

# Oracle® Banking Trade Finance

## Configuring JMS on Weblogic Server 12c



Release 14.7.5.0.0

G15580-01

September 2024

The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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Oracle Banking Trade Finance Configuring JMS on Weblogic Server 12c, Release 14.7.5.0.0

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# Preface

Below is brief description on major components in Weblogic JMS Server architecture.

- [Purpose](#)
- [Weblogic 12c New Features](#)
- [Components Diagram & Data Flow](#)

## Purpose

The purpose of this document is to explain the steps required for JMS Configuration in cluster mode for

1. FCUBS 12.1
2. WebLogic Server 12.1.3.0.0

### JMS Server

JMS server acts as management container for JMS queue and topic resources defined within JMS modules that are targeted to specific that JMS server. A JMS server's main responsibility is to maintain persistent storage for these resources, maintain the state of durable subscriber and etc. JMS servers can host a defined set of modules and any associated persistent storage that reside on a WebLogic Server instance.

### JMS Module

JMS modules are application-related definitions that are independent of the domain environment. JMS modules group JMS configuration resources (such as queues, topics, and connections factories).

These are outside domain configuration. JMS modules are globally available for targeting to servers and clusters configured in the domain and therefore are available to all the applications deployed on the same targeted. JMS modules contain configuration resources, such as standalone queue and topic destinations, distributed destinations, and connection factories.

### Subdeployment

Subdeployment is also known as Advanced Targeting. Subdeployment resource is a bridge between the group of JMS resources and JMS Servers. When you create a JMS resource you need to choose one Subdeployment.

### JMS Resources

1. **Queue** defines a point-to-point destination type, which are used for asynchronous peer communications. A message delivered to queue is distributed to only one customer.
2. **Topic** defines a publish/subscribe destination type, which are used for asynchronous peer communication. A message delivered to topic is distributed to all topic consumers.

3. **Distributed queue** defines a set of queues that are distributed on multiple JMS servers, but are accessible as a single, logical queue to JMS clients
4. **Distributed topic** defines a set of topics that are distributed on multiple JMS servers, but which as accessible as a single, logical topic to JMS clients.
5. **Uniform Distributed Queue:** queue members are created uniformly from a common configuration.

**Persistence store**

A persistent store provides a built-in, high-performance storage solution for weblogic server subsystems and services that required persistence. There are two type of mechanism to store the message.

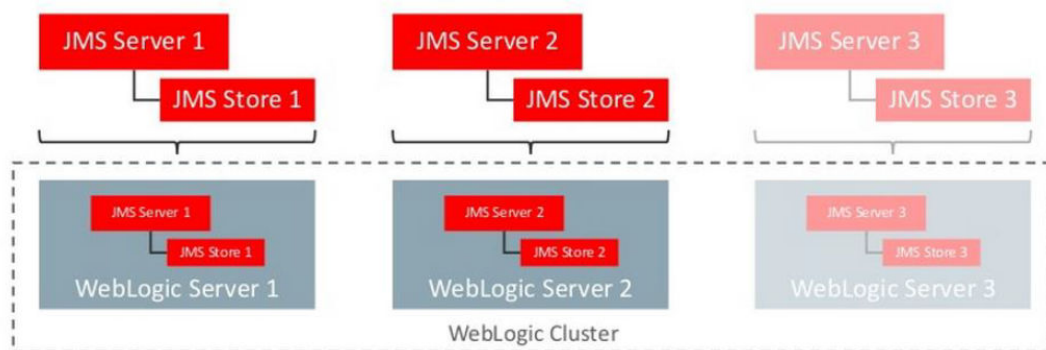
1. File based persistence store → Message is stored in a file
2. DB based persistence store → Message is stored in Database.

## Weblogic 12c New Features

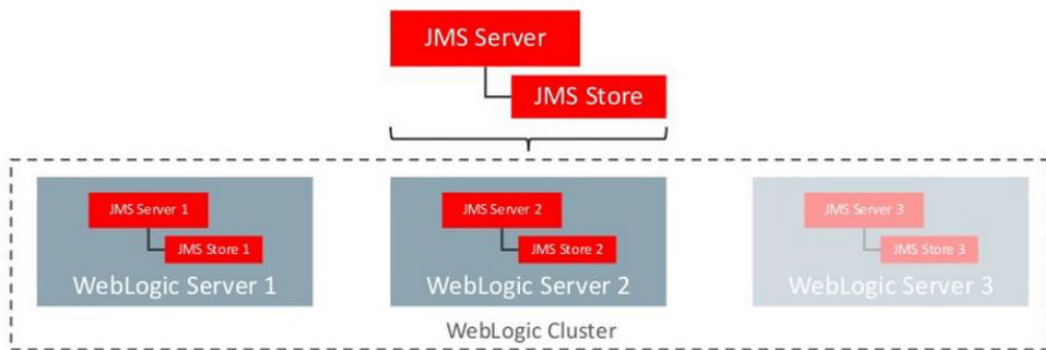
Before weblogic 12c JMS Servers and stores are targeted to individual WLS Servers. Scaling up requires configure the JMS server, the store and target it to new WLS Server.

In 12c JMS Servers and stores are targeted to WLS cluster. Scaling up requires to add a WLS server to the cluster.

**Figure 1 Architecture Previous to 12c**

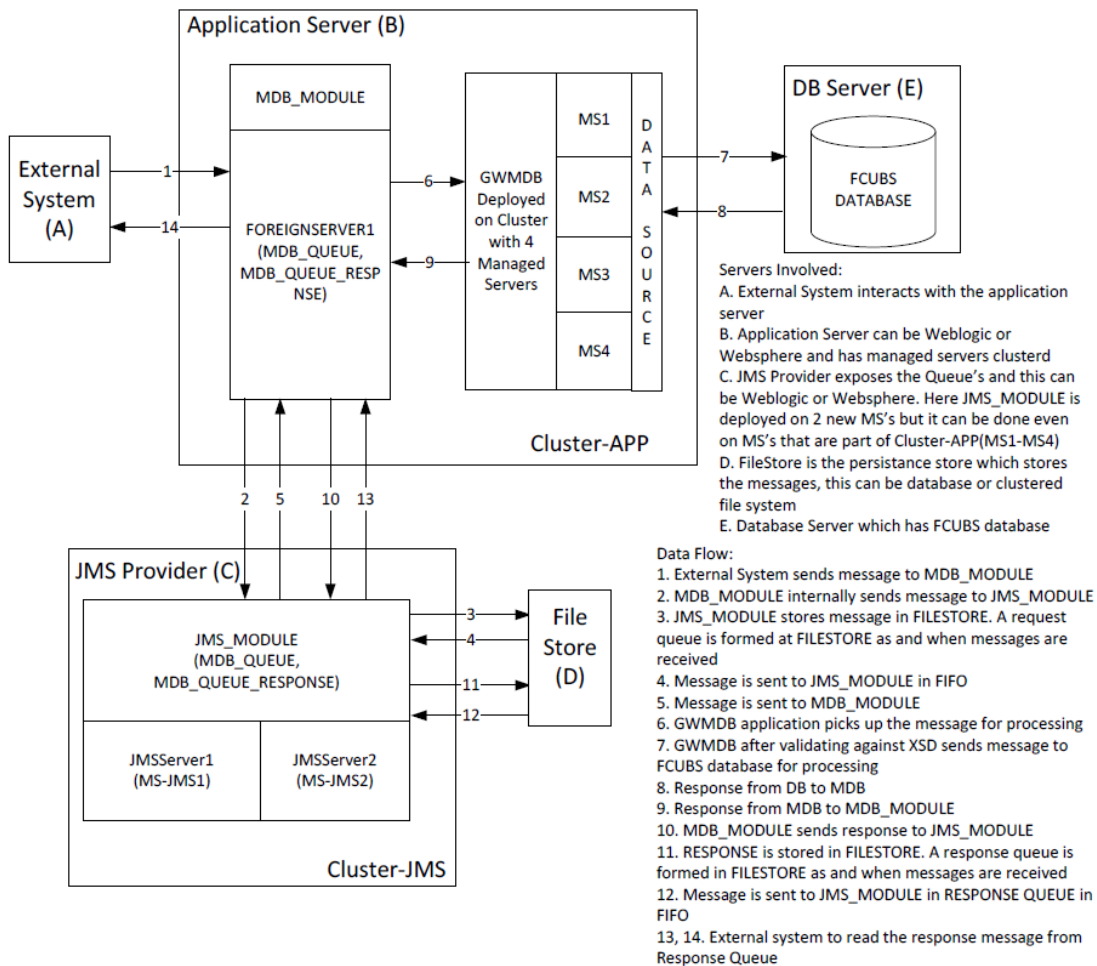


**Figure 2 Architecture in 12c**



# Components Diagram & Data Flow

Below is the flow diagram which indicates various components that are used and the document explain steps to create.



# 1

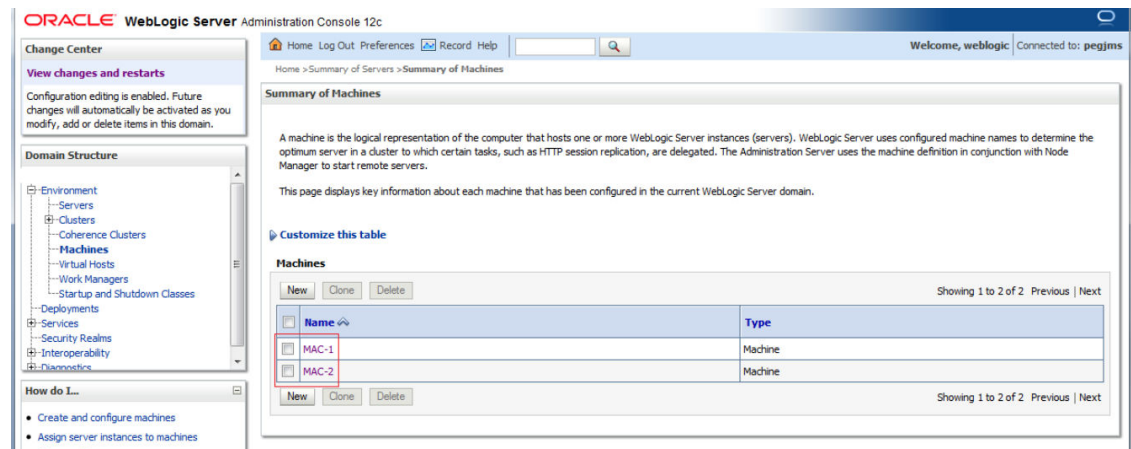
## Pre-Requisites

The document assumes that the below are created before proceeding JMS creation.

- [Machines](#)
- [Dynamic Clusters and Managed Servers](#)
- [DataSource](#)
- [Shared Folder](#)

### 1.1 Machines

Figure 1-1 MAC-1 & MAC-2



### 1.2 Dynamic Clusters and Managed Servers

Ensure Dynamic cluster for FCUBS (4 Managed Servers) and Dynamic cluster for JMS Deployment (2 Managed Servers).



**Summary of Clusters**

This page summarizes the clusters that have been configured in the current WebLogic Server domain.

A cluster defines groups of WebLogic Server servers that work together to increase scalability and reliability.

**Clusters (Filtered - More Columns Exist)**

Name	Cluster Address	Cluster Messaging Mode	Migration Basis	Default Load Algorithm	Replication Type	Cluster Broadcast Channel	Servers
Cluster-App		Unicast	Database	Round Robin	(None)		DC_FCUBS_1, DC_FCUBS_2, DC_FCUBS_3, DC_FCUBS_4
Cluster-JMS		Unicast	Database	Round Robin	(None)		DC_JMS_1, DC_JMS_2

**Summary of Servers**

This page summarizes each server that has been configured in the current WebLogic Server domain.

**Servers (Filtered - More Columns Exist)**

Name	Type	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	Configured			RUNNING	OK	7001
DC_FCUBS_1	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7101
DC_FCUBS_2	Dynamic	Cluster-App	MAC-2	SHUTDOWN	Not reachable	7102
DC_FCUBS_3	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7103
DC_FCUBS_4	Dynamic	Cluster-App	MAC-2	SHUTDOWN	Not reachable	7104
DC_JMS_1	Dynamic	Cluster-JMS	MAC-1	SHUTDOWN	Not reachable	7106
DC_JMS_2	Dynamic	Cluster-JMS	MAC-2	SHUTDOWN	Not reachable	7107

## 1.3 DataSource

Ensure that DataSource required for the MDB ear is created with Target as Cluster-App.

**Summary of JDBC Data Sources**

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

**Data Sources (Filtered - More Columns Exist)**

Name	Type	JNDI Name	Targets
FLEXTST.WORLD	Generic	FLEXTST.WORLD	Cluster-App

## 1.4 Shared Folder

A shared folder for File Store Creation is required and this folder should be accessible across both the servers (eg, NFS mount).

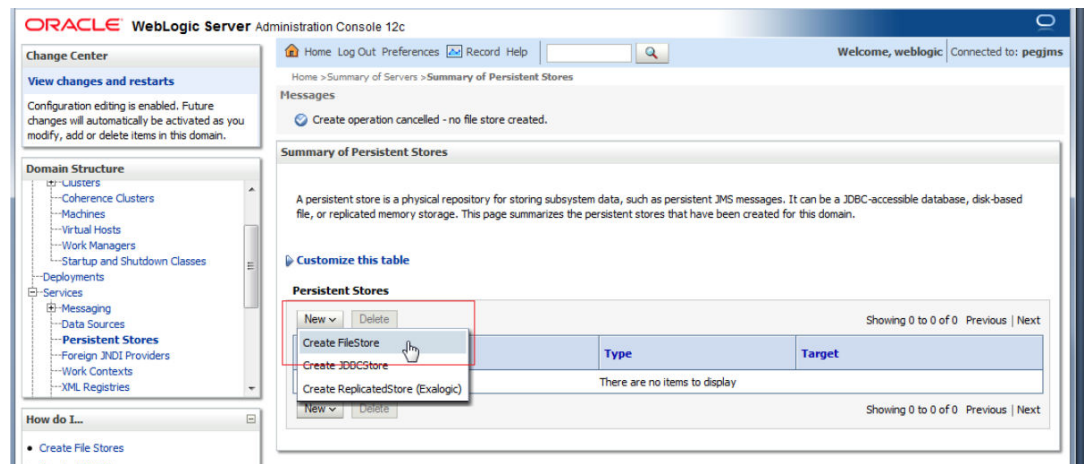
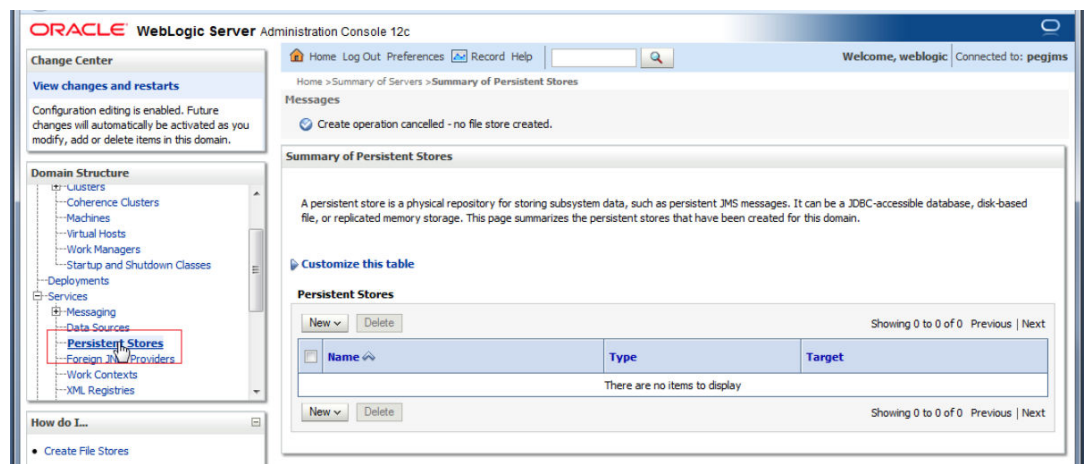
# 2

## JMS Configuration

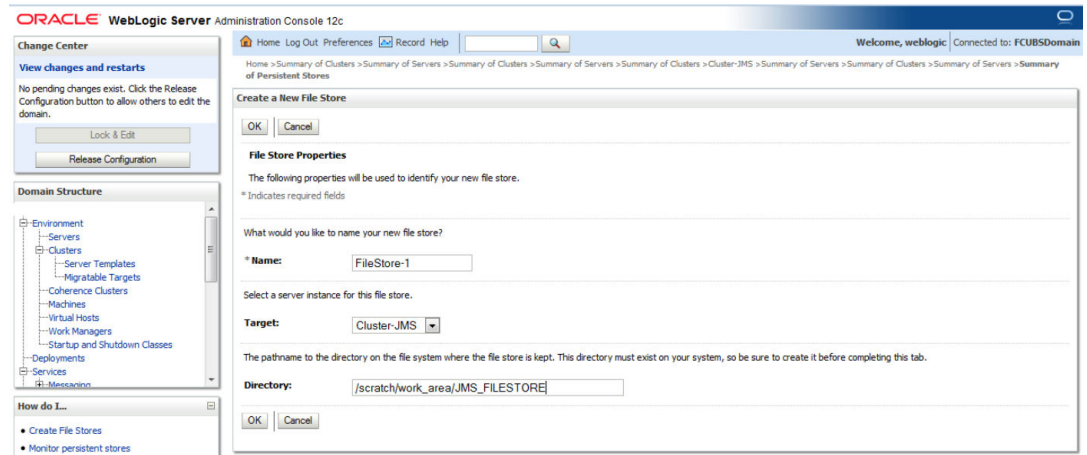
- Persistence Store Creation
- JMS Server Creation
- Cluster Configuration for Service Migration

### 2.1 Persistence Store Creation

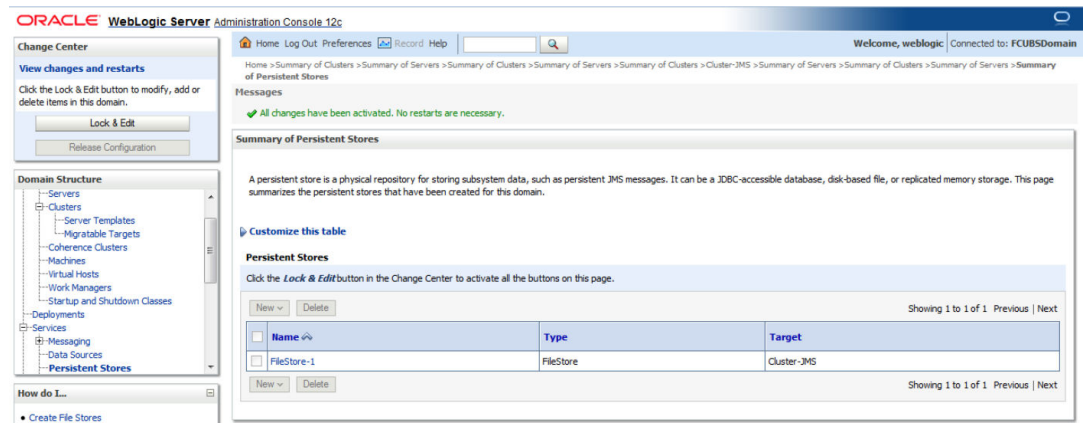
1. Navigate to Services > Persistent Stores > New > **Create FileStore**.



2. Select **Cluster-JMS** under target drop-down and Click on **OK**.

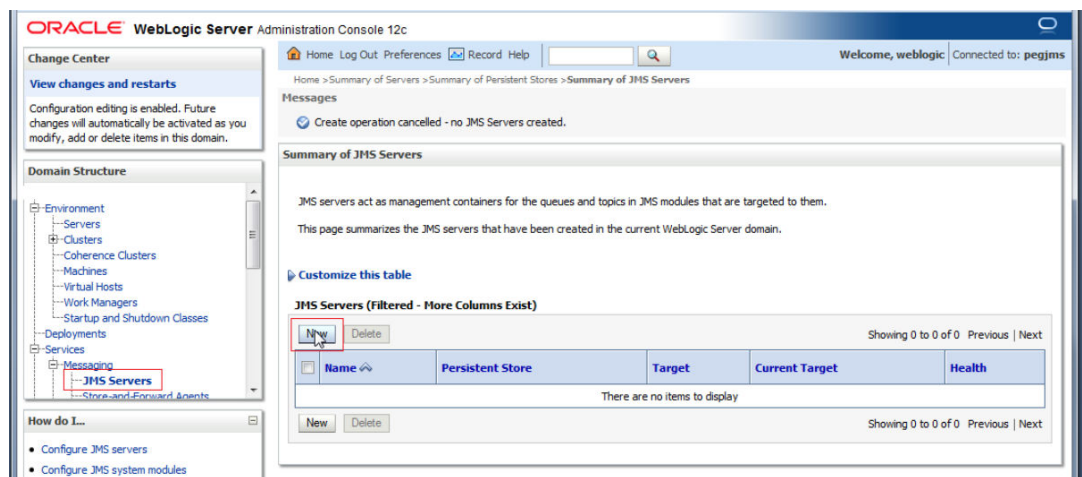


3. FileStore-1 is created.

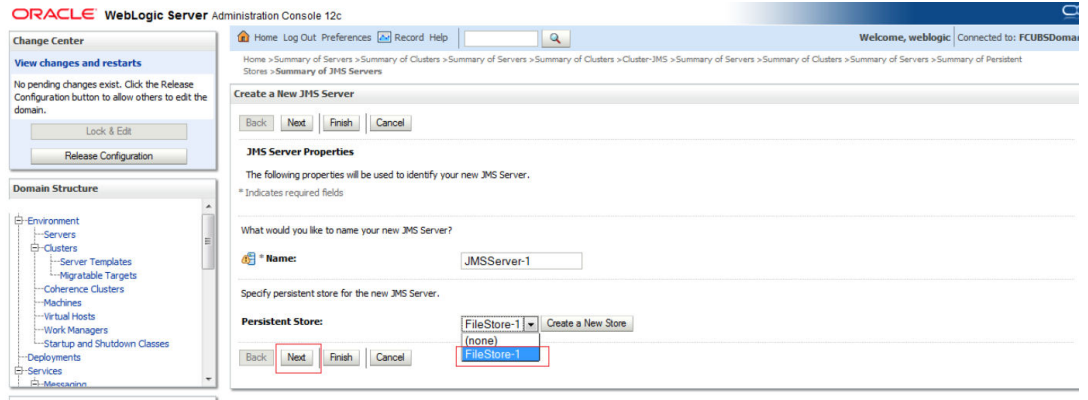


## 2.2 JMS Server Creation

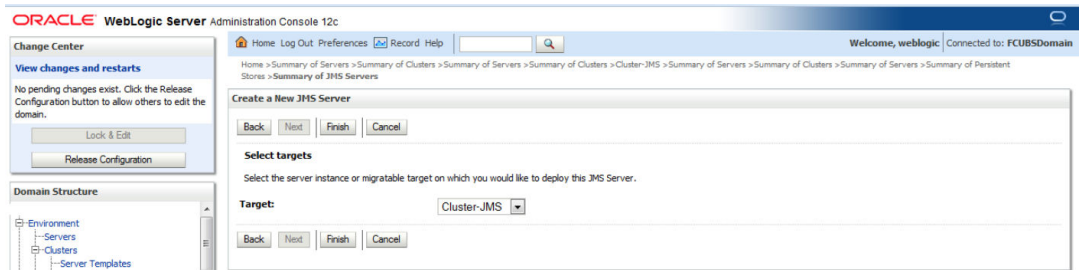
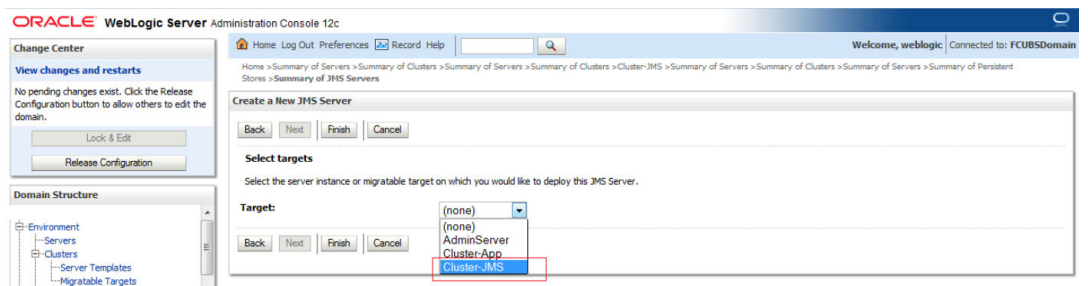
1. Navigate to Services → Messaging → JMS Servers → Click on **New**.



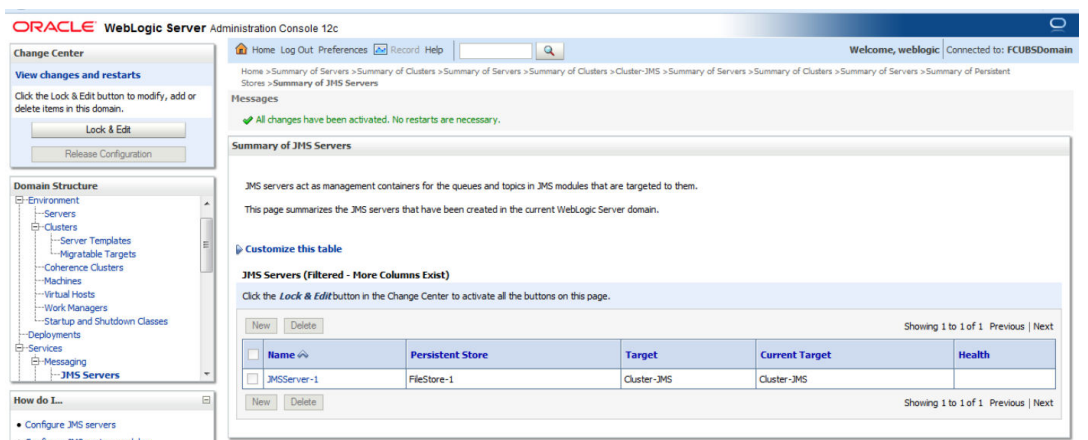
2. Select FileStore-1, Click **Next**.



3. Select Target as Cluster-JMS and click on **Finish**.



4. JMS-Server-1 is created.

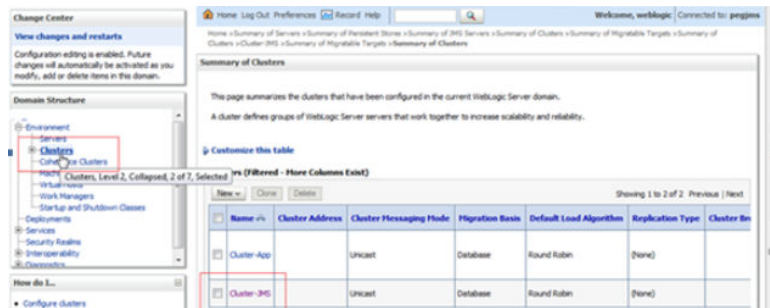


- In NFS below filestores can be seen.

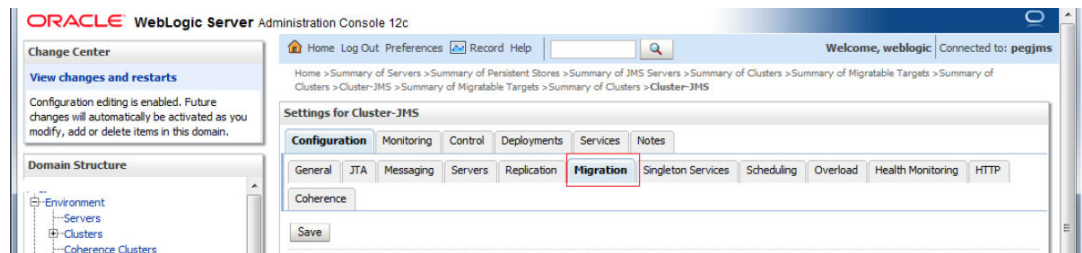
```
[root@      JMS_FILESTORE]# ll
total 2056
-rw-r----- 1 wll2c oinstall 1049088 Jun 16 14:10 FILESTORE-1@DC_JMS_1000000.DAT
-rw-r----- 1 wll2c oinstall 1049088 Jun 16 14:10 FILESTORE-1@DC_JMS_2000000.DAT
[root@      JMS_FILESTORE]# pwd
/scratch/work_area/JMS_FILESTORE
[root@      JMS_FILESTORE]#
```

## 2.3 Cluster Configuration for Service Migration

- Click on Environment > Clusters > Cluster-JMS



- Click on **Migration** Tab.



- Change Migration Basis to Consensus and Click on **Save**.

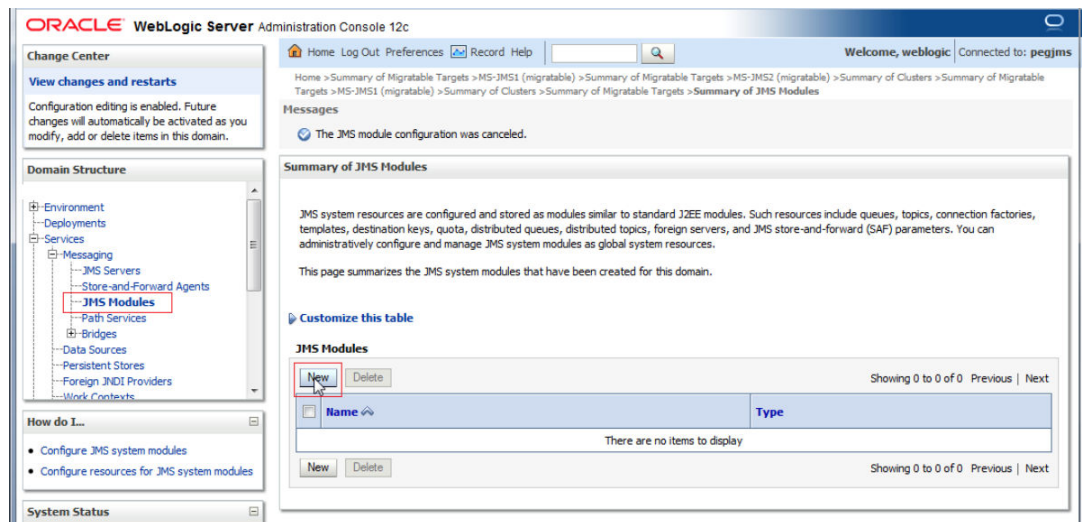
# 3

## JMS Module Creation

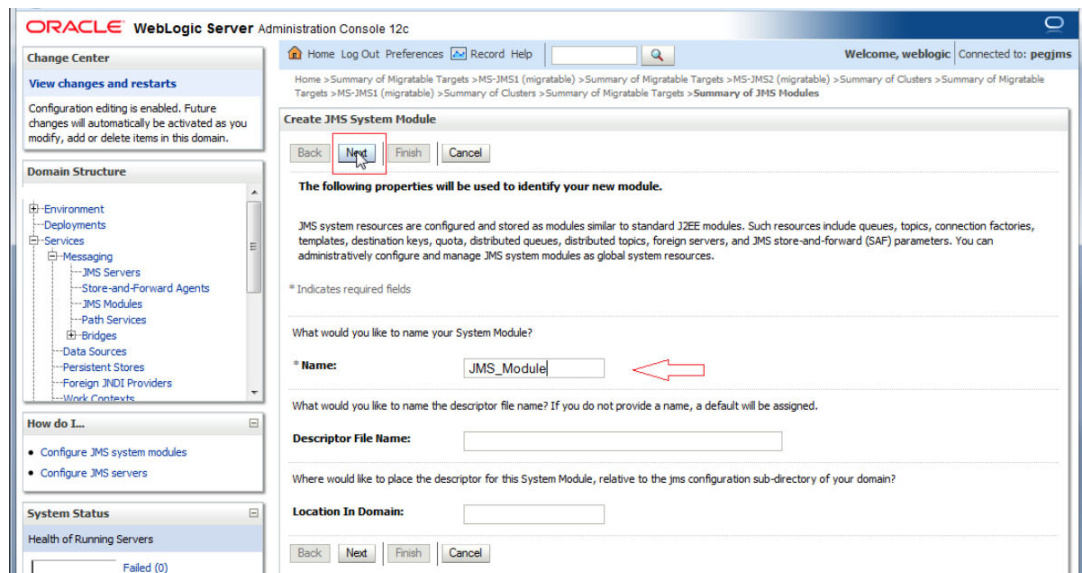
- Module Creation
- Sub Deployment Creation
- Resource Creation

### 3.1 Module Creation

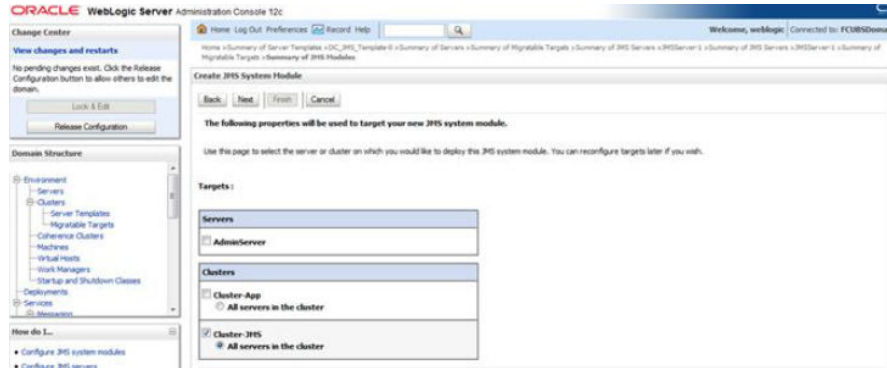
1. Navigate to Services > Messaging > JMS Modules and Click on **New**.



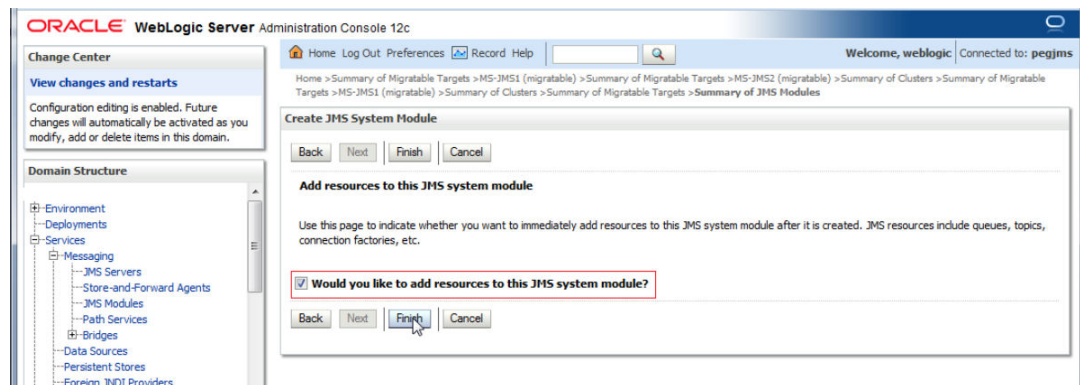
2. Enter name as JMS\_MODULE and Click on **Next**.



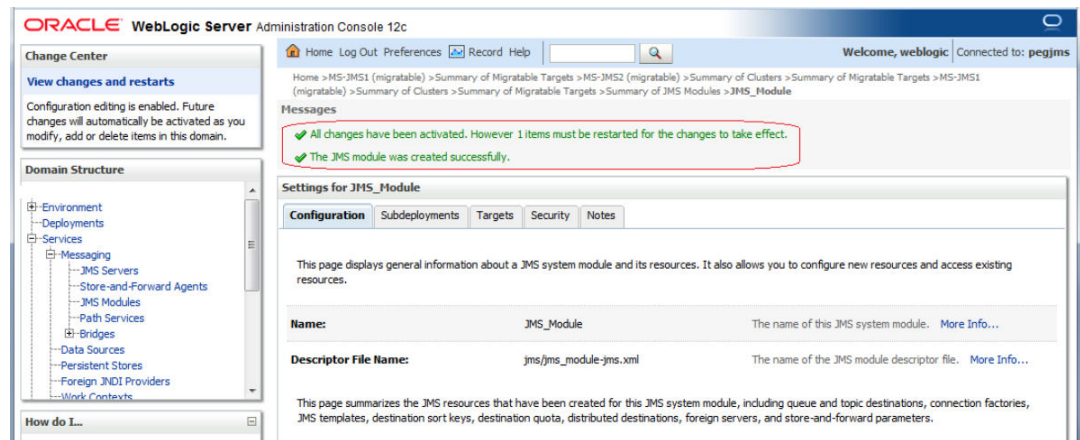
3. Select Target as Cluster-JMS and Click on **Next**.



4. Select the checkbox and Click on **Finish**.



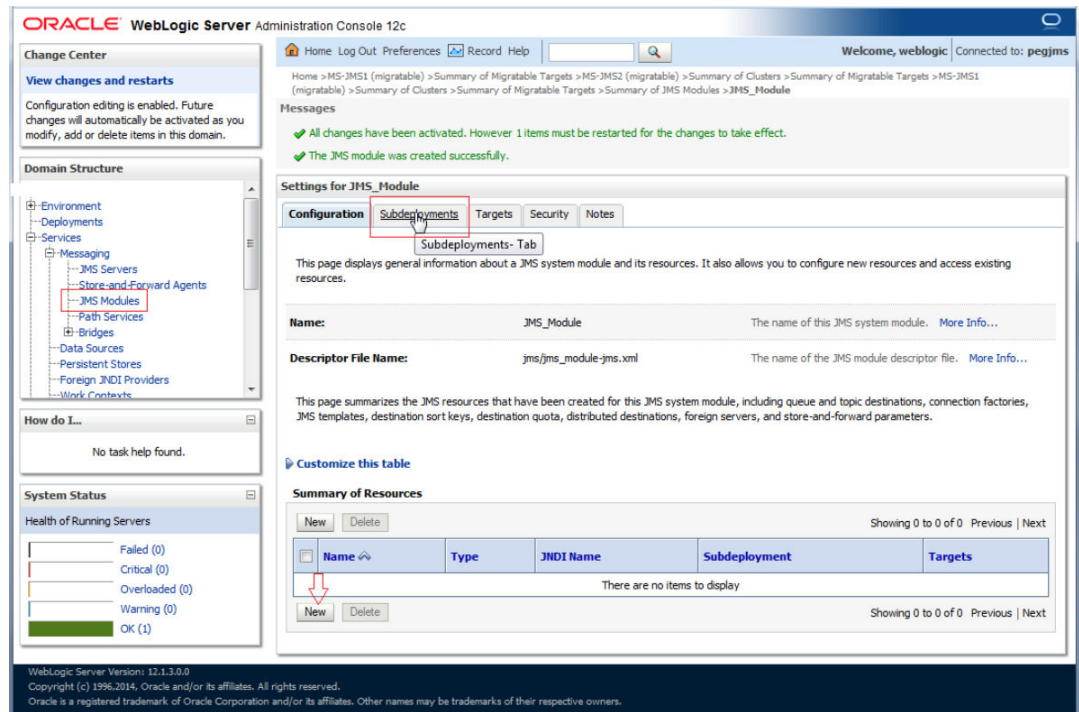
5. JMS\_MODULE is created.



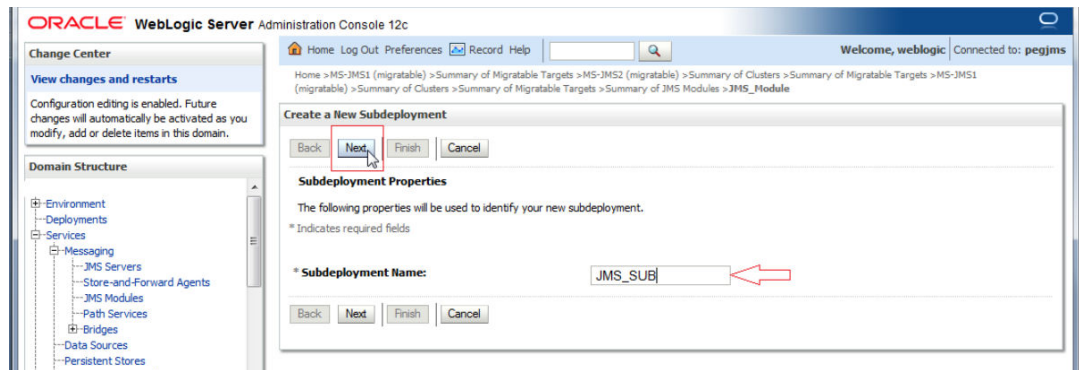
## 3.2 Sub Deployment Creation

1. In JMS\_MODULE, Click on **SubDeployment** tab, Click on **New**.

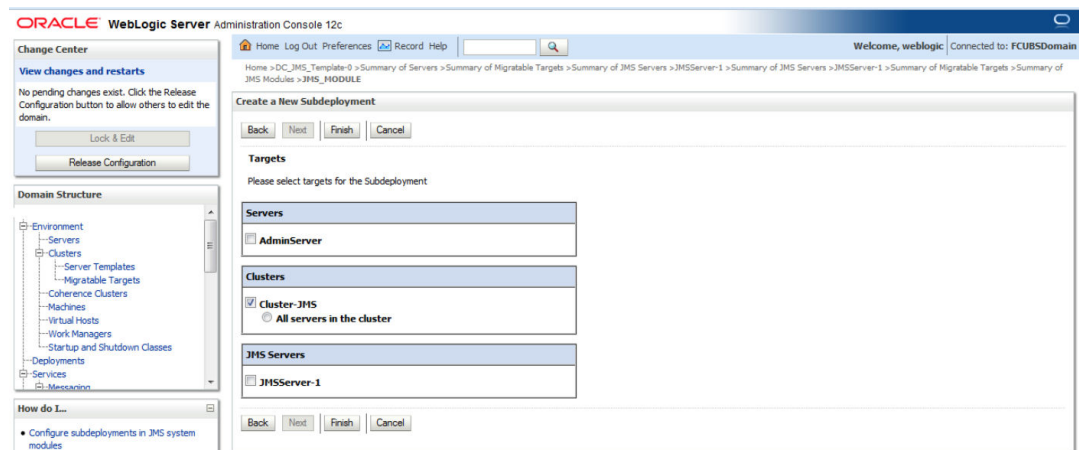




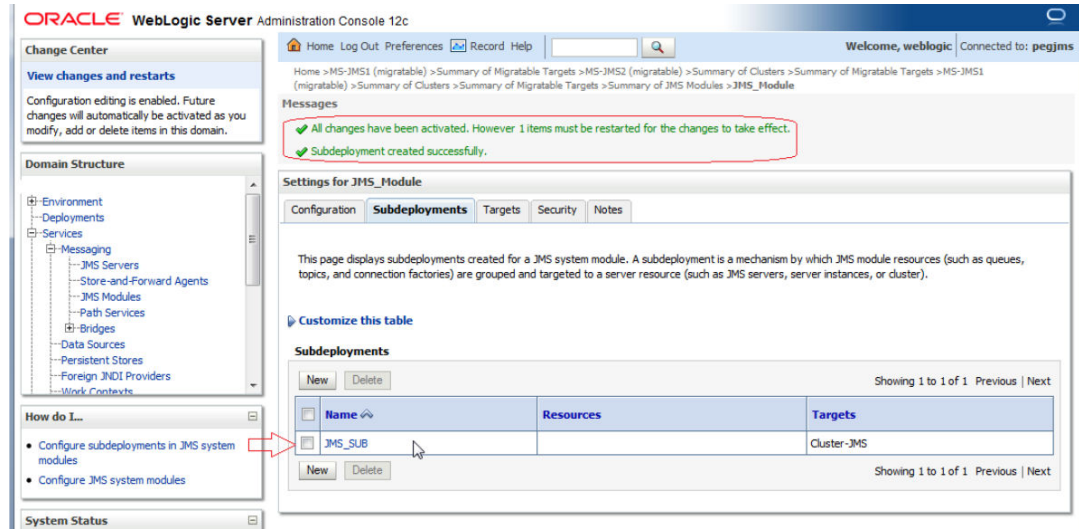
2. Enter name as JMS\_SUB and click on Next.



3. Select Target as Cluster-JMS and Click on Finish.



4. Sub-Deployment is created

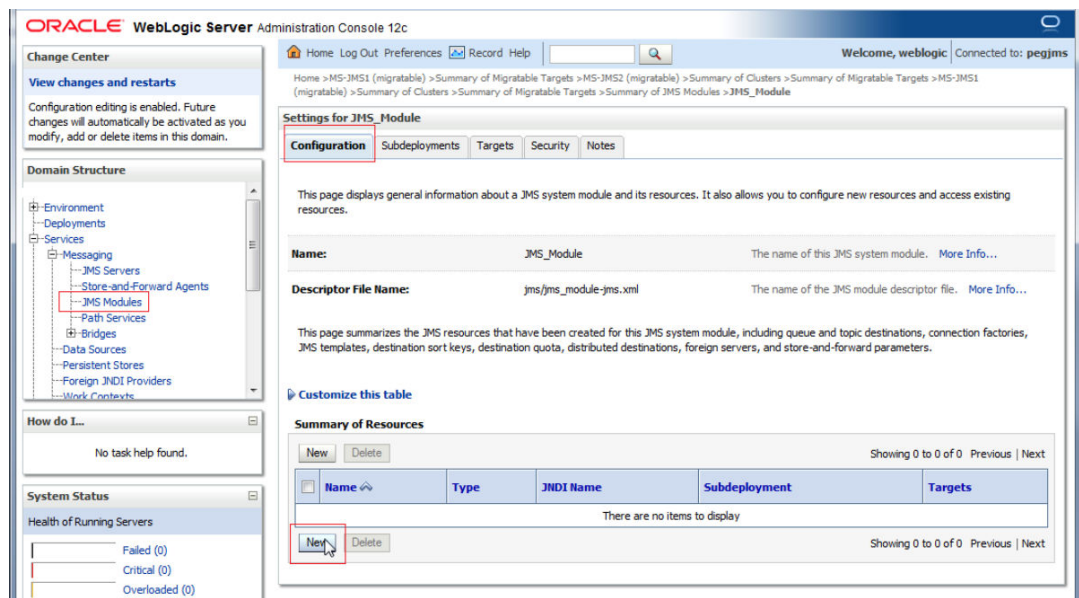


### 3.3 Resource Creation

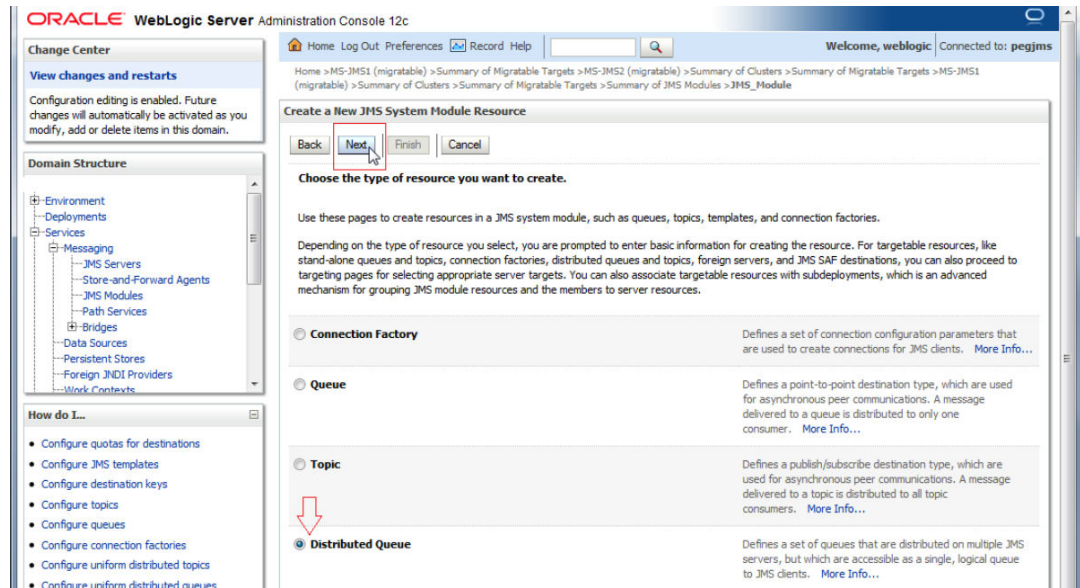
- Queue Creation
- Connection Factory Creation

#### 3.3.1 Queue Creation

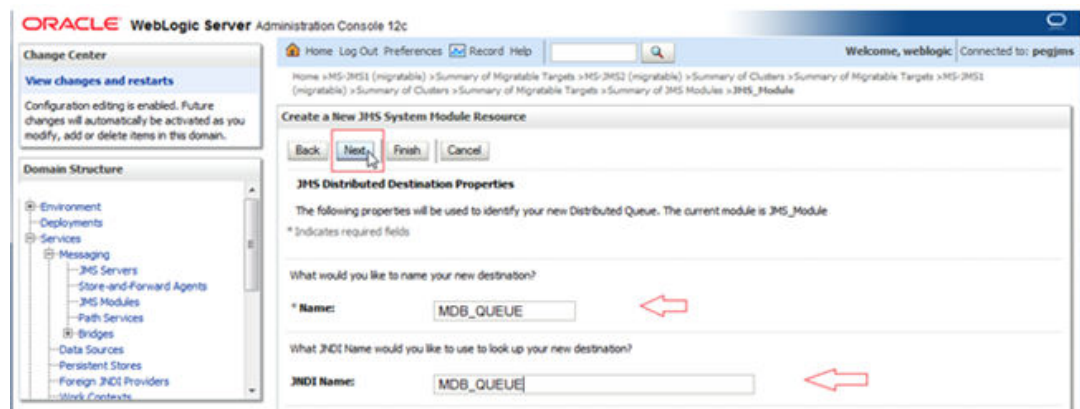
1. In JMS\_MODULE Click on **New**.



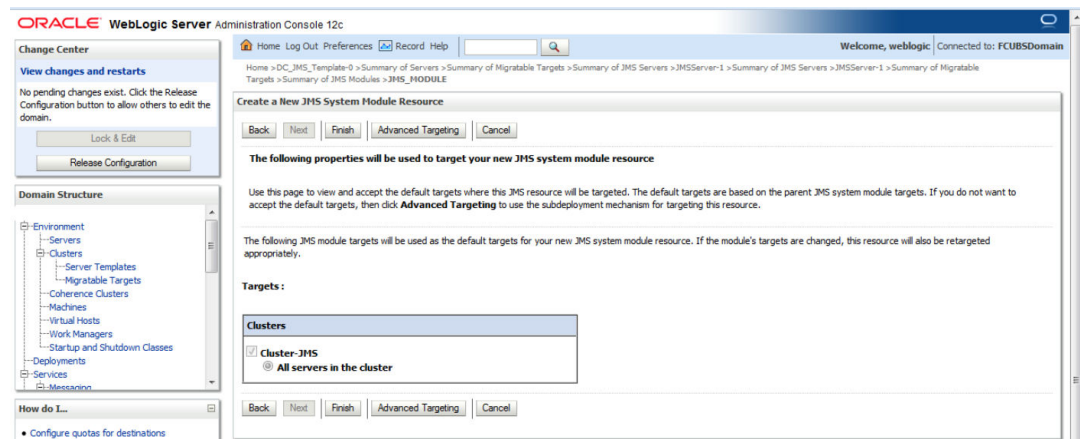
2. Select Distributed Queue and Click on **Next**.



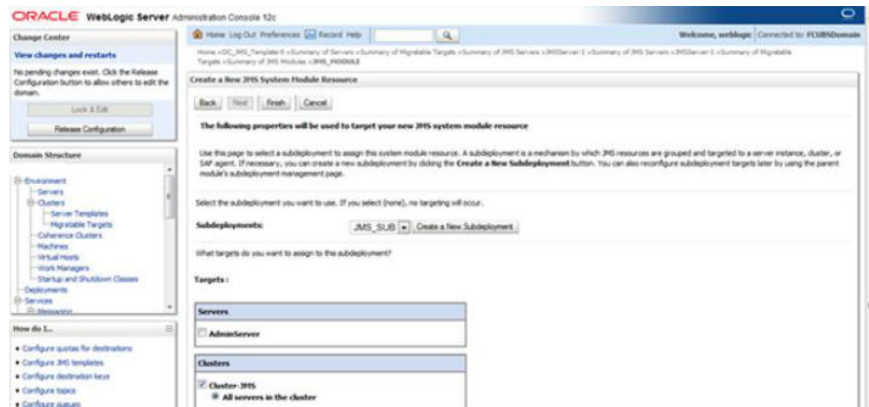
3. Enter the queue name and Click on Next.



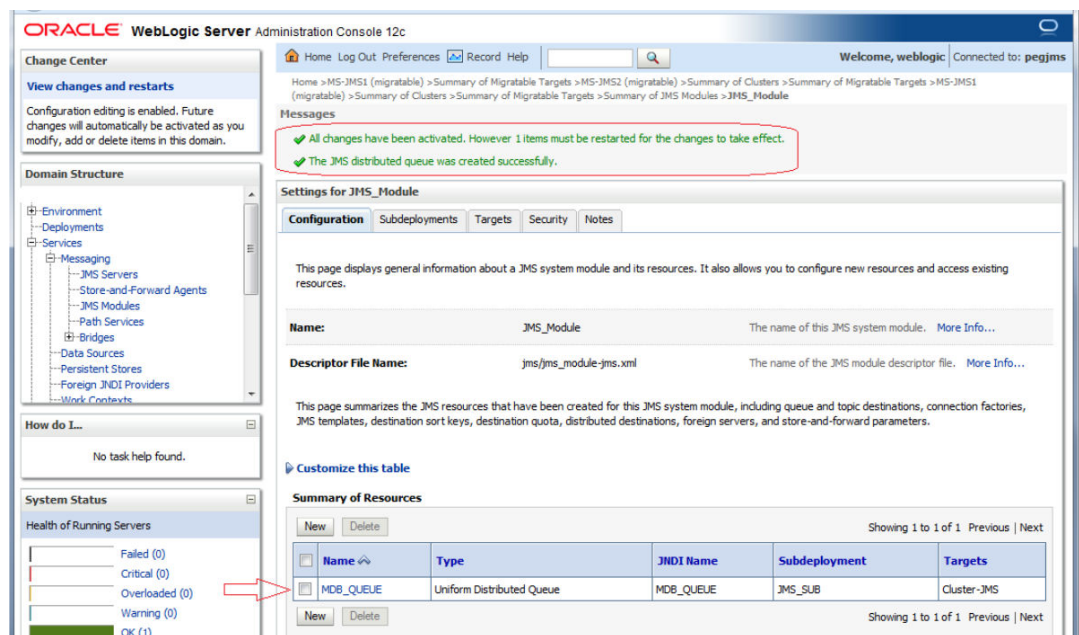
4. Click on **Advance Targeting**.



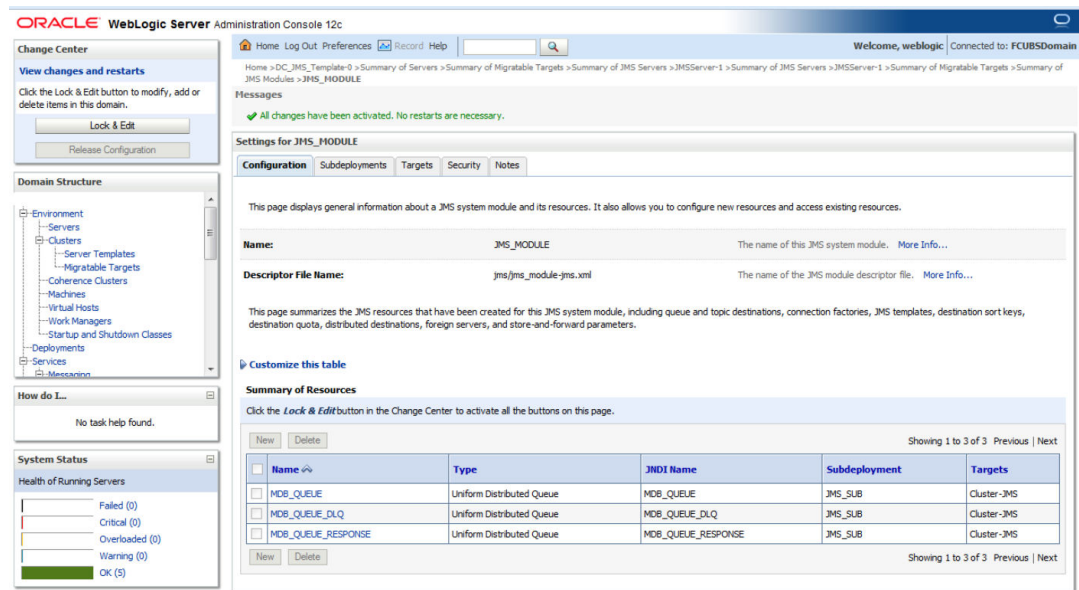
5. Select Subdeployment as JMS\_SUB and Click on **Finish**.



6. MDB\_QUEUE is created

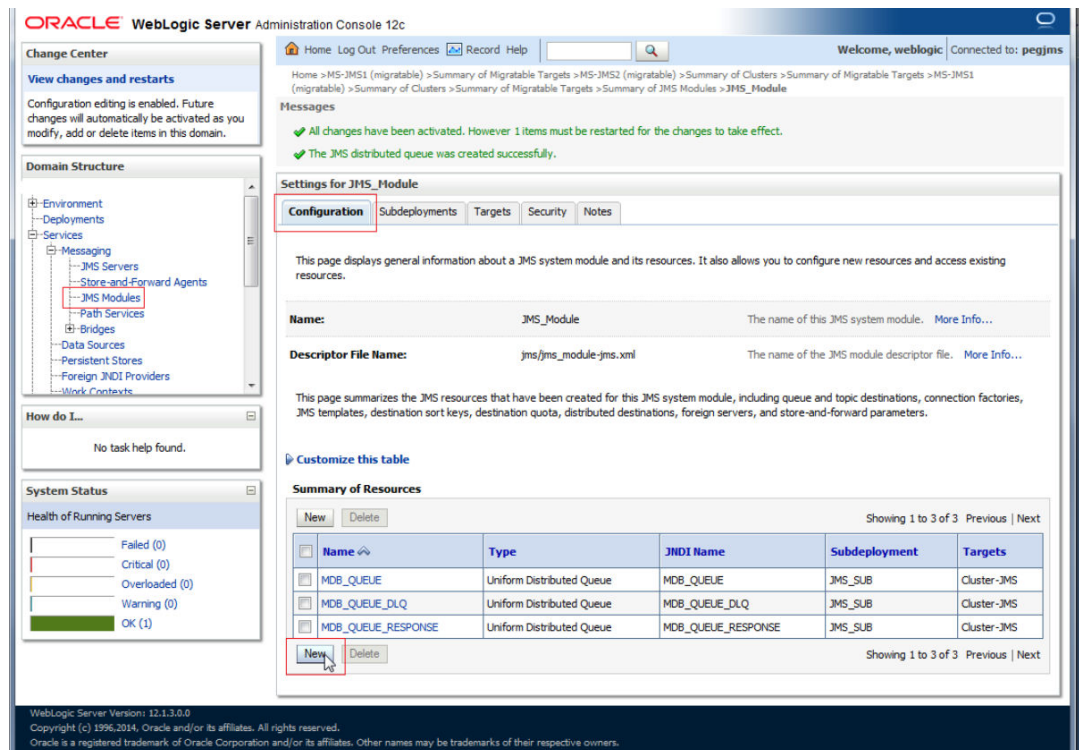


7. Similarly Create MDB\_QUEUE\_RESPONSE and MDB\_QUEUE\_DLQ

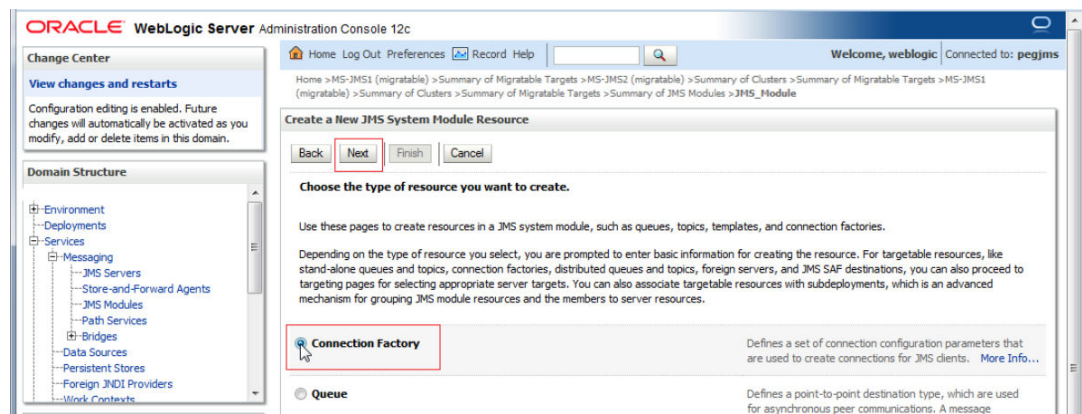


## 3.3.2 Connection Factory Creation

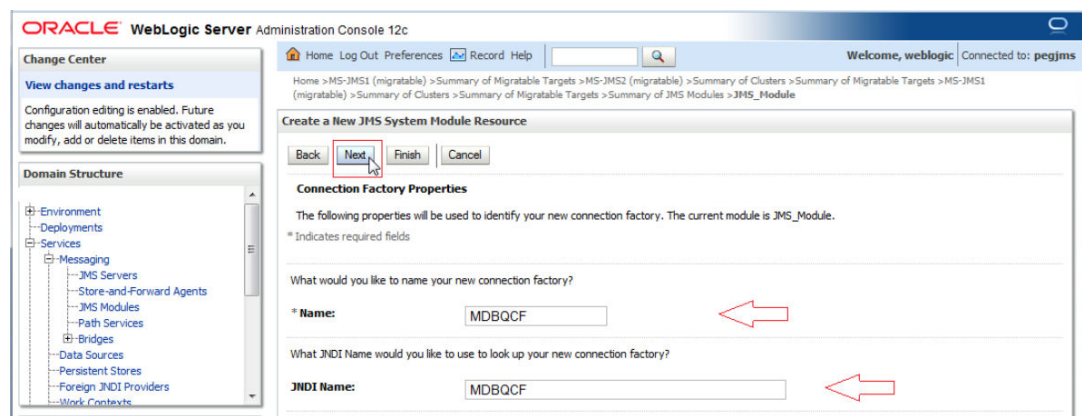
1. In JMS\_MODULE, Click on **New**.



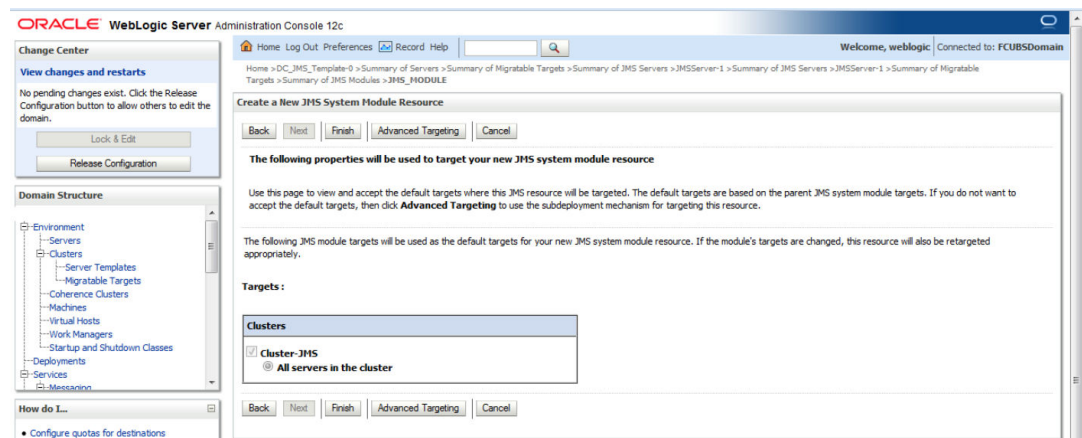
2. Select Connection Factory and click on **Next**.



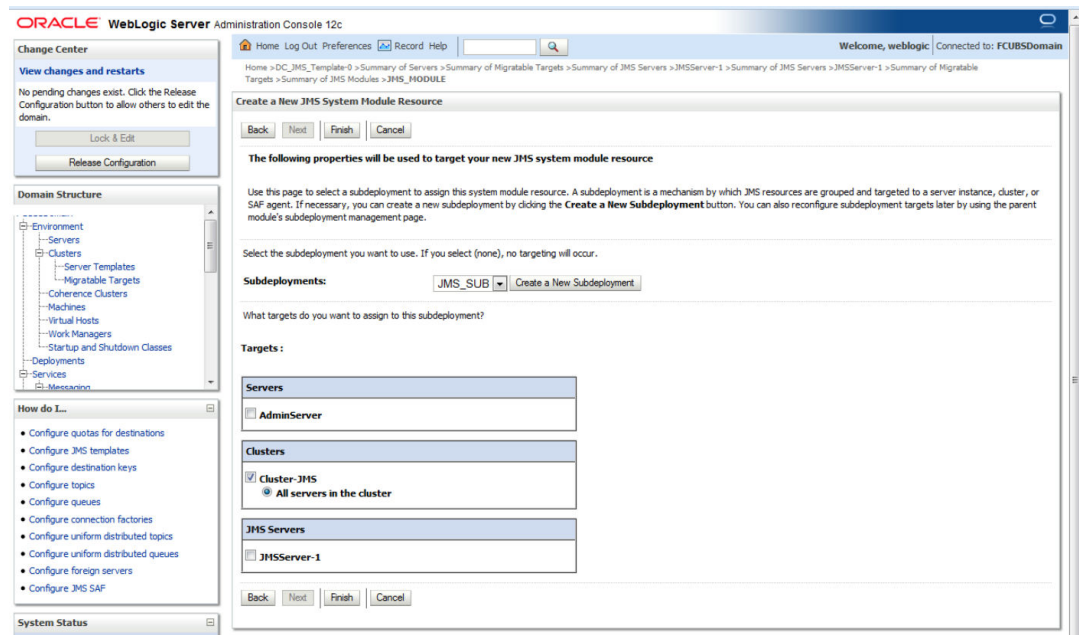
3. Enter the Name and Click on **Next**.



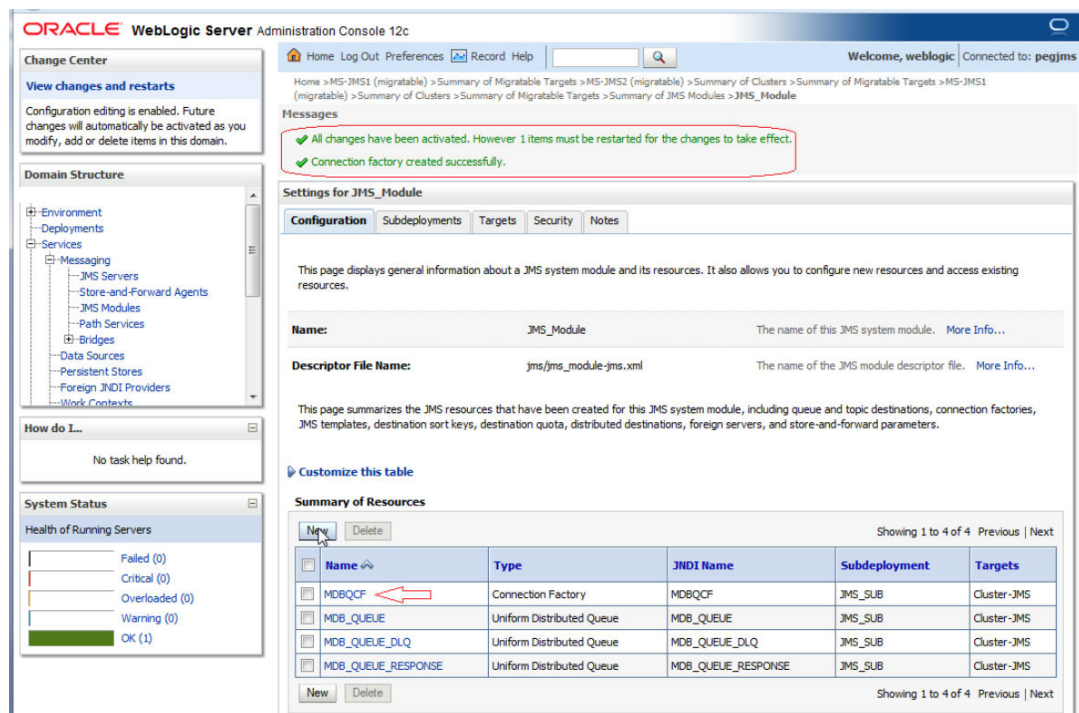
4. Click on **Advance Targeting**.



5. Select **JMS\_SUB** and Click on **Finish**.



## 6. Connection Factory is Created.



# 4

## Server Restart

1. Increase the heap size of both DC\_JMS\_1 and DC\_JMS\_2 cluster.

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains navigation menus for Change Center, Domain Structure, and How do I... The main content area displays the 'Summary of Servers' page. A table lists the following servers:

Name	Type	Cluster	Machine	State	Health	Listen Port
AdminServer (admin)	Configured			RUNNING	OK	7001
DC_FCUBS_1	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7101
DC_FCUBS_2	Dynamic	Cluster-App	MAC-2	SHUTDOWN	Not reachable	7102
DC_FCUBS_3	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7103
DC_FCUBS_4	Dynamic	Cluster-App	MAC-2	SHUTDOWN	Not reachable	7104
DC_JMS_1	Dynamic	Cluster-JMS	MAC-1	SHUTDOWN	Not reachable	7106
DC_JMS_2	Dynamic	Cluster-JMS	MAC-2	SHUTDOWN	Not reachable	7107

2. Select the cluster 'DC\_JMS\_Template-0' and

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar shows the 'Domain Structure' with 'Server Templates' selected. The main content area displays the 'Summary of Server Templates' page. A table lists the following templates:

Name	Cluster	Machine	Listen Port	Listen Address
DC_FCUBS_Template	Cluster-App		7100	
DC_JMS_Template-0	Cluster-JMS		7105	

3. Click on **Server Start** Tab and in Arguments Section enter `-XX:MaxPermSize=512m`



The screenshot displays the Oracle WebLogic Server Administration Console interface. The main content area is titled "Settings for DC\_JMS\_Template-0" and features a "Server Start" tab. This tab contains several configuration fields with descriptive text and "More Info..." links:

- Java Home:** A text input field with a description: "The Java home directory (path on the machine running Node Manager) to use when starting this server." A red box highlights this field.
- Java Vendor:** A text input field with a description: "The Java Vendor value to use when starting this server."
- BEA Home:** A text input field with a description: "The BEA home directory (path on the machine running Node Manager) to use when starting this server."
- Root Directory:** A text input field with a description: "The directory that this server uses as its root directory. This directory must be on the computer that hosts Node Manager. If you do not specify a Root Directory value, the domain directory is used by default."
- Class Path:** A large text area with a description: "The classpath (path on the machine running Node Manager) to use when starting this server."
- Arguments:** A text input field containing the value `-XX:MaxPermSize=512m`. A red box highlights this field.

On the left side of the console, there are several panels: "Change Center" with "View changes and restarts" and "Release Configuration" buttons; "Domain Structure" showing a tree view of the environment; "How do I..." with links for configuring startup arguments, starting servers, and shutting down instances; and "System Status" showing the health of running servers (Failed, Critical, Overloaded) with zero counts for each.

4. **Restart** the AdminServer and DC\_JMS\_1 and DC\_JMS\_2 managed servers.

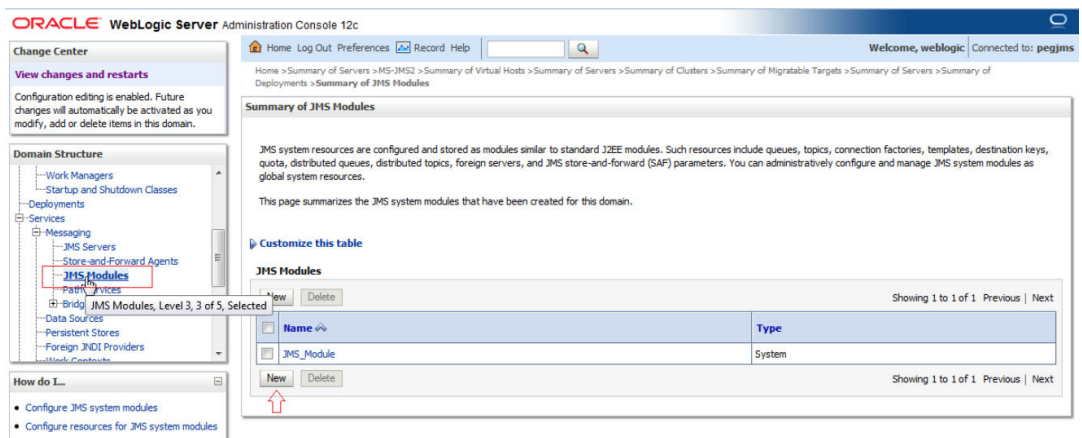
# 5

## Foreign Server Creation

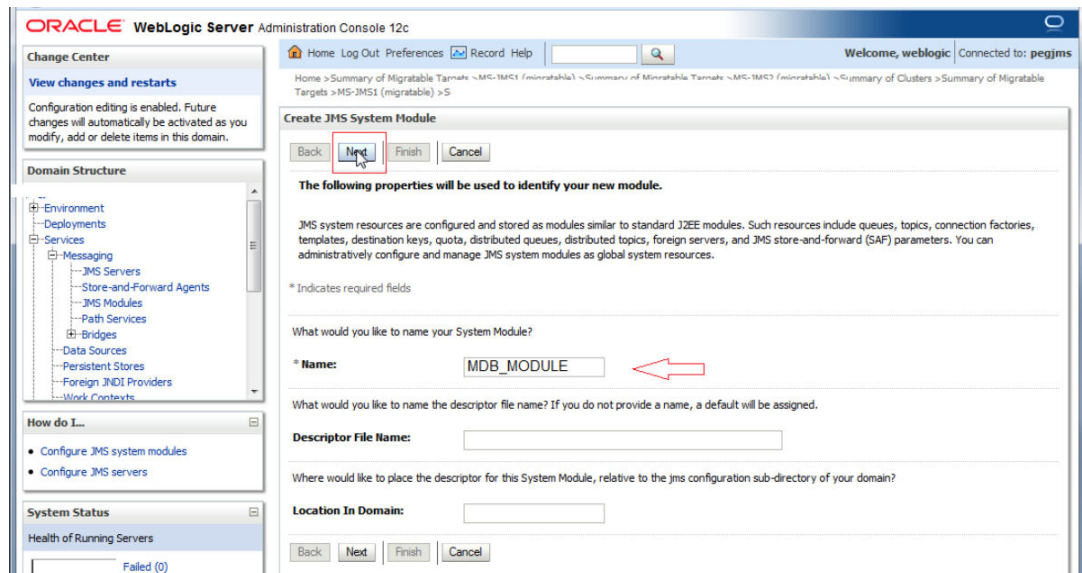
- Module Creation
- Foreign Server Creation
- Foreign Server Configuration

### 5.1 Module Creation

1. JMS\_Modules and Click on **New**.



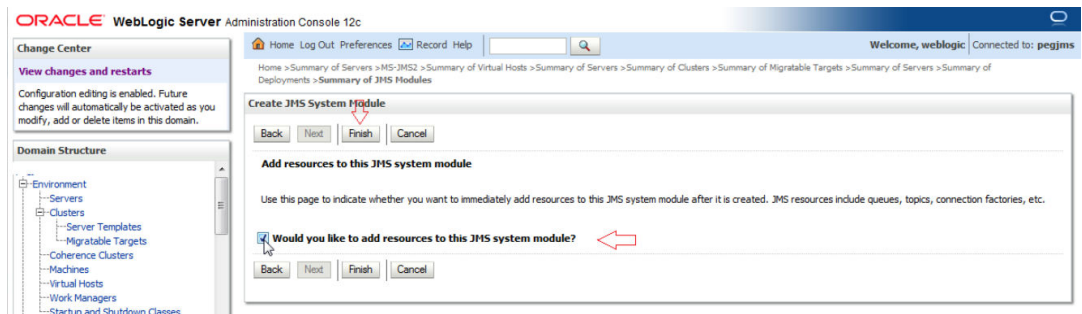
2. Enter name as **MDB\_MODULE** and click on **Next**.



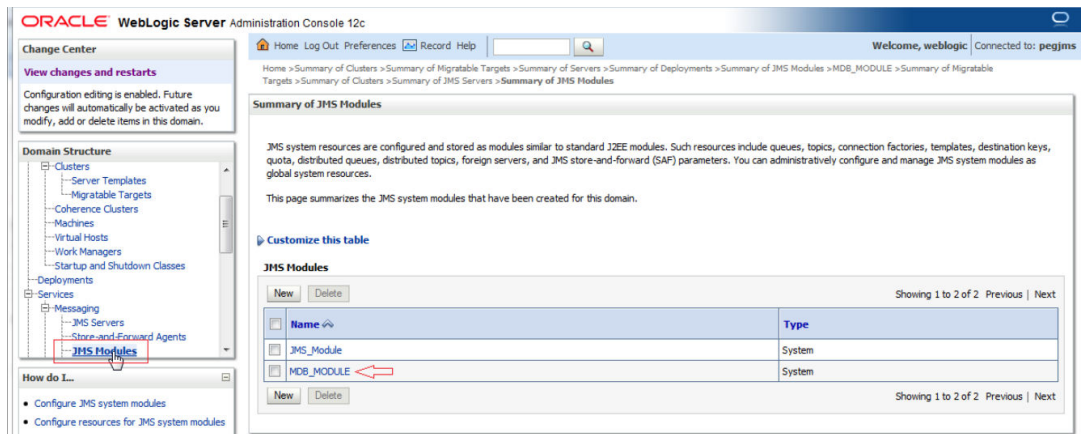
3. Select target as **Cluster-App** and click on **Next**.



4. Select CheckBox and Click on **Finish**.

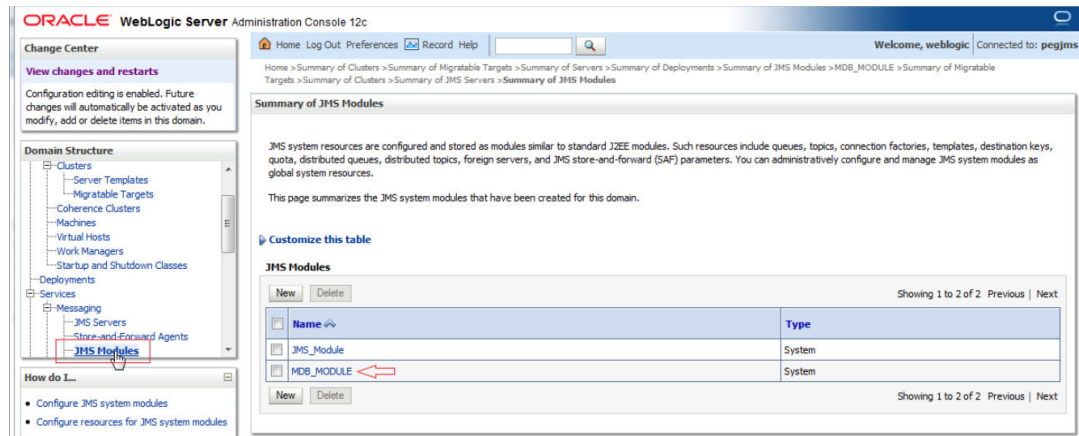


5. MDB\_MODULE is created.

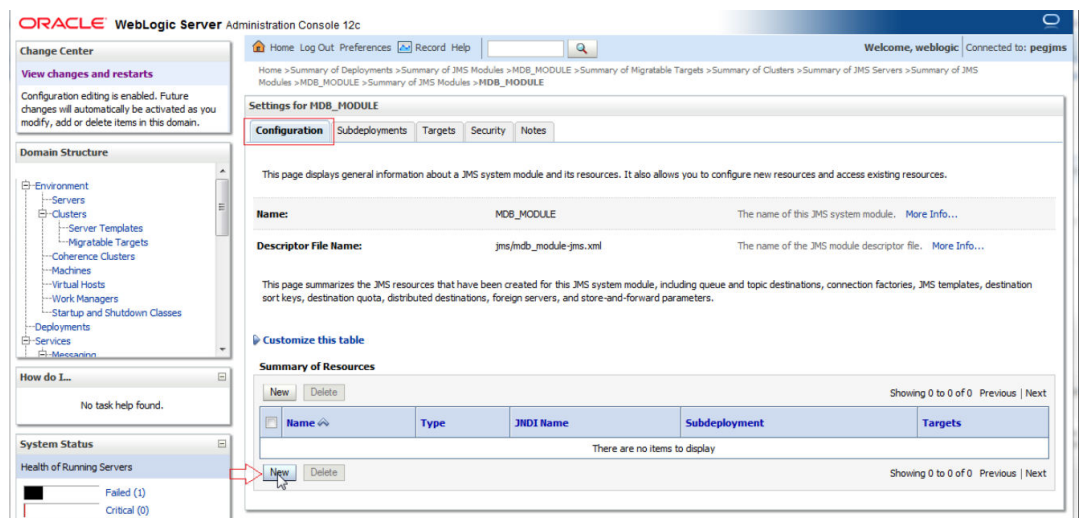


## 5.2 Foreign Server Creation

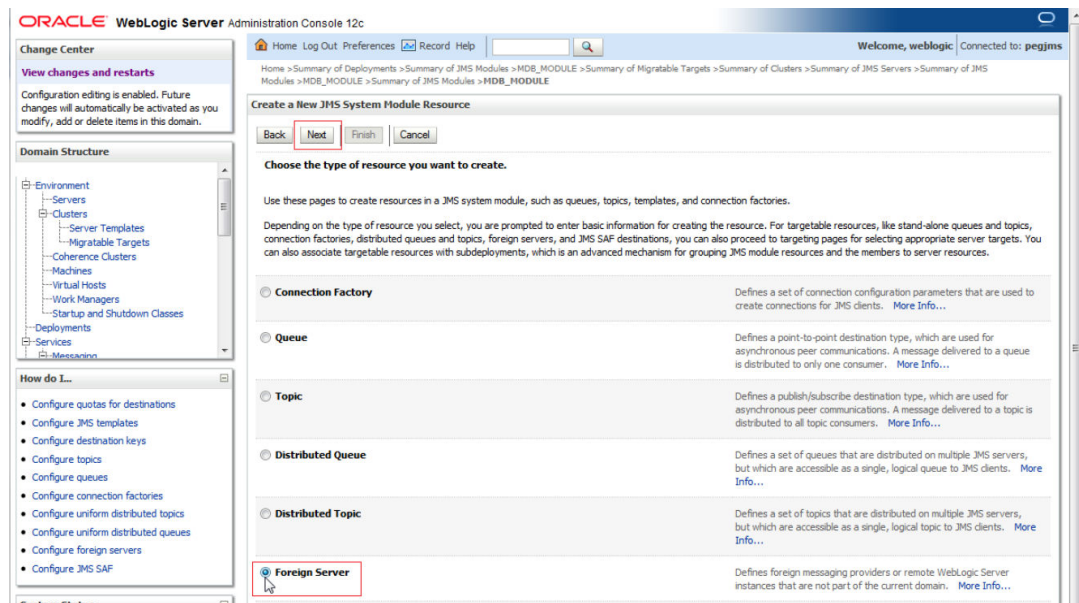
1. In MDB\_MODULE, Click on New Resource, Select **Foreign Server**.



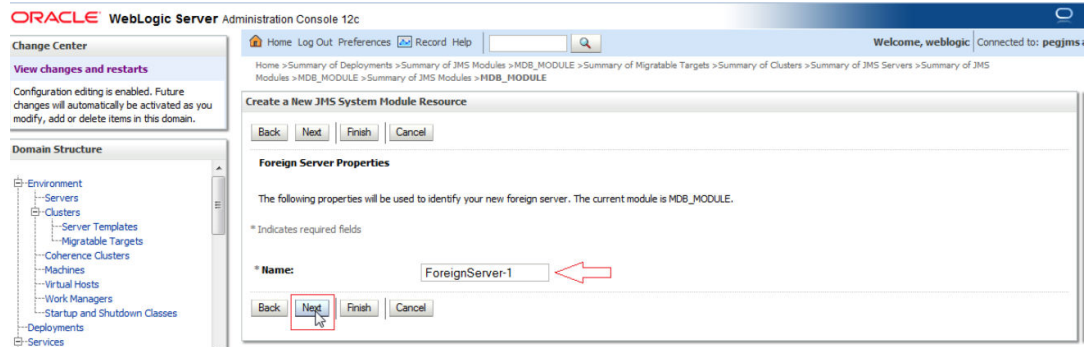
2. Click on Configuration **New**.



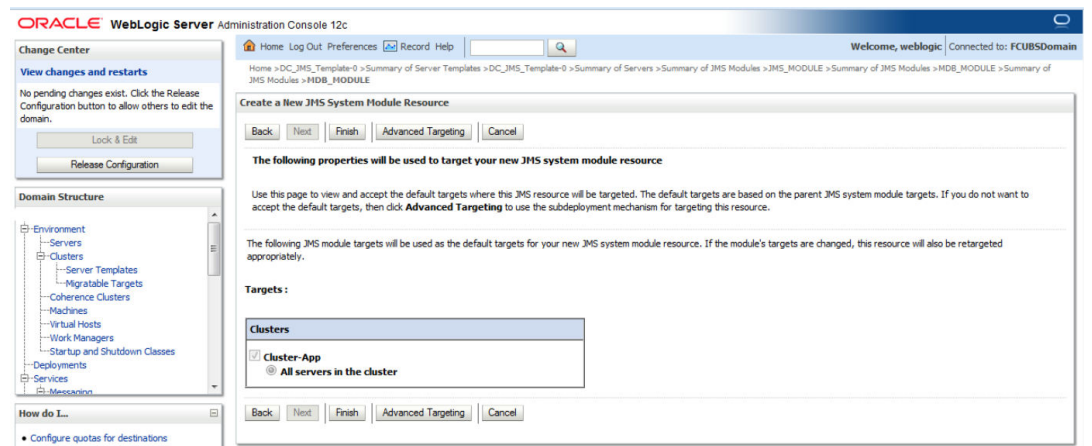
3. Select Foreign Server and Click on Next.



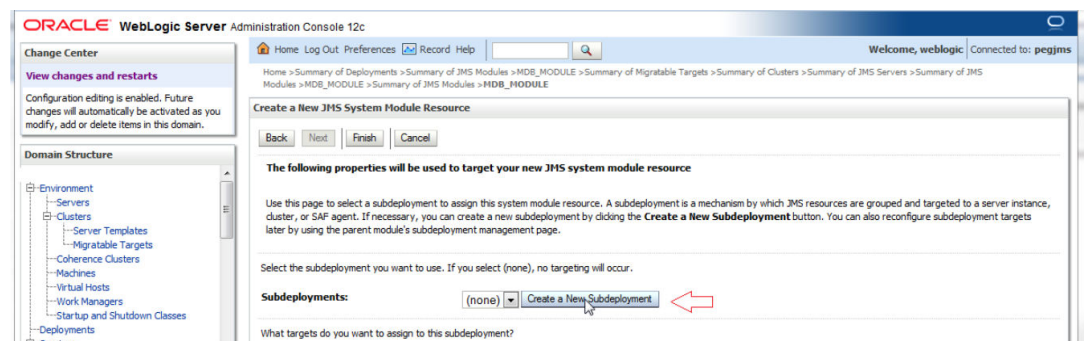
4. Enter name and Click on **Next**.



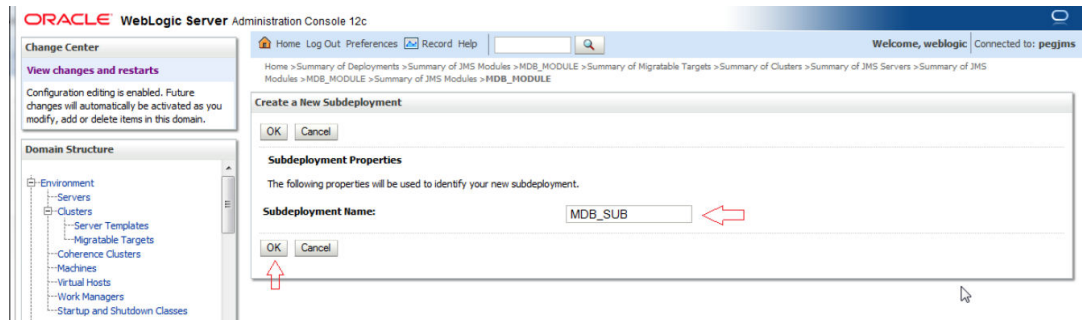
5. Click on **Advanced Targeting**.



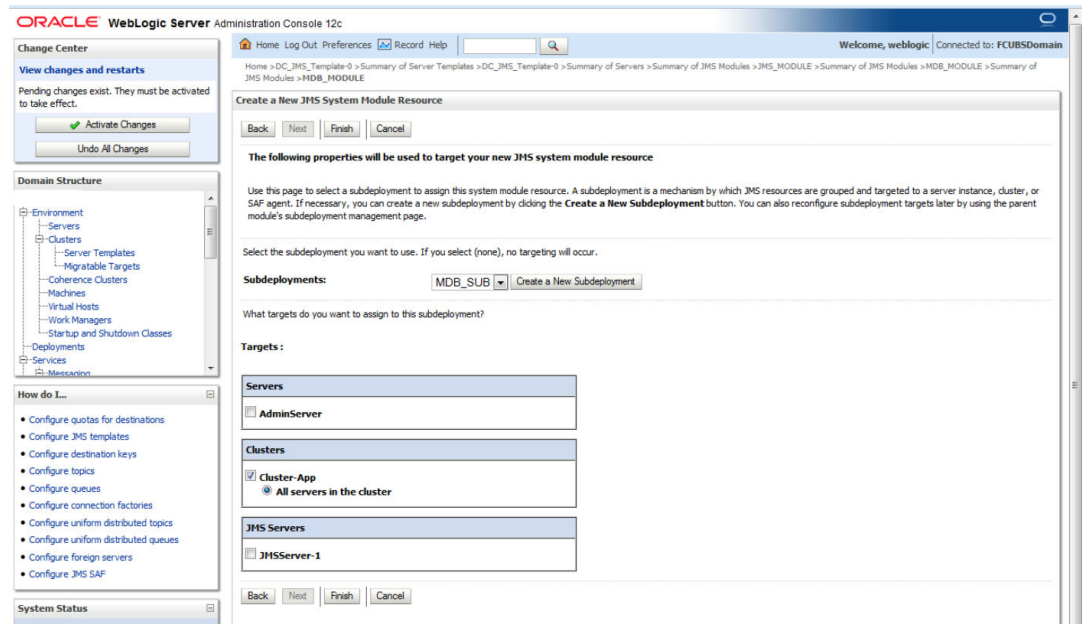
6. Click on **Create New Subdeployment**.



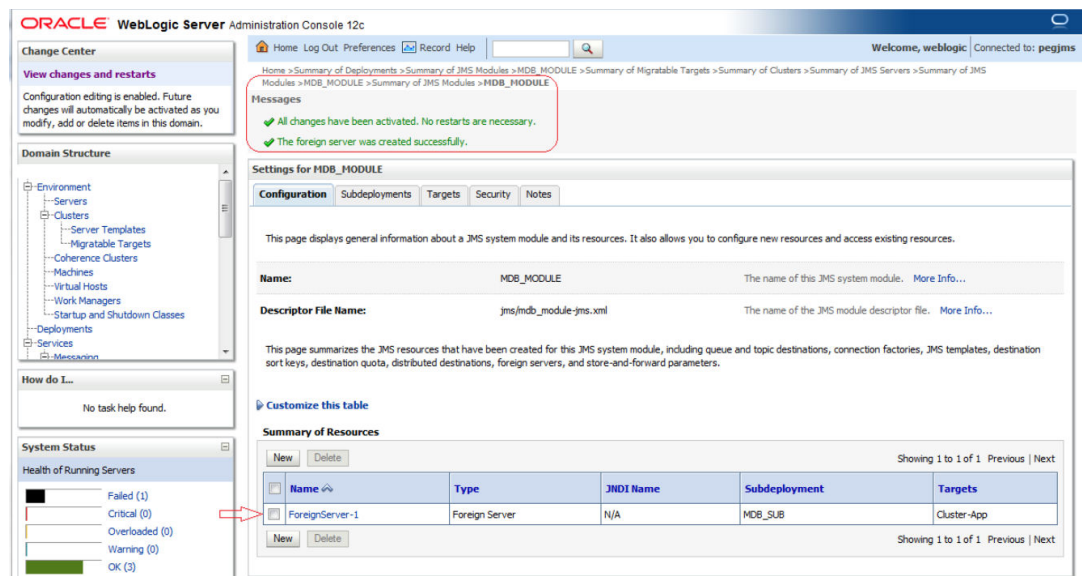
7. Enter Name as **MDB\_SUB** and Click on **OK**.



8. Select Target as **Cluster-App** and Click on **Finish**.



9. Foreign Server is created.



## 5.3 Foreign Server Configuration

1. Click on **ForeignServer-1**.

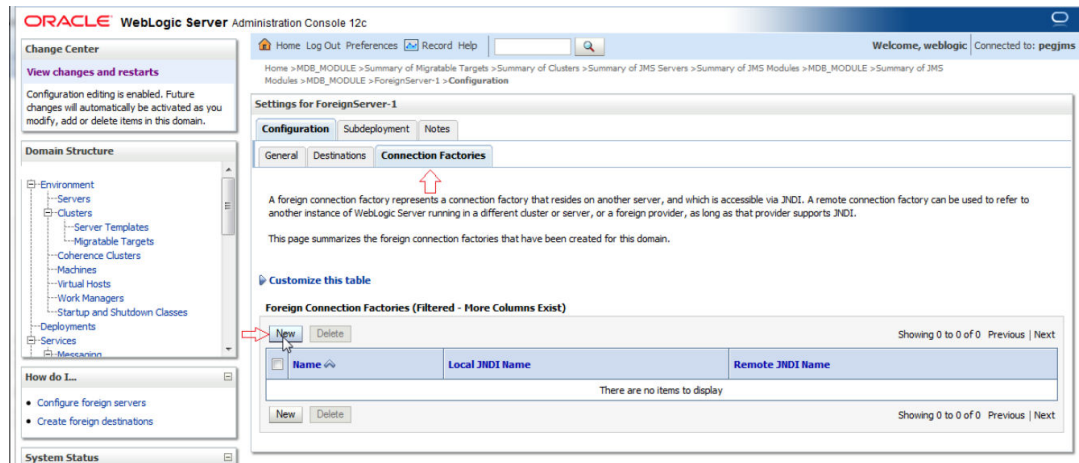
The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains navigation menus for Change Center, Domain Structure, How do I..., and System Status. The main content area displays the 'Settings for MDB\_MODULE' page. A message indicates that all changes have been activated successfully. Below this, there is a 'Summary of Resources' table with the following data:

Name	Type	JNDI Name	Subdeployment	Targets
ForeignServer-1	Foreign Server	N/A	MDB_SUB	Cluster-App

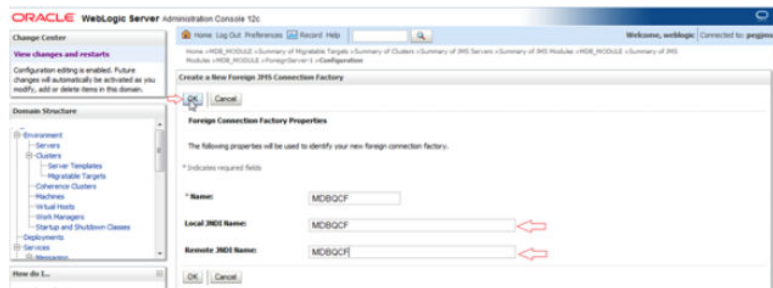
2. Enter the JNDI URL as Cluster URL(JMS Managed Servers) and Click on **Save**.

The screenshot shows the 'Settings for ForeignServer-1' page in the Oracle WebLogic Server Administration Console. The 'Connection Factories' tab is selected. The 'JNDI Connection URL' field is highlighted with a red box, and the 'Save' button is also highlighted. The 'JNDI Connection URL' field contains the value: (j)10.104.148.185:7106:10.104.148.109:7107.

3. Click on **Connection Factories** tab.



4. Create MDBQCF Connection Factory.

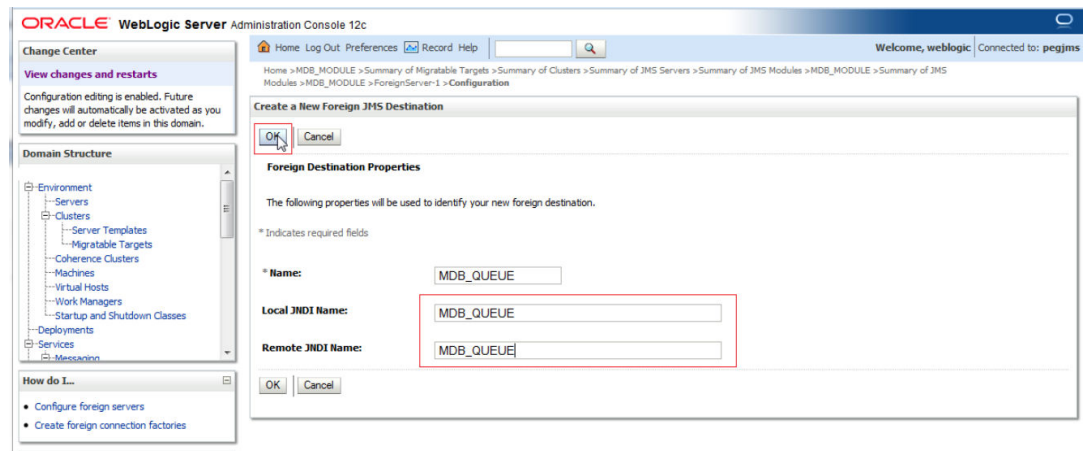
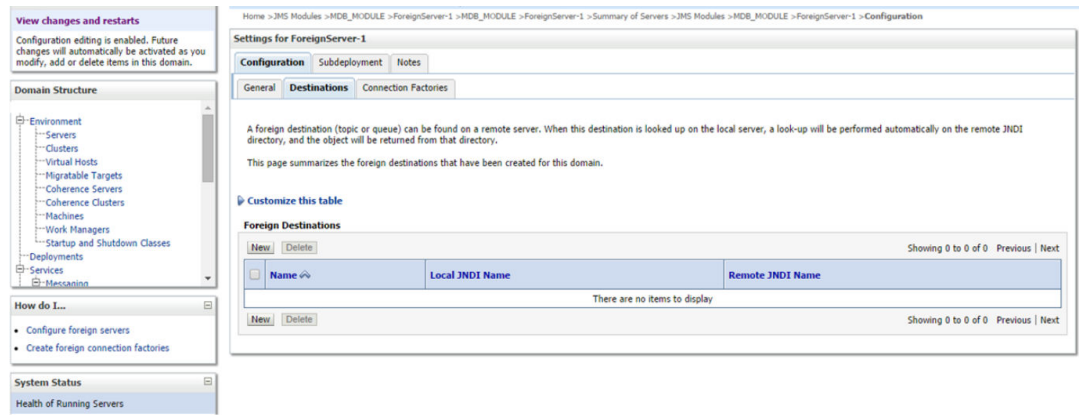


5. Click on Destination tab.

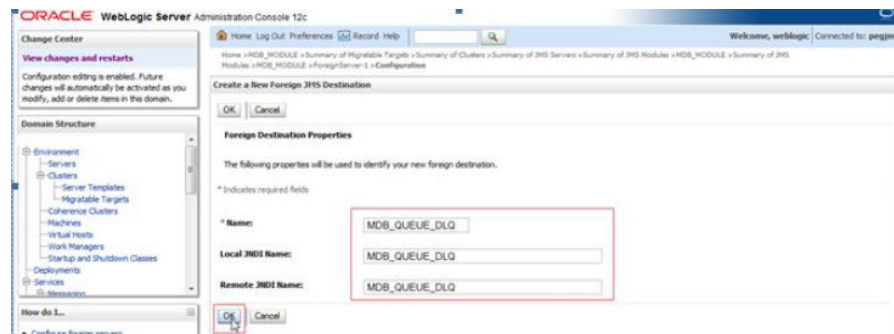


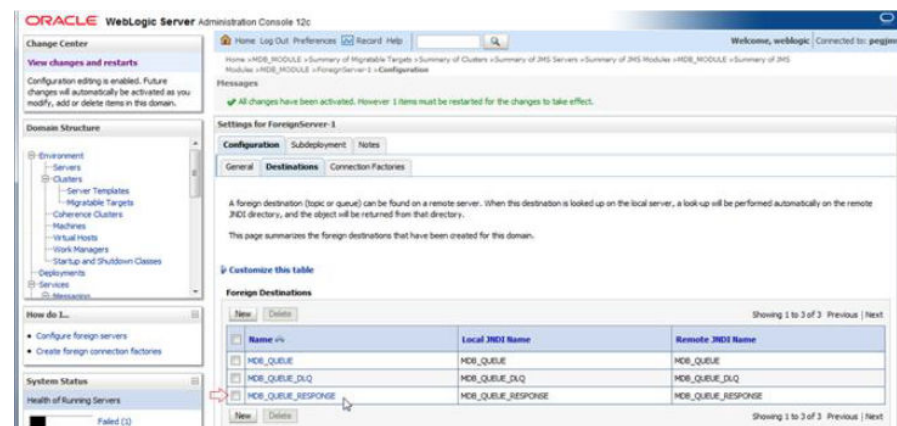
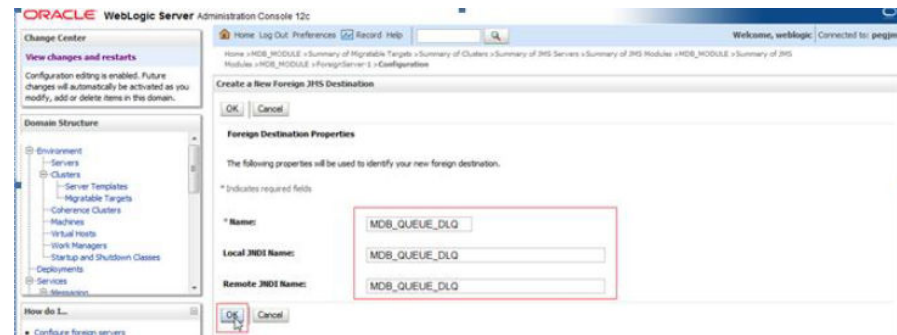
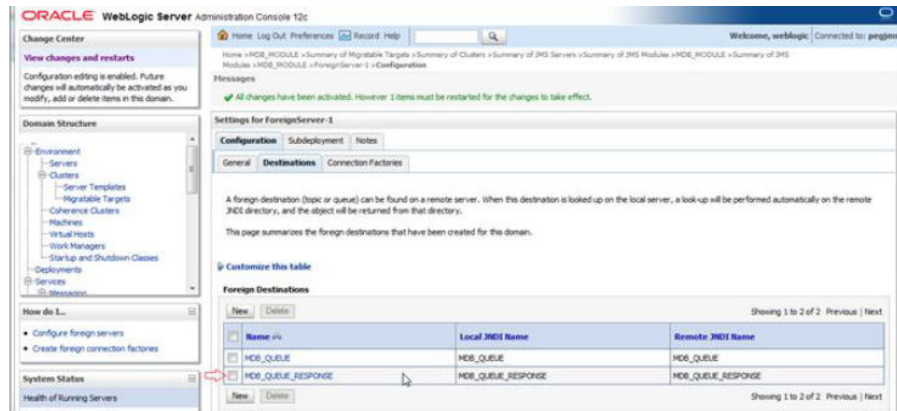
6. Create MDB\_QUEUE.





7. Similarly Create **MDB\_QUEUE\_RESPONSE**, **MDB\_QUEUE\_DLQ**.





- After all the resources are created, **Restart** the Admin and Managed Servers.

# 6 Application Deployment

## 1. Deploy the EAR with Target as Cluster-App.

The screenshot shows the 'Settings for GWMDB' page in the WebLogic Administration Console. The 'Targets' tab is selected, and the 'Target Assignments' table is visible. The table lists the components and their current targets.

Component	Type	Current Targets
GWMDB	Enterprise Application	Cluster-App
GW_MDB_Bean.jar	EJB	(None specified)

## 2. Health Should be OK if JMS is configured properly, otherwise Warning will be displayed.

The screenshot shows the 'Summary of Deployments' page in the WebLogic Administration Console. The 'Control' tab is selected, and the 'Deployments' table is visible. The table lists the installed applications and their health status.

Name	State	Health	Type	Deployment Order
FCUBSApp	Active	OK	Enterprise Application	100
GWEJB	Active	OK	Enterprise Application	100
GWMDB	Active	OK	Enterprise Application	100
java-rs(1.1,1.9)	Active		Library	100
SWEJB	Active	OK	Enterprise Application	100

# 7

## Frequently Asked Questions

### 1. Deploy the EAR with Target as Cluster-App.

The screenshot shows the Oracle WebLogic Administration Console interface. On the left is the 'Change Center' sidebar with a 'Domain Structure' tree. The main content area is titled 'Settings for GWMDB' and has tabs for Overview, Deployment Plan, Configuration, Security, **Targets**, Control, Testing, Monitoring, and Notes. The 'Targets' tab is active, displaying 'Target Assignments' for the GWMDB component. A table lists the current targets:

Component	Type	Current Targets
GWMDB	Enterprise Application	Cluster-App
GW_MDB_Bean.jar	EJB	(None specified)

### 2. Health Should be OK if JMS is configured properly, otherwise Warning will be displayed.

The screenshot shows the 'Summary of Deployments' page in the Oracle WebLogic Administration Console. The 'Control' tab is active, displaying a table of installed Java EE applications and modules. The table includes columns for Name, State, Health, Type, and Deployment Order.

Name	State	Health	Type	Deployment Order
FCUBSApp	Active	OK	Enterprise Application	100
GWJEB	Active	OK	Enterprise Application	100
GWMDB	Active	OK	Enterprise Application	100
java-rs(1.1,1.9)	Active		Library	100
SWEJEB	Active	OK	Enterprise Application	100

- Application and JMS Cluster Deployed on Same Cluster
- Application Shows Warning upon Restart of Managed Servers
- Securing File Store Data
- t3s Protocol
- How to Test the Deployment
- Increase Maximum Number of Message-Driven Bean Threads
- How High Availability is Achieved
- How to setup for Scheduler/Notifications
- What other modules uses JMS Queue's
- References

## 7.1 Application and JMS Cluster Deployed on Same Cluster

Application and JMS Module can be deployed on the same cluster. In this document both are on different clusters, however it is possible to deploy on the one cluster. When it is deployed on same cluster then.

1. Foreign Server Creation is not required.
2. Targets should be given accordingly during SubDeployment Creation.

## 7.2 Application Shows Warning upon Restart of Managed Servers

Managed Servers Start Order:

1. Stop all managed servers.
2. Start only the JMS Cluster managed servers.
3. After these are started then start the App Cluster managed servers.

Even after proper JMS setup when the managed servers are restarted Health of the Application is Warning.

The screenshot shows the Oracle WebLogic Server Administration Console. The main area displays the 'Summary of Deployments' page. A table lists the deployed applications and their health status. The application 'GWHDB' is highlighted with a red box, showing a 'Warning' health status. The table also shows other applications like FCUBSApp, GWEJB, and SWEJB, all with 'OK' health status.

Name	State	Health	Type	Deployment Order
FCUBSApp (12.0.3.0)	Active	OK	Enterprise Application	100
GWEJB	Active	OK	Enterprise Application	100
GWHDB	Active	Warning	Enterprise Application	100
JMS-12.1.1-L12.37	Active	OK	Library	100
SWEJB	Active	OK	Enterprise Application	100

1. Force Stop the Application.
2. Then Start the Application, this would resolve the Warning and the Health of Deployment is changed to **OK**.

## 7.3 Securing File Store Data

In order to properly secure file store data, set appropriate directory permissions on all file store directories. If data encryption is required, use appropriate third-party encryption software.

## 7.4 t3s Protocol

To secure the communication with the JMS Server use t3s protocol instead of t3. This is applicable when connecting to the connection factory to send or receive messages and also in the JNDI Connection URL provided in foreign server creation.

### Note:

when using the t3s protocol SSL Listen Port Enabled should be checked in server template and the port number used in the URL should be secure port.

## 7.5 How to Test the Deployment

1. Navigate to Services  $\square$  JMS Modules  $\square$  JMS\_MODULE  $\square$  MDB\_QUEUE  $\square$  MONITORING.

View changes and restarts

Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

Domain Structure

- Environment
  - Servers
  - Clusters
  - Virtual Hosts
  - Migratable Targets
  - Coherence Servers
  - Coherence Clusters
  - Machines
  - Work Managers
  - Startup and Shutdown Classes
- Deployments
- Services
  - MessageStore

How do I...?

- Manage distributed queue messages
- Configure uniform distributed queues

Settings for MDB\_QUEUE

Configuration Security **Monitoring** Subdeployment Notes

Use this page to view statistics about all of the members of a uniform distributed queue. Click on the individual member destination name in the table below to manage the messages on that destination.

To access the uniform distributed queue's message management page, select the check box next to its name, and then click the **Show Messages** button.

Customize this table

Destinations (Filtered - More Columns Exist)

Name	Consumers Current	Consumers High	Consumers Total
<input type="checkbox"/> JMS_MODULE:JMSServer-1@MDB_QUEUE	64	64	64
<input type="checkbox"/> JMS_MODULE:JMSServer-2@MDB_QUEUE	64	64	64

Show Messages Showing 1 to 2 of 2 Previous Next

2. Select any one Server and Click on **Show Messages**.

Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

Domain Structure

- Environment
  - Servers
  - Clusters
  - Virtual Hosts
  - Migratable Targets
  - Coherence Servers
  - Coherence Clusters
  - Machines
  - Work Managers
  - Startup and Shutdown Classes
- Deployments
- Services
  - MessageStore

How do I...?

- Manage queue messages
- Manage distributed queue messages
- Manage topic durable subscribers

System Status

Summary of JMS Messages

This page summarizes the available messages for a stand-alone queue, a distributed queue, or a topic durable subscriber. Use this page to view message details, create new messages, delete selected messages, move messages to another destination, export message contents in XML format to another file, import XML formatted message contents from another file, or drain all the messages from a destination.

Click on a message to view its contents.

Message Selector:

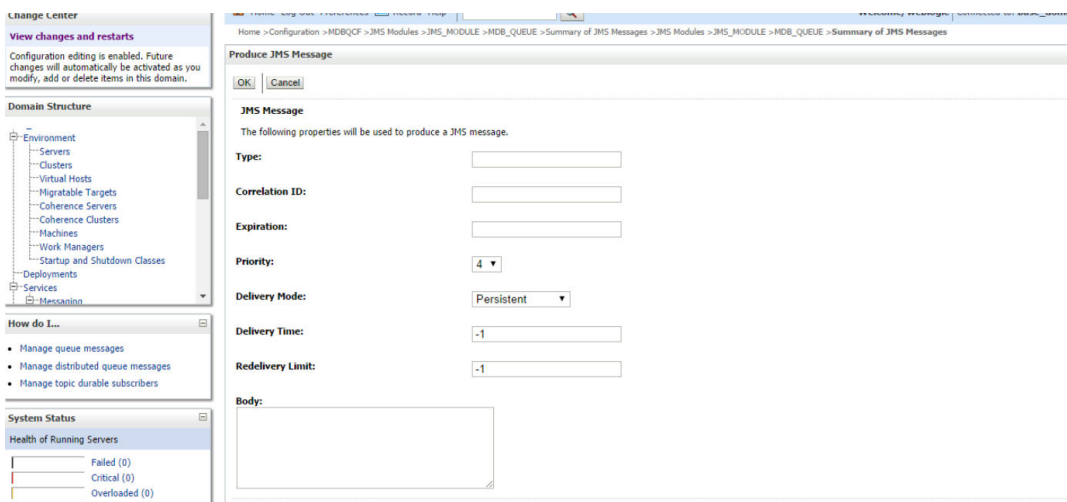
Customize this table

JMS Messages (Filtered - More Columns Exist)

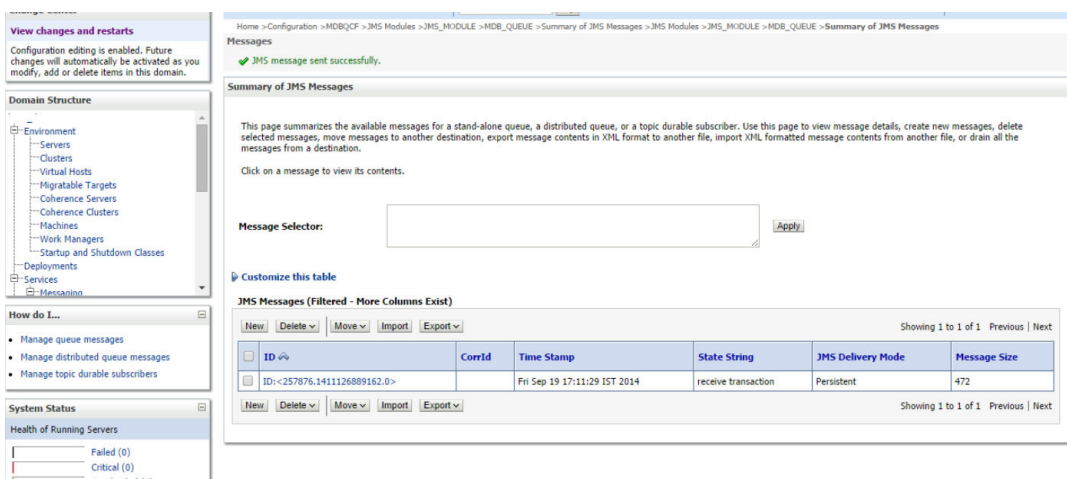
ID	Corrid	Time Stamp	State String	JMS Delivery Mode	Message Size
There are no items to display					

New Delete Move Import Export Showing 1 to 0 of 0 Previous Next

3. Click on **New** and enter the Message in Body and Click on **OK**.



4. Message is Sent.



5. Verify at backend or in the MDB log if the message is processed successfully.

## 7.6 Increase Maximum Number of Message-Driven Bean Threads

Default number of consumers for an MDB is 16. To increase or restrict this number create Custom Work Manager with a Max Threads Constraint in conjunction with MDBs. The solution is to create a work manager with a max threads constraint and assign the proxy services dispatch policy to this work manager.

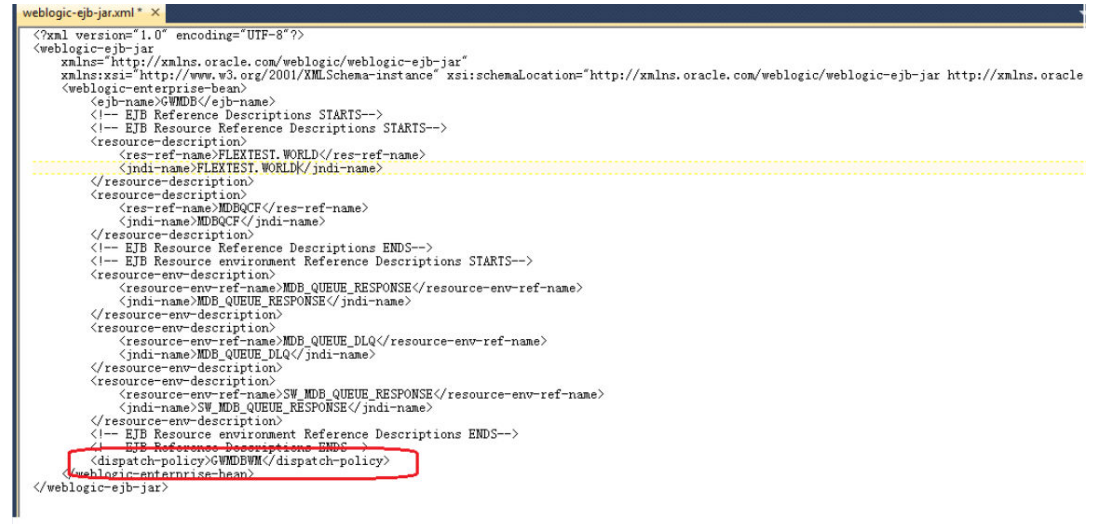
Steps to create custom work manager

1. Modify the MDB deployment description and deploy the EAR.
2. Create Custom Workmanager and add constraints to limit the number of the max MDB threads
  - [Modify weblogic-ejb-jar.xml](#)
  - [Work Manager Creation](#)

## 7.6.1 Modify weblogic-ejb-jar.xml

1. Add below line to the weblogic-ejb-jar.xml of the MDB Ear.

```
<dispatch-policy>GWMDBWM</dispatch-policy>
```



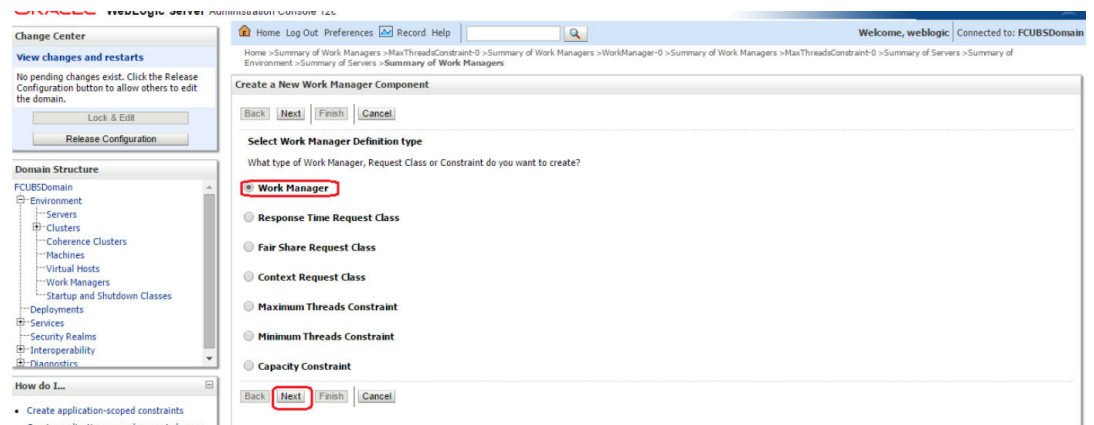
```

weblogic-ejb-jar.xml * x
<?xml version="1.0" encoding="UTF-8"?>
<weblogic-ejb-jar
  xmlns="http://xmlns.oracle.com/weblogic/weblogic-ejb-jar"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://xmlns.oracle.com/weblogic/weblogic-ejb-jar http://xmlns.oracle
  <weblogic-enterprise-bean>
    <ejb-name>GWMDB</ejb-name>
    <!-- EJB Reference Descriptions STARTS-->
    <!-- EJB Resource Reference Descriptions STARTS-->
    <resource-description>
      <res-ref-name>FLEXTEST_WORLD</res-ref-name>
      <!-- EJB Resource Reference Descriptions ENDS-->
      <!-- EJB Resource environment Reference Descriptions STARTS-->
      <resource-env-description>
        <resource-env-ref-name>MDB_QUEUE_RESPONSE</resource-env-ref-name>
        <!-- EJB Resource environment Reference Descriptions ENDS-->
        <!-- EJB Resource Reference Descriptions ENDS-->
        <!-- EJB Resource environment Reference Descriptions ENDS-->
        <resource-env-ref-name>MDB_QUEUE_DLQ</resource-env-ref-name>
        <resource-env-ref-name>MDB_QUEUE_DLQ</resource-env-ref-name>
        <resource-env-ref-name>SW_MDB_QUEUE_RESPONSE</resource-env-ref-name>
        <resource-env-ref-name>SW_MDB_QUEUE_RESPONSE</resource-env-ref-name>
        <!-- EJB Resource environment Reference Descriptions ENDS-->
        <!-- EJB Resource Reference Descriptions ENDS-->
        <!-- EJB Resource environment Reference Descriptions ENDS-->
        <dispatch-policy>GWMDBWM</dispatch-policy>
      </weblogic-enterprise-bean>
    </weblogic-ejb-jar>
  
```

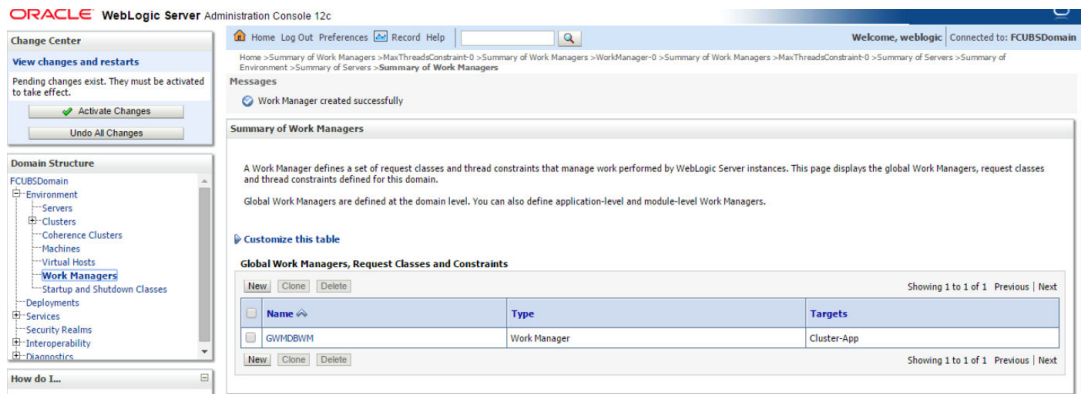
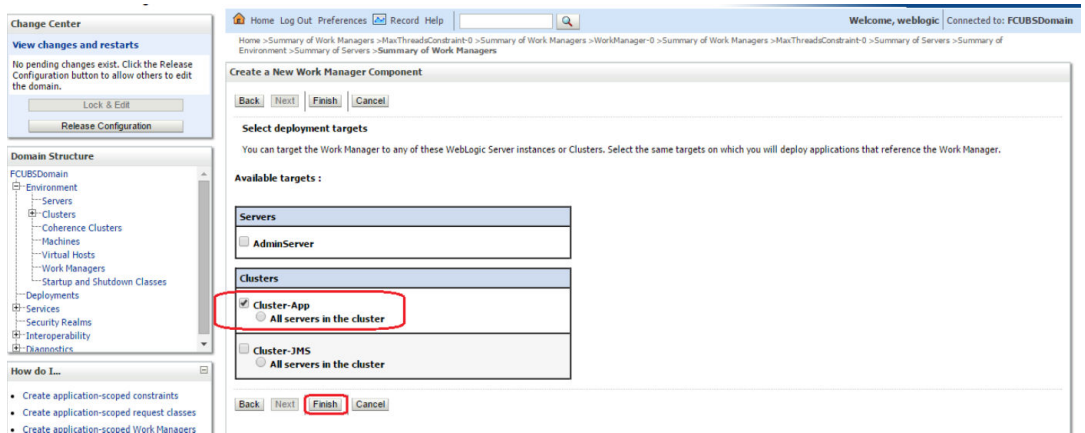
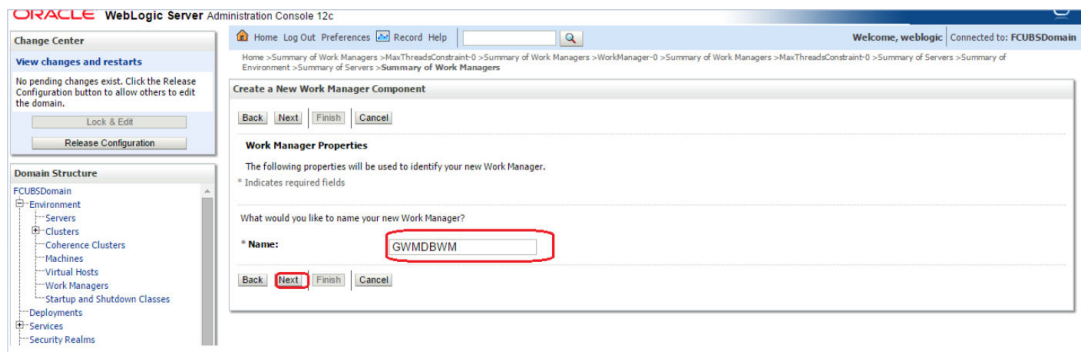
2. Remove if any of the below tags present in weblogic-ejb-jar.xml  
max-beans-in-free-pool and initial-beans-in-free-pool
3. Save the ear file and redeploy the EAR file.

## 7.6.2 Work Manager Creation

1. Login into weblogic console, navigate to Domain > Environment > WorkManager Create new workmanager with the name GWMDBWM(as mentioned in property file) by following below steps:







2. Create new Max Thread Constraint and in the Count field give the desired thread count.

**Change Center**  
View changes and restarts  
Pending changes exist. They must be activated to take effect.  
[Activate Changes] [Undo All Changes]

**Domain Structure**  
FCUBSDomain  
Environment  
Servers  
Clusters  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Security Realms  
Interoperability  
Diagnostics

**How do I...?**  
• Create application-scoped constraints  
• Create application-scoped request classes  
• Create application-scoped Work Managers

**Create a New Work Manager Component**  
[Back] [Next] [Finish] [Cancel]

**Select Work Manager Definition type**  
What type of Work Manager, Request Class or Constraint do you want to create?

- Work Manager
- Response Time Request Class
- Fair Share Request Class
- Context Request Class
- Maximum Threads Constraint**
- Minimum Threads Constraint
- Capacity Constraint

[Back] [Next] [Finish] [Cancel]

**Change Center**  
View changes and restarts  
Pending changes exist. They must be activated to take effect.  
[Activate Changes] [Undo All Changes]

**Domain Structure**  
FCUBSDomain  
Environment  
Servers  
Clusters  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Security Realms  
Interoperability  
Diagnostics

**How do I...?**  
• Create application-scoped constraints

**Create a New Work Manager Component**  
[Back] [Next] [Finish] [Cancel]

**Maximum Threads Constraint Properties**  
The following properties will be used to identify your new Max Threads Request Class.  
\* Indicates required fields

What would you like to name the new Maximum Threads Constraint?

\* Name: [MaxThreadsConstraint-0]

What is the maximum number of concurrent threads to allocate for requests? Enter either a fixed thread count or the name of a Data Source whose size will be used for the constraint.

Count: [25]

Data Source: [ ]

[Back] [Next] [Finish] [Cancel]

**Change Center**  
View changes and restarts  
Pending changes exist. They must be activated to take effect.  
[Activate Changes] [Undo All Changes]

**Domain Structure**  
FCUBSDomain  
Environment  
Servers  
Clusters  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Security Realms  
Interoperability  
Diagnostics

**How do I...?**  
• Create application-scoped constraints  
• Create application-scoped request classes  
• Create application-scoped Work Managers

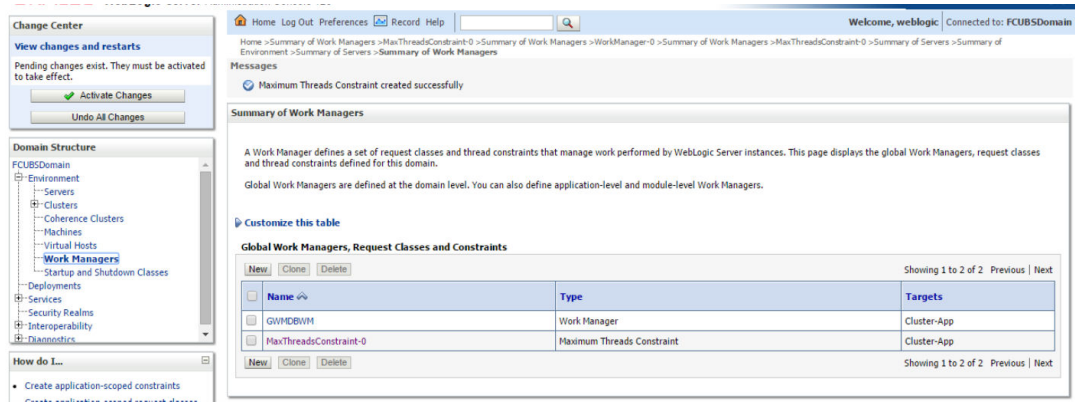
**Create a New Work Manager Component**  
[Back] [Next] [Finish] [Cancel]

**Select deployment targets**  
You can target the Work Manager to any of these WebLogic Server instances or Clusters. Select the same targets on which you will deploy applications that reference the Work Manager.

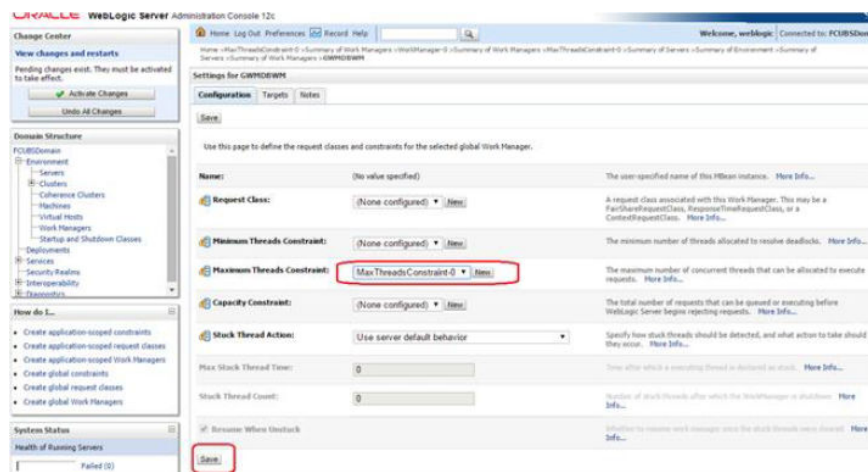
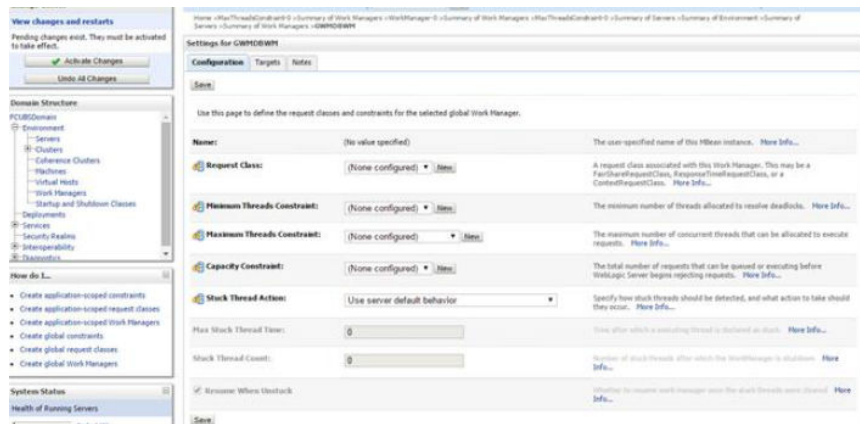
**Available targets:**

- Servers**  
 AdminServer
- Clusters**  
 **Cluster-App**  
 All servers in the cluster
- Cluster-JMS  
 All servers in the cluster

[Back] [Next] [Finish] [Cancel]



3. Modify the newly created workmanager and assign the Maximum Thread Constraint that is created in above step.



4. Restart managed servers and notice the change in the number of consumers for the QUEUE'S.

## 7.7 How High Availability is Achieved

1. Application Server:

MDB\_MODULE and the GWEJB ear are deployed in a cluster. Cluster has 4 managed servers, if any server goes down then the messages are processed by other managed servers.

**2. JMS Provider:**

JMS is deployed on 2 managed servers, JMSServer1 and JMSServer2, if any one goes down other will handle the messages.

**3. FileStore:**

File store is a cluster file system or database where if one node goes down then other will handle the requests.

**4. DB Server:**

Database is installed in RAC mode where it has more than 1 node, if a node goes down then other nodes will handle messages.

## 7.8 How to setup for Scheduler/Notifications

The above document can be used for setting up JMS for scheduler/notifications but additional queues and connection factory needs to be created.

## 7.9 What other modules uses JMS Queue's

JMS is used by following modules, relevant queues and factories needs to be created additionally,

1. EMS for swift messages
2. GI for upload
3. ELCM
4. BIP

## 7.10 References

1. FCUBS\_12.1\_Weblogic12c\_Middleware\_Practices.doc
2. GATEWAY\_Applications\_WL.doc
3. Resource\_Creation\_WL.doc

# Glossary

# Index