

# Oracle® Banking Payments

## Payments Weblogic JMS Configuration



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ORACLE®

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# 1

## Preface

- [Purpose](#)
- [Audience](#)  
This manual is intended for the following User/User Roles:
- [Documentation Accessibility](#)
- [Critical Patches](#)
- [Diversity and Inclusion](#)
- [Conventions](#)

### 1.1 Purpose

This guide is designed to help acquaint you with the Oracle Banking Payments application. This guide provides answers to specific features and procedures that the user need to be aware of the module to function successfully.

### 1.2 Audience

This manual is intended for the following User/User Roles:

**Table 1-1 User Roles**

Role	Function
Implementation & IT Staff	Implementation & Maintenance of the Software

### 1.3 [Documentation Accessibility](#)

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

#### **Access to Oracle Support**

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

### 1.4 Critical Patches

Oracle advises customers to get all their security vulnerability information from the Oracle Critical Patch Update Advisory, which is available at [Critical Patches, Security Alerts and Bulletins](#). All critical patches should be applied in a timely manner to make sure effective security, as strongly recommended by [Oracle Software Security Assurance](#).

## 1.5 Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

## 1.6 Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

# 2

## Introduction

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

### 2.1 Purpose

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

- FCUBS 12.1
- WebLogic Server 12.1.3.0.0

### 2.2 Introduction

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

#### **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.

## 2.3 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 2-1 Architecture previous to 12c**

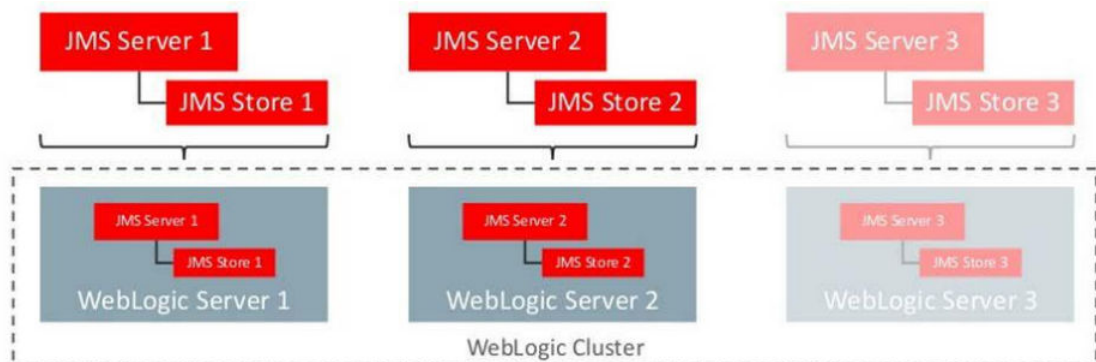
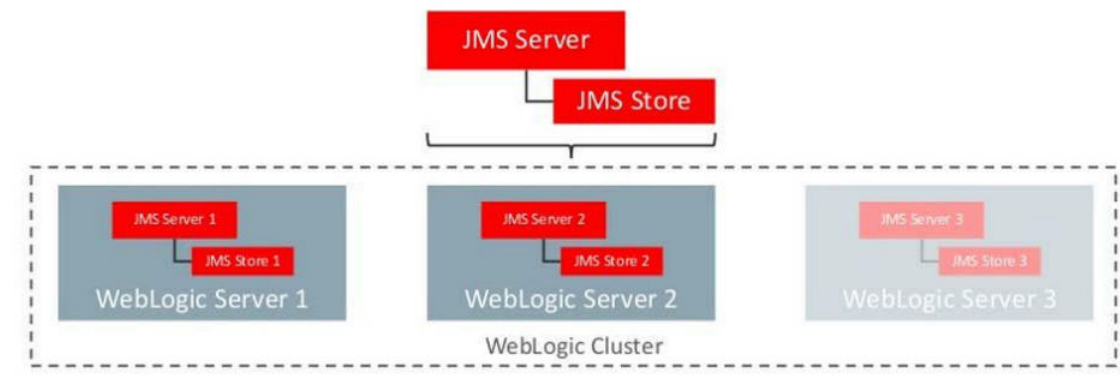


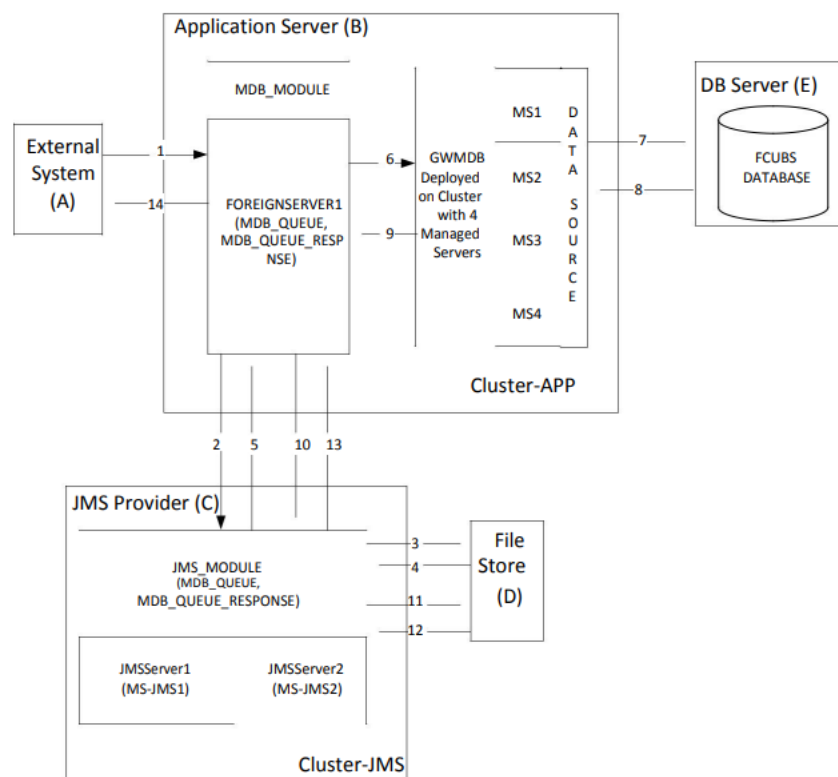
Figure 2-2 Architecture in 12c



## 2.4 Components Diagram & Data Flow

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

Figure 2-3 Components Diagram & Data Flow



**Servers Involved:**

- External System interacts with the application C server
- Application Server can be Weblogic or Websphere and has managed servers clustered
- JMS Provider exposes the Queue's and this can be Weblogic or Websphere. Here JMS\_MODULE is Cluster-APP deployed on 2 new MS's but it can be done even on MS's that are part of Cluster-APP(MS1-MS4)
- FileStore is the persistence store which stores 2 5 10 13 the messages, this can be database or clustered file system
- Database Server which has FCUBS database

**Data Flow:**

- External System sends message to MDB\_MODULE
- MDB\_MODULE internally sends message to JMS\_MODULE
- JMS\_MODULE stores message in FILESTORE. A request JMS\_MODULE 4 Store queue is formed at FILESTORE as and when messages are received
- Message is sent to JMS\_MODULE in FIFO
- Message is sent to MDB\_MODULE
- GWMDB application picks up the message for processing
- GWMDB after validating against XSD sends message to FCUBS database for processing
- Response from DB to MDB
- Response from MDB to MDB\_MODULE
- MDB\_MODULE sends response to JMS\_MODULE
- RESPONSE is stored in FILESTORE. A response queue is formed in FILESTORE as and when messages are received
- Message is sent to JMS\_MODULE in RESPONSE QUEUE in FIFO
- External system to read the response message from Response Queue

# 3

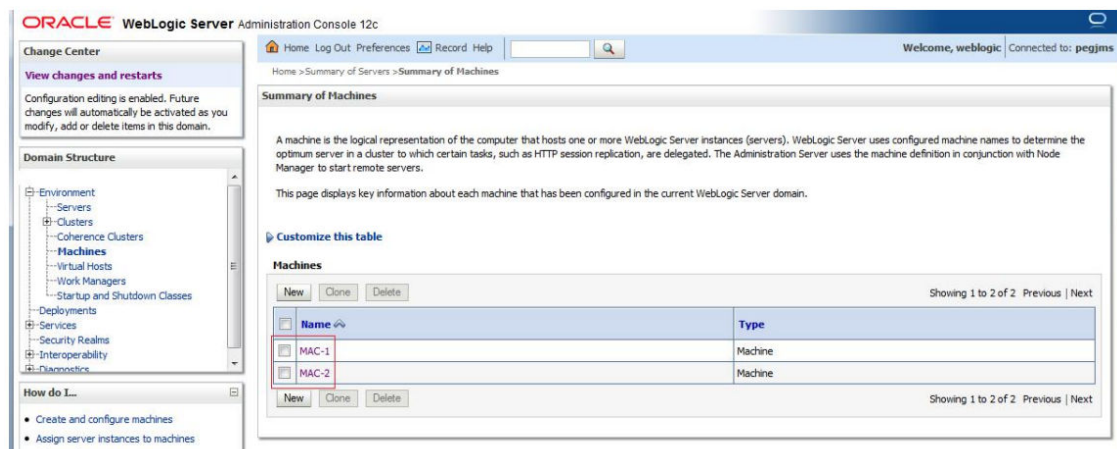
## Pre-Requisites

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

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

### 3.1 Machines

**Figure 3-1 MAC-1 & MAC-2**



### 3.2 Dynamic Clusters and Managed Servers

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

Figure 3-2 Dynamic Clusters and Managed Servers

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains the 'Domain Structure' tree with 'Clusters' selected. The main content area is titled 'Summary of Clusters' and displays a table of configured clusters.

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

Figure 3-3 Dynamic Clusters and Managed Servers

The screenshot shows the Oracle WebLogic Server Administration Console with the 'Summary of Servers' page selected. It displays a table of configured servers.

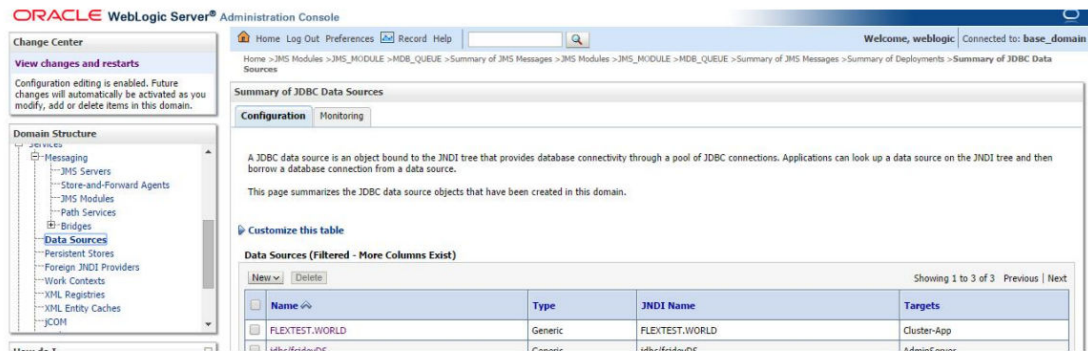
Name	Type	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	Configured			RUNNING	OK	7001
DC_FCUBS_1	Dynamic	Cluster-App	MACH-1	SHUTDOWN	Not reachable	7101
DC_FCUBS_2	Dynamic	Cluster-App	MACH-2	SHUTDOWN	Not reachable	7102
DC_FCUBS_3	Dynamic	Cluster-App	MACH-1	SHUTDOWN	Not reachable	7103
DC_FCUBS_4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

## 3.3 DataSource

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



Figure 3-4 DataSource



## 3.4 Shared Folder

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

# 4

## JMS Configuration

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

### 4.1 Persistence Store Creation

1. Go to **Services** and click **Persistent Stores**.
2. Under **Persistent Stores**, click **New** and select **Create FileStore**.

Figure 4-1 Summary of Persistent Stores

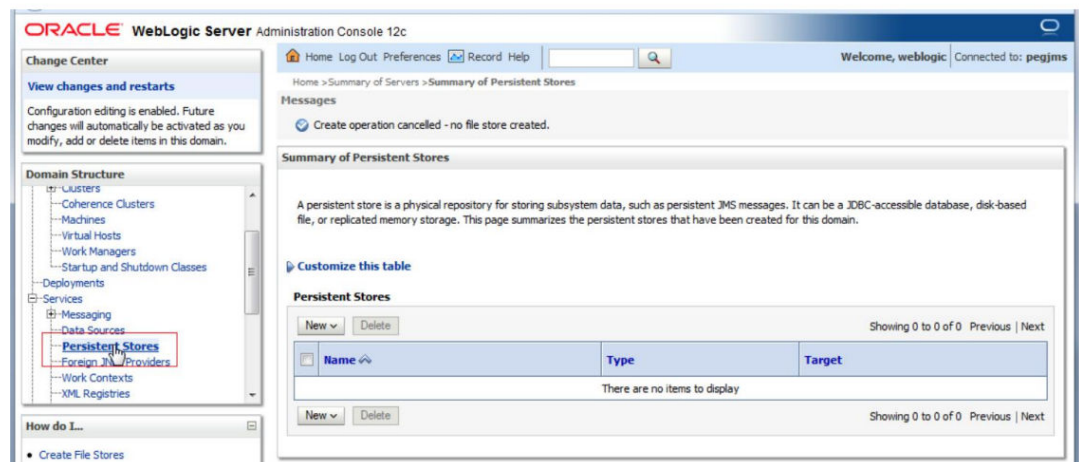
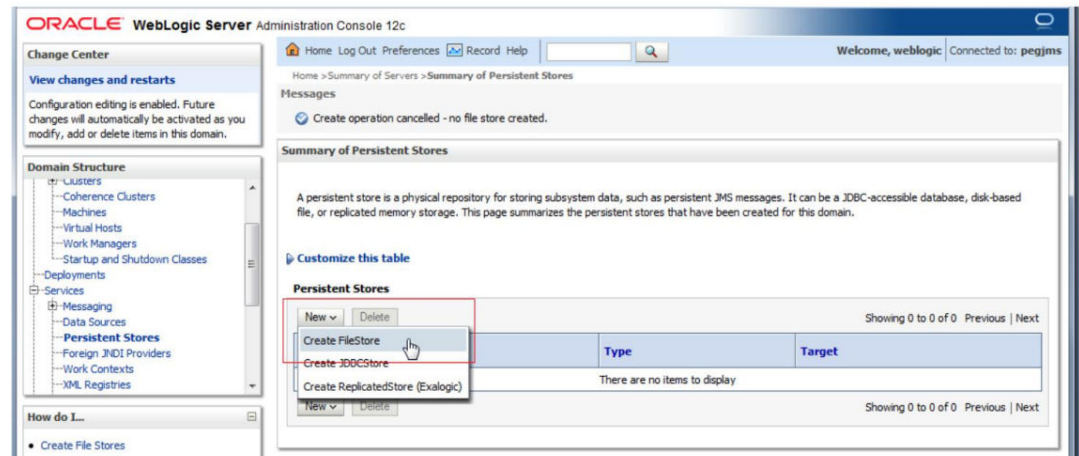


Figure 4-2 Summary of Persistent Stores



3. Select Cluster-JMS under target dropdown and Click on OK.

Figure 4-3 Create a New File Store

**ORACLE WebLogic Server Administration Console 12c**

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: FCUBSDomain

Home > Summary of Clusters > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Clusters > Cluster-JMS > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Persistent Stores

**Create a New File Store**

OK Cancel

**File Store Properties**

The following properties will be used to identify your new file store.

\* Indicates required fields

What would you like to name your new file store?

\* Name: FileStore-1

Select a server instance for this file store.

Target: Cluster-JMS

The pathname to the directory on the file system where the file store is kept. This directory must exist on your system, so be sure to create it before completing this tab.

Directory: /scratch/work\_area/JMS\_FILESTORE

OK Cancel

4. FileStore-1 is created.

Figure 4-4 Summary of Persistent Stores

**ORACLE WebLogic Server Administration Console 12c**

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: FCUBSDomain

Home > Summary of Clusters > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Clusters > Cluster-JMS > Summary of Servers > Summary of Clusters > Summary of Servers > Summary of Persistent Stores

**Summary of Persistent Stores**

All changes have been activated. No restarts are necessary.

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**

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

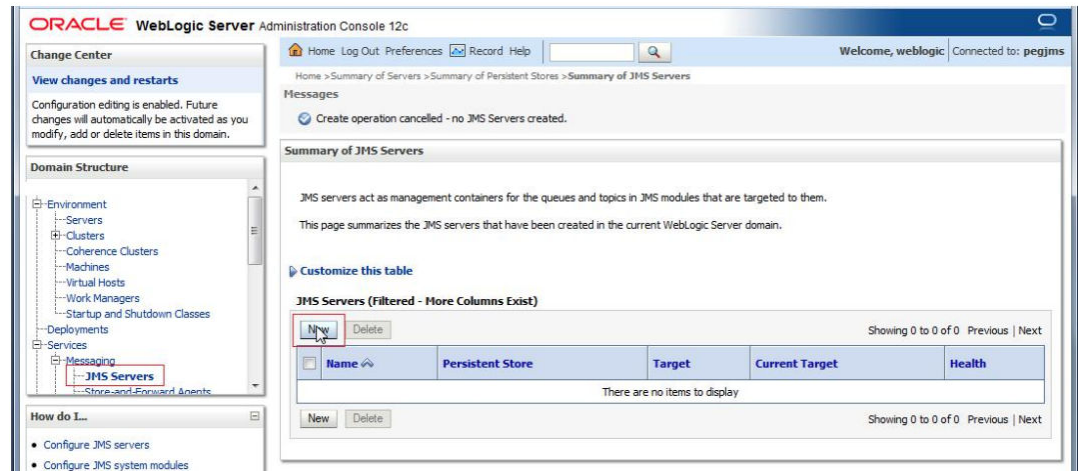
Name	Type	Target
FileStore-1	FileStore	Cluster-JMS

Showing 1 to 1 of 1 Previous Next

## 4.2 JMS Server Creation

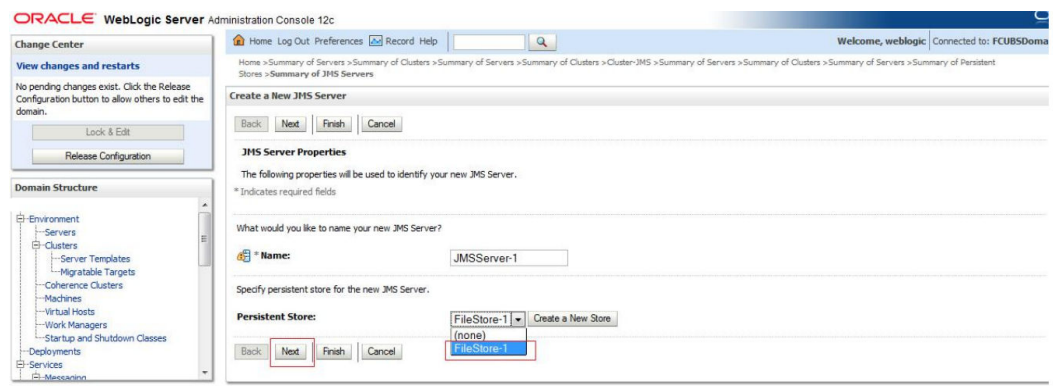
1. Go to **Services** then **Messaging**.
2. Select **JMS Servers** and click on **New**.

Figure 4-5 Summary of JMS Servers



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

Figure 4-6 Create a New JMS Servers



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

Figure 4-7 Create a New JMS Servers

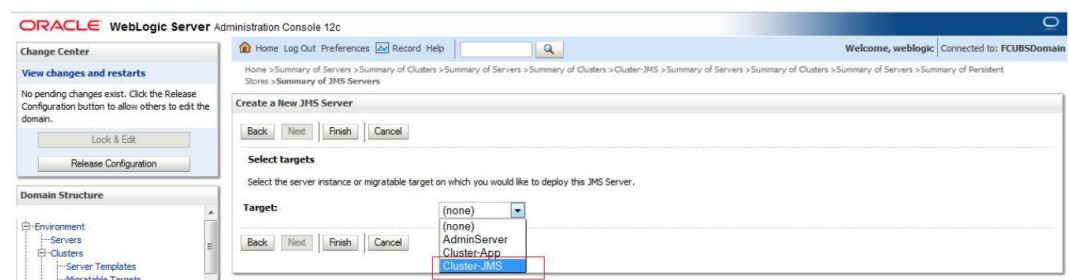
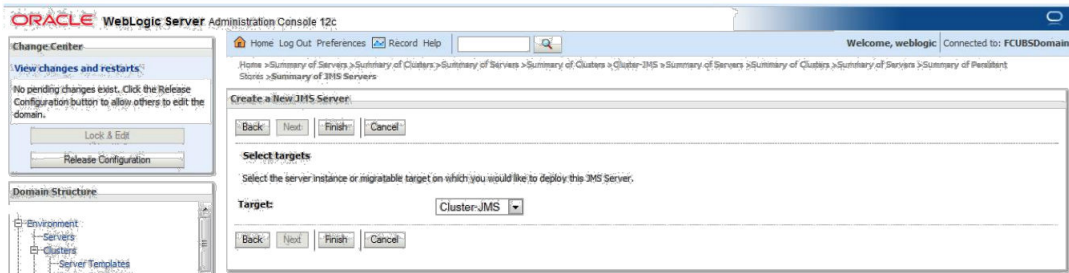
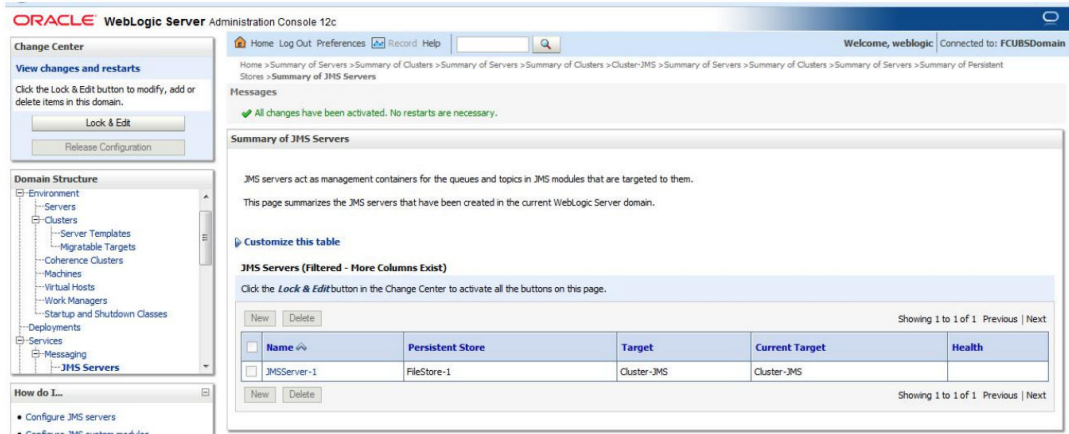


Figure 4-8 JMS Server



5. JMS-Server-1 is created.

Figure 4-9 Create a New JMS Server



6. In NFS below filestores can be seen

Figure 4-10 NFS

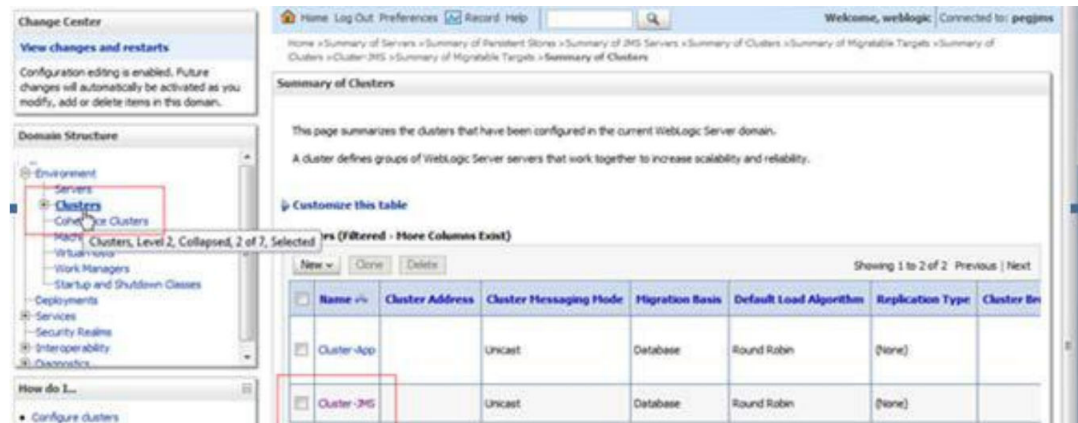
```
[root@ JMS_FILESTORE]# ll
total 2056
-rw-r----- 1 wl12c oinstall 1049088 Jun 16 14:10 FILESTORE-1@DC_JMS_1000000.DAT
-rw-r----- 1 wl12c oinstall 1049088 Jun 16 14:10 FILESTORE-1@DC_JMS_2000000.DAT
[root@ JMS_FILESTORE]# pwd
/scratch/work_area/JMS_FILESTORE
[root@ JMS_FILESTORE]#
```

## 4.3 Cluster Configuration for Service Migration

1. Click on Environment, select Clusters and then Cluster-JMS

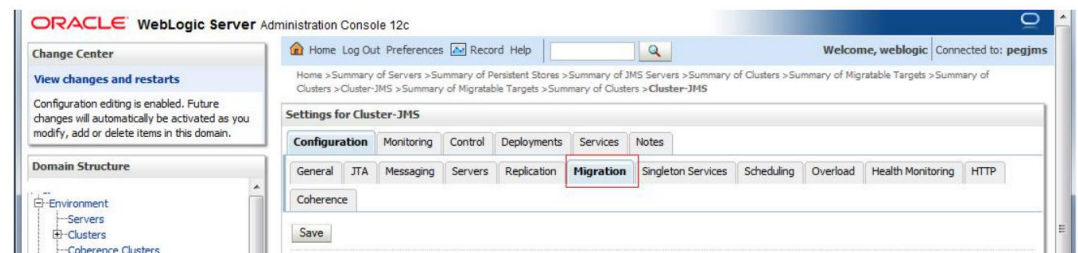


Figure 4-11 Summary of Clusters



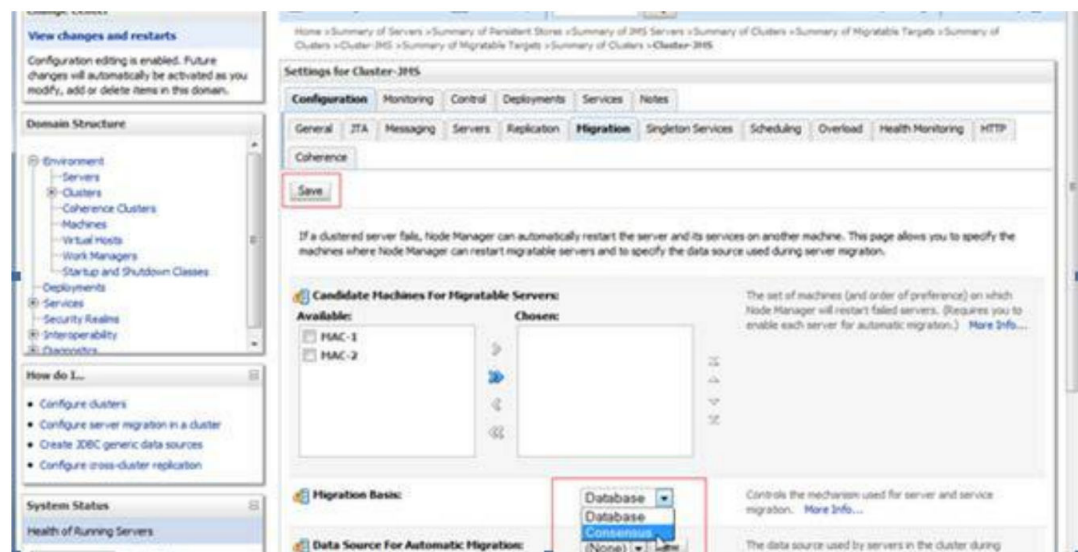
- Click on **Migration** Tab

Figure 4-12 Summary of Clusters-JMS



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

Figure 4-13 Summary of Clusters-JMS



# 5

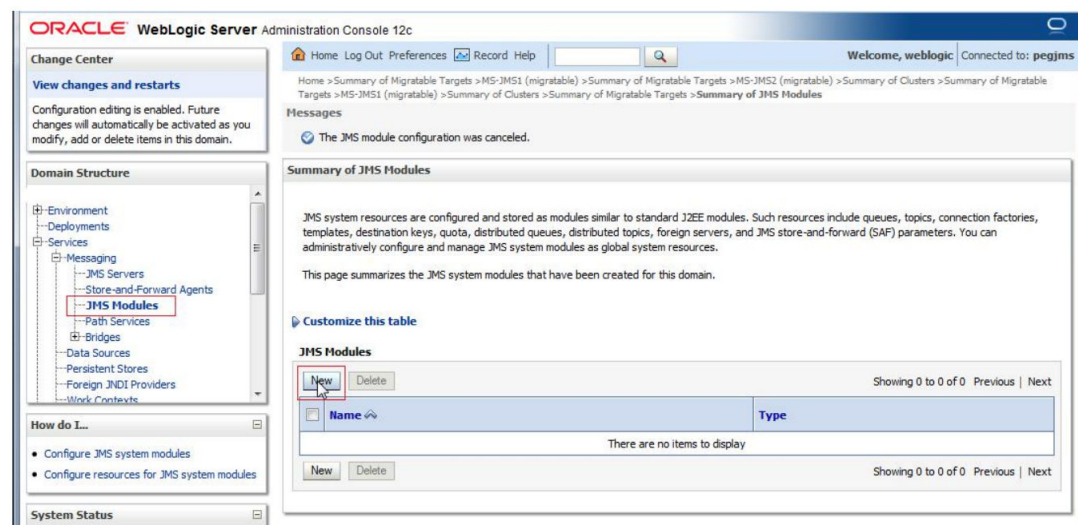
## JMS Module Creation

- Module Creation
- Sub Deployment Creation
- Resource Creation

### 5.1 Module Creation

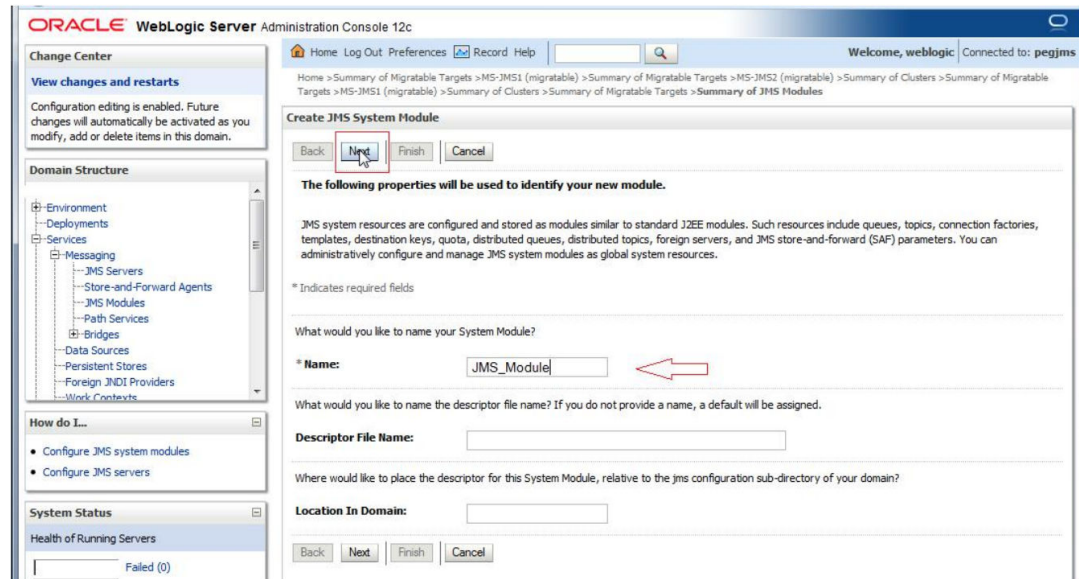
1. Go to **Services**, select **Messaging** and then **JMS Modules**.
2. Under **JMS Modules** and Click on **New**.

Figure 5-1 Summary of JMS Modules



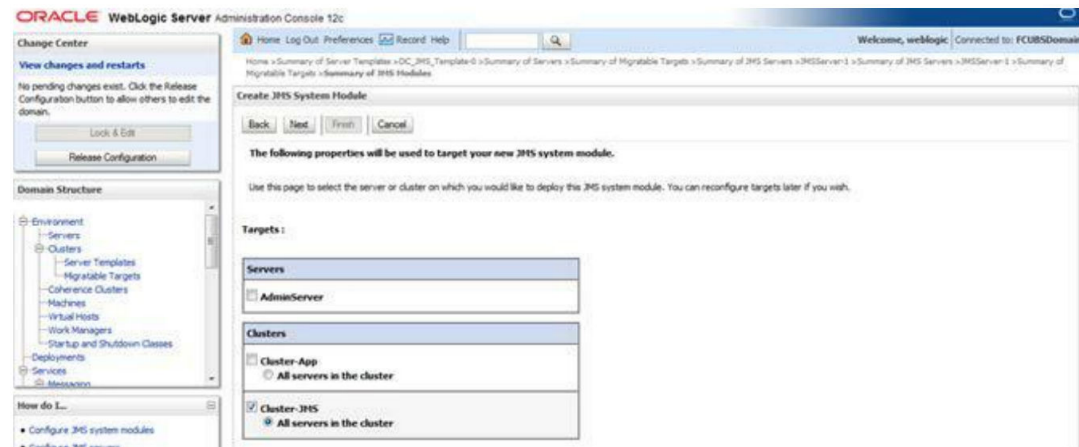
3. Enter name as JMS\_MODULE and Click on **Next**.

Figure 5-2 Create JMS System Module



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

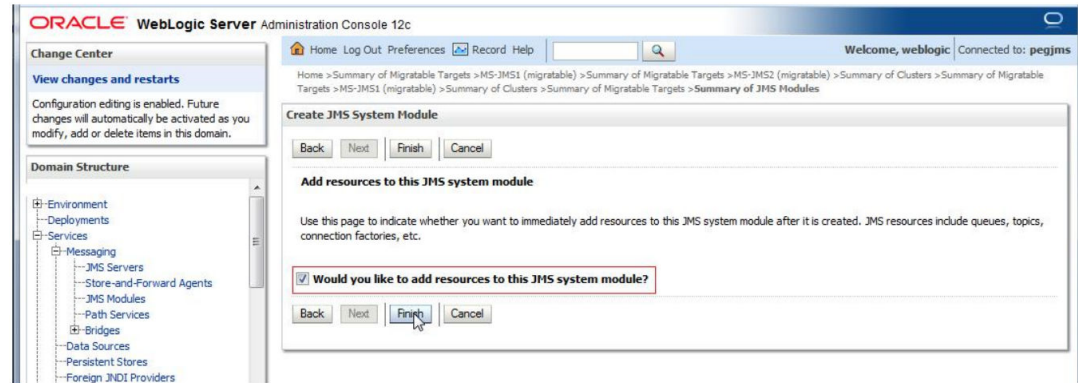
Figure 5-3 Create JMS System Module



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

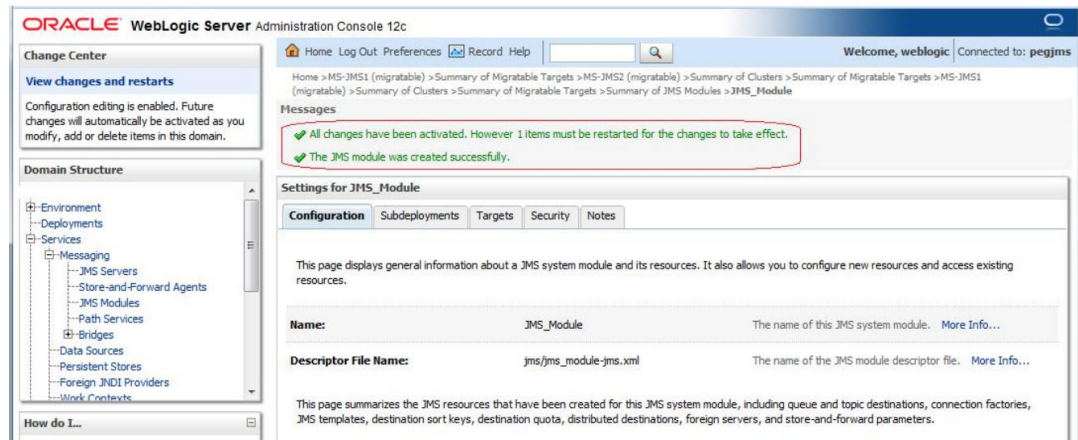


Figure 5-4 Create JMS System Module



6. JMS\_MODULE is created.

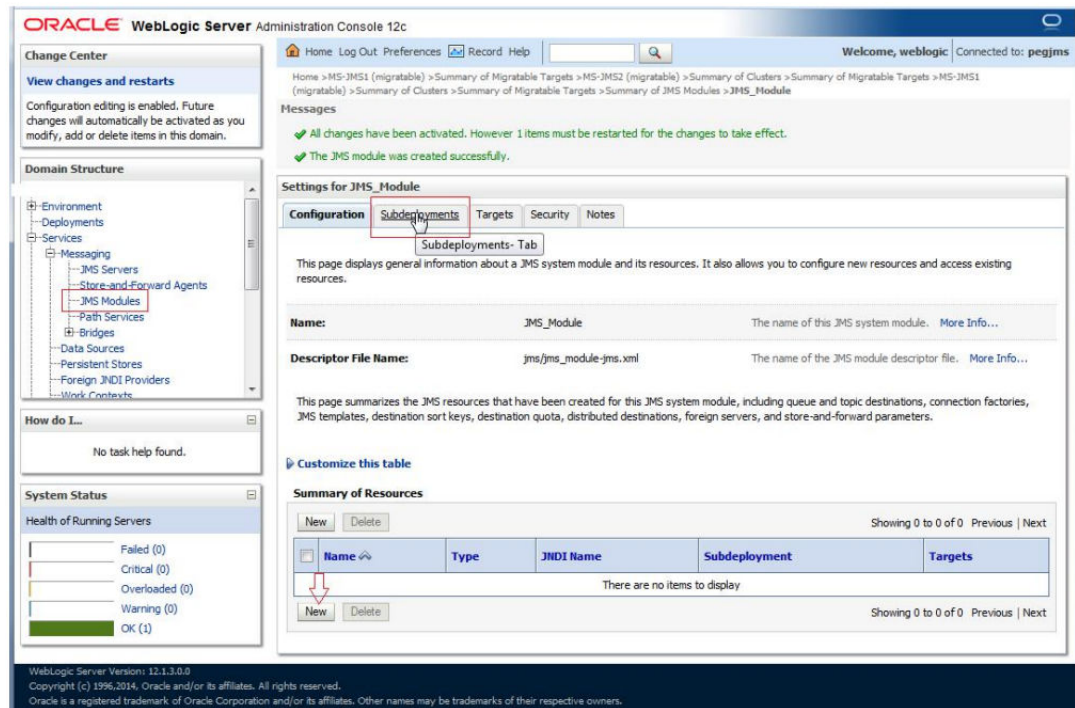
Figure 5-5 Settings for JMS\_Module



## 5.2 Sub Deployment Creation

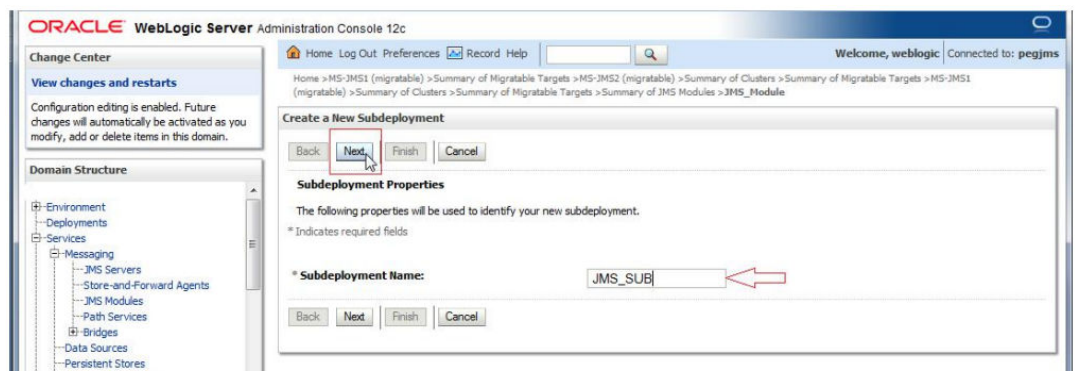
1. In JMS\_MODULE, Click on Sub Deployment tab , Click on **New**.

Figure 5-6 Settings for JMS Module



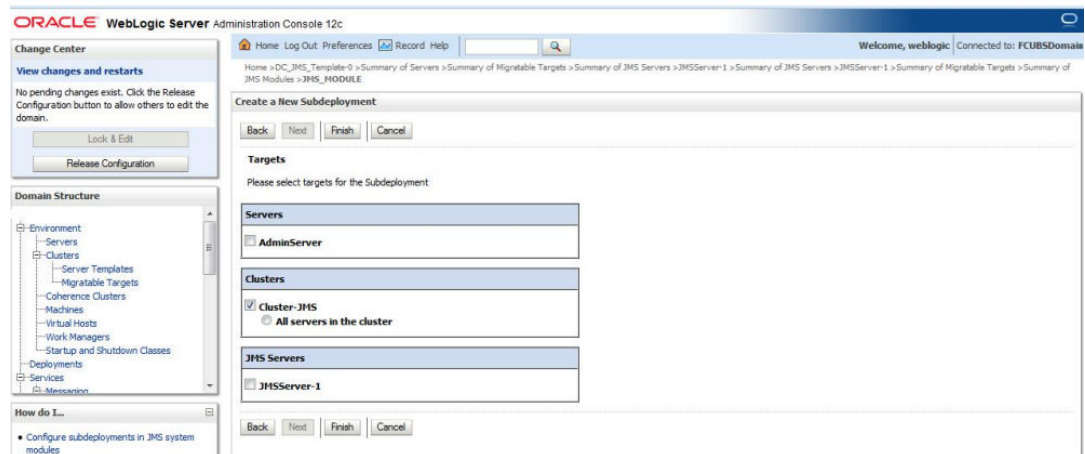
2. Enter name as JMS\_SUB and click on Next.

Figure 5-7 Create a New Subdeployment



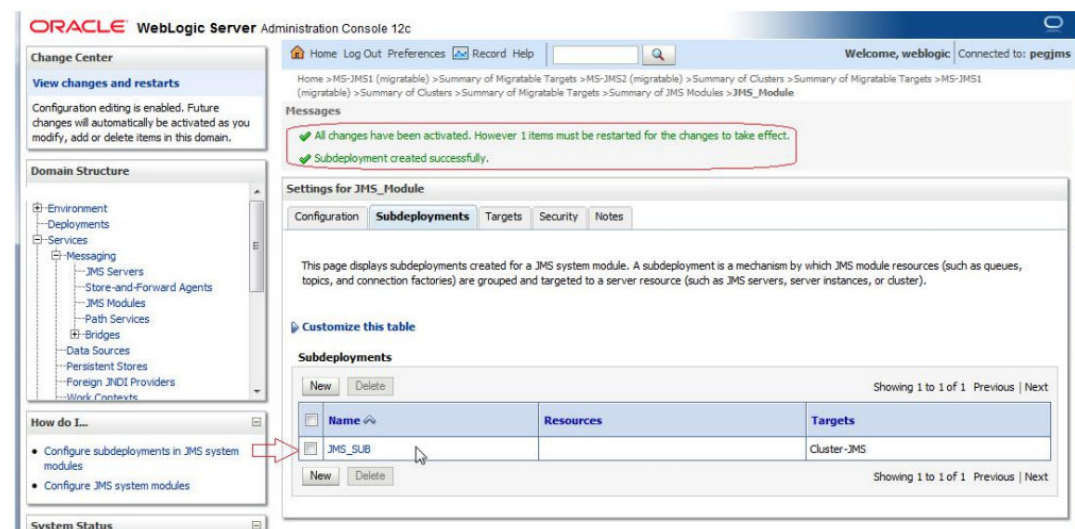
3. Select Target as Cluster-JMS and Click on Finish.

Figure 5-8 Create a New Subdeployment



4. Sub-Deployment is created.

Figure 5-9 Settings for JMS\_Module



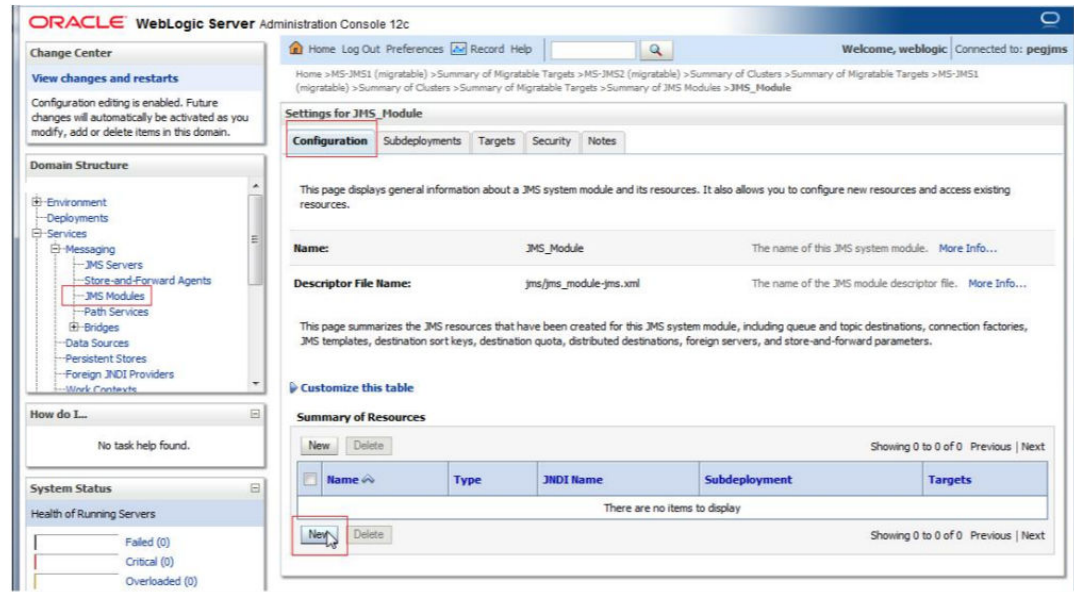
## 5.3 Resource Creation

- Queue Creation
- Connection Factory Creation

### 5.3.1 Queue Creation

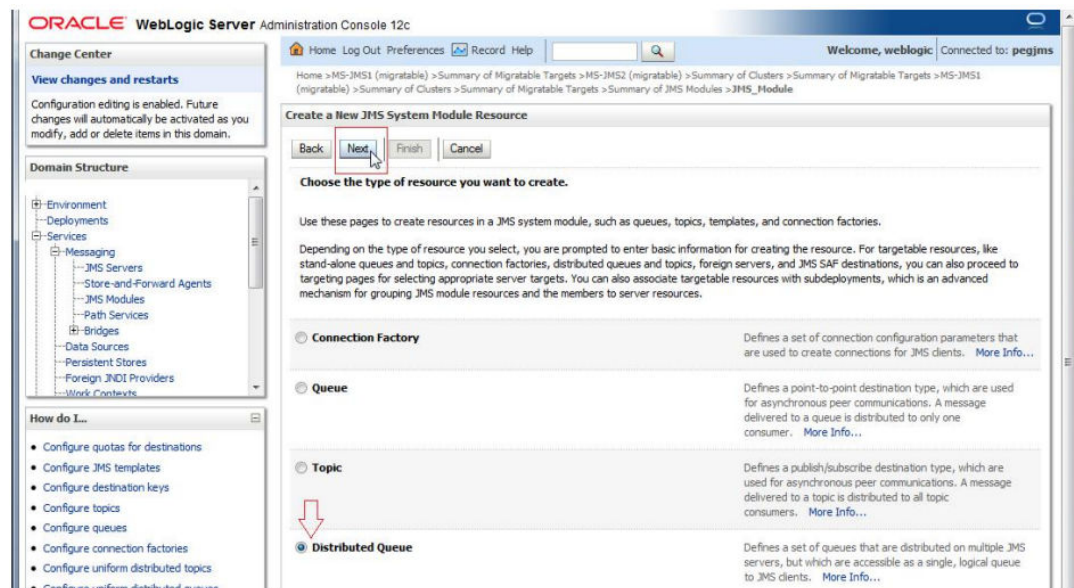
1. In JMS\_MODULE Click on **New**.

Figure 5-10 Settings for JMS Module



2. Select Distributed Queue and Click on Next.

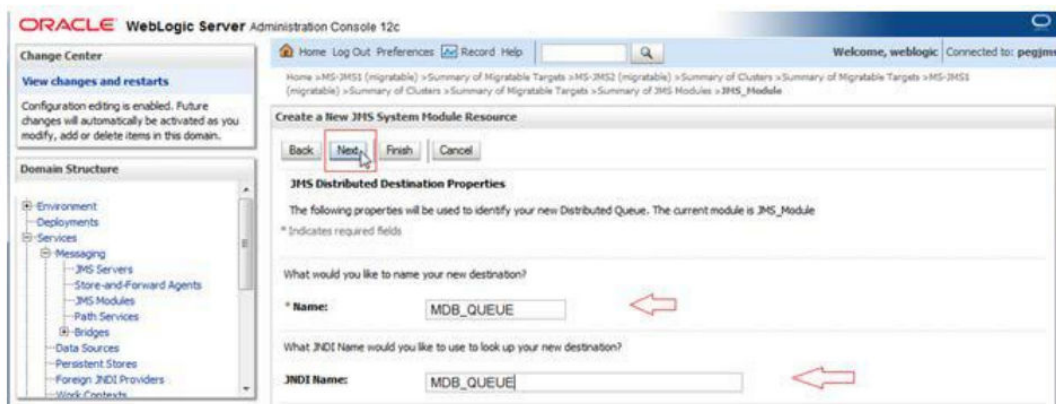
Figure 5-11 Create a New JMS System Module Resource



3. Enter the queue name and Click on Next.

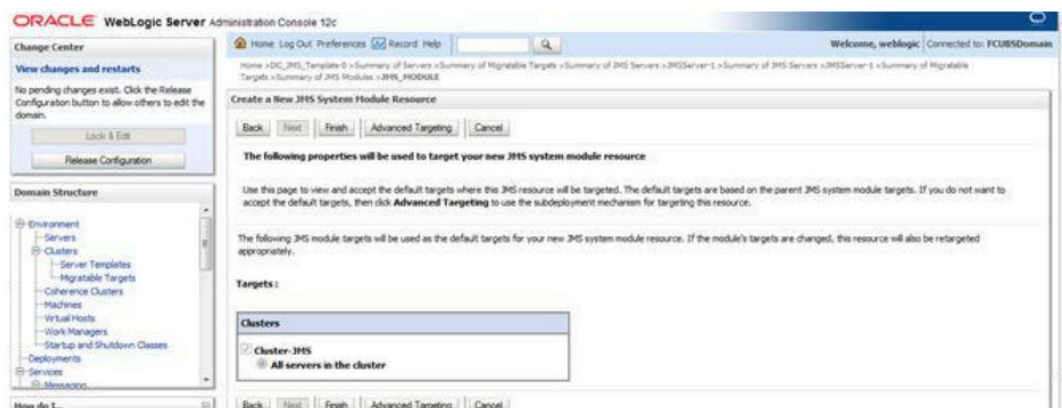


Figure 5-12 Create a New JMS System Module Resource



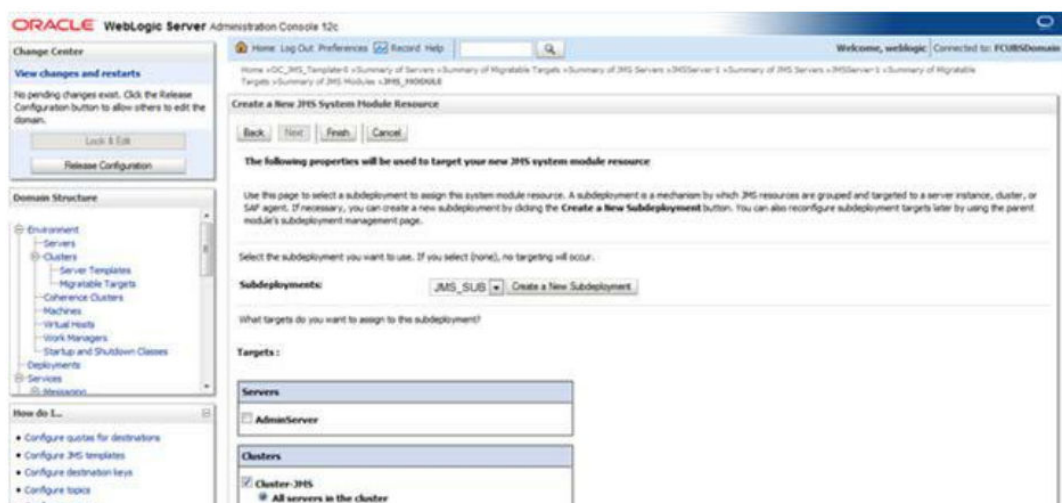
4. Click on **Advance Targeting**.

Figure 5-13 Create a New JMS System Module Resource



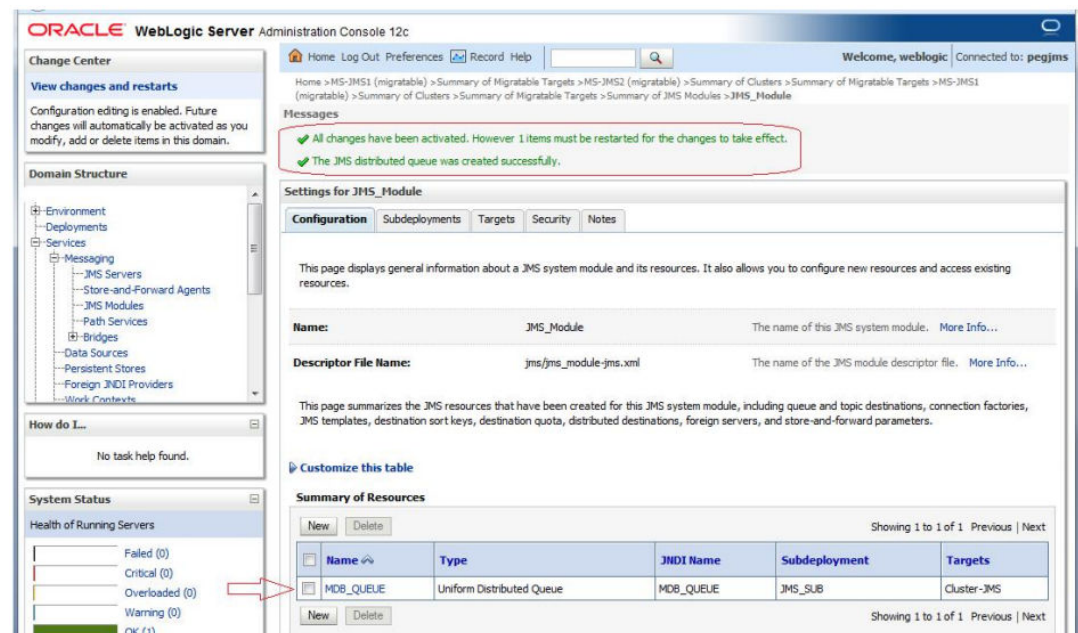
5. Select Subdeployment as JMS\_SUB and Click on **Finish**.

Figure 5-14 Create a New JMS System Module Resource



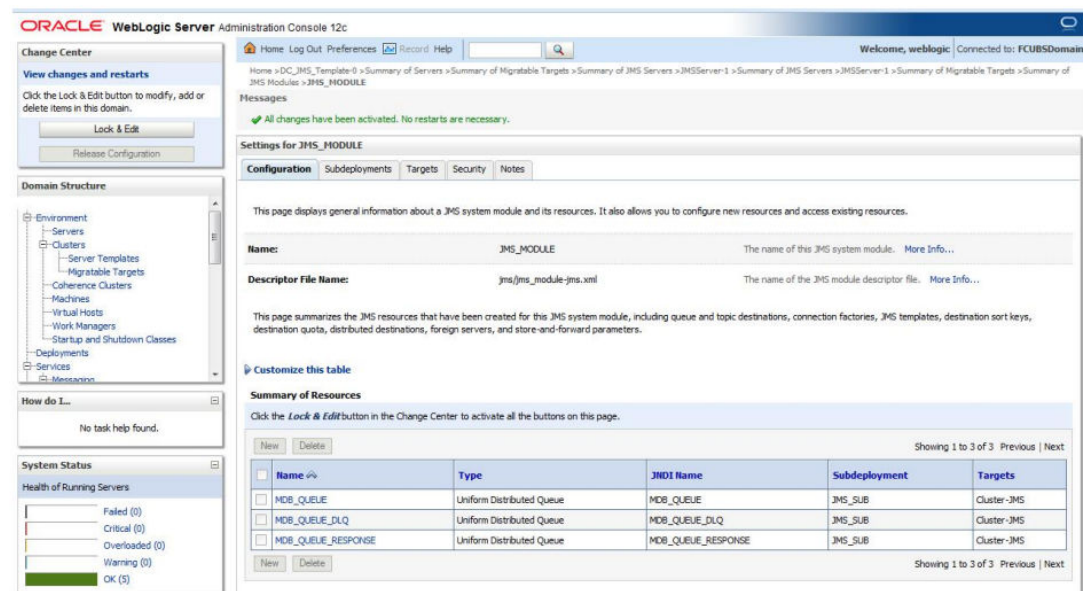
6. MDB\_QUEUE is created.

Figure 5-15 Settings for JMS\_Module



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

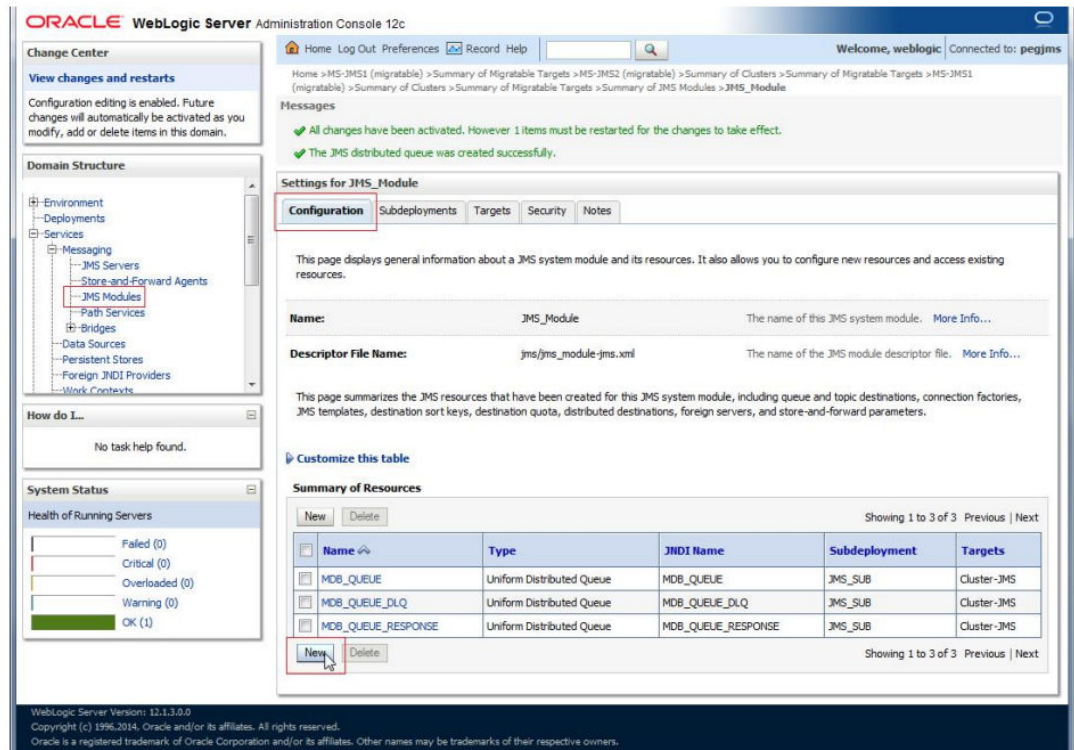
Figure 5-16 Settings for JMS Module



## 5.3.2 Connection Factory Creation

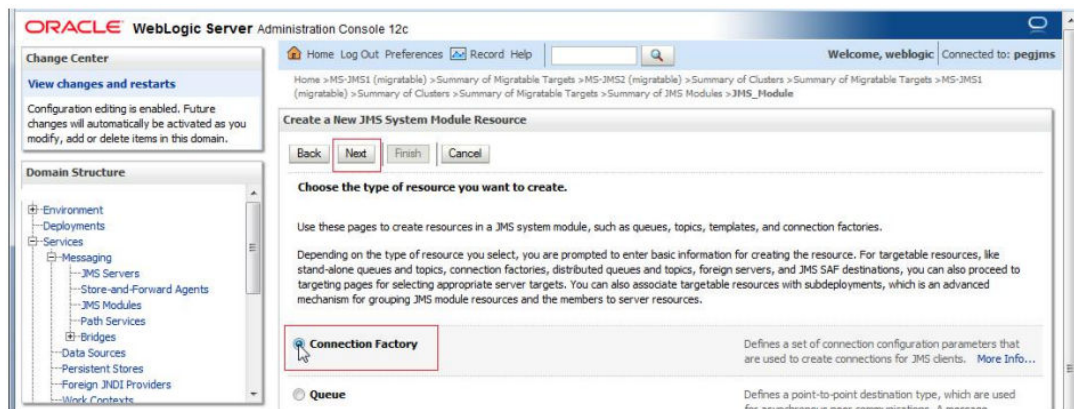
1. In JMS\_MODULE Click on **New**.

Figure 5-17 Settings for JMS Module



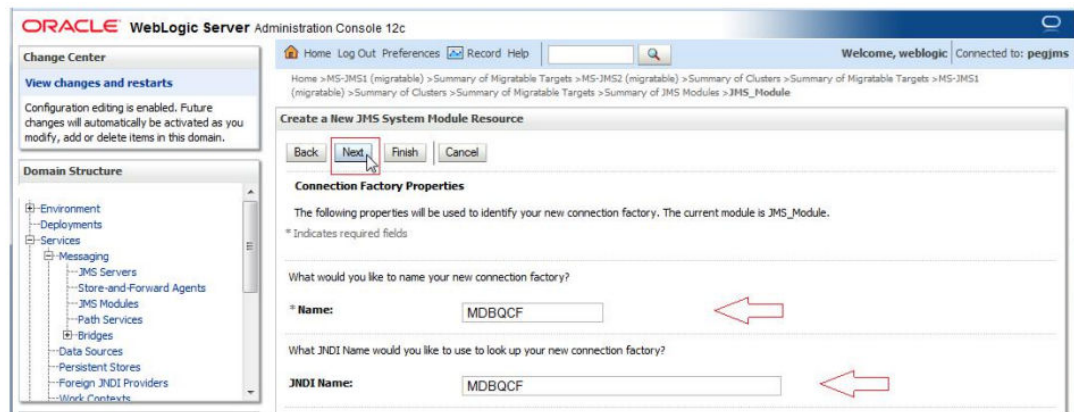
2. Select Connection Factory and click on Next.

Figure 5-18 Create a New JMS System Module Resource



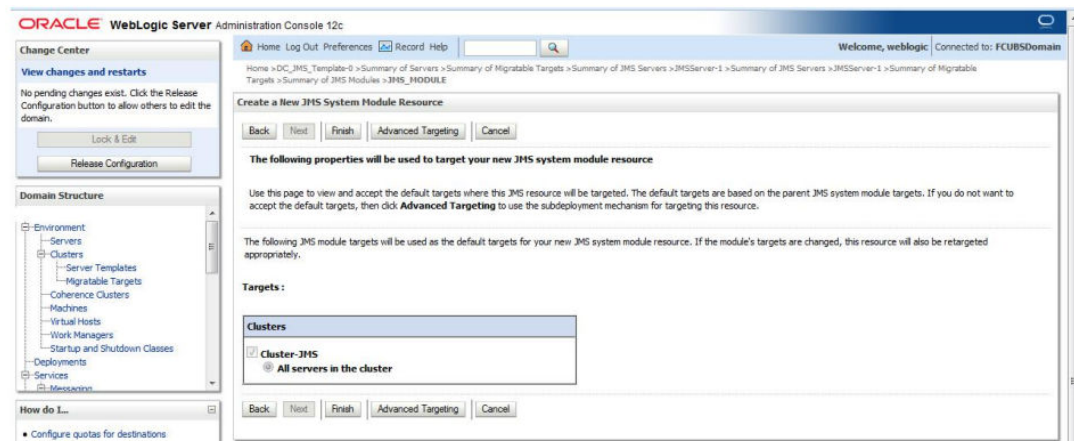
3. Enter the Name and Click on Next.

Figure 5-19 Create a New JMS System Module Resource



4. Click on **Advance Targeting**.

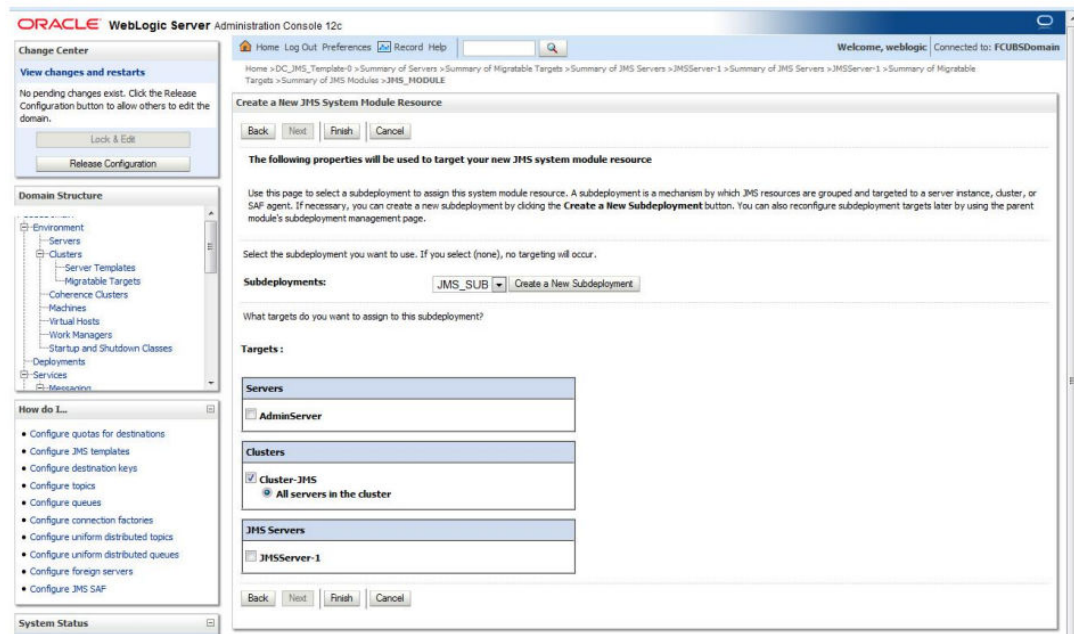
Figure 5-20 Create a New JMS System Module Resource



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

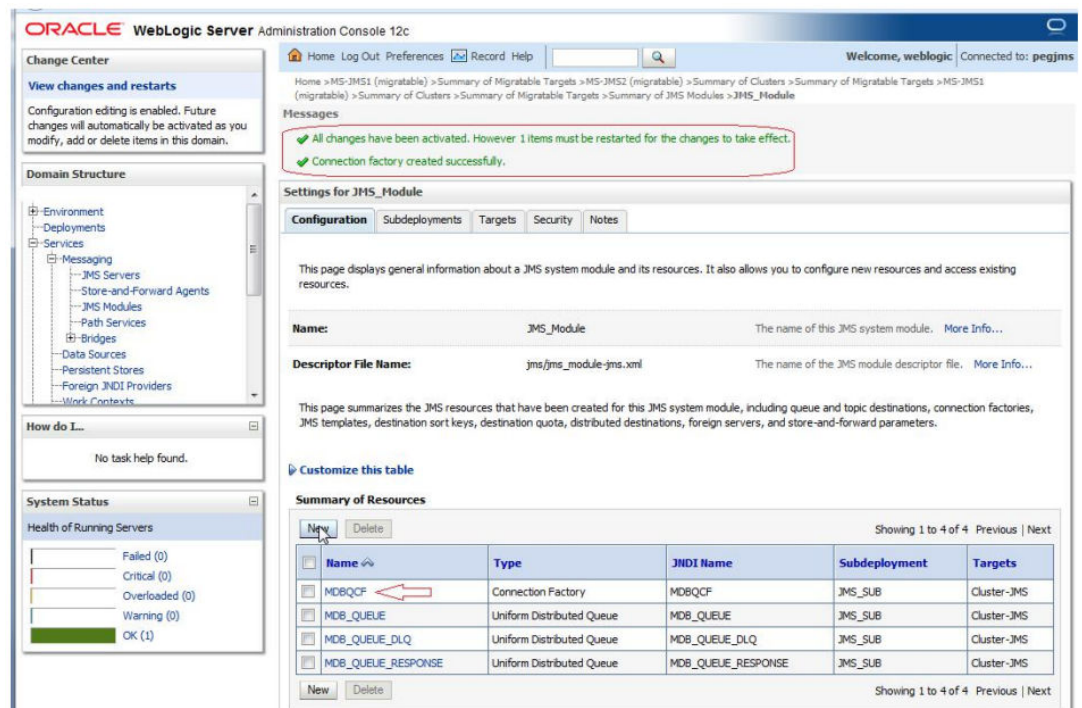


Figure 5-21 Create a New JMS System Module Resource



6. Connection Factory is created.

Figure 5-22 Settings for JMS\_Module



# 6

## Server Restart

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

Figure 6-1 Summary of Servers

**Summary of Servers**

A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration. This page summarizes each server that has been configured in the current WebLogic Server domain.

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

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

Name	Type	Cluster	Machine	State	Health	Listen Port
AdminServer(admin)	Configured			RUNNING	OK	7001
DC_FOUBS_1	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7101
DC_FOUBS_2	Dynamic	Cluster-App	MAC-2	SHUTDOWN	Not reachable	7102
DC_FOUBS_3	Dynamic	Cluster-App	MAC-1	SHUTDOWN	Not reachable	7103
DC_FOUBS_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'

Figure 6-2 Summary of Server Templates

**Summary of Server Templates**

This page summarizes each server template that has been configured in the current WebLogic Server domain. A server template contains common, non-default attributes that you can apply to a set of server instances, which then inherit the template configuration. Server templates enable you to easily manage configuration for a group of server instances in one centralized location.

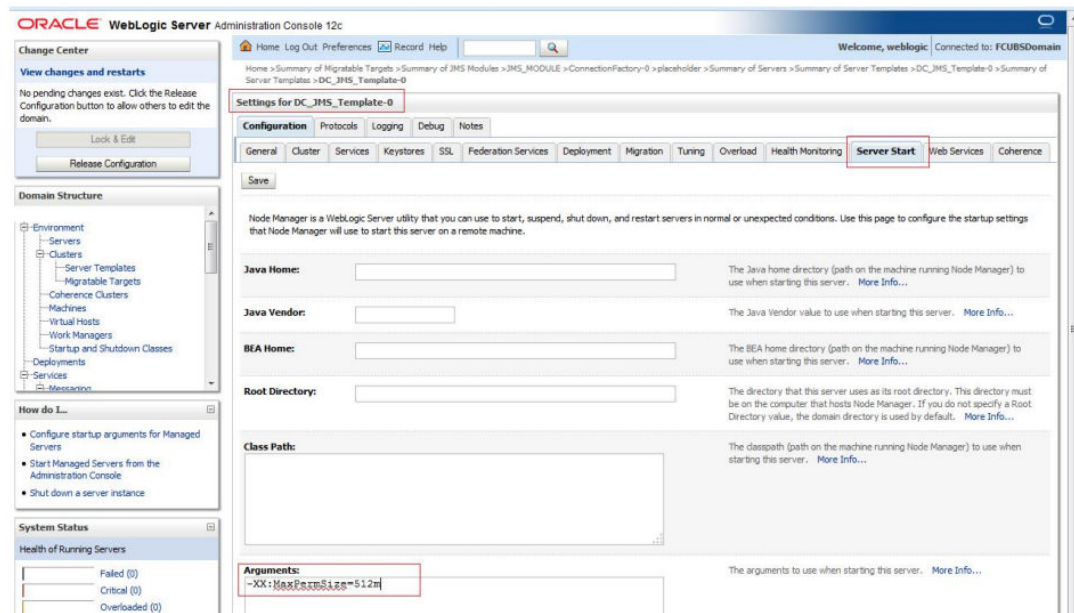
**Server Templates**

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

Name	Cluster	Machine	Listen Port	Listen Address
DC_FOUBS_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`.

Figure 6-3 Settings for DC\_JMS\_Template-0



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

# 7

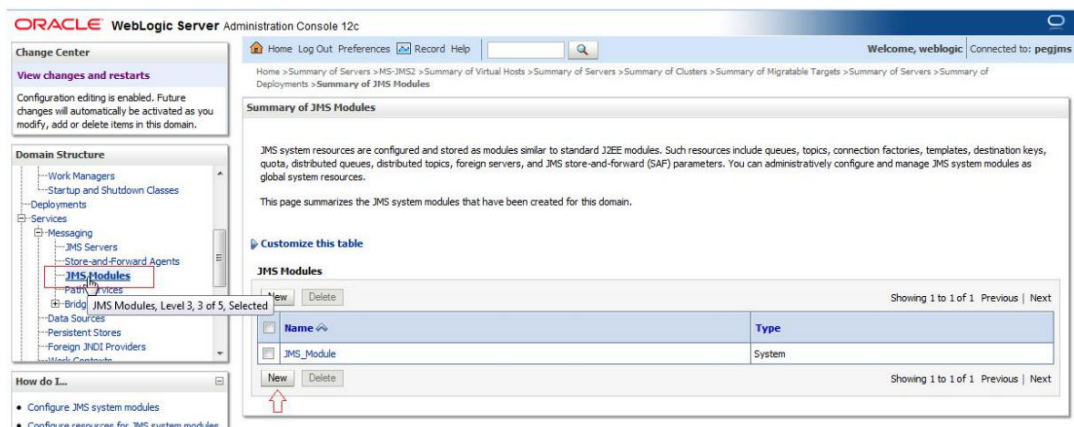
## Foreign Server Creation

- Module Creation
- Foreign Server Creation
- Foreign Server Configuration

### 7.1 Module Creation

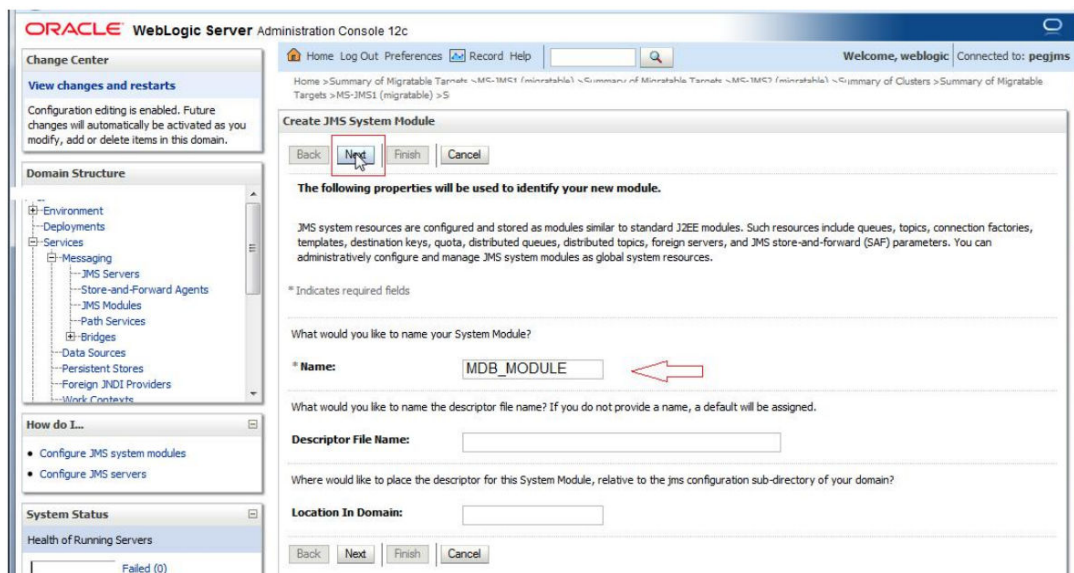
1. JMS\_Modules and Click on **New**.

**Figure 7-1 Summary of JMS Modules**



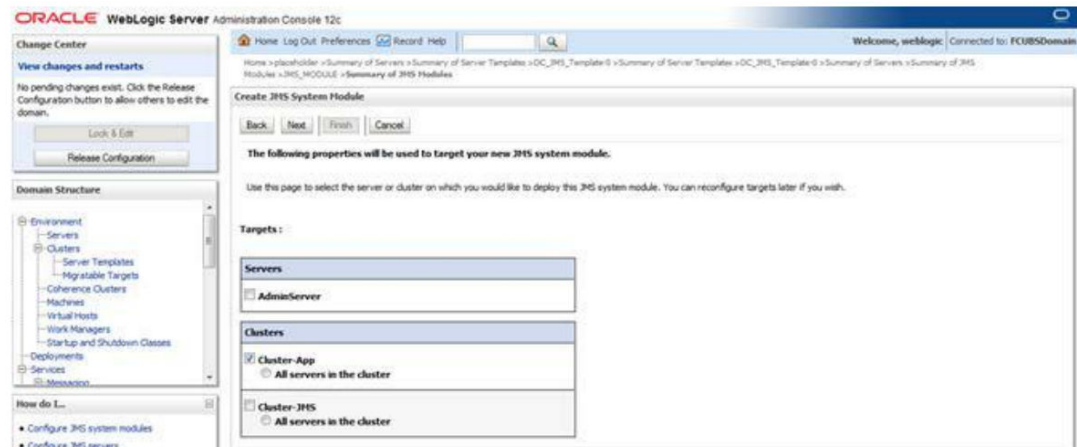
2. Enter name as MDB\_MODULE and Click on **Next**.

**Figure 7-2 Create JMS System Module**



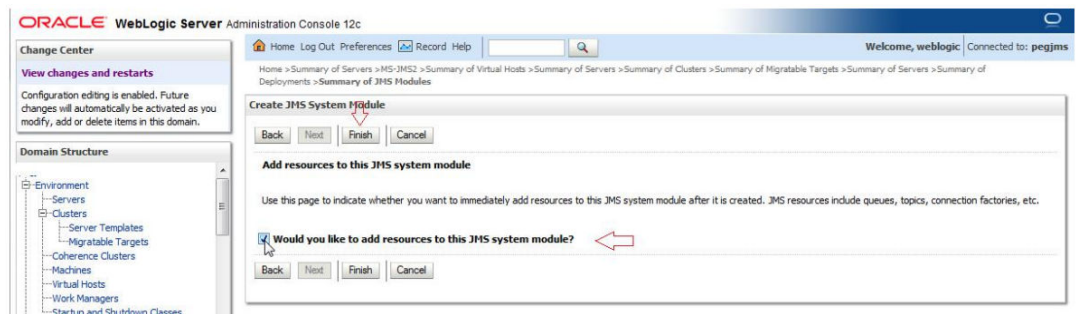
3. Select Target as Cluster-App and Click on **Next**.

Figure 7-3 Create JMS System Module



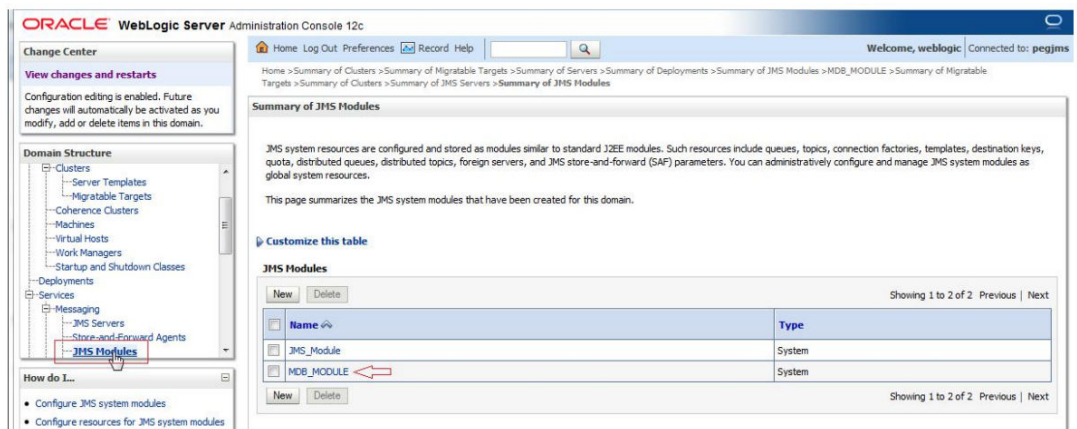
4. Select the checkbox and Click on **Finish**.

Figure 7-4 Create JMS System Module



5. MDB\_MODULE is created.

Figure 7-5 Summary of JMS\_Module

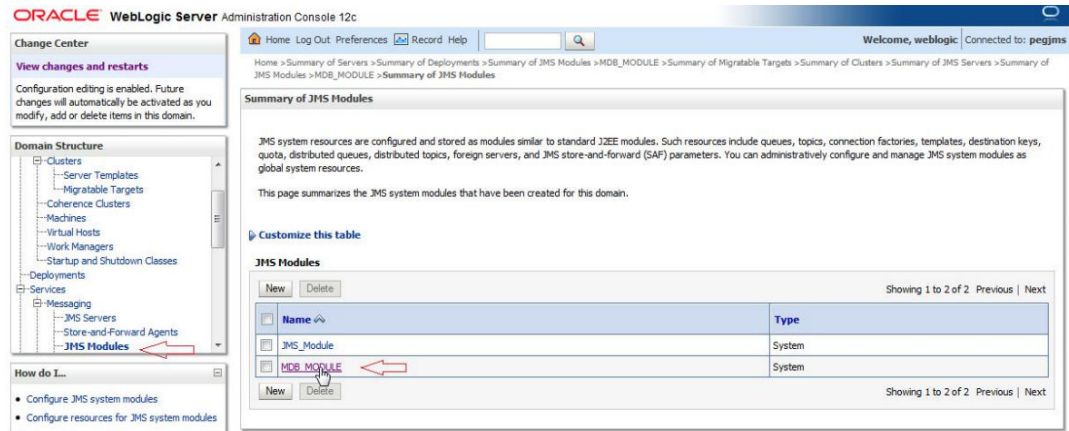




## 7.2 Foreign Server Creation

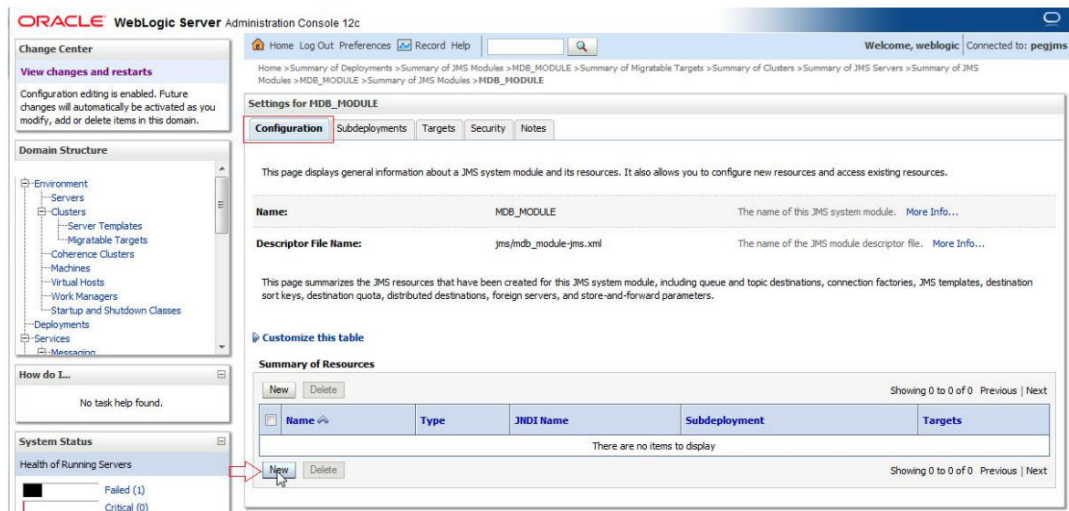
1. In MDB\_MODULE, Click on New Resource, Select **Foreign Server**.

Figure 7-6 Summary of JMS Modules



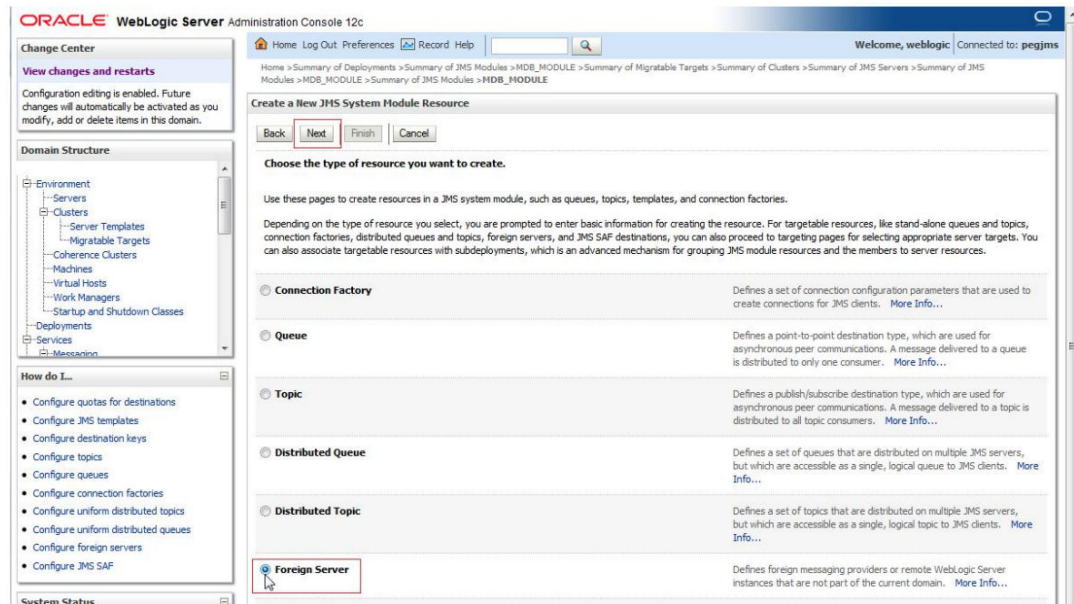
2. Click on Configuration and **New**.

Figure 7-7 Settings for MDB\_Module



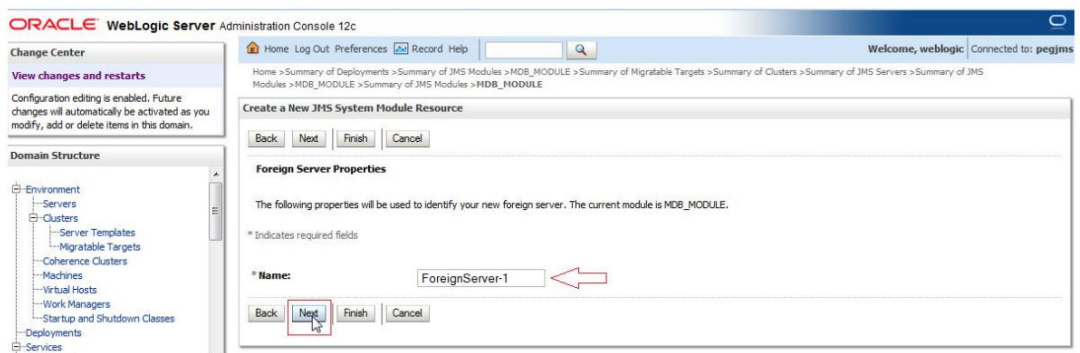
3. Select Foreign Server and Click on **Next**.

Figure 7-8 Create a New JMS System Module Resource



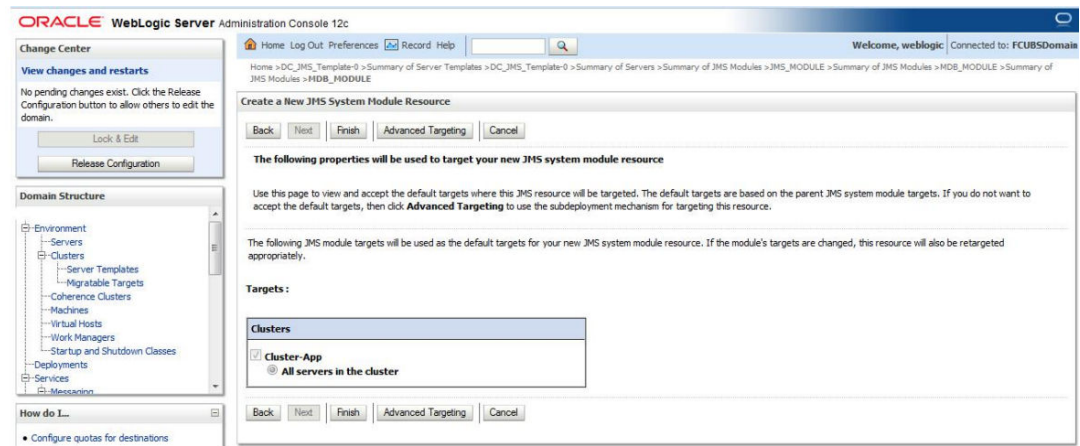
4. Enter name and Click on **Next**.

Figure 7-9 Create a New JMS System Module Resource



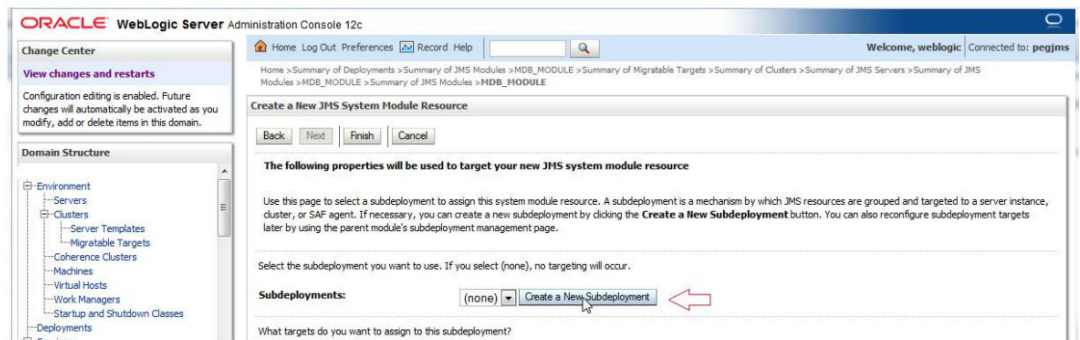
5. Click on **Advanced Targeting**.

Figure 7-10 Create a New JMS System Module Resource



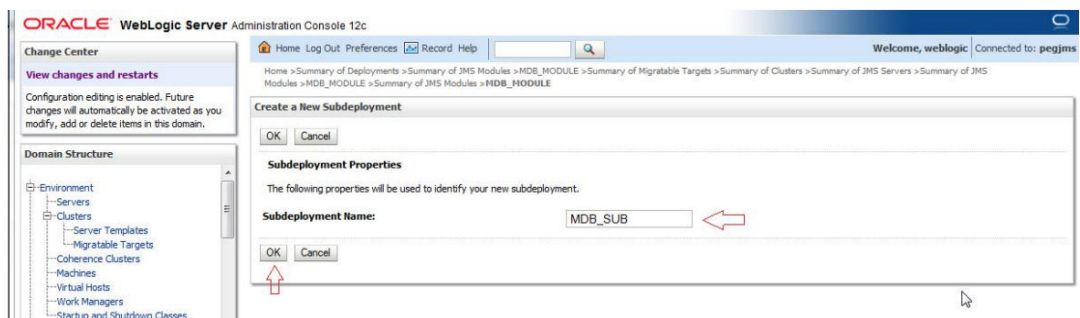
6. Click on **Create a New SudDeployment**.

Figure 7-11 Create a New JMS System Module Resource



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

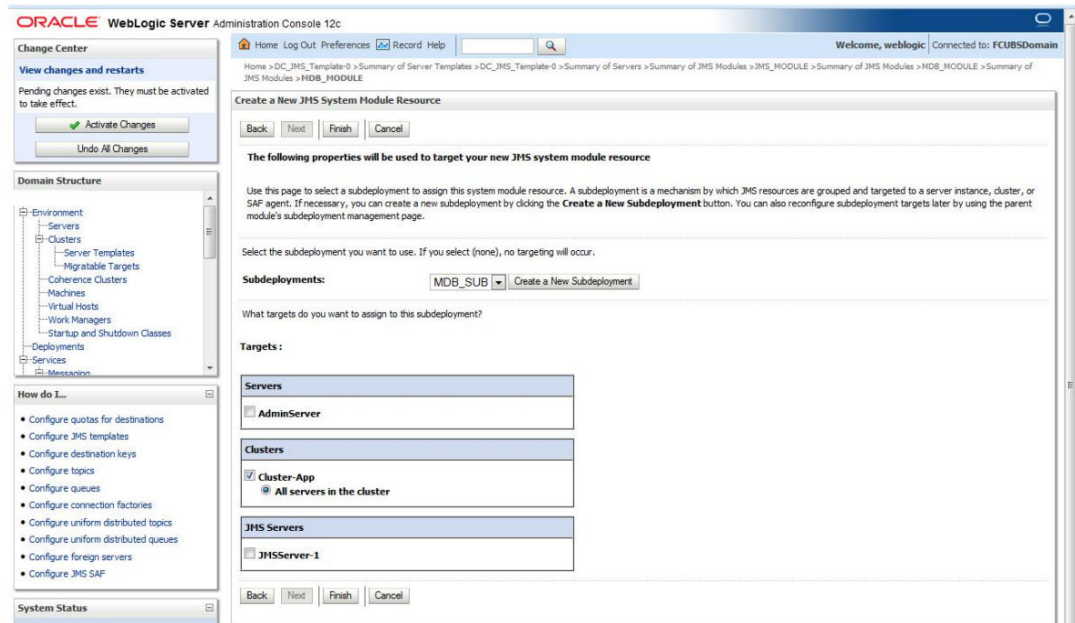
Figure 7-12 Create a New Subdeployment



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

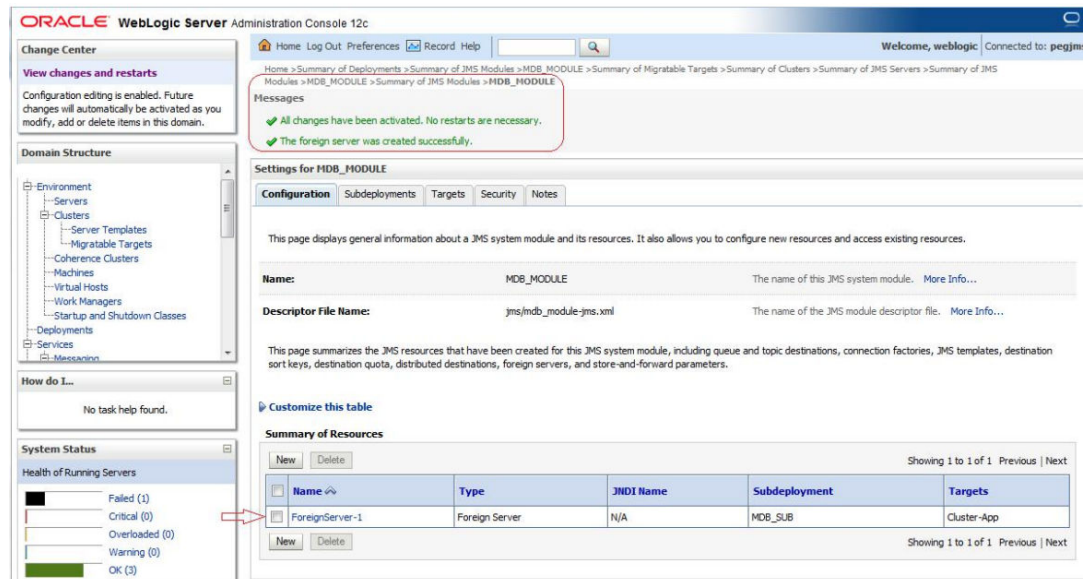


Figure 7-13 Create a New JMS System Module Resource



- Foreign Server is created.

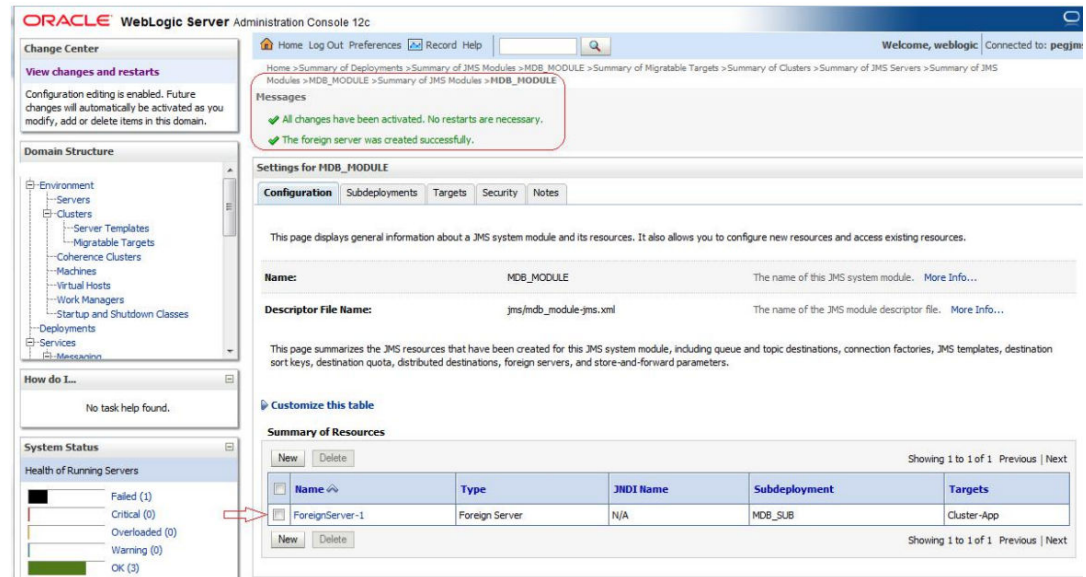
Figure 7-14 Settings for MDB\_Module



## 7.3 Foreign Server Configuration

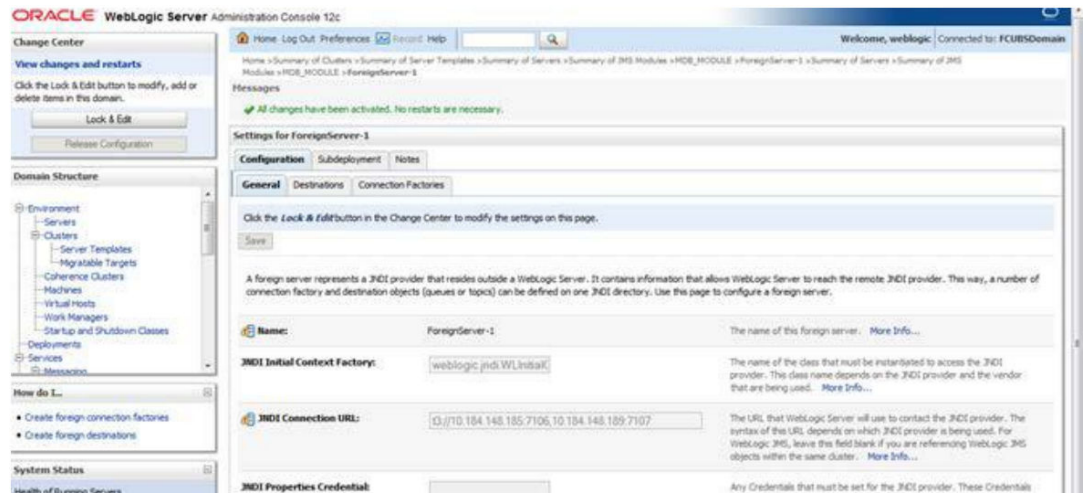
- Click on ForeignServer-1.

Figure 7-15 Settings for MDB\_Module



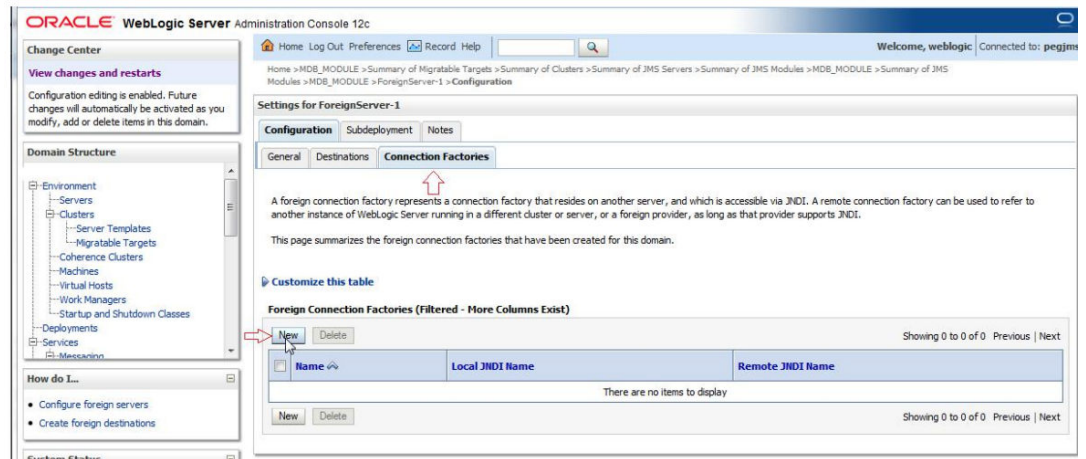
2. Enter the JNDI URL as Cluster URL(JMS Managed Servers) and Click on **Save**.

Figure 7-16 Settings for ForeignServer-1



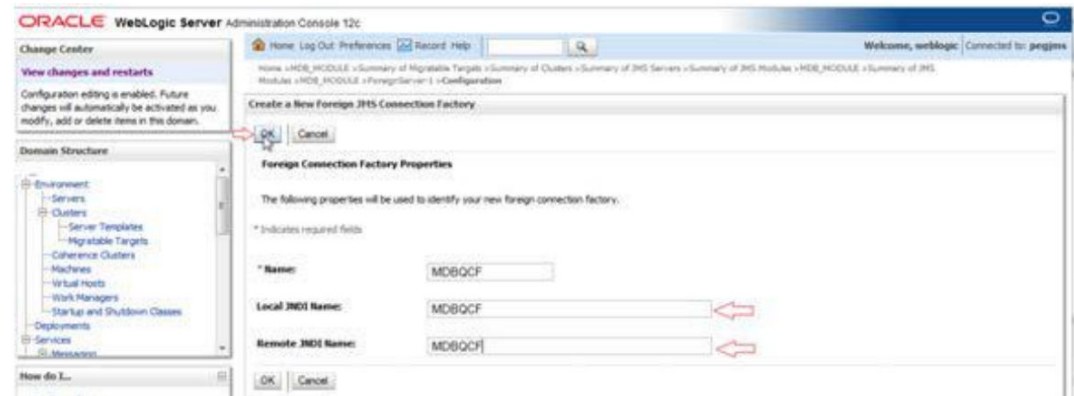
3. Click on Connection Factories.

Figure 7-17 Settings for ForeignServer-1



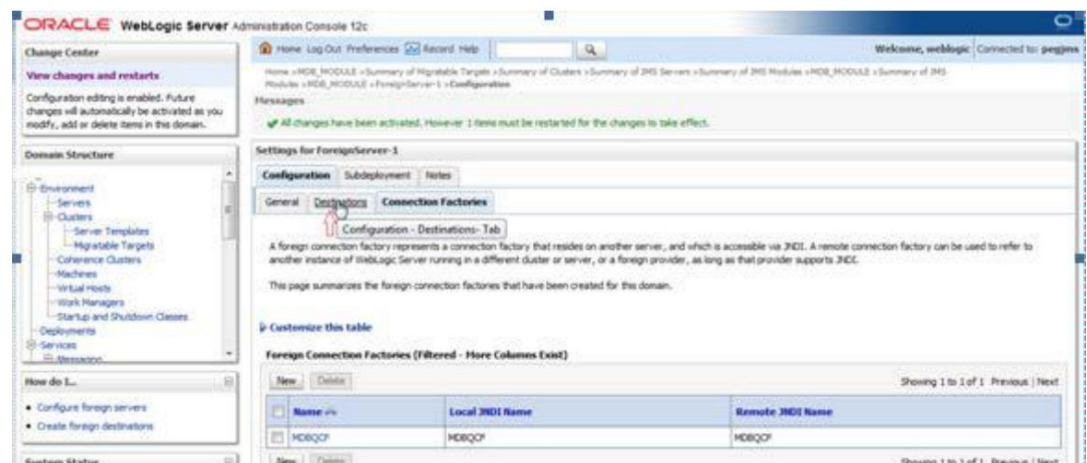
4. Create MDBQCF Connection Factory.

Figure 7-18 Create a New Foreign JMS Connection Factory



5. Click on **Destination**.

Figure 7-19 Settings for ForeignServer-1



6. Create MDB\_QUEUE.

Figure 7-20 Settings for ForeignServer-1

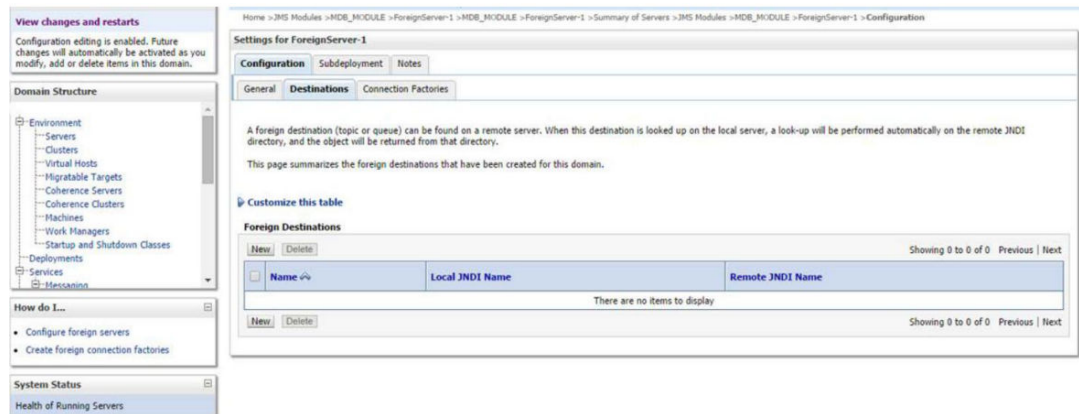
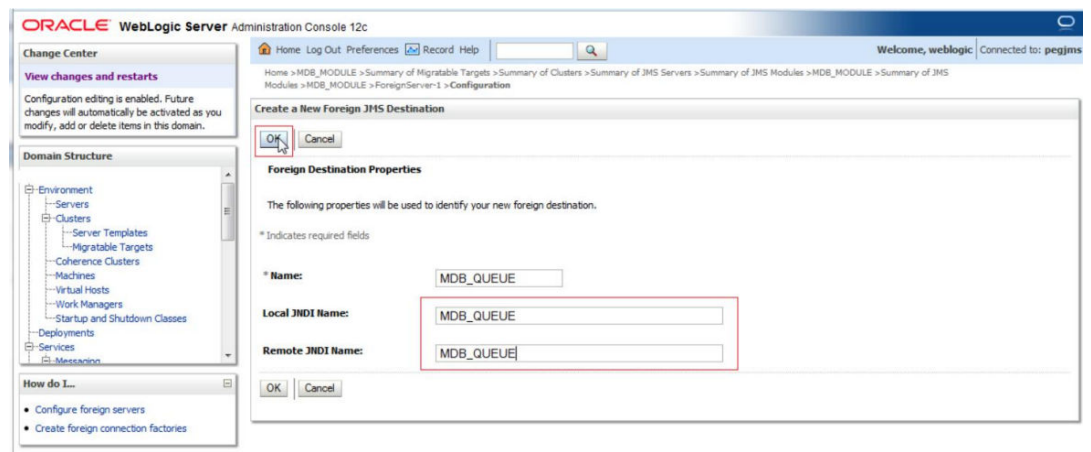
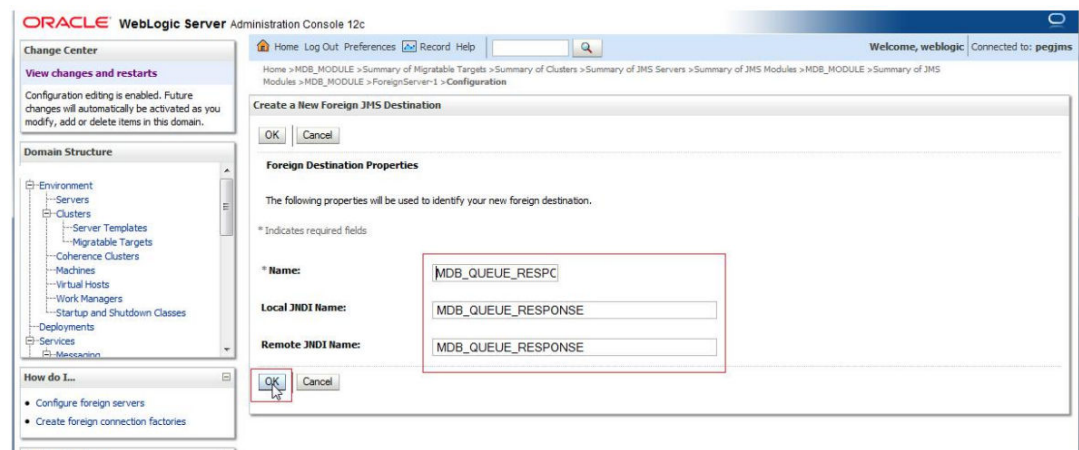


Figure 7-21 Create a New Foreign JMS Destination

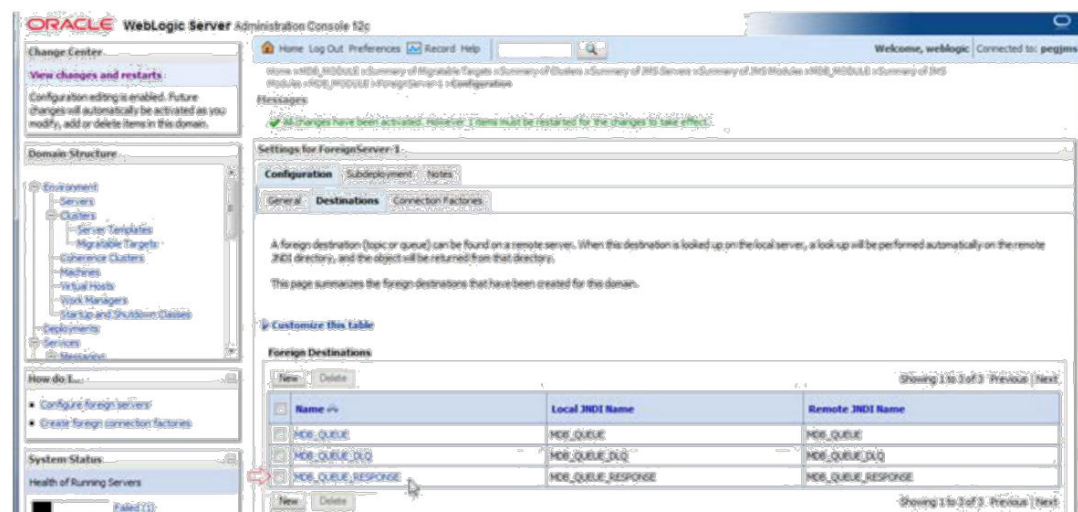
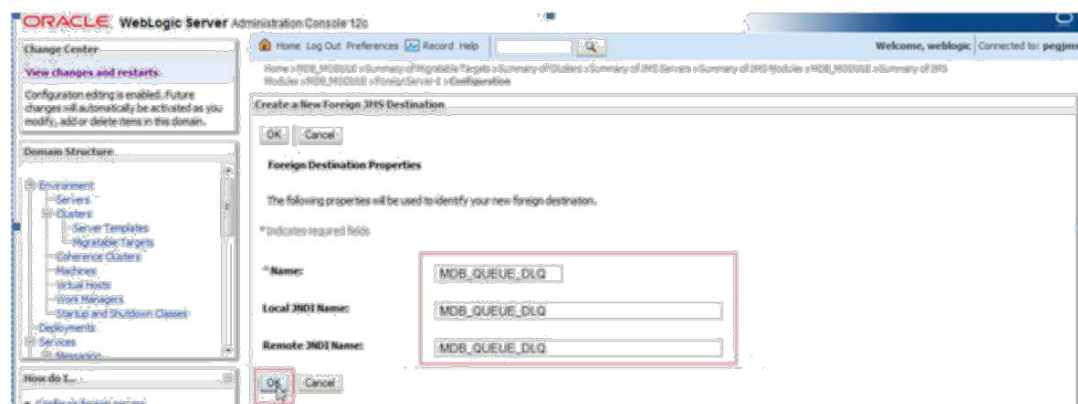
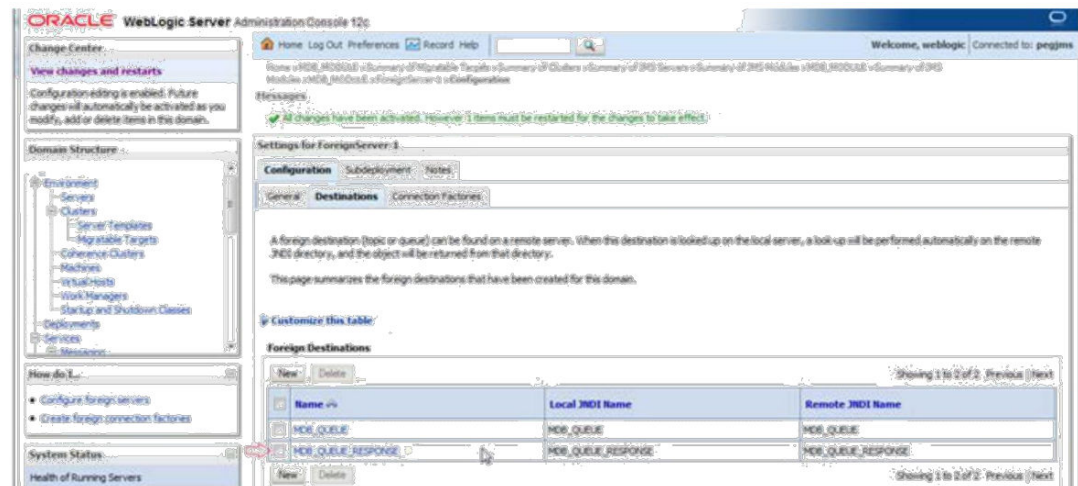


7. Similarly Create MDB\_QUEUE\_RESPONSE, MDB\_QUEUE\_DLQ.

Figure 7-22 Create a New Foreign JMS Destination







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

# 8

## Application Deployment

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

**Figure 8-1 Settings for GWMDB**

The screenshot shows the Oracle WebLogic Console interface. On the left is the 'Change Center' sidebar with a 'Domain Structure' tree. The main area displays the 'Settings for GWMDB' page, with the 'Targets' tab selected. The page contains a 'Target Assignments' table with columns for Component, Type, and 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.

**Figure 8-2 Summary of Deployments**

The screenshot shows the Oracle WebLogic Console interface. On the left is the 'Change Center' sidebar. The main area displays the 'Summary of Deployments' page, with the 'Control' tab selected. The page contains a table of installed applications and modules, with columns for Name, State, Health, Type, and Deployment Order.

Name	State	Health	Type	Deployment Order
FOUBSApp	Active	OK	Enterprise Application	100
GWEEJB	Active	OK	Enterprise Application	100
GWMDB	Active	OK	Enterprise Application	100
jax-rs(1.1.1.9)	Active		Library	100
GWEEJB	Active	OK	Enterprise Application	100



# 9

## Frequently Asked Questions

- [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](#)

### 9.1 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

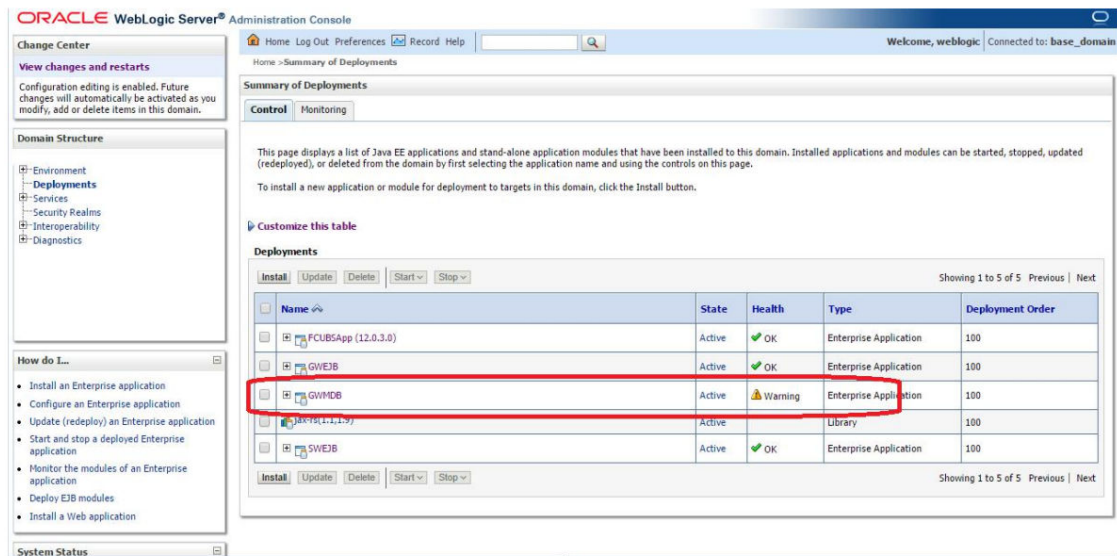
### 9.2 Application Shows Warning upon Restart of Managed Servers

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

Figure 9-1 Summary of deployments



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

## 9.3 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.

## 9.4 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.

## 9.5 How to Test the Deployment

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. Navigate to Services → JMS Modules → JMS\_MODULE → MDB\_QUEUE → MONITORING

Figure 9-2 Settings for MDB\_Queue

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
  - Messaging

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:JMServer-1@MDB_QUEUE	64	64	64
<input type="checkbox"/> JMS_MODULE:JMServer-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.

Figure 9-3 Summary of JMS Messages

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:  **Apply**

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.

Figure 9-4 Produce JMS Messages

Change Center

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
  - Messaging

How do I...

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

System Status

Health of Running Servers

Failed (0)

Critical (0)

Overloaded (0)

Produce JMS Message

OK Cancel

JMS Message

The following properties will be used to produce a JMS message.

Type:

Correlation ID:

Expiration:

Priority:

Delivery Mode:

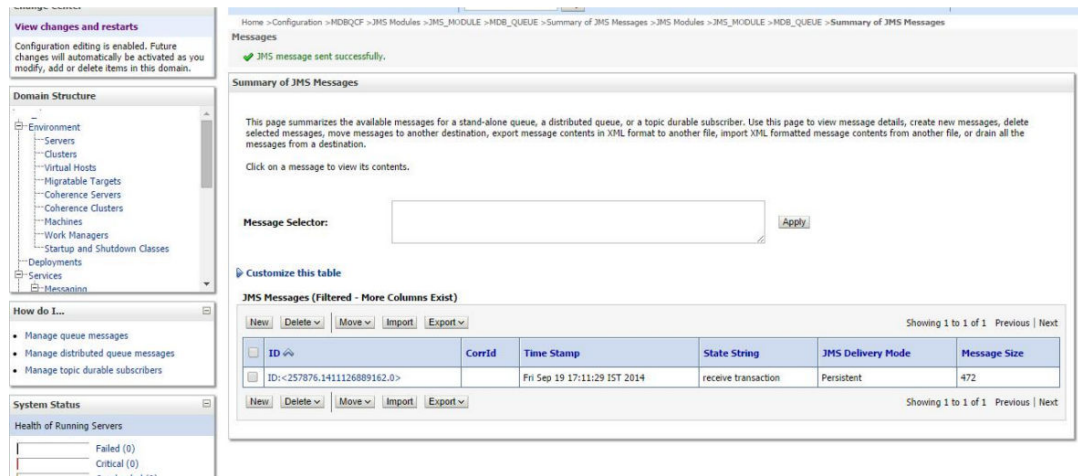
Delivery Time:

Redelivery Limit:

Body:

#### 4. Message is Sent.

**Figure 9-5 Summary of JMS Messages**



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

## 9.6 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.

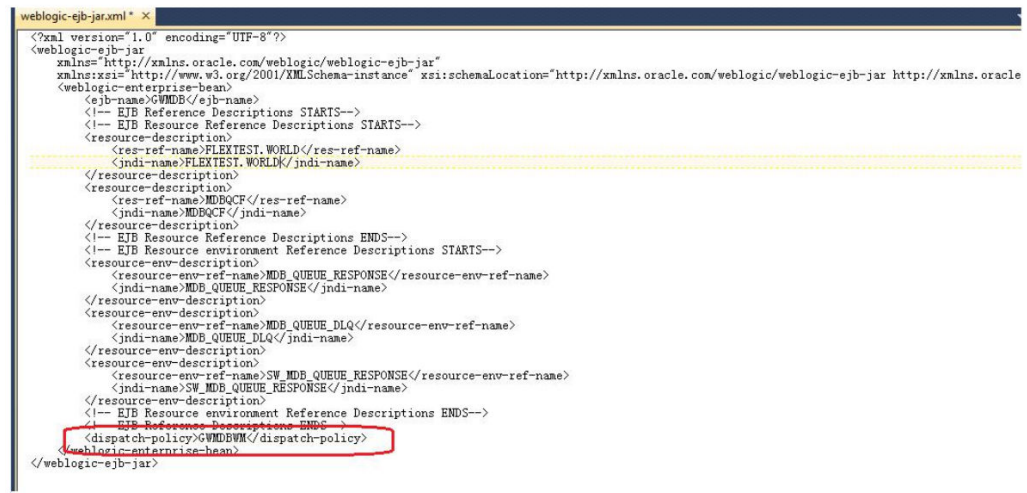
Steps to create custom work manager

1. Modify the MDB deployment descriptor and redploy 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](#)

### 9.6.1 Modify weblogic-ejb-jar.xml

1. Add below line to the weblogic-ejb-jar.xml of the MDB Ear  
`<dispatch-policy>GWMDBWM</dispatch-policy>`

Figure 9-6 weblogic-ejb-jar.xml



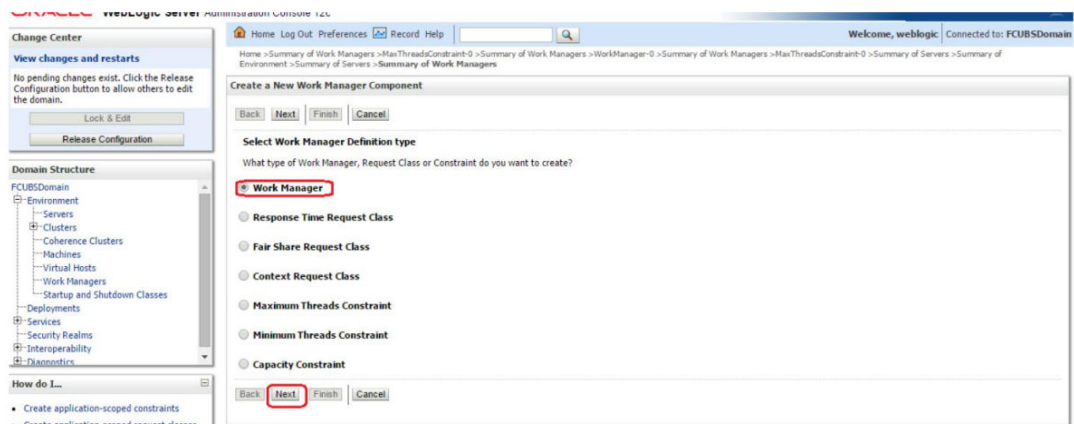
```
<?xml version="1.0" encoding="UTF-8"?>
<weblogic-ejb-jar
  xmlns="http://xmlns.oracle.com/weblogic/weblogic-ejb-jar"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://xmlns.oracle.com/weblogic/weblogic-ejb-jar http://xmlns.oracle.com/weblogic-ejb-jar/
  <ejb-name>GWMDB/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

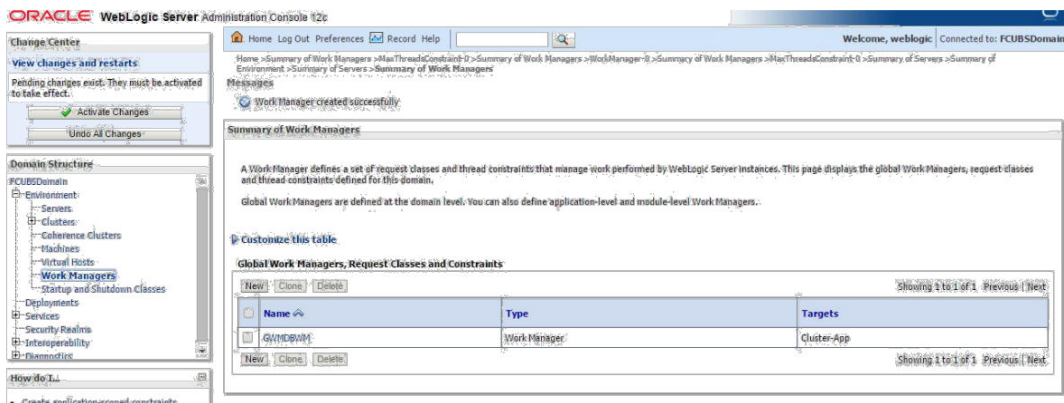
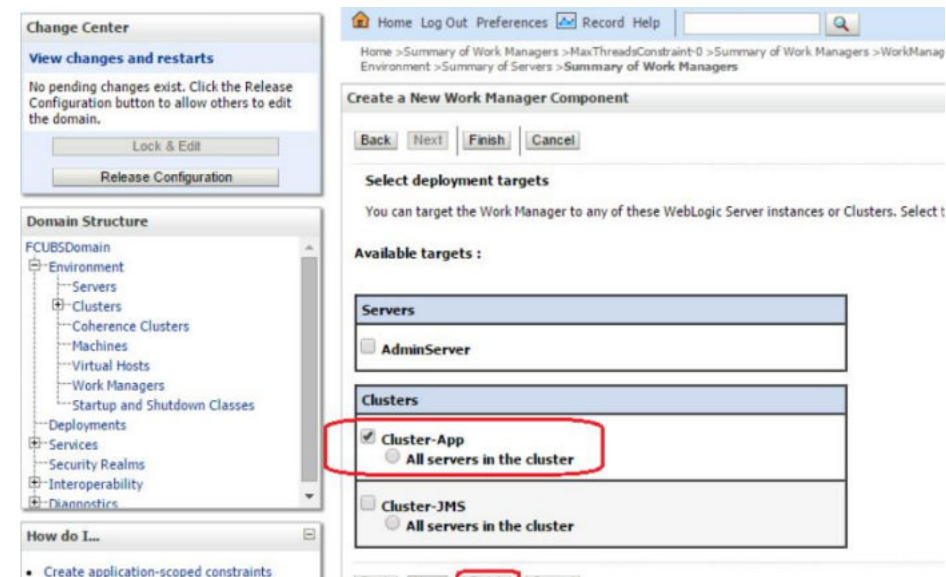
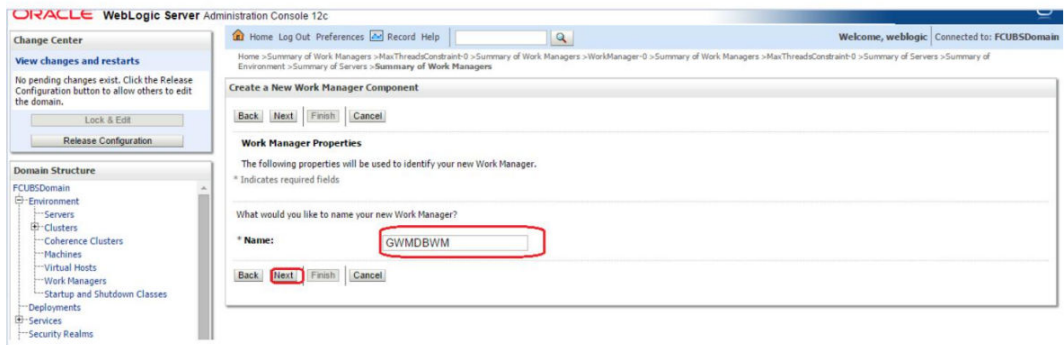
2. Remove if any of the below tags present in weblogic-ejb-jar.xml max-beans-in-free-pool and initial-beans-in-free-pool
3. Save the ear file and redeploy the EAR file.

## 9.6.2 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

Figure 9-7 weblogic-ejb-jar.xml





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



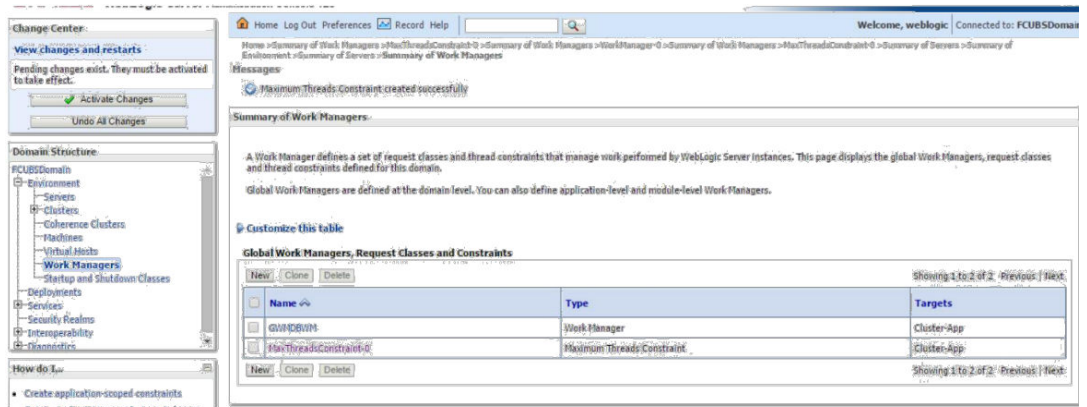
Figure 9-8 Create a New Work Manager Component

The figure consists of three screenshots from the Oracle WebLogic Server Administration Console, illustrating the steps to create a new Work Manager Component.

**Screenshot 1: Create a New Work Manager Component**  
The console shows the "Create a New Work Manager Component" wizard. Under "Select Work Manager Definition type", the "Maximum Threads Constraint" option is selected and highlighted with a red box. The "Next" button is also highlighted with a red box.

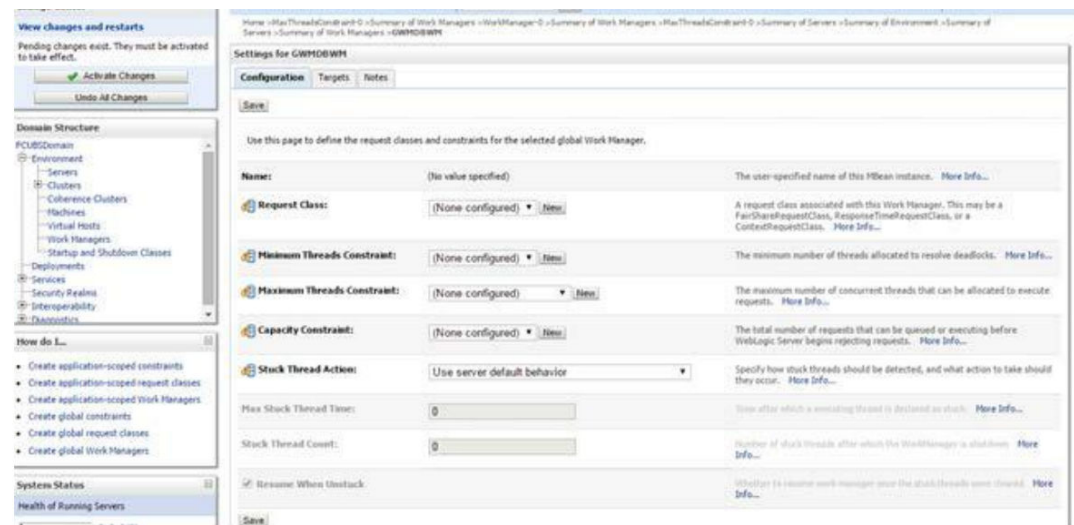
**Screenshot 2: Maximum Threads Constraint Properties**  
The wizard proceeds to the "Maximum Threads Constraint Properties" step. The "Name" field is set to "MaxThreadsConstraint-0". The "Count" field is set to "25" and is highlighted with a red box. The "Data Source" field is empty. The "Next" button is highlighted with a red box.

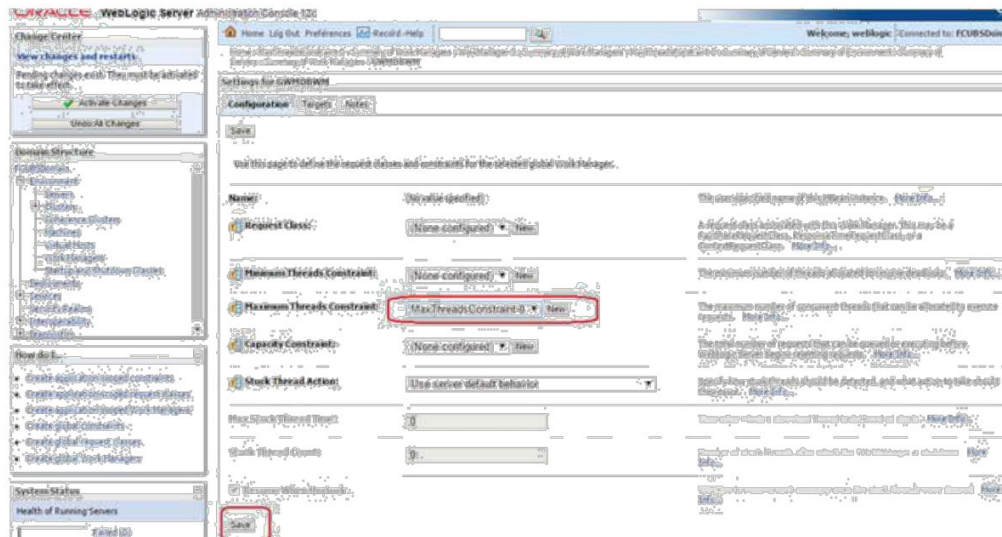
**Screenshot 3: Select deployment targets**  
The wizard proceeds to the "Select deployment targets" step. Under "Available targets", the "Cluster-App" option is selected and highlighted with a red box. The "Next" button is highlighted with a red box.



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

Figure 9-9 Settings for GWMDBMW





- Restart managed servers and notice the change in the number of consumers for the QUEUE's.

## 9.7 How High Availability is achieved

- 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.
- JMS Provider: JMS is deployed on 2 managed servers, JMSServer1 and JMSServer2, if any one goes down other will handle the messages.
- FileStore: File store is a cluster file system or database where if one node goes down then other will handle the requests.
- 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.

## 9.8 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.

## 9.9 What other modules uses JMS Queue's

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

- EMS for swift messages
- GI for upload
- ELCM
- BIP

## 9.10 References

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

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