_cluster_ind	This is to be configured based on the environment i.e. for weblogic cluster environment set it as 'Y'. Else, set it to 'N'.
	outbound_jms_queue_provider_url	The JMS server url to be configured. Ex: For non clustered environment - t3://<JMS server host>:<JMS server port> Ex: For clustered environment - t3://<JMS server host>:<JMS server port>,<JMS server host>:<JMS server port>
ofsll.int.webhook	jdbc_ds_key	Datasource configured to retrieve data for Webhook.

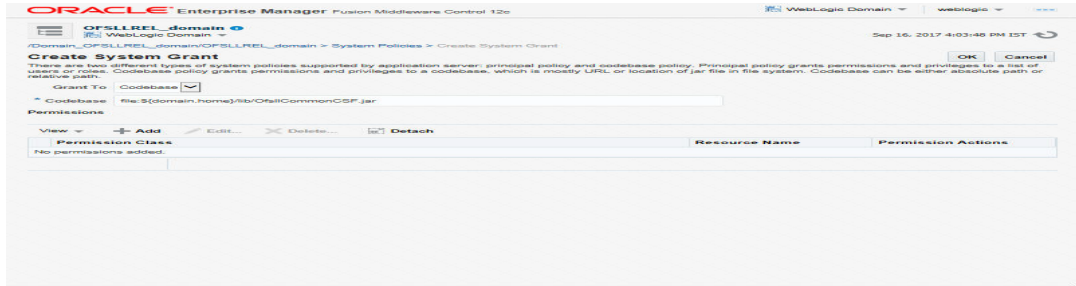
* A new file(file.properties) needs to be created and copied to the application server in the same path as mentioned in the value corresponding to the key 'emailBodyContentPath' under the map 'ofsll.int.bip'. The file should have the following contents:

- 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.

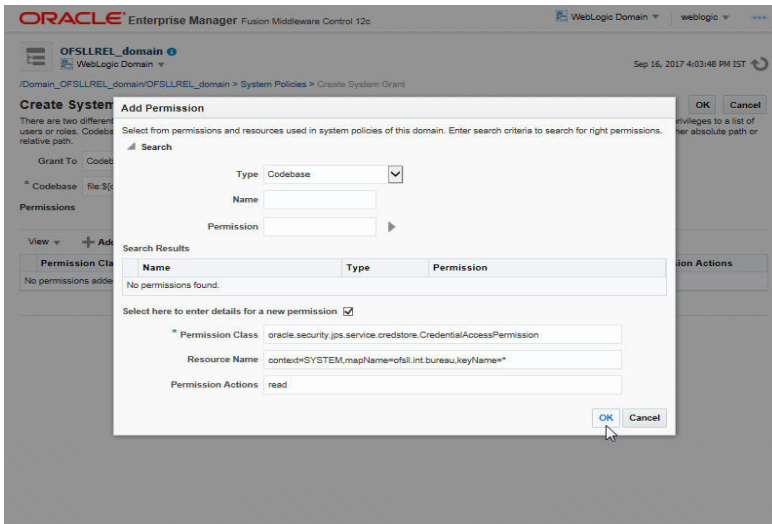


10. Click 'Create'. The following window is displayed.



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
oracle.security.jps.service.cred-store.CredentialAccessPermission	context=SYSTEM,mapName=ofsll.int.webhook,keyName=*	read, write, update
oracle.security.jps.service.key-store.KeyStoreAccessPermission	stripeName=OFSLL_STRIPE, keyStoreName=OFSLL_KSS, alias=*	read

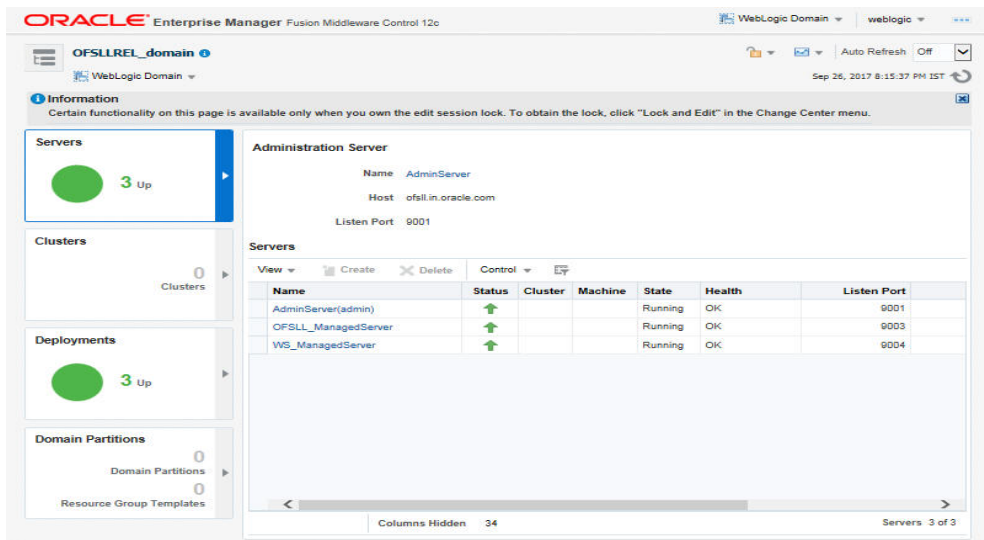
15. Click 'OK'.

9.6 Deploy MDB EJB

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

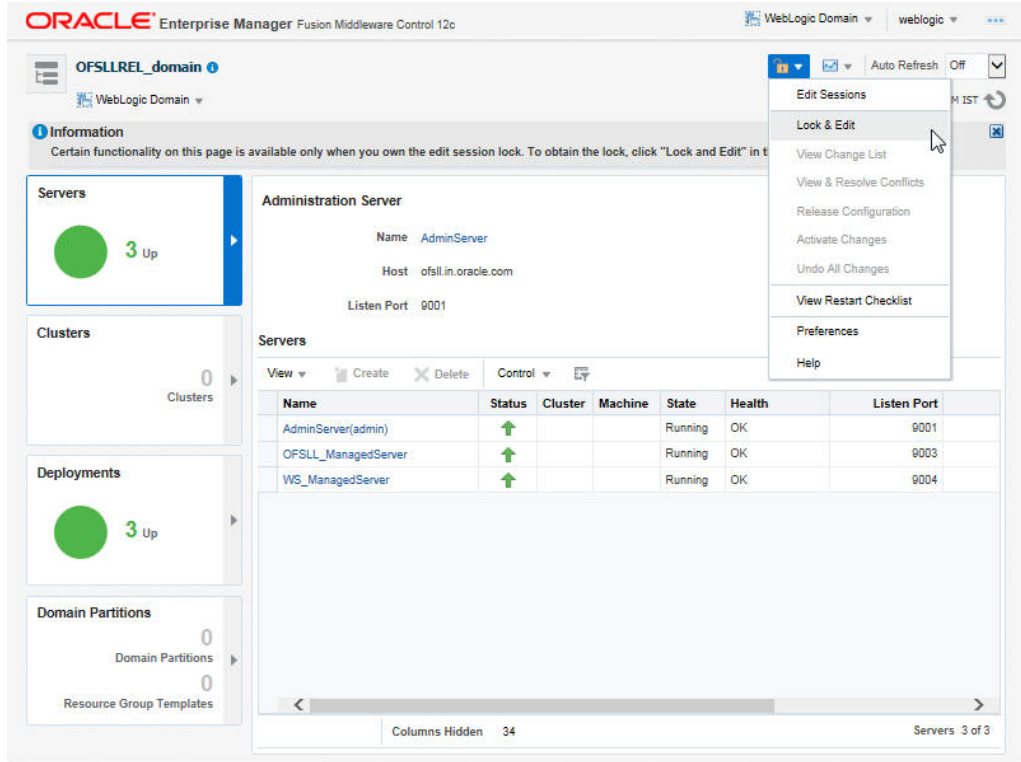


2. Enter valid login credentials. The following window is displayed.

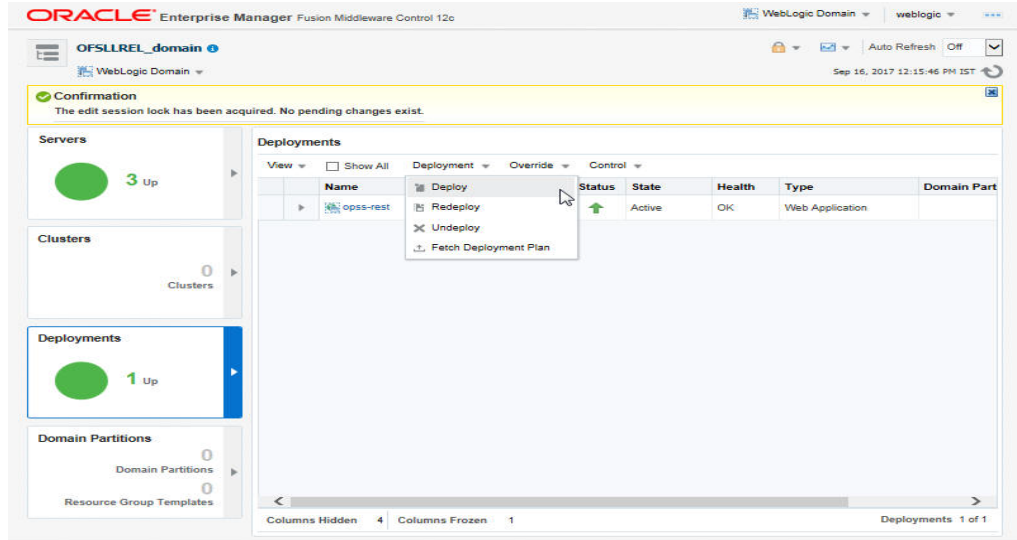


3. Select 'Lock & Edit' option in the lock drop-down list available in the header.

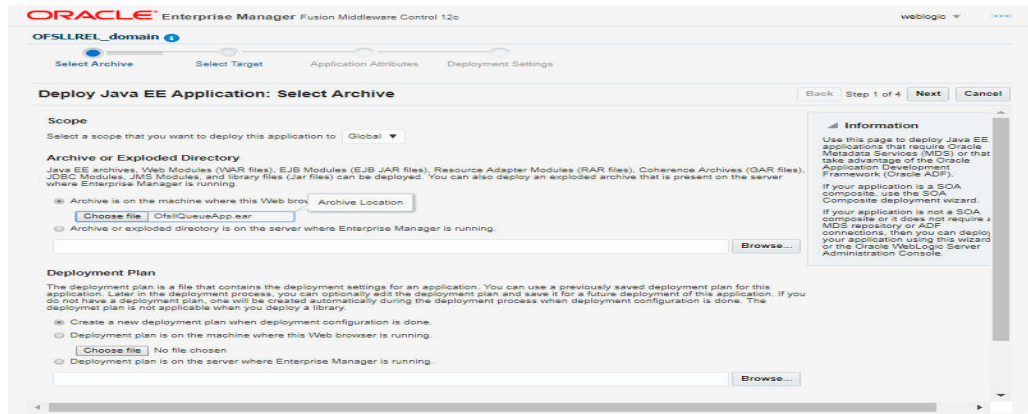
- Click 'Deployment' in the left panel. The following window is displayed.



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

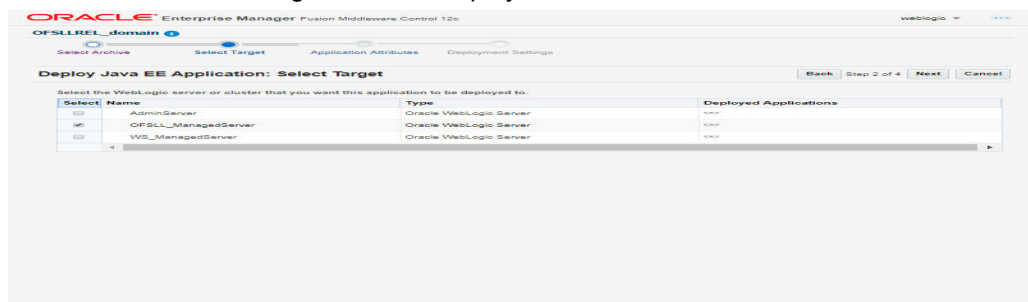


6. The following window is displayed.



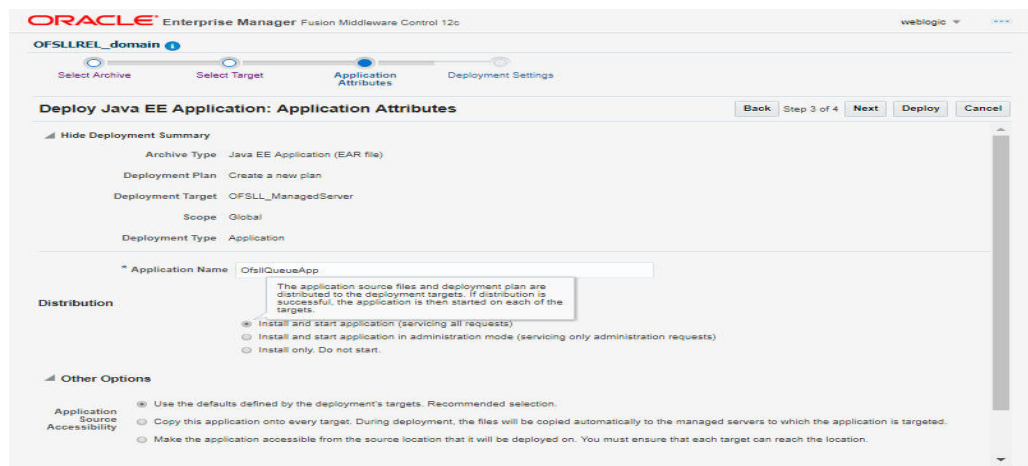
7. Browse to the folder containing the MDB EJB. Eg: C:/OfsllQueueApp.ear

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



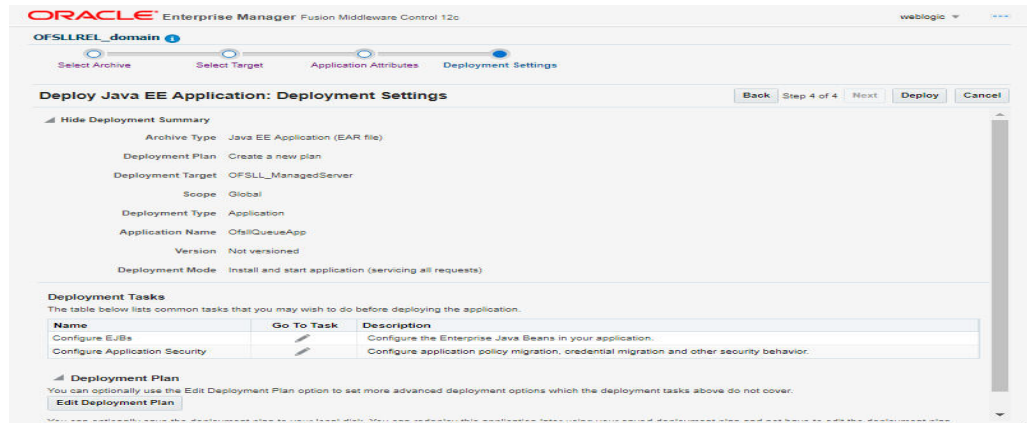
9. Select the server on which the MDB EJB needs to be deployed.

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

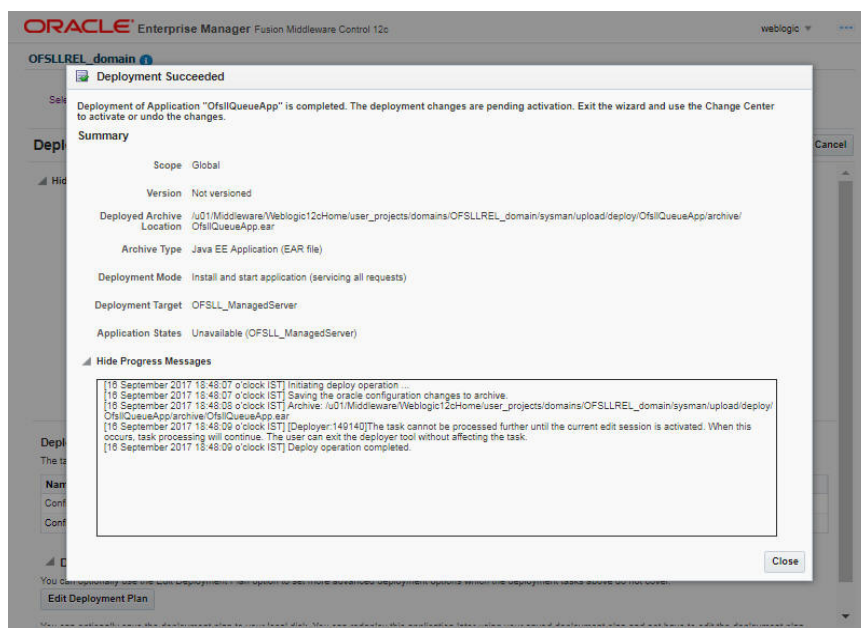


11. Select the option 'Install and start application (servicing all requests)'.

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.

Note

While starting the 'OFSLLREL_ManagedServer', always start with option '-DUseSun-HttpHandler=true' to enforce the weblogic server to uses SUN SSL implementation.

10. Configure Oracle JET

Oracle JavaScript Extension Toolkit (Oracle JET) is a complete yet modular JavaScript development toolkit helping developers build engaging user interfaces. Based on industry standards and popular open-source frameworks, Oracle JET further adds advanced functionality and services to help developer build better applications faster.

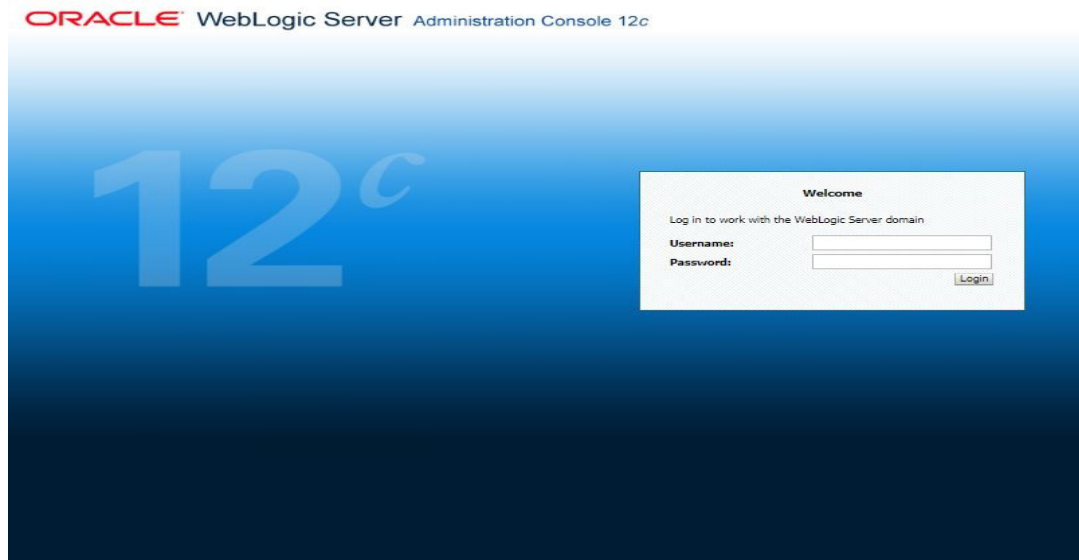
For more information, refer to <https://www.oracle.com/application-development/technologies/jet/oracle-jet.html>

The following steps are to be performed to configure Oracle JET through the Weblogic Console:

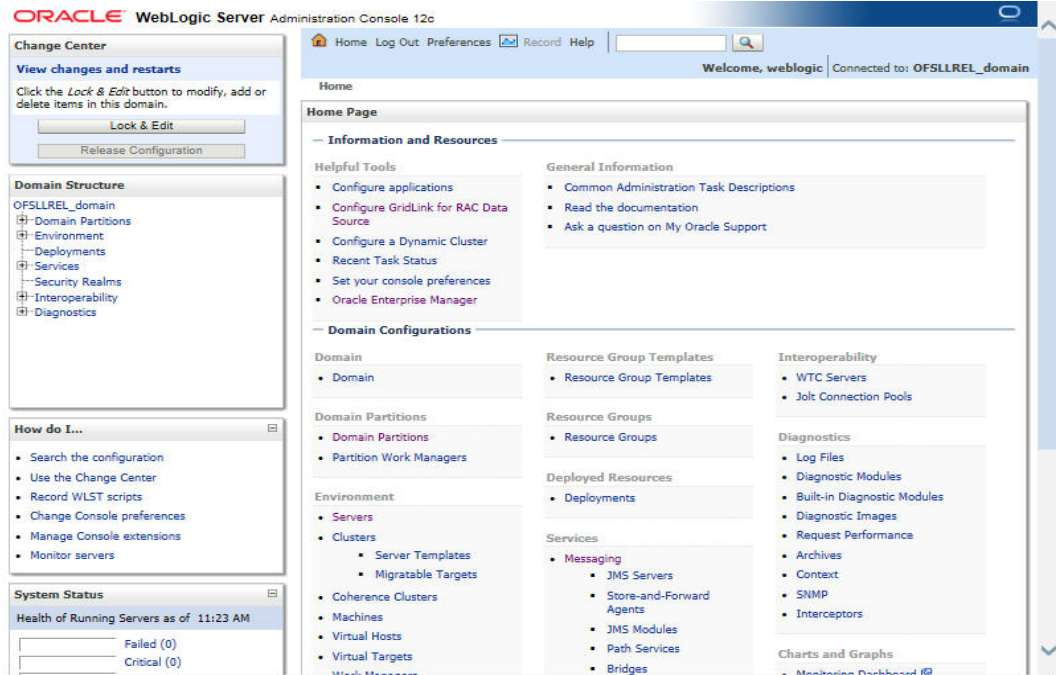
- [Create Data Sources for Oracle JET](#)
- [Deploy Oracle JET](#)

10.1 Create Data Sources for Oracle JET

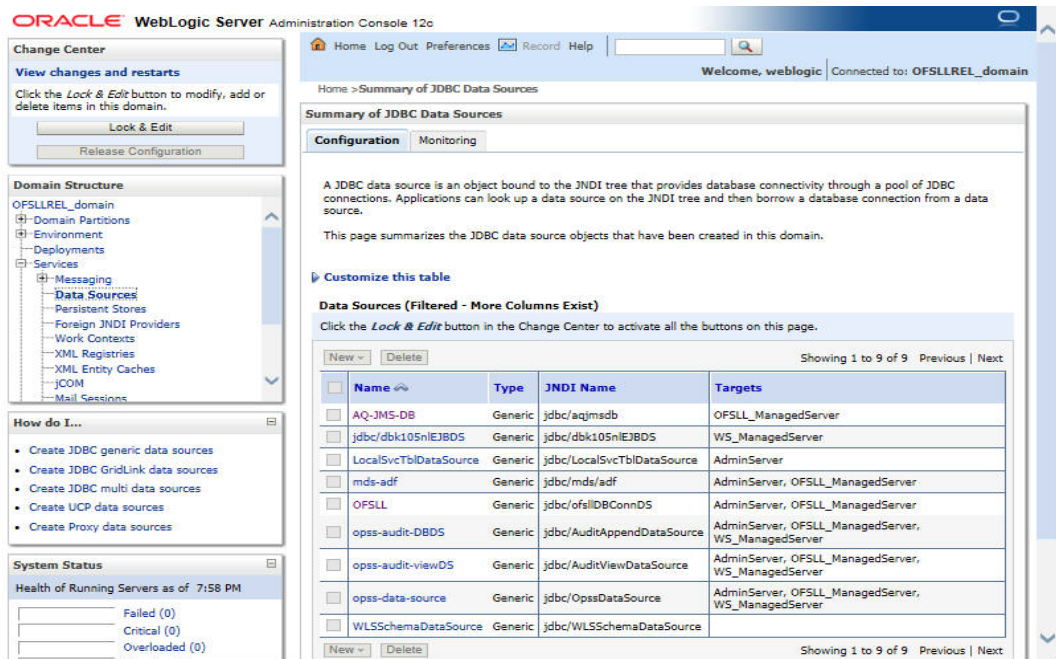
1. Login to Oracle Weblogic 12c console (<http://hostname:port/console>).



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



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



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

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Change Center' panel has 'Lock & Edit' selected. The 'Domain Structure' panel shows 'Data Sources' expanded. The main area displays 'Summary of JDBC Data Sources' with a table of existing data sources. A 'New' dropdown menu is open, showing 'Generic Data Source' as the selected option.

Generic Data Source	Type	JNDI Name	Targets
GridLink Data Source	Generic	jdbc/aqjmsdb	OFSSL_ManagedServer
Multi Data Source	Generic	jdbc/dbk105nIEJBDS	WS_ManagedServer
Proxy Data Source	Generic	jdbc/LocalSvcTbIDataSource	AdminServer
UCP Data Source	Generic	jdbc/mds/adf	AdminServer, OFSSL_ManagedServer
OFSSL	Generic	jdbc/ofslIDBConnDS	AdminServer, OFSSL_ManagedServer
opss-audit-DBDS	Generic	jdbc/AuditAppendDataSource	AdminServer, OFSSL_ManagedServer, WS_ManagedServer
opss-audit-viewDS	Generic	jdbc/AuditViewDataSource	AdminServer, OFSSL_ManagedServer, WS_ManagedServer
opss-data-source	Generic	jdbc/OpssDataSource	AdminServer, OFSSL_ManagedServer, WS_ManagedServer
WLSSchemaDataSource	Generic	jdbc/WLSSchemaDataSource	

- The following window is displayed.

The screenshot shows the 'Create a New JDBC Data Source' wizard. The 'Name' field is 'OfsIIPlato', the 'Scope' is 'Global', and the 'JNDI Name' is 'jdbc/ofs11'. The 'Database Type' is set to 'Oracle'.

JDBC Data Source Properties

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

* Indicates required fields

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

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

What JNDI name would you like to assign to your new JDBC Data Source?
JNDI Name: jdbc/ofs11

What database type would you like to select?
Database Type: Oracle

- Specify the following details:
 - Enter Data source Name as OfsIIPlato

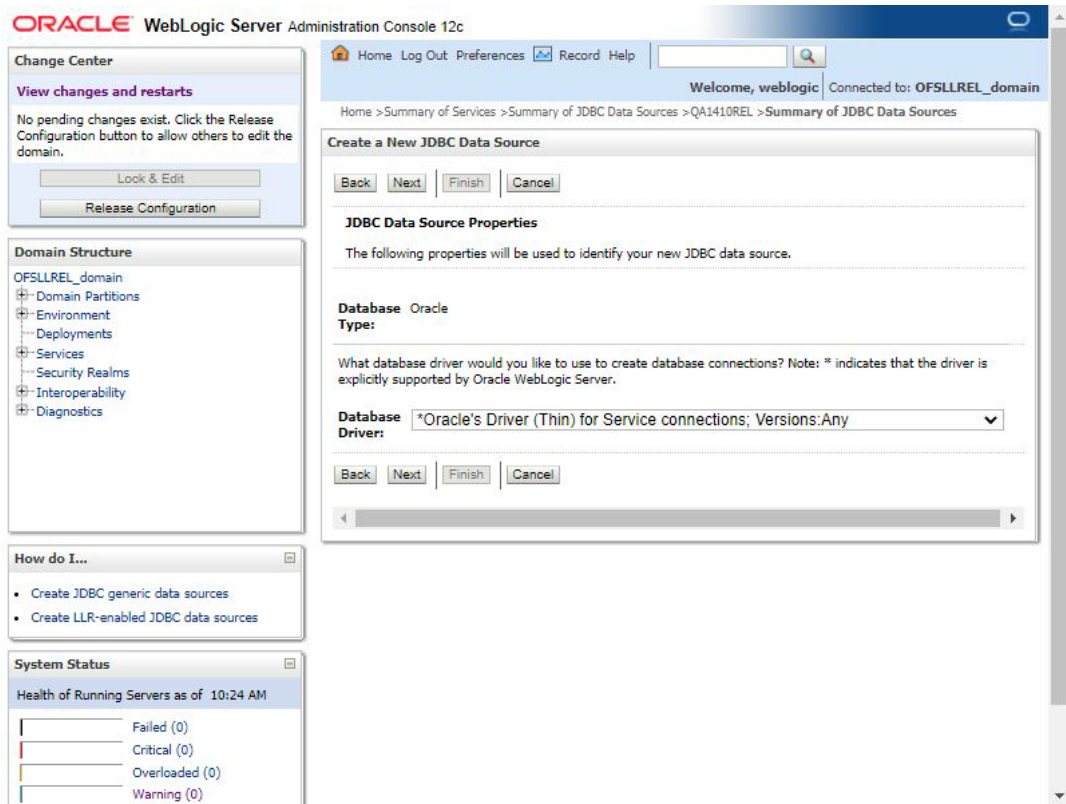
- Enter the JNDI Name as 'jdbc/ofssl'.

Note

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

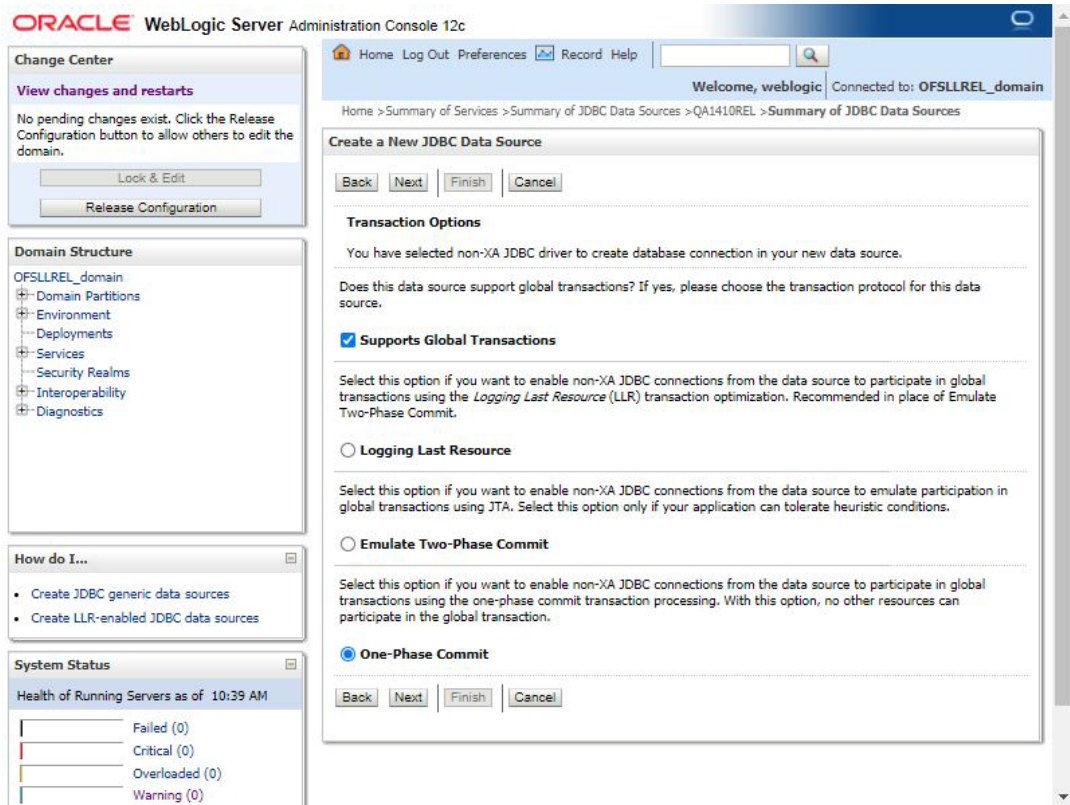
- Select 'Oracle' as Database Type.

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

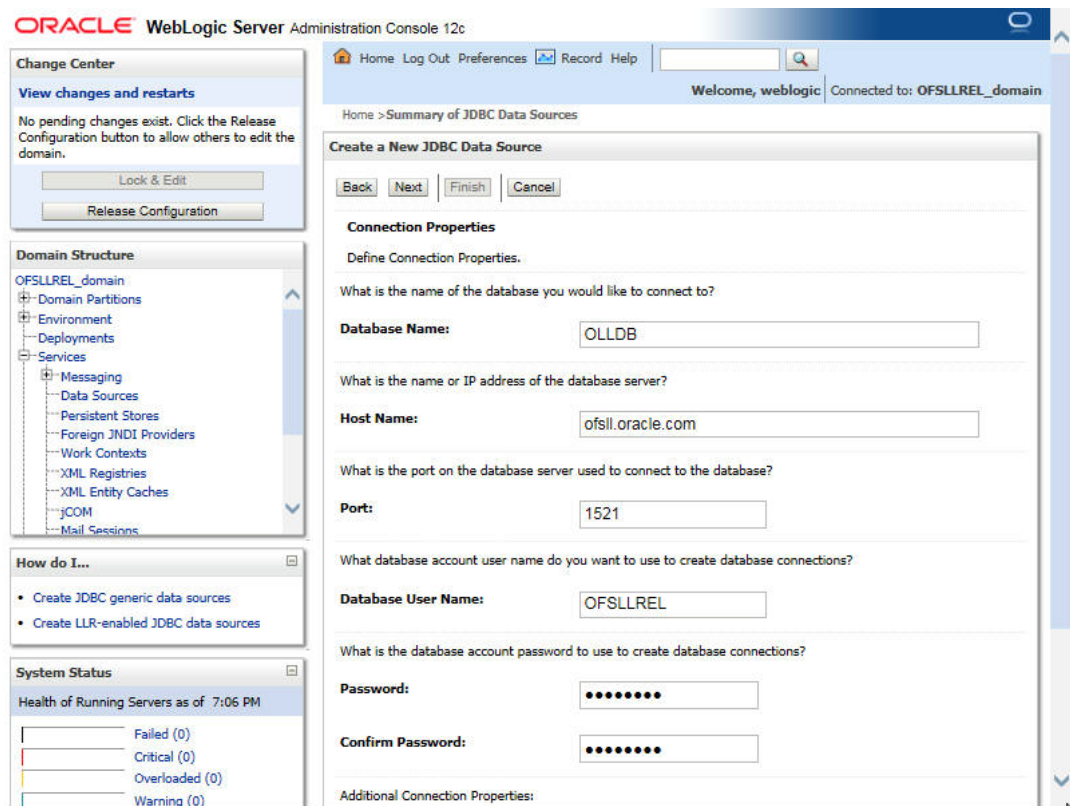


8. Select the Database Driver 'Oracle's Driver(Thin) for Service connections; Versions:Any'.

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

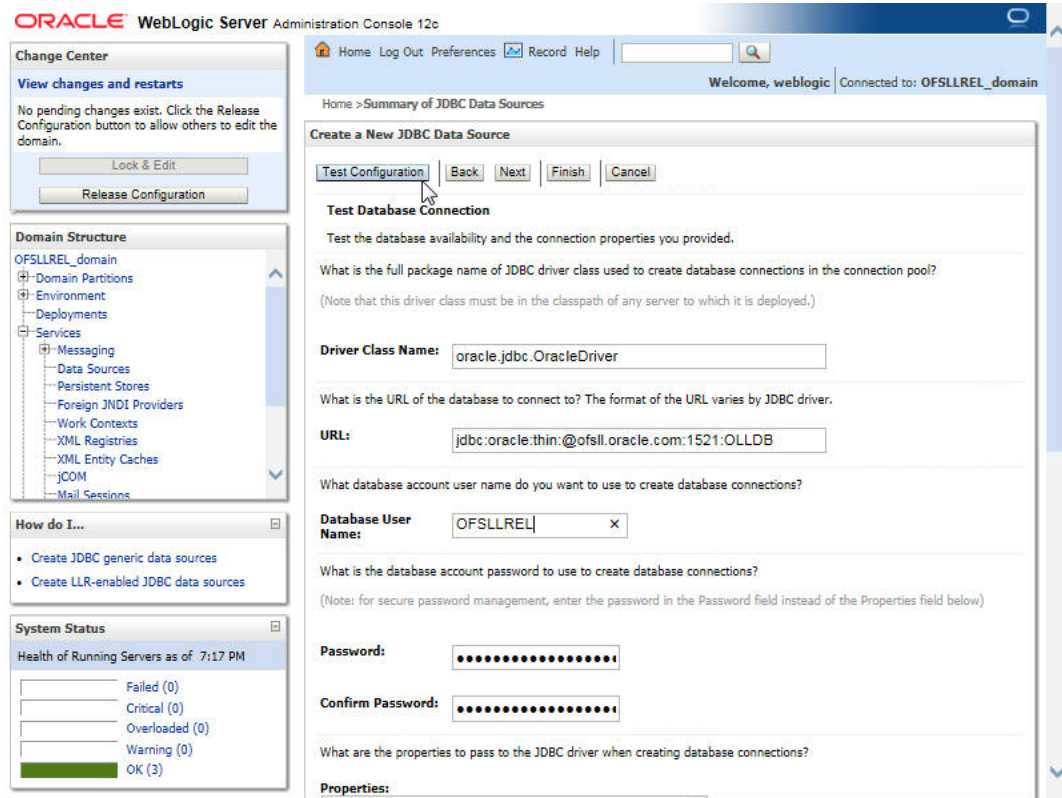


10. Click 'Next'. The following window is displayed.



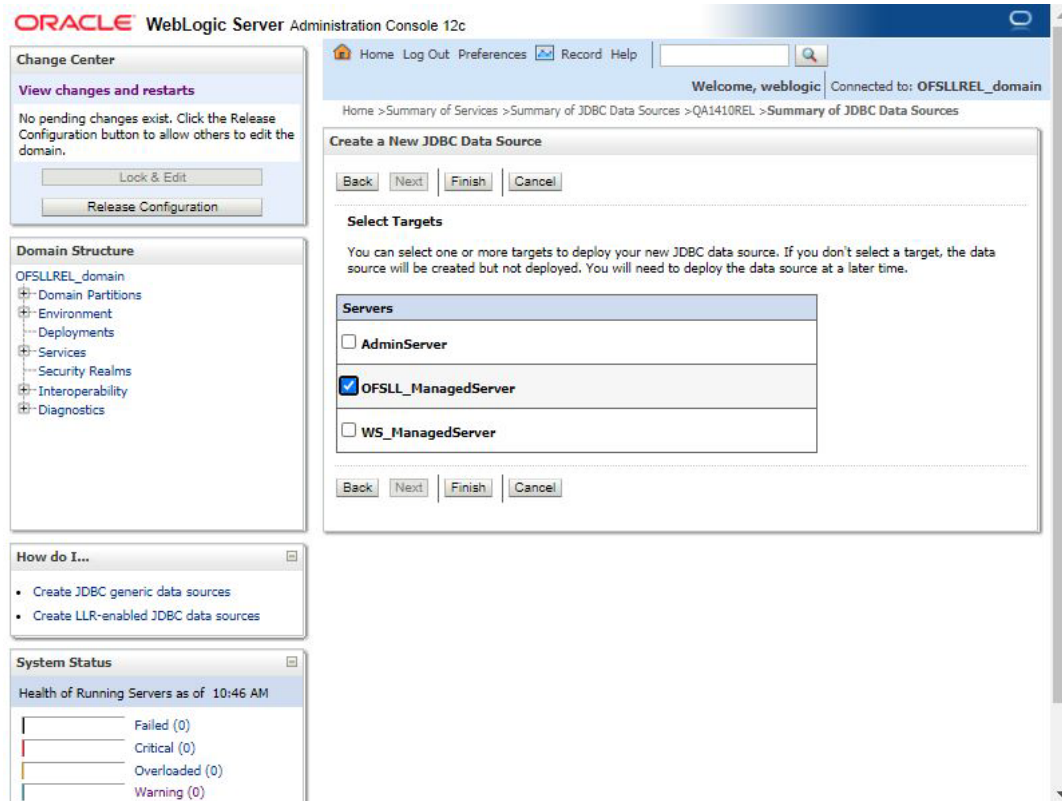
11. Enter your Database details. For more information, contact your system administrator.

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. In weblogic console, select Services > Data Sources > select the OfslIPlato data source > Connection Pool.
2. The initial capacity and Maximum capacity is defaulted to 45. If the number of concurrent users are more, then this needs to be increased.

Similarly create 'Plato' data sources by following the steps mentioned in above section ([Create Data Sources for Oracle JET](#)).

- Create data source name as Plato
- Update the JNDI as jdbc/PLATO
- Select Services > Data Sources > select the Platodata source > Connection Pool.
- Update the initial capacity and Maximum capacity, if the number of concurrent users are more.

10.2 Deploy Oracle JET

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

SIGN IN TO
ORACLE ENTERPRISE MANAGER
FUSION MIDDLEWARE CONTROL 12c

Domain Domain_OFSLREL_domain

* User Name

* Password

Login to Partition

Sign In

ORACLE®

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

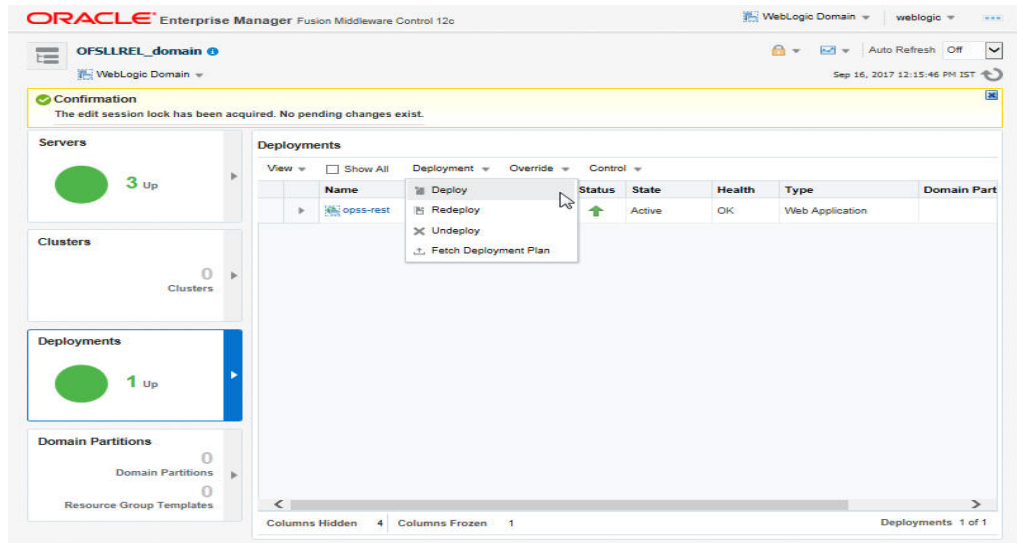
The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface for the OFSSLREL_domain. The main content area displays the Administration Server details, including its name (AdminServer), host (ofsl.in.oracle.com), and listen port (9001). Below this, a table lists the managed servers:

Name	Status	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	↑			Running	OK	9001
OFSSL_ManagedServer	↑			Running	OK	9003
WS_ManagedServer	↑			Running	OK	9004

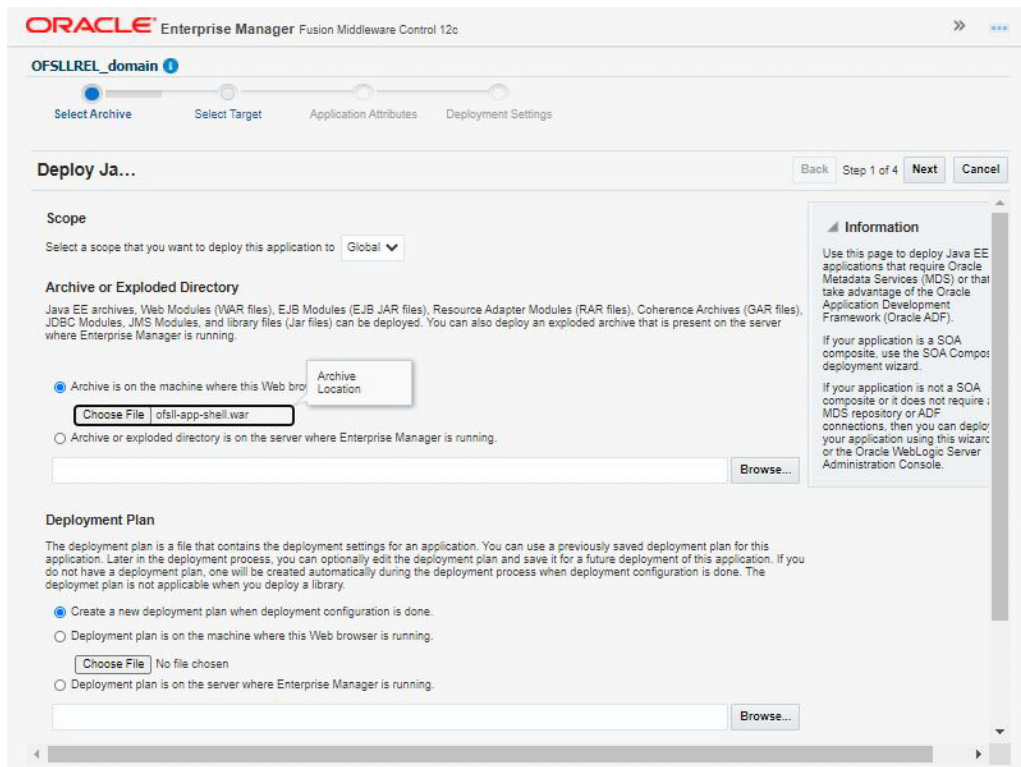
3. Select 'Lock & Edit' option in the lock drop-down list available in the header.
4. Click 'Deployment' in the left panel. The following window is displayed.

The screenshot shows the Oracle Enterprise Manager Fusion Middleware Control 12c interface for the OFSSLREL_domain. The 'Lock & Edit' menu is open, showing options such as 'Edit Sessions', 'Lock & Edit', 'View Change List', 'View & Resolve Conflicts', 'Release Configuration', 'Activate Changes', 'Undo All Changes', 'View Restart Checklist', 'Preferences', and 'Help'. The 'Lock & Edit' option is highlighted by the mouse cursor.

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

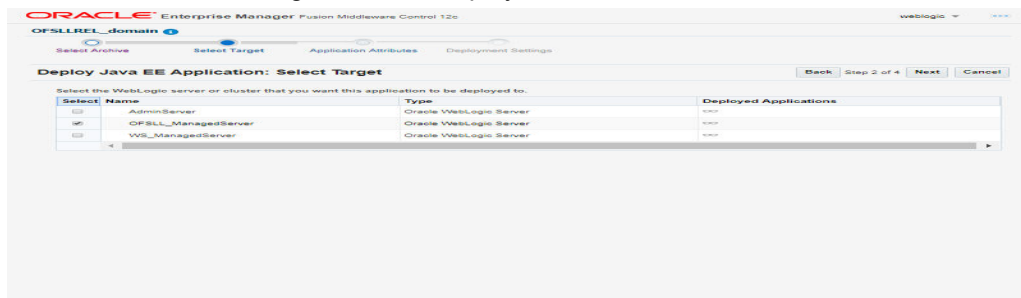


- The following window is displayed.



- Browse to the folder containing the ofall-app-shell.war.

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



9. Select the server on which the Oracle JET application needs to be deployed.
10. Click 'Next'. The following window is displayed.

ORACLE® Enterprise Manager Fusion Middleware Control 12c

OFSSLREL_domain

Select Archive Select Target **Application Attributes** Deployment Settings

Deploy Ja... Back Step 3 of 4 Next Deploy Cancel

Hide Deployment Summary

Archive Type: Web Module (WAR file)
 Deployment Plan: Create a new plan
 Deployment Target: OFSSL_ManagedServer
 Scope: Global
 Deployment Type: Application

* Application Name: ofsl-app-shell

Context Root of Web Modules

Web Module	Context Root
ofsl-app-shell.war	ofsl-app-shell

Distribution

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

Other Options

Application Use the defaults defined by the deployment's targets. Recommended selection.

11. Select the option 'Install and start application (servicing all requests)'.
12. Check the context root and click 'Next'. The following window is displayed.

ORACLE® Enterprise Manager Fusion Middleware Control 12c

OFSSLREL_domain

Select Archive Select Target Application Attributes **Deployment Settings**

Deploy Ja... Back Step 4 of 4 Next Deploy Cancel

Hide Deployment Summary

Archive Type: Web Module (WAR file)
 Deployment Plan: Create a new plan
 Deployment Target: OFSSL_ManagedServer
 Scope: Global
 Deployment Type: Application
 Application Name: ofsl-app-shell
 Version: Not versioned
 Context Root: ofsl-app-shell
 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 Application Security		Configure application policy migration, credential migration and other security behavior.

Deployment Plan

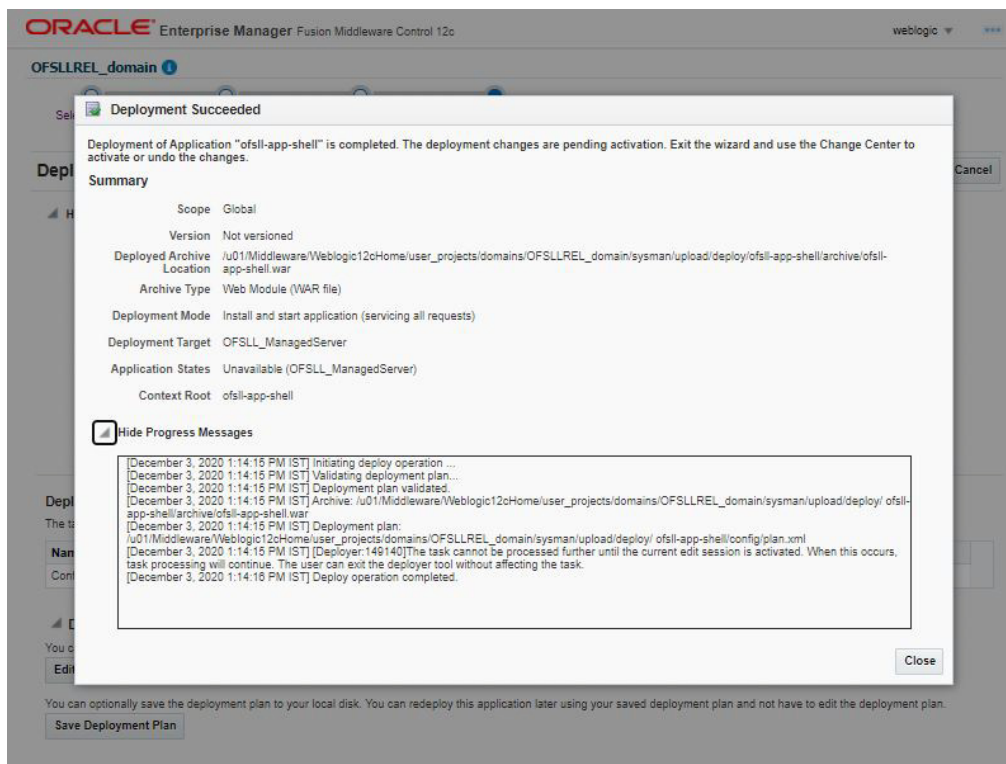
You can optionally use the Edit Deployment Plan option to set more advanced deployment options which the deployment tasks above do not cover.

[Edit Deployment Plan](#)

You can optionally save the deployment plan to your local disk. You can redeploy this application later using your saved deployment plan and not have to edit the deployment plan.

[Save Deployment Plan](#)

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



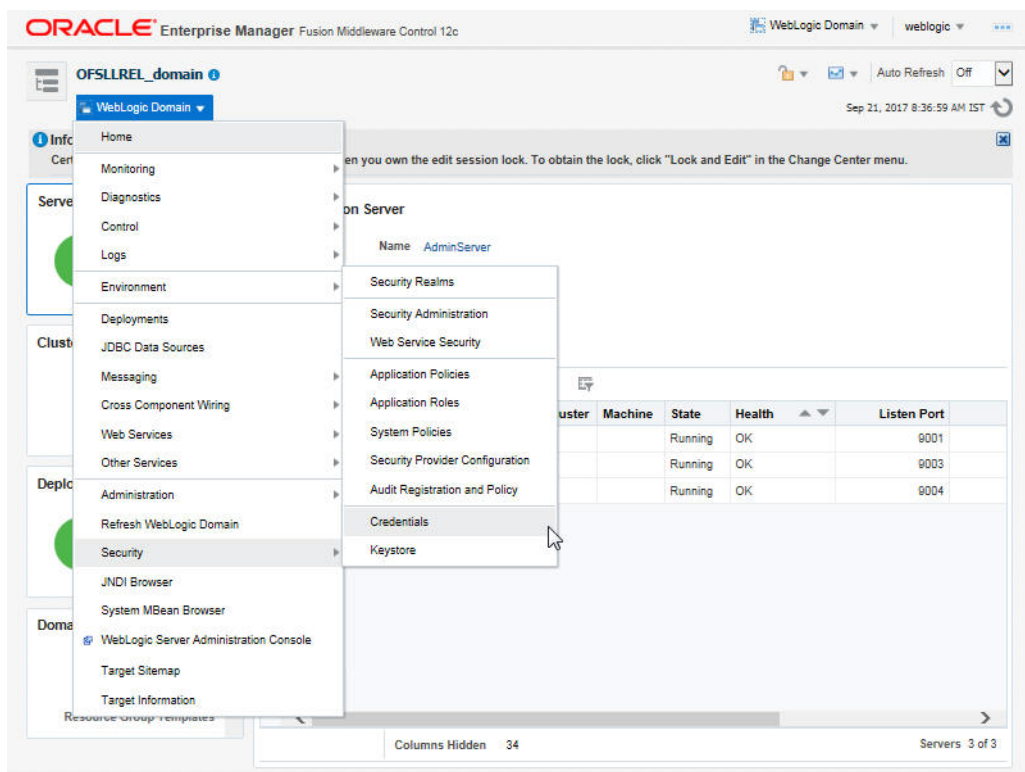
- Click 'Close'. Post deployment, you need to activate the changes by selecting 'Active Changes' option from 'Edit Session' drop-down list as indicated in step 4 above.
- Similarly, deploy 'ofssl-servicing-api-14.11.war' following the steps indicated above ([Deploy Oracle JET](#)).
- Update the startManagedWebLogic.sh file (\$MW_HOME/user_projects/domains/mydomain/bin directory) as indicated in below parameters:
 - JAVA_OPTIONS="{JAVA_OPTIONS} -Dapigateway.url=https://<hostname>:<portno>/ofssl-servicing-api/ -DmenuEnabled=true"
 - export JAVA_OPTIONSOn configuring the above parameter, restart the weblogic server.

11. Configure Oracle Analytics Publisher for Application

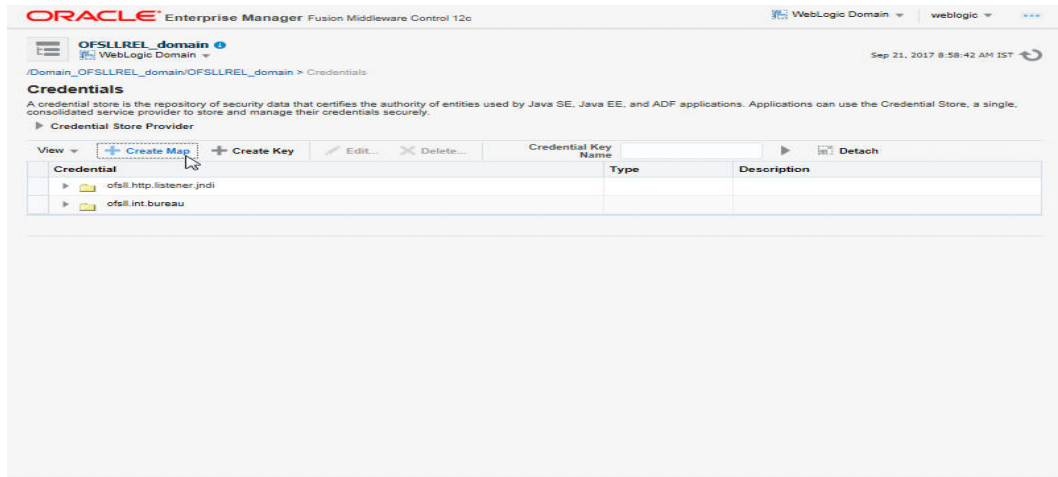
1. Copy the OfsslCommonCSF.jar from /WEB-INF/lib available in the staging area to \$DOMAIN_HOME/lib
2. Update the setDomainEnv.sh file (\$MW_HOME/user_projects/domains/mydomain/bin directory) by appending the above jar file path – EXTRA_JAVA_PROPERTIES="..... \${EXTRA_JAVA_PROPERTIES} -Dofssl.csf.path=\${DOMAIN_HOME}"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

Note

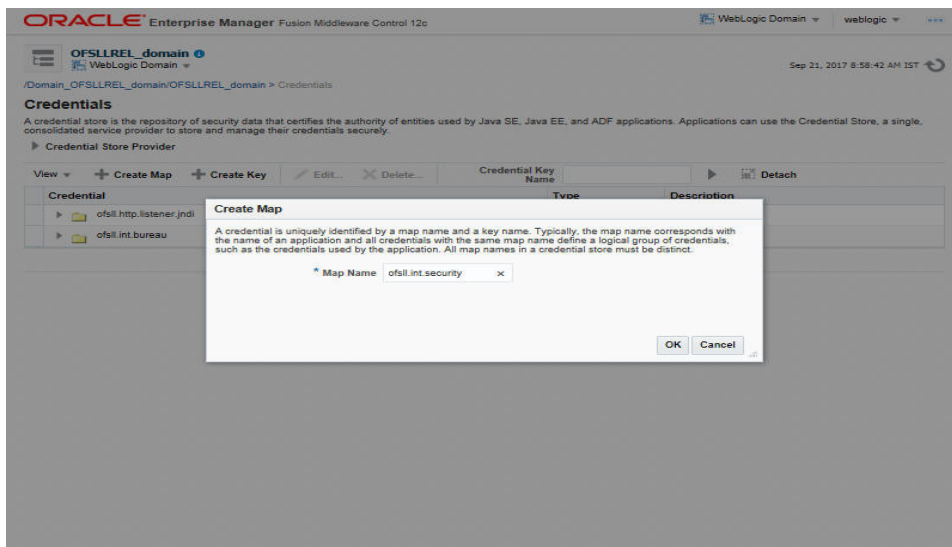
It is assumed that BI Publisher is installed and configured. Refer BI Publisher Guide for further details.



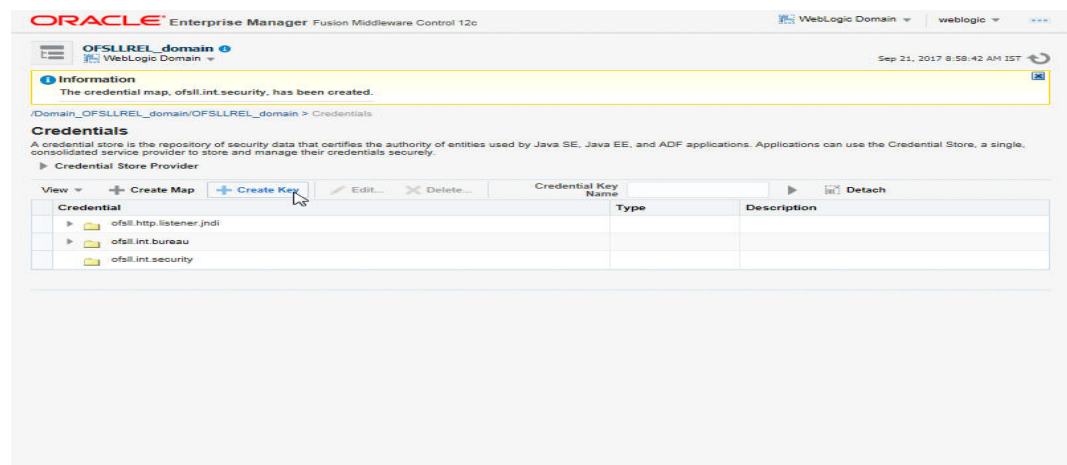
4. Click WebLogic Domain on the right panel. Select Security > Credentials. Click 'Create Map'.



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

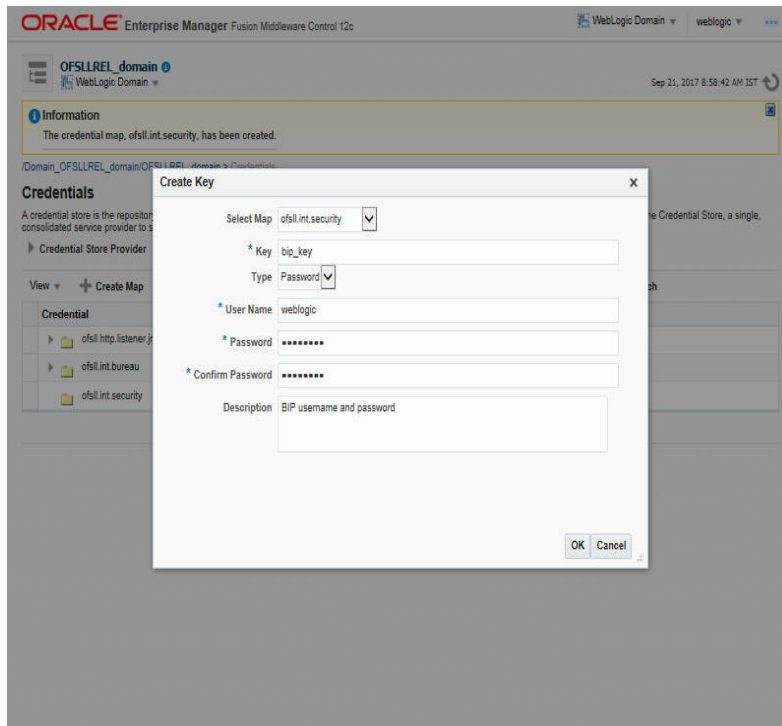


6. Click 'OK'.

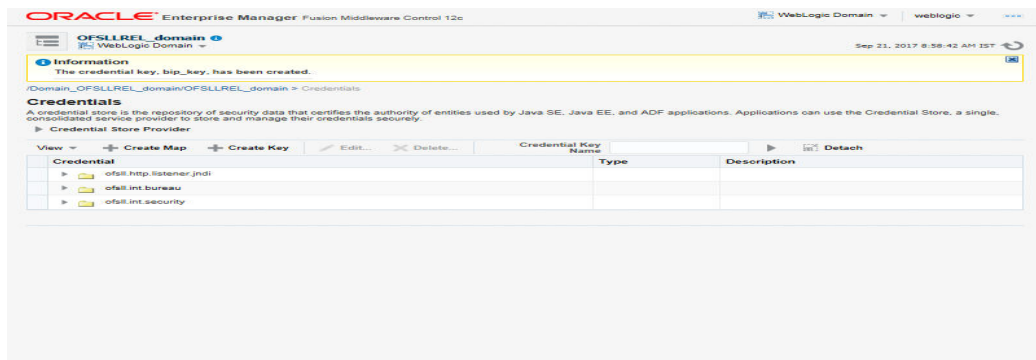


7. Click 'Create Key' Button.

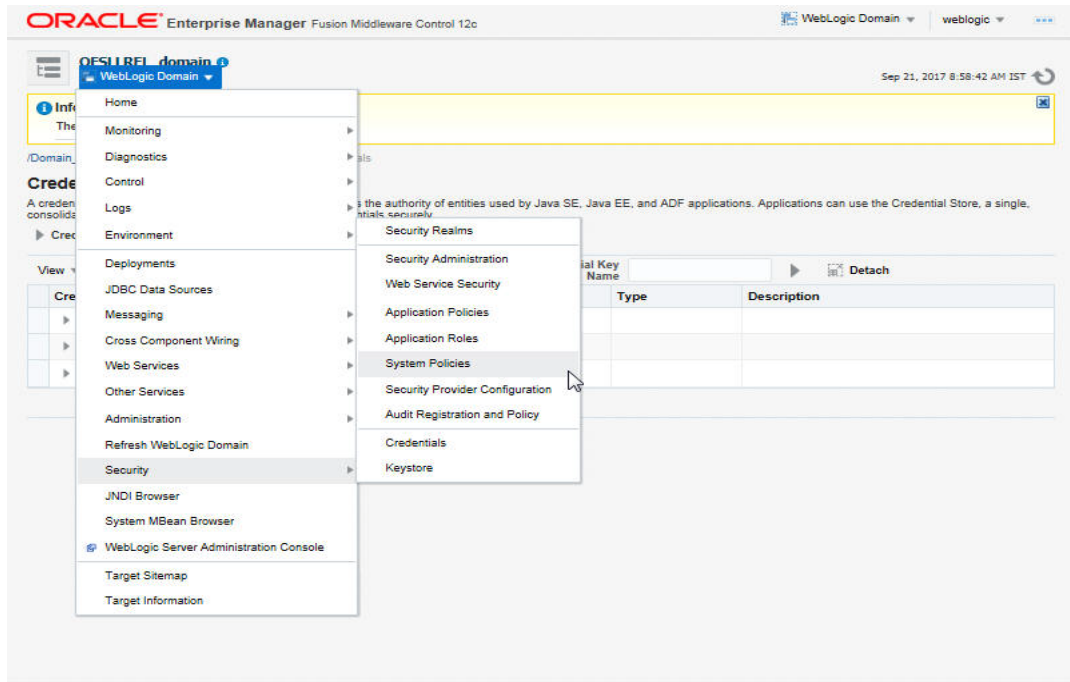
8. Enter the details as per your requirement. Specify 'User Name' and 'Password' of BI Publisher console.



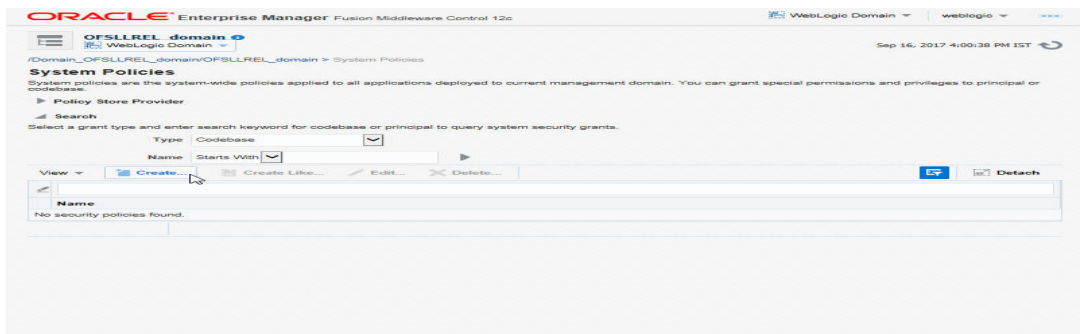
9. Click 'OK'. The following window is displayed.



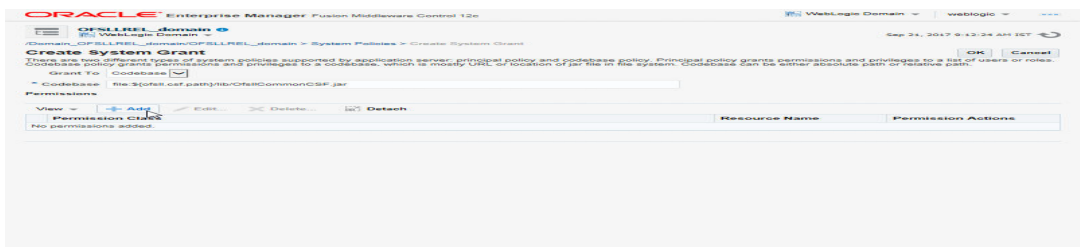
- On the left panel, right click on the domain OFSLL_domain > Security > System Policies. The following window is displayed.



- Click 'Create'.



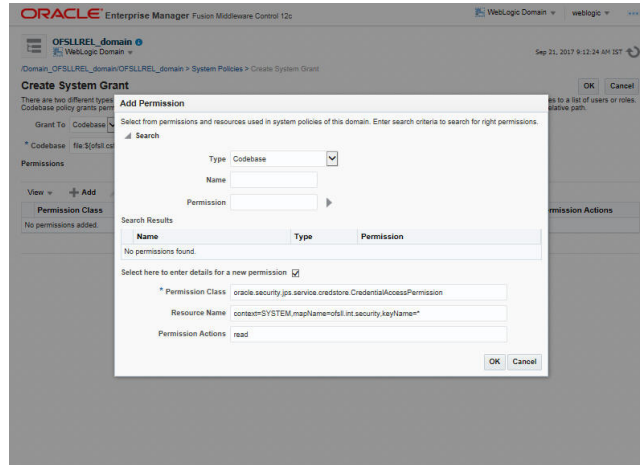
- The following window is displayed. Enter the codebase as 'file:\${ofssl.csf.path}/lib/OfsllCommonCSF.jar' and click 'Add'.



- 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.

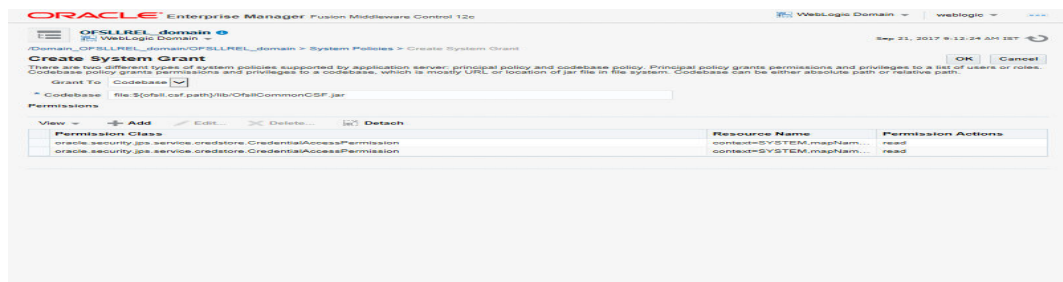
- Permission Class: oracle.security.jps.service.credstore.CredentialAccessPermission
- Resource Name: context=SYSTEM,mapName=ofssl.int.security,keyName=*

- Permission Actions: read

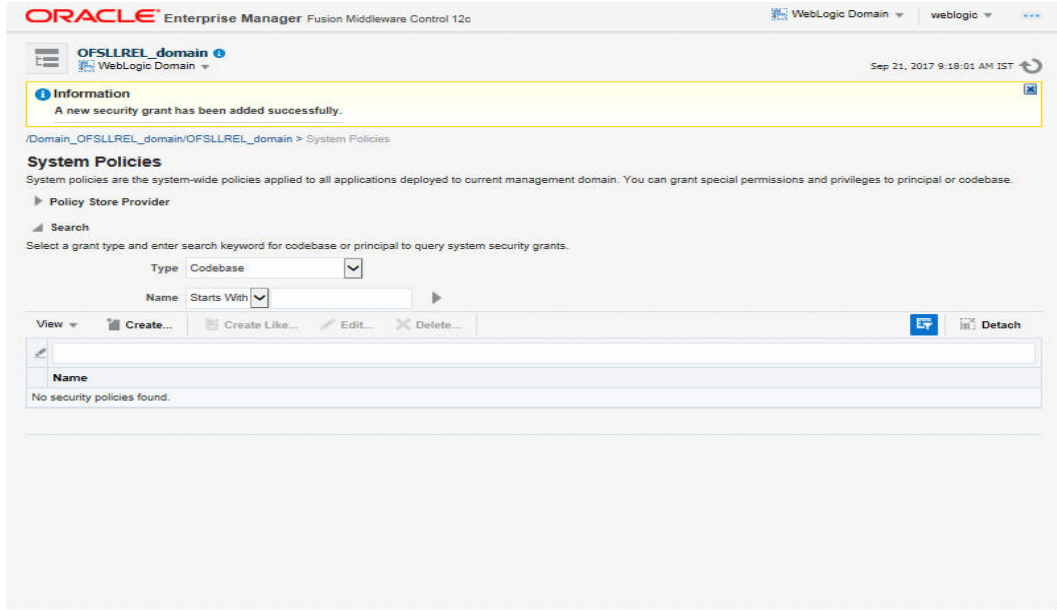


Configuring JNDI Name for http Listener

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



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



12. 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'.

ORACLE WebLogic Server Administration Console 12c

Home > Summary of Deployments

Summary of Deployments

Configuration Control Monitoring

This page displays the list of Java EE applications and standalone application modules installed to this domain.

You can update (redeploy) or delete installed applications and modules from the domain by selecting the checkbox next to the application name and then using the controls on this page.

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

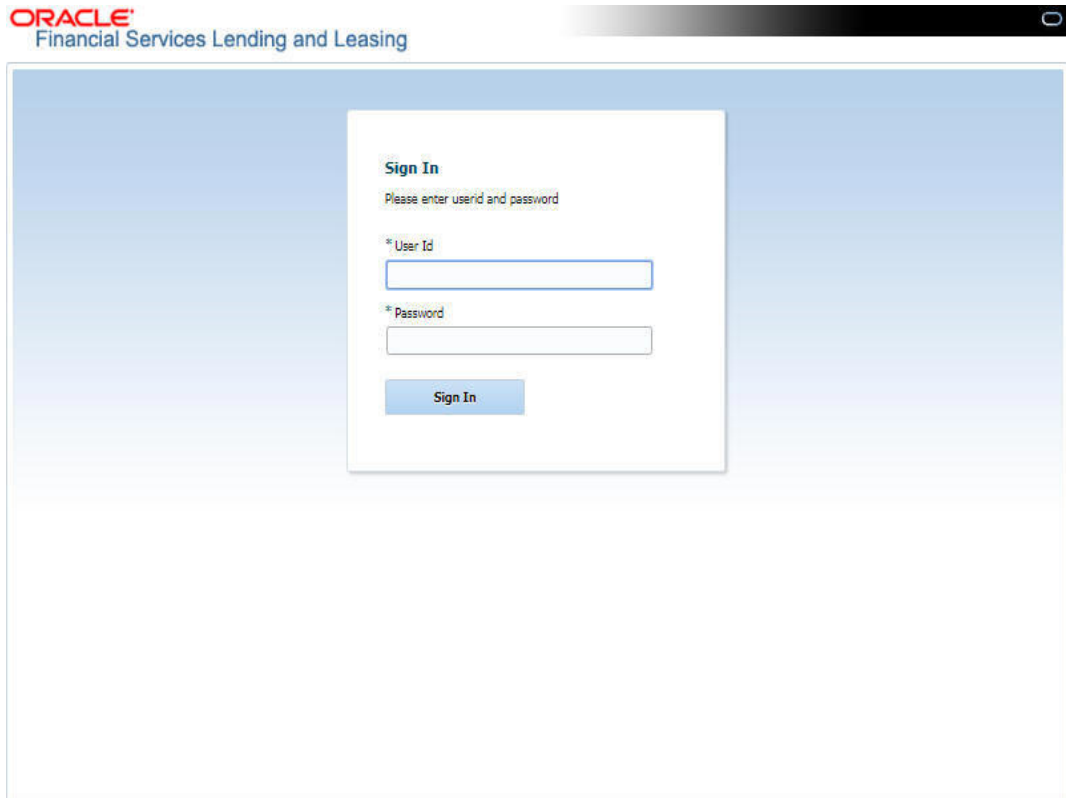
Customize this table

Deployments

<input type="checkbox"/>	Name	State	Health	Type	Targets	Scope	Domain Partitions	Deployment Order
<input type="checkbox"/>	coherence-transaction-rar	Active	OK	Resource Adapter	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global		100
<input type="checkbox"/>	DMS Application (12.2.1.1.0)	Active	OK	Web Application	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global		5
<input type="checkbox"/>	em	Active	OK	Enterprise Application	AdminServer	Global		400
<input type="checkbox"/>	ofssl1411 (V14.11.0.0-b75)	Active	OK	Enterprise Application	OFSLL_ManagedServer	Global		100
<input type="checkbox"/>	opss-rest	Active	OK	Web Application	AdminServer	Global		150
<input type="checkbox"/>	state-management-provider-memory-rar	Active	OK	Resource Adapter	AdminServer, OFSLL_ManagedServer, WS_ManagedServer	Global		100

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

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



4. After successful login, the following screen is displayed

