

Payments Weblogic JMS Configuration

Oracle Banking Payments

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# 1. Introduction

## 1.1 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

## 1.2 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

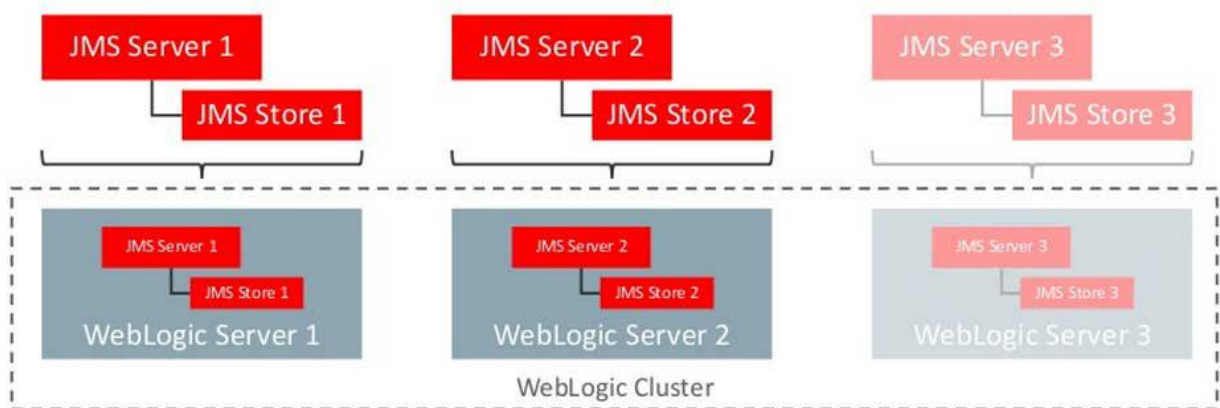
- 1) File based persistence store → Message is stored in a file
- 2) DB based persistence store → Message is stored in Database.

## 1.3 Weblogic 12c New Features

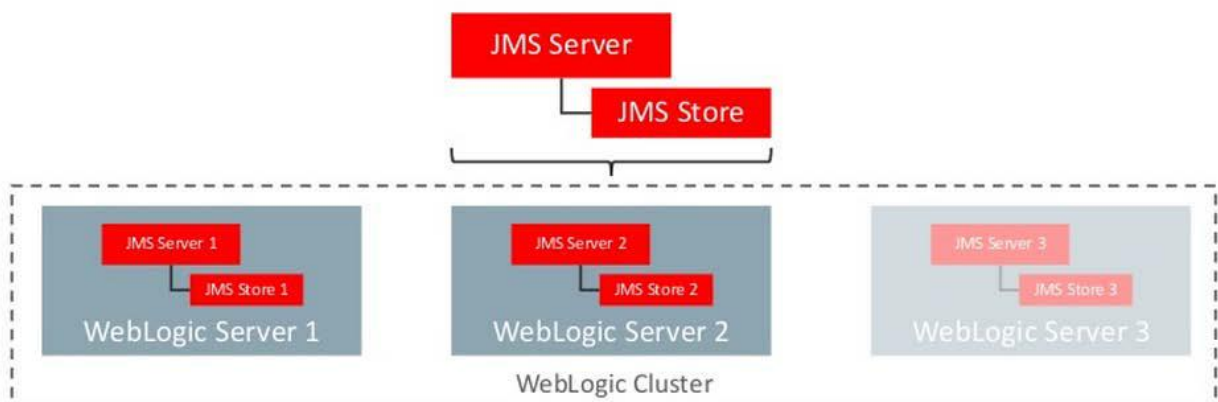
Before weblogic 12c JMS Servers and stores are targeted to individual WLS Servers. Scaling up requires configure the JMS server, the store and target it to new WLS Server

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

### Architecture previous to 12c



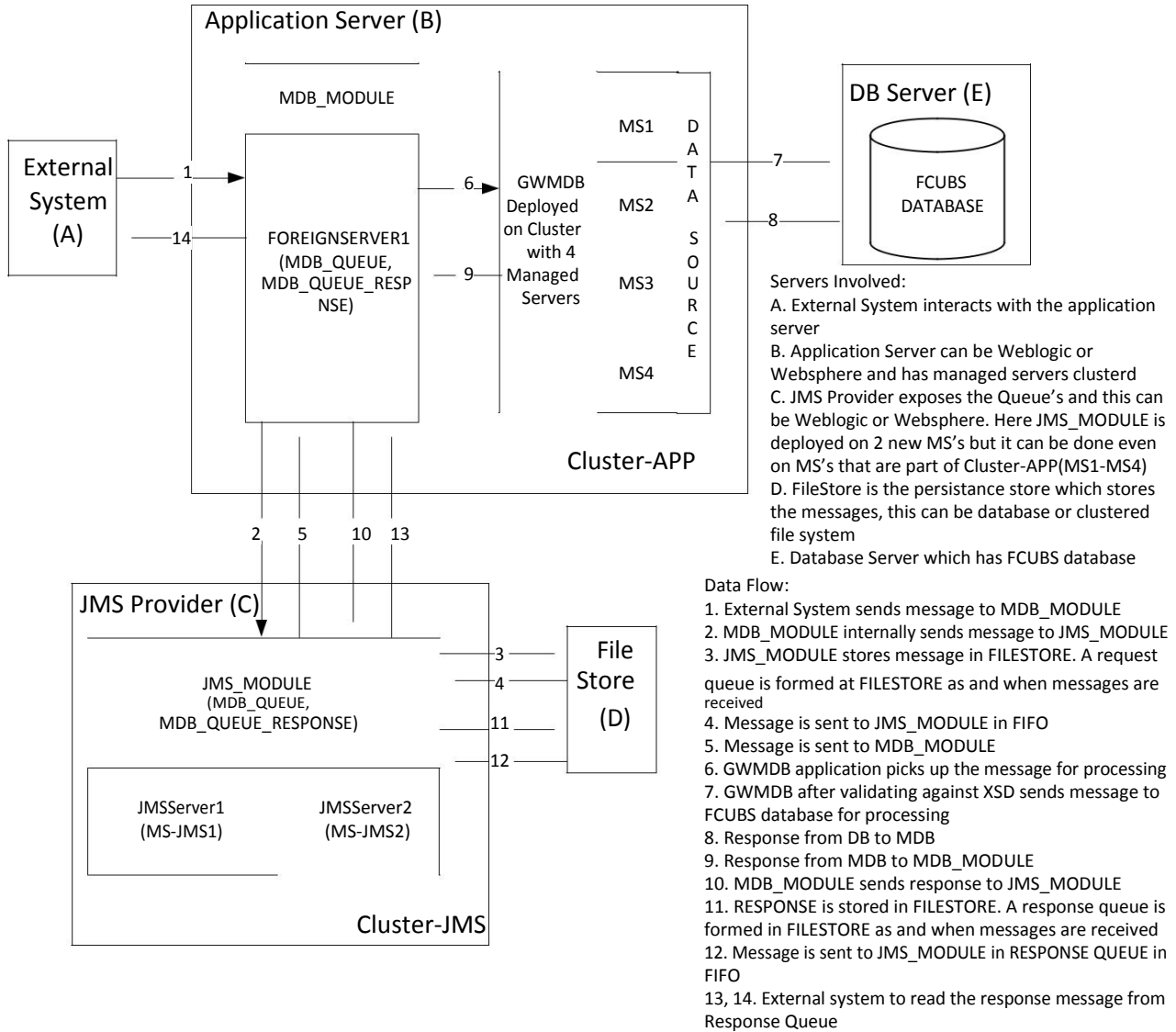
### Architecture in 12c





# 1.4 Components Diagram & Data Flow

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



## 2. Pre-Requisites

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

### 2.1 Machines

MAC-1 & MAC-2

**ORACLE WebLogic Server Administration Console 12c**

Home > Summary of Servers > Summary of Machines

**Summary of Machines**

A machine is the logical representation of the computer that hosts one or more WebLogic Server instances (servers). WebLogic Server uses configured machine names to determine the optimum server in a cluster to which certain tasks, such as HTTP session replication, are delegated. The Administration Server uses the machine definition in conjunction with Node Manager to start remote servers.

This page displays key information about each machine that has been configured in the current WebLogic Server domain.

**Customize this table**

**Machines**

| Name  | Type    |
|-------|---------|
| MAC-1 | Machine |
| MAC-2 | Machine |

### 2.2 Dynamic Clusters and Managed Servers

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

**ORACLE WebLogic Server Administration Console 12c**

Home > Summary of Servers > Summary of Clusters > Summary of Server Templates > Summary of Clusters > Summary of Servers > Summary of Clusters > Summary of Server Templates > Summary of Clusters > Summary of Servers > Summary of Clusters

**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.

**Customize this table**

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

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

| 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**

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)**

| 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        |

## 2.3 Data Source

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

**Summary of JDBC Data Sources**

A JDBC data source is an object bound to the JNDI tree that provides database connectivity through a pool of JDBC connections. Applications can look up a data source on the JNDI tree and then borrow a database connection from a data source. This page summarizes the JDBC data source objects that have been created in this domain.

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

| Name            | Type    | JNDI Name       | Targets     |
|-----------------|---------|-----------------|-------------|
| FLEXTTEST.WORLD | Generic | FLEXTTEST.WORLD | Cluster-App |

## 2.4 Shared Folder

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

## 3. JMS Configuration

### 3.1 Persistence Store Creation

- 1) Navigate to Services → Persistent Stores → New → Create FileStore

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Servers > Summary of Persistent Stores

Messages

- Create operation cancelled - no file store created.

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

New Delete Showing 0 to 0 of 0 Previous | Next

| Name                          | Type | Target |
|-------------------------------|------|--------|
| There are no items to display |      |        |

New Delete Showing 0 to 0 of 0 Previous | Next

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

- Clusters
  - Coherence Clusters
  - Machines
  - Virtual Hosts
  - Work Managers
  - Startup and Shutdown Classes
- Deployments
- Services
  - Messaging
  - Data Sources
  - Persistent Stores**
  - Foreign JNDI Providers
  - Work Contexts
  - XML Registries

How do I...

- Create File Stores

ORACLE WebLogic Server Administration Console 12c

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

Home > Summary of Servers > Summary of Persistent Stores

Messages

- Create operation cancelled - no file store created.

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

New Delete Showing 0 to 0 of 0 Previous | Next

| Name                          | Type | Target |
|-------------------------------|------|--------|
| There are no items to display |      |        |

New Delete Showing 0 to 0 of 0 Previous | Next

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

- Clusters
  - Coherence Clusters
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  - Virtual Hosts
  - Work Managers
  - Startup and Shutdown Classes
- Deployments
- Services
  - Messaging
  - Data Sources
  - Persistent Stores**
  - Foreign JNDI Providers
  - Work Contexts
  - XML Registries

How do I...

- Create File Stores

## 2) Select **Cluster-JMS** under target dropdown and Click on OK

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main window displays the 'Create a New File Store' dialog. The 'Name' field is filled with 'FileStore-1'. The 'Target' dropdown menu is set to 'Cluster-JMS'. The 'Directory' field contains '/scratch/work\_area/JMS\_FILESTORE'. The 'OK' button is highlighted.

**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**  
Environment  
Servers  
Clusters  
Server Templates  
Migratable Targets  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Messaging  
Persistent Stores

**How do I...**  
Create File Stores  
Monitor 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

## 3) **FileStore-1** is created

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main window displays the 'Summary of Persistent Stores' page. A message indicates that all changes have been activated. A table lists the created FileStore-1 with Type 'FileStore' and Target 'Cluster-JMS'.

**Change Center**  
View changes and restarts  
Click the Lock & Edit button to modify, add or delete items in this domain.  
Lock & Edit  
Release Configuration

**Domain Structure**  
Servers  
Clusters  
Server Templates  
Migratable Targets  
Coherence Clusters  
Machines  
Virtual Hosts  
Work Managers  
Startup and Shutdown Classes  
Deployments  
Services  
Messaging  
Data Sources  
Persistent Stores

**How do I...**  
Create File 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**  
Click the **Lock & Edit** button in the Change Center to activate all the buttons on this page.

New Delete Showing 1 to 1 of 1 Previous | Next

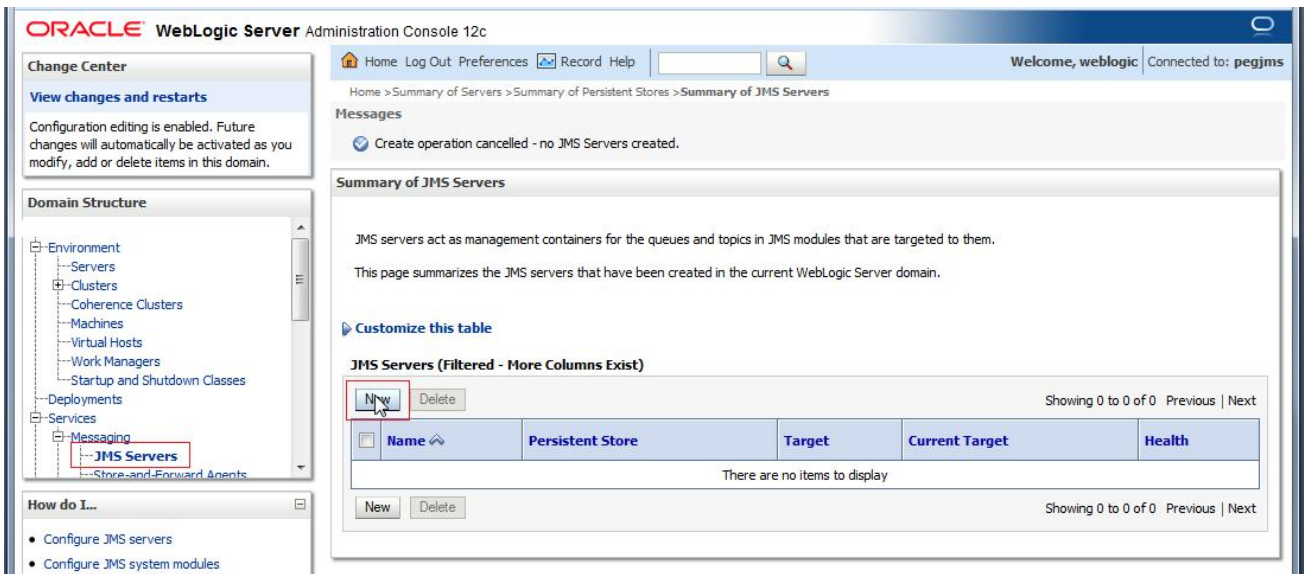
| Name        | Type      | Target      |
|-------------|-----------|-------------|
| FileStore-1 | FileStore | Cluster-JMS |

New Delete Showing 1 to 1 of 1 Previous | Next



## 3.2 JMS Server Creation

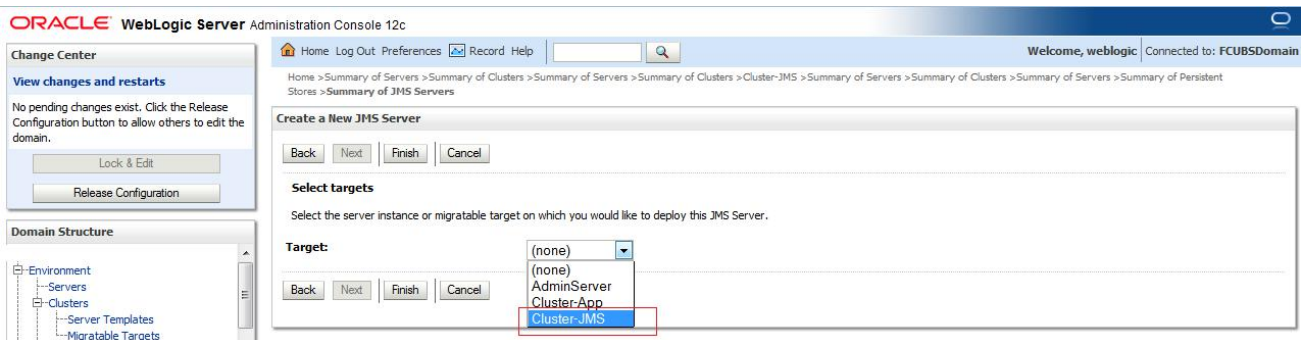
- 1) Navigate to Services → Messaging → JMS Servers → Click on **New**

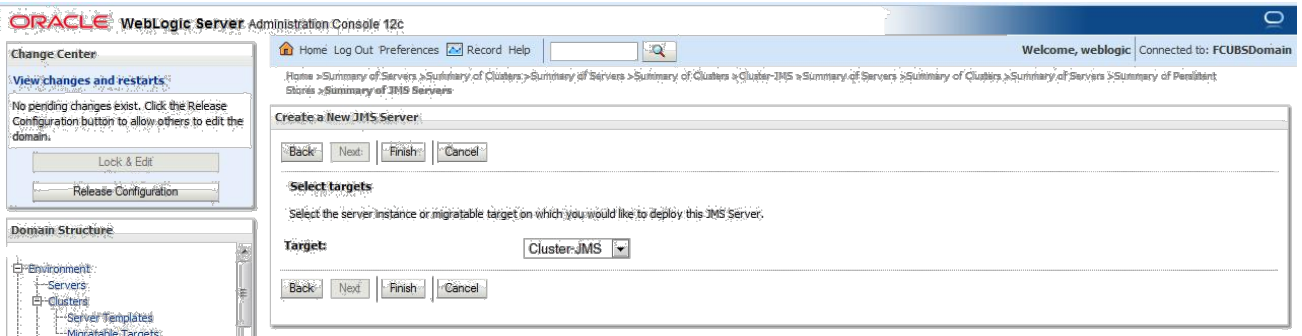


- 2) .Select FileStore-1 , Click **Next**

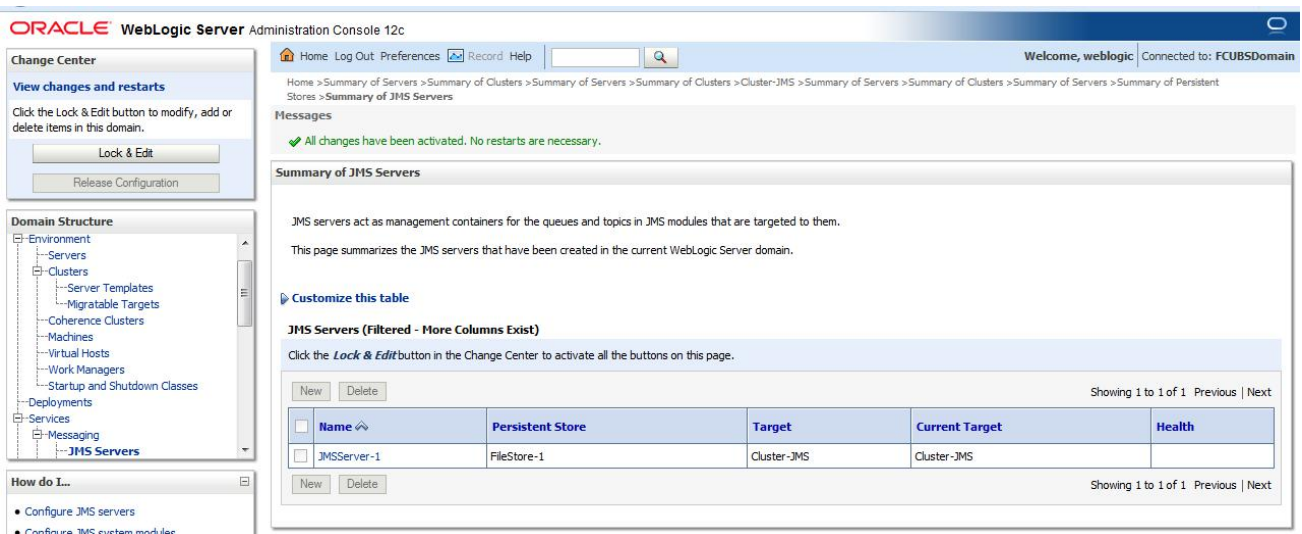


- 3) Select Target as Cluster-JMS and click on **Finish**





#### 4) JMS-Server-1 is created

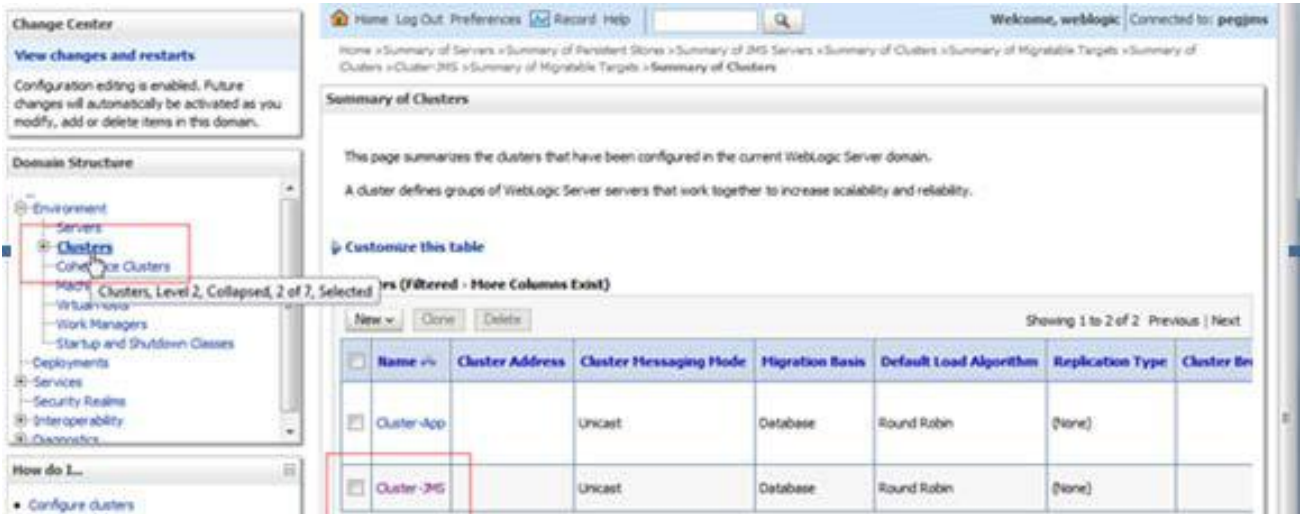


#### 5) In NFS below filestores can be seen

```
[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]#
```

### 3.3 Cluster Configuration for Service Migration

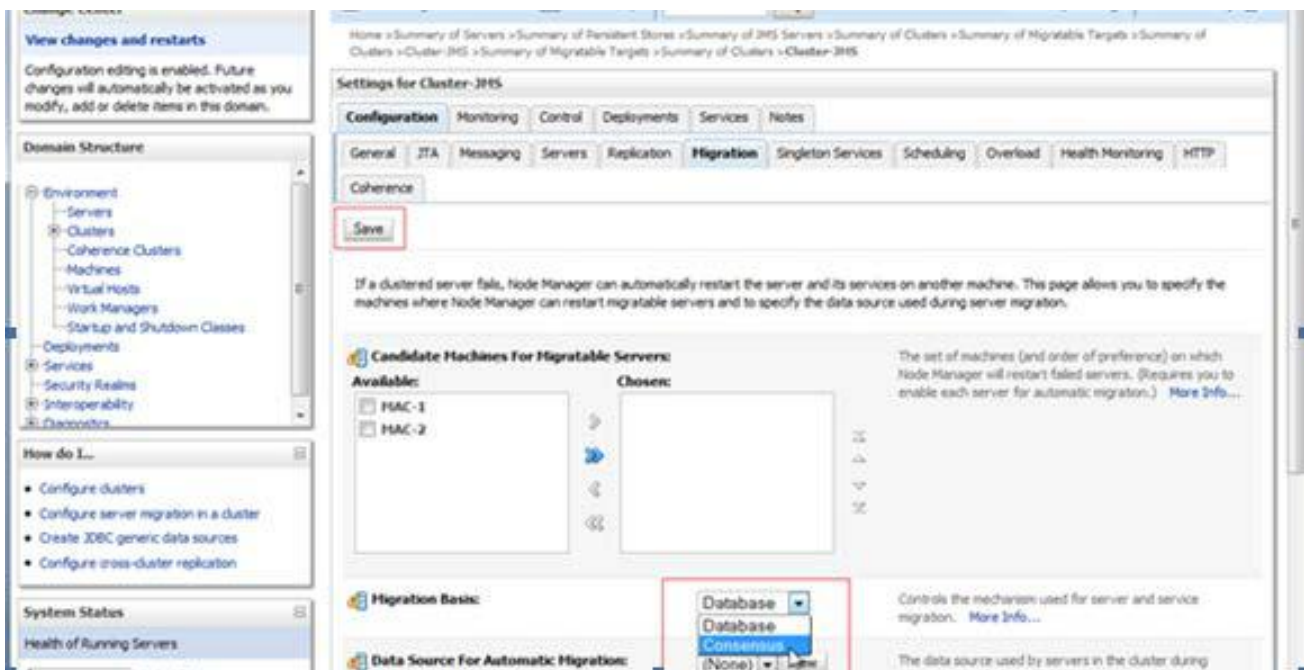
1) Click on Environment → Clusters → Cluster-JMS



2) Click on **Migration** Tab



3) Change Migration Basis to Consensus and Click on **Save**





## 4. JMS Module Creation

### 4.1 Module Creation

- 1) Navigate to Services → Messaging → JMS Modules and Click on **New**.

The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The left sidebar contains the 'Domain Structure' tree with 'JMS Modules' highlighted. The main content area displays the 'Summary of JMS Modules' page, which includes a message 'The JMS module configuration was canceled.' and a table with the following structure:

| Name                          | Type |
|-------------------------------|------|
| There are no items to display |      |

The 'New' button in the table's toolbar is highlighted with a red box.

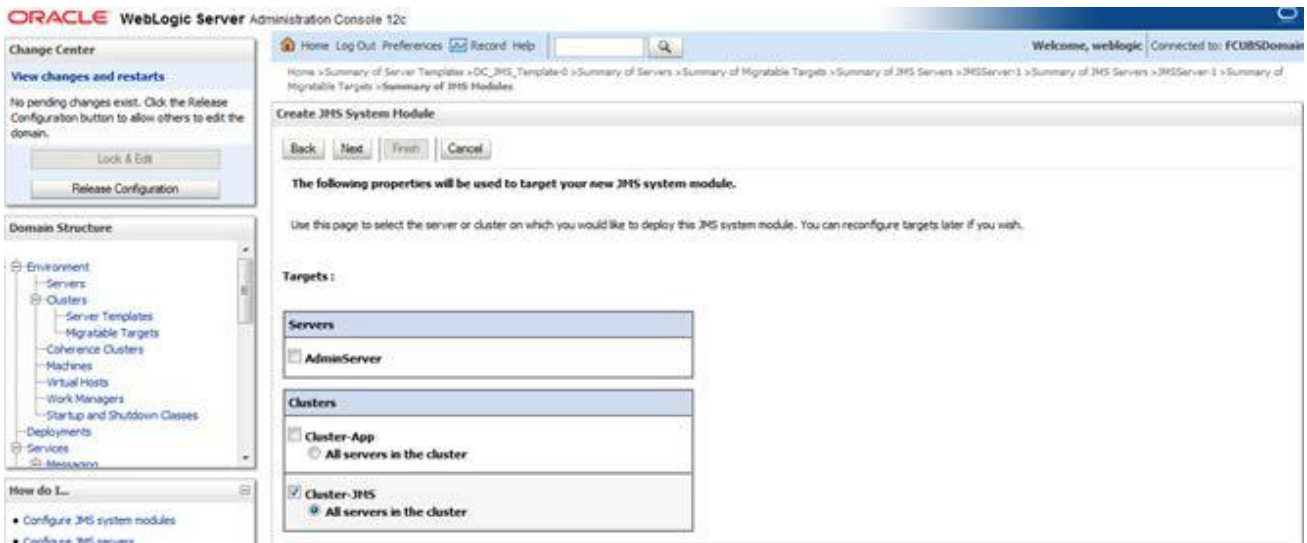
- 2) Enter name as JMS\_MODULE and Click on **Next**

The screenshot shows the 'Create JMS System Module' wizard in the Oracle WebLogic Server Administration Console 12c. The 'Name' field is filled with 'JMS\_Module' and the 'Next' button is highlighted with a red box. The wizard includes the following fields:

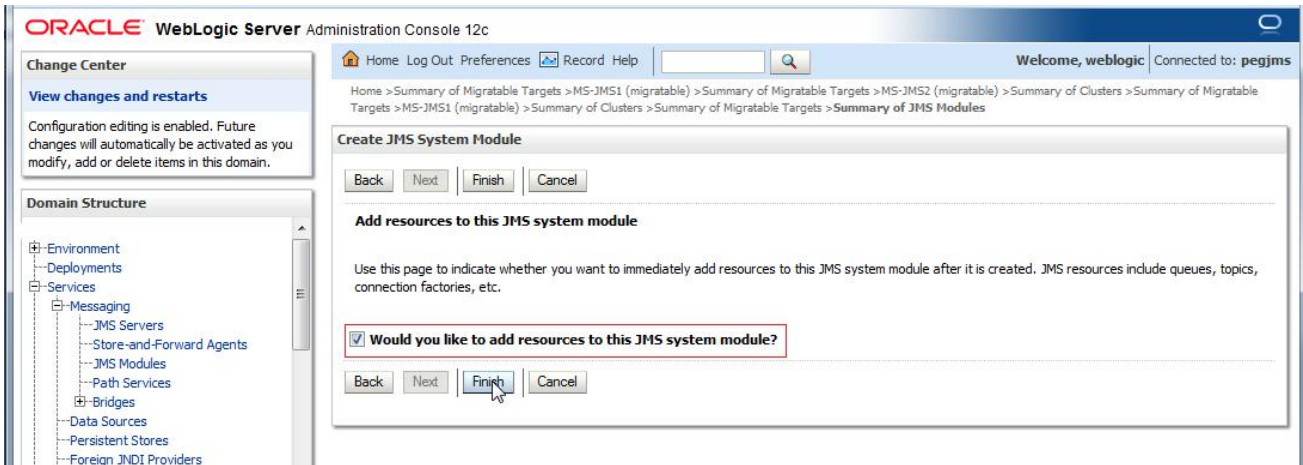
- Name:** JMS\_Module
- Descriptor File Name:** (empty)
- Location In Domain:** (empty)

The wizard also includes a 'Back' button and a 'Next' button.

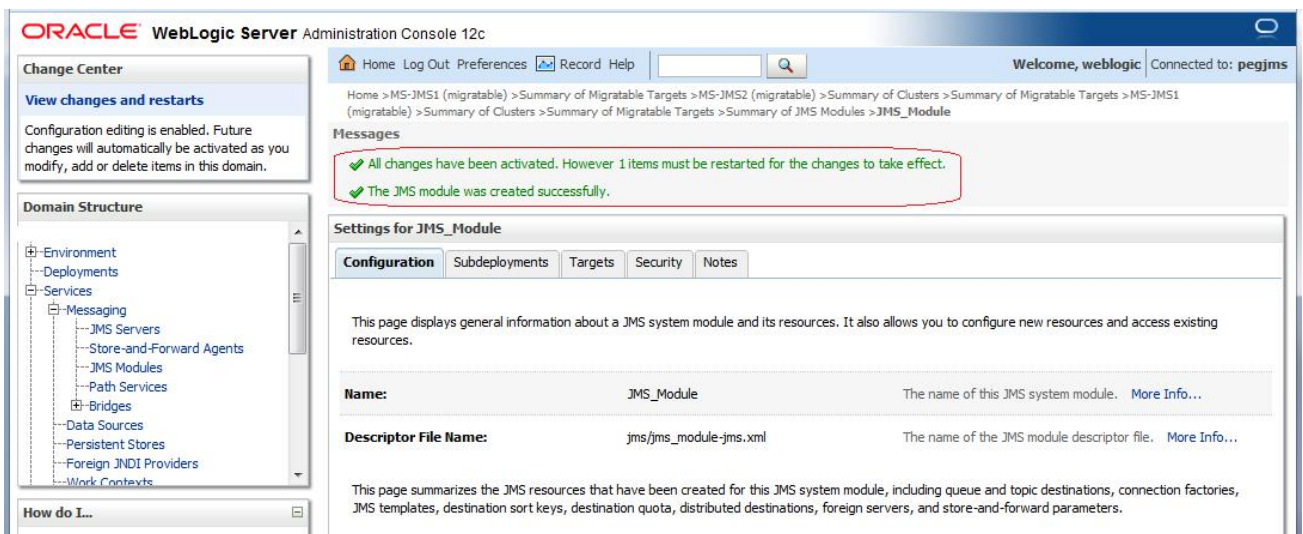
### 3) Select Target as Cluster-JMS and Click on **Next**



### 4) Select the checkbox and Click on **Finish**



### 5) JMS\_MODULE is created



## 4.2 Sub Deployment Creation

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

ORACLE WebLogic Server Administration Console 12c

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

Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module

Messages

- All changes have been activated. However 1 items must be restarted for the changes to take effect.
- The JMS module was created successfully.

Settings for JMS\_Module

Configuration Subdeployments Targets Security Notes

Subdeployments- Tab

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

Name: JMS\_Module The name of this JMS system module. More Info...

Descriptor File Name: jms/jms\_module-jms.xml The name of the JMS module descriptor file. More Info...

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

Customize this table

Summary of Resources

New Delete Showing 0 to 0 of 0 Previous Next

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

New Delete Showing 0 to 0 of 0 Previous Next

WebLogic Server Version: 12.1.3.0.0  
Copyright (c) 1996,2014, Oracle and/or its affiliates. All rights reserved.  
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

- 2) Enter name as JMS\_SUB and click on **Next**

ORACLE WebLogic Server Administration Console 12c

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

Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module

Create a New Subdeployment

Back Next Finish Cancel

Subdeployment Properties

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

\* Indicates required fields

\* Subdeployment Name: JMS\_SUB

Back Next Finish Cancel



### 3) Select Target as Cluster-JMS and Click on **Finish**

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Create a New Subdeployment". The breadcrumb path is: Home > DC\_JMS\_Template-0 > Summary of Servers > Summary of Migratable Targets > Summary of JMS Servers > JMSServer-1 > Summary of Migratable Targets > Summary of JMS Modules > JMS\_MODULE. The "Targets" section is active, and the "Cluster-JMS" target is selected under the "Clusters" category. The "All servers in the cluster" radio button is selected. The "Finish" button is highlighted.

### 4) Sub-Deployment is created

The screenshot shows the Oracle WebLogic Server Administration Console. The main window is titled "Settings for JMS\_Module". The breadcrumb path is: Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module. The "Subdeployments" tab is active. A message box indicates: "All changes have been activated. However 1 items must be restarted for the changes to take effect." and "Subdeployment created successfully." The "Subdeployments" table shows one entry: JMS\_SUB targeting Cluster-JMS.

| Name    | Resources | Targets     |
|---------|-----------|-------------|
| JMS_SUB |           | Cluster-JMS |

## 4.3 Resource Creation

### 4.3.1 Queue Creation

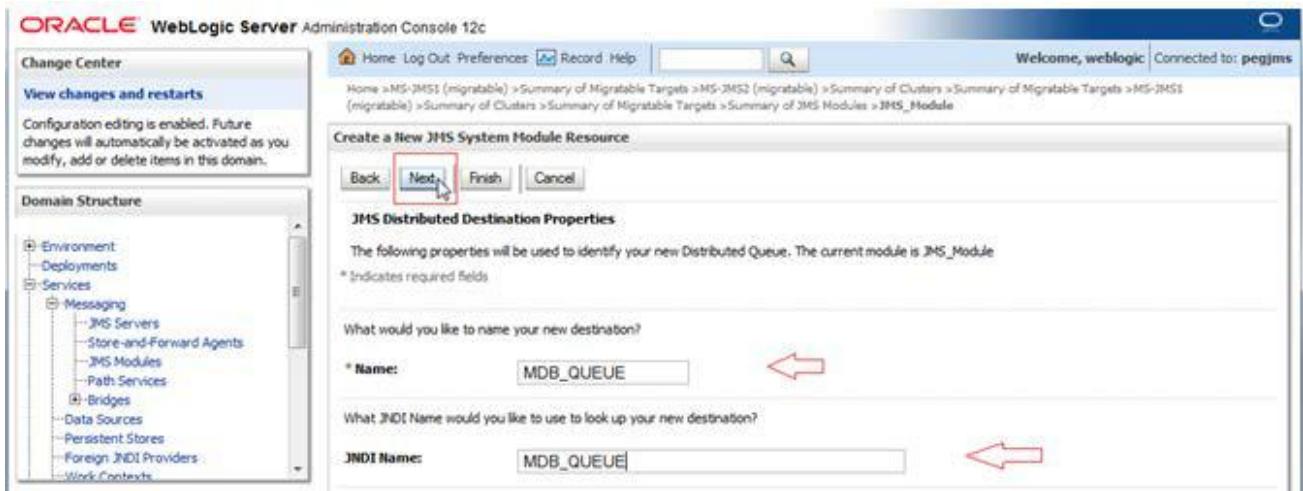
- 1) In JMS\_MODULE Click on **New**

The screenshot shows the Oracle WebLogic Server Administration Console. The breadcrumb trail is: Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module. The 'Settings for JMS\_Module' page is displayed, with the 'Configuration' tab selected. The 'Summary of Resources' table is empty, and the 'New' button is highlighted with a red box.

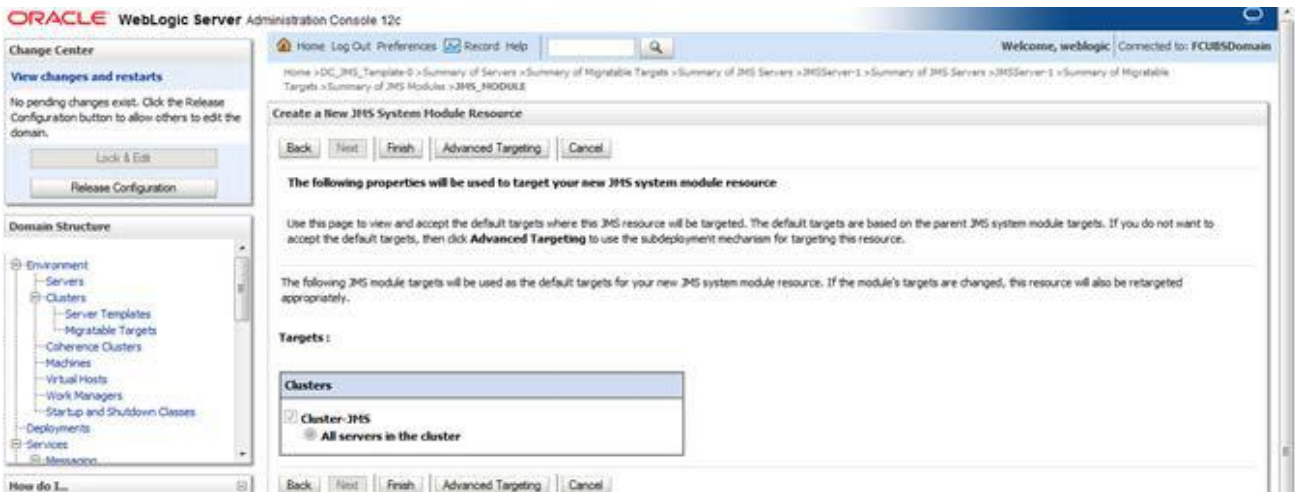
- 2) Select Distributed Queue and Click on **Next**

The screenshot shows the Oracle WebLogic Server Administration Console. The breadcrumb trail is: Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module. The 'Create a New JMS System Module Resource' page is displayed. The 'Distributed Queue' radio button is selected, and the 'Next' button is highlighted with a red box.

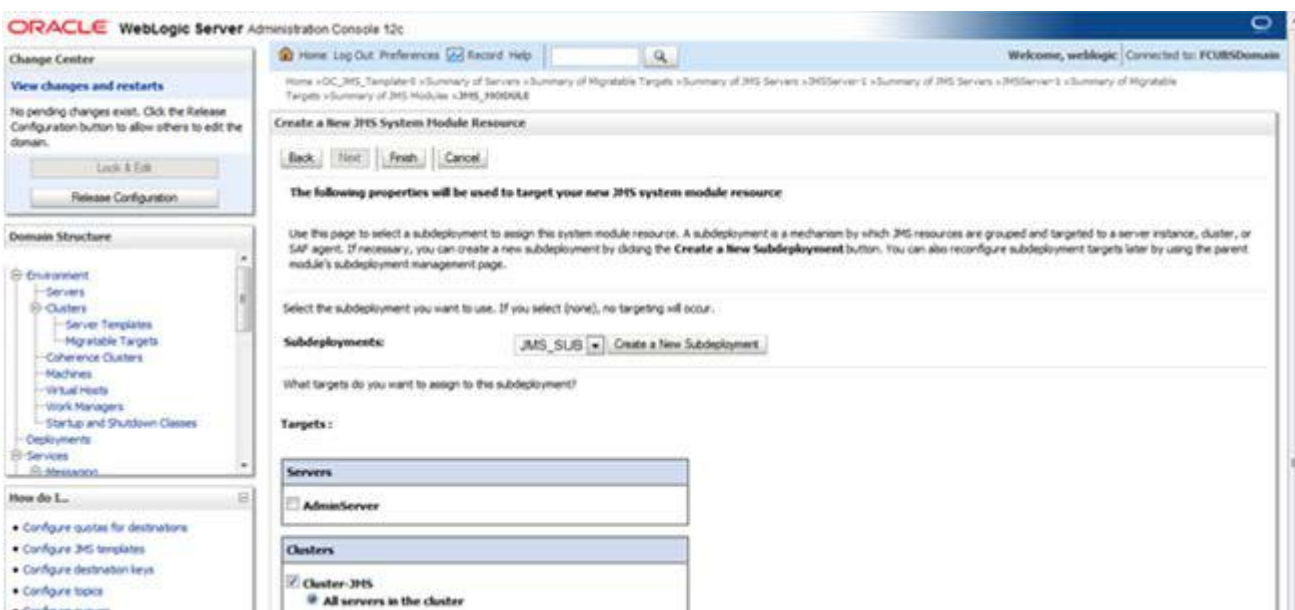
3) Enter the queue name and Click on **Next**



4) Click on **Advance Targeting**



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





6) MDB\_QUEUE is created

ORACLE WebLogic Server Administration Console 12c

Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module

Messages

- ✓ All changes have been activated. However 1 items must be restarted for the changes to take effect.
- ✓ The JMS distributed queue was created successfully.

Settings for JMS\_Module

Configuration Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

Name: JMS\_Module The name of this JMS system module. More Info...

Descriptor File Name: jms/jms\_module-jms.xml The name of the JMS module descriptor file. More Info...

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

Customize this table

Summary of Resources

New Delete Showing 1 to 1 of 1 Previous | Next

| Name      | Type                      | JNDI Name | Subdeployment | Targets     |
|-----------|---------------------------|-----------|---------------|-------------|
| MDB_QUEUE | Uniform Distributed Queue | MDB_QUEUE | JMS_SUB       | Cluster-JMS |

New Delete Showing 1 to 1 of 1 Previous | Next

System Status

Health of Running Servers

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

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

ORACLE WebLogic Server Administration Console 12c

Home > DC\_JMS\_Template-0 > Summary of Servers > Summary of Migratable Targets > Summary of JMS Servers > JMSServer-1 > Summary of JMS Servers > JMSServer-1 > Summary of Migratable Targets > Summary of JMS Modules > JMS\_MODULE

Messages

- ✓ All changes have been activated. No restarts are necessary.

Settings for JMS\_MODULE

Configuration Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

Name: JMS\_MODULE The name of this JMS system module. More Info...

Descriptor File Name: jms/jms\_module-jms.xml The name of the JMS module descriptor file. More Info...

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

Customize this table

Summary of Resources

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

New Delete Showing 1 to 3 of 3 Previous | Next

| Name               | Type                      | JNDI Name          | Subdeployment | Targets     |
|--------------------|---------------------------|--------------------|---------------|-------------|
| MDB_QUEUE          | Uniform Distributed Queue | MDB_QUEUE          | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_DLQ      | Uniform Distributed Queue | MDB_QUEUE_DLQ      | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_RESPONSE | Uniform Distributed Queue | MDB_QUEUE_RESPONSE | JMS_SUB       | Cluster-JMS |

New Delete Showing 1 to 3 of 3 Previous | Next

System Status

Health of Running Servers

- Failed (0)
- Critical (0)
- Overloaded (0)
- Warning (0)
- OK (5)

## 4.3.2 Connection Factory Creation

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

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar contains the 'Domain Structure' tree with 'JMS Modules' selected. The main content area displays the 'Settings for JMS\_Module' page, with the 'Configuration' tab active. A message at the top states: 'All changes have been activated. However 1 items must be restarted for the changes to take effect. The JMS distributed queue was created successfully.' Below this, the 'Summary of Resources' table is shown with the following data:

| Name               | Type                      | JNDI Name          | Subdeployment | Targets     |
|--------------------|---------------------------|--------------------|---------------|-------------|
| MDB_QUEUE          | Uniform Distributed Queue | MDB_QUEUE          | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_DLQ      | Uniform Distributed Queue | MDB_QUEUE_DLQ      | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_RESPONSE | Uniform Distributed Queue | MDB_QUEUE_RESPONSE | JMS_SUB       | Cluster-JMS |

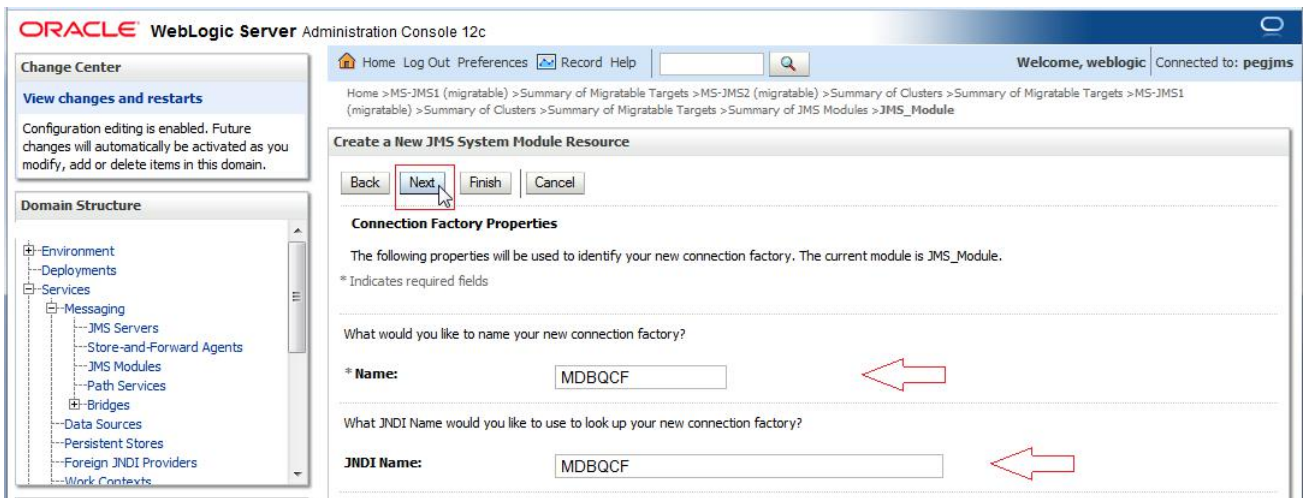
The 'New' button in the table's toolbar is highlighted with a red box. The bottom of the console shows the version '12.1.3.0.0' and copyright information.

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

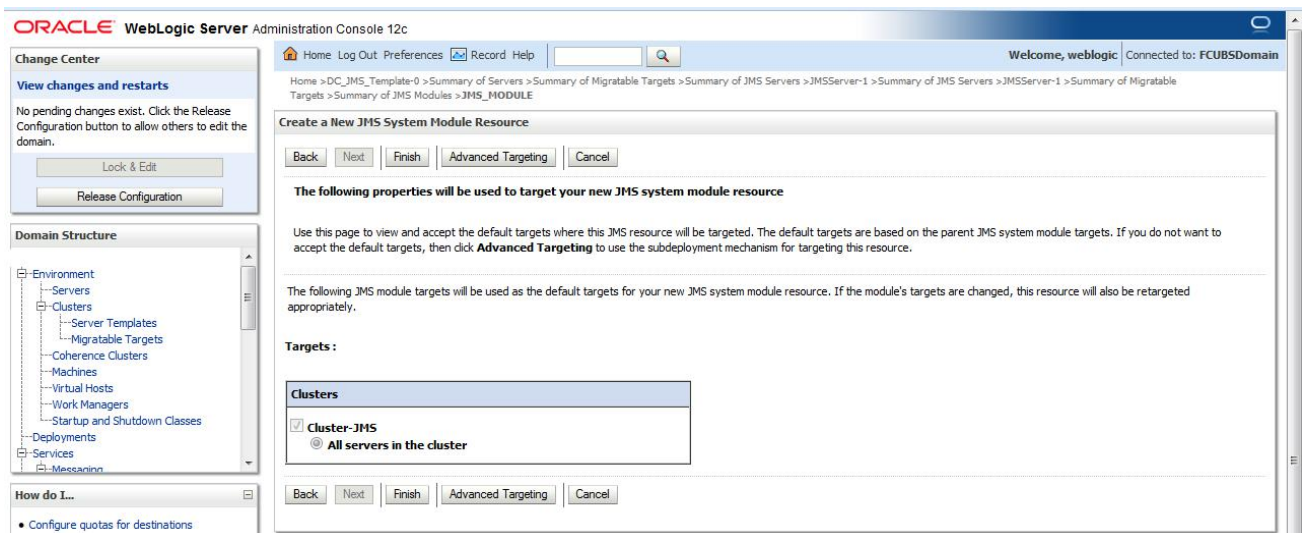
The screenshot shows the 'Create a New JMS System Module Resource' page in the Oracle WebLogic Server Administration Console. The 'Next' button in the top navigation bar is highlighted with a red box. The page prompts the user to 'Choose the type of resource you want to create.' The 'Connection Factory' radio button is selected and highlighted with a red box. The description for 'Connection Factory' is: 'Defines a set of connection configuration parameters that are used to create connections for JMS clients.' The 'Queue' option is also visible but not selected.



### 3) Enter the Name and Click on **Next**



### 4) Click on **Advance Targeting**



## 5) Select JMS\_SUB and Click on Finish

**ORACLE WebLogic Server Administration Console 12c**

Home > DC\_JMS\_Template-0 > Summary of Migratable Targets > Summary of JMS Servers > JMS-Server-1 > Summary of JMS Servers > JMS-Server-1 > Summary of Migratable Targets > Summary of JMS Modules > JMS\_MODULE

**Create a New JMS System Module Resource**

Back Next Finish Cancel

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

Use this page to select a subdeployment to assign this system module resource. A subdeployment is a mechanism by which JMS resources are grouped and targeted to a server instance, cluster, or SAF agent. If necessary, you can create a new subdeployment by clicking the **Create a New Subdeployment** button. You can also reconfigure subdeployment targets later by using the parent module's subdeployment management page.

Select the subdeployment you want to use. If you select (none), no targeting will occur.

**Subdeployments:** JMS\_SUB Create a New Subdeployment

What targets do you want to assign to this subdeployment?

**Targets:**

**Servers**

AdminServer

**Clusters**

Cluster-JMS

All servers in the cluster

**JMS Servers**

JMS-Server-1

Back Next Finish Cancel

## 6) Connection Factory is Created

**ORACLE WebLogic Server Administration Console 12c**

Home > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Clusters > Summary of Migratable Targets > Summary of JMS Modules > JMS\_Module

Messages

✓ All changes have been activated. However 1 items must be restarted for the changes to take effect.

✓ Connection factory created successfully.

**Settings for JMS\_Module**

Configuration Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

**Name:** JMS\_Module The name of this JMS system module. [More Info...](#)

**Descriptor File Name:** jms/jms\_module-jms.xml The name of the JMS module descriptor file. [More Info...](#)

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

[Customize this table](#)

**Summary of Resources**

New Delete Showing 1 to 4 of 4 Previous | Next

| Name               | Type                      | JNDI Name          | Subdeployment | Targets     |
|--------------------|---------------------------|--------------------|---------------|-------------|
| MDBQCF             | Connection Factory        | MDBQCF             | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE          | Uniform Distributed Queue | MDB_QUEUE          | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_DLQ      | Uniform Distributed Queue | MDB_QUEUE_DLQ      | JMS_SUB       | Cluster-JMS |
| MDB_QUEUE_RESPONSE | Uniform Distributed Queue | MDB_QUEUE_RESPONSE | JMS_SUB       | Cluster-JMS |

New Delete Showing 1 to 4 of 4 Previous | Next

## 5. Server Restart

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

**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_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

**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_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. Below the tab, there are several configuration fields: "Java Home", "Java Vendor", "BEA Home", "Root Directory", "Class Path", and "Arguments". The "Arguments" field is highlighted with a red box and contains the text "-XX:MaxPermSize=512m". The left sidebar contains navigation menus for "Change Center", "Domain Structure", "How do I...", and "System Status". The top navigation bar includes "Home", "Log Out", "Preferences", "Record", and "Help".

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



## 6. Foreign Server Creation

### 6.1 Module Creation

#### 1) JMS\_Modules and Click on **New**

ORACLE WebLogic Server Administration Console 12c

Home > Summary of Servers > MS-JMS2 > Summary of Virtual Hosts > Summary of Servers > Summary of Clusters > Summary of Migratable Targets > Summary of Servers > Summary of Deployments > Summary of JMS Modules

**Summary of JMS Modules**

JMS system resources are configured and stored as modules similar to standard J2EE 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

| Name       | Type   |
|------------|--------|
| JMS_Module | System |

New Delete

Showing 1 to 1 of 1 Previous | Next

New Delete

Showing 1 to 1 of 1 Previous | Next

How do I...  
• Configure JMS system modules  
• Configure resources for JMS system modules

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

ORACLE WebLogic Server Administration Console 12c

Home > Summary of Migratable Targets > MS-JMS1 (migratable) > Summary of Migratable Targets > MS-JMS2 (migratable) > Summary of Clusters > Summary of Migratable Targets > MS-JMS1 (migratable) > S

**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 J2EE 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:  ←

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:

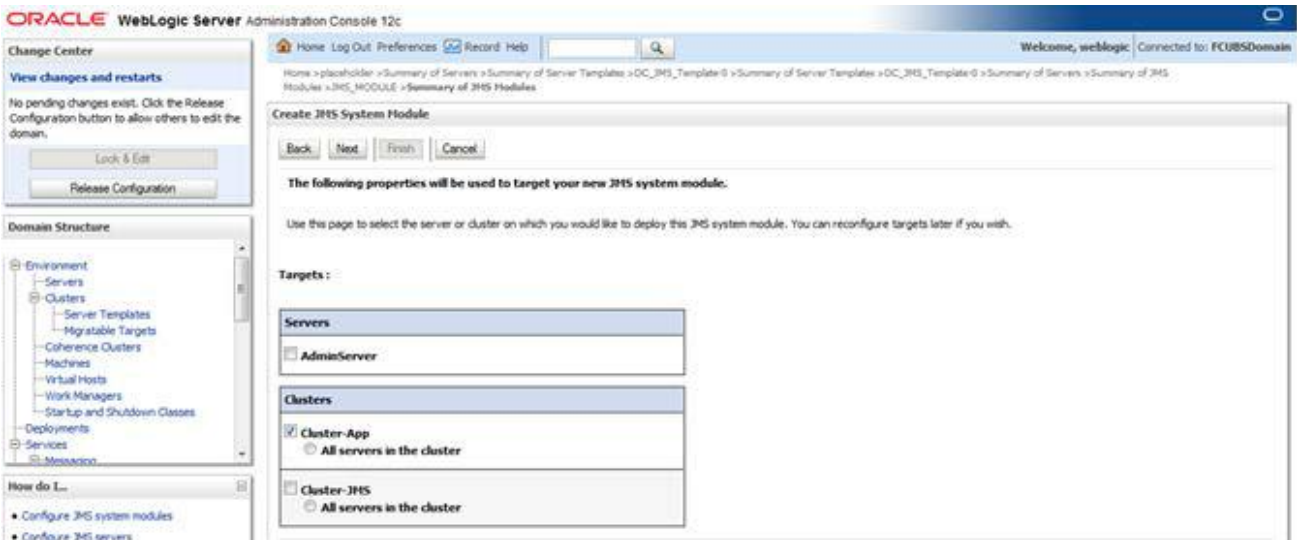
Where would like to place the descriptor for this System Module, relative to the jms configuration sub-directory of your domain?

Location In Domain:

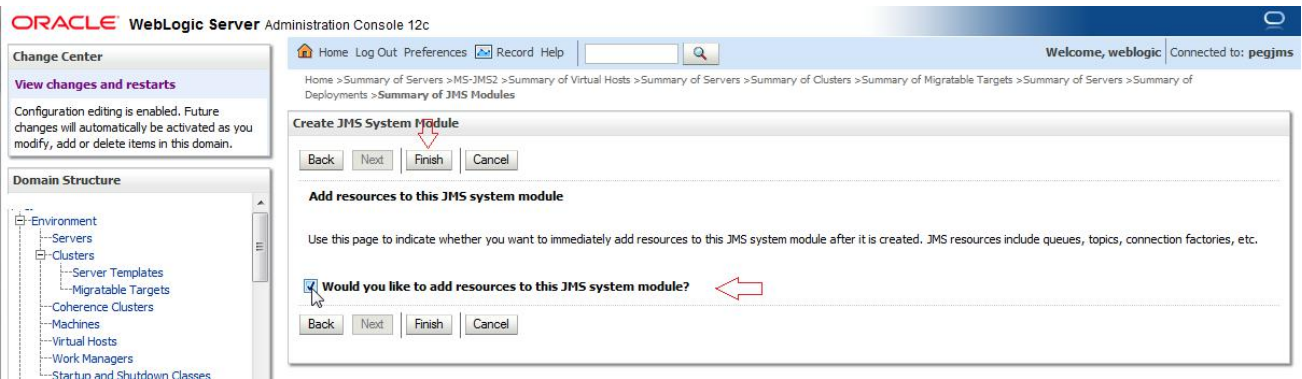
Back Next Finish Cancel

System Status  
Health of Running Servers  
Failed (0)

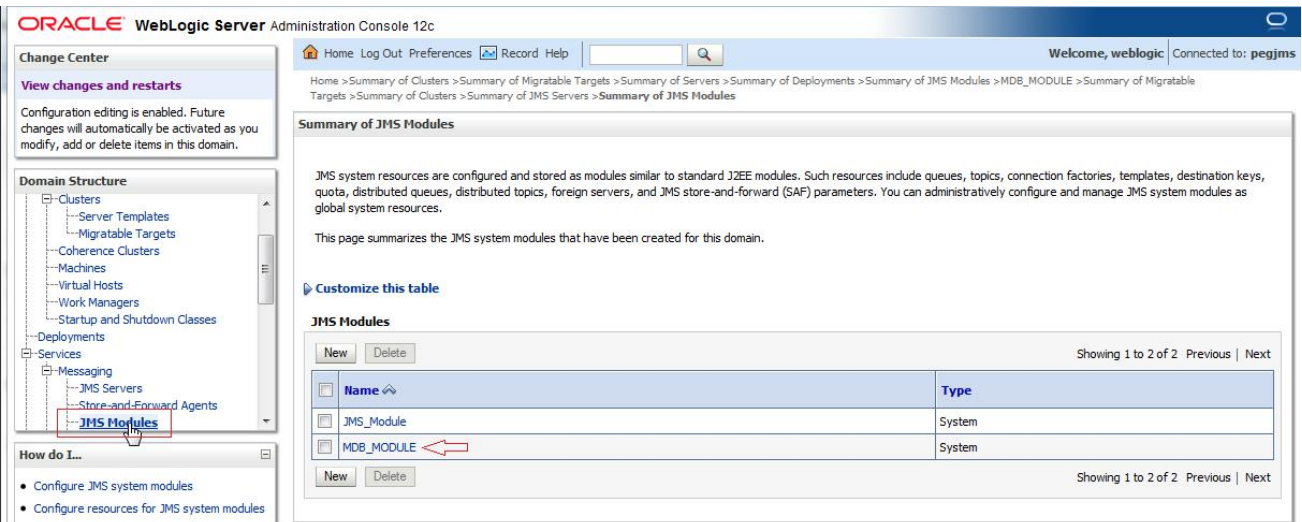
3) Select target as Cluster-App and click on **Next**



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



5) MDB\_MODULE is **created**



## 6.2 Foreign Server Creation

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

ORACLE WebLogic Server Administration Console 12c

Home > Summary of Servers > Summary of Deployments > Summary of JMS Modules > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules

**Summary of JMS Modules**

JMS system resources are configured and stored as modules similar to standard J2EE 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**

New Delete Showing 1 to 2 of 2 Previous | Next

| Name       | Type   |
|------------|--------|
| JMS_Module | System |
| MDB_MODULE | System |

New Delete Showing 1 to 2 of 2 Previous | Next

2) Click on Configuration → New

ORACLE WebLogic Server Administration Console 12c

Home > Summary of Deployments > Summary of JMS Modules > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE

**Settings for MDB\_MODULE**

Configuration Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

**Name:** MDB\_MODULE The name of this JMS system module. More Info...

**Descriptor File Name:** jms/mdb\_module-jms.xml The name of the JMS module descriptor file. More Info...

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

**Customize this table**

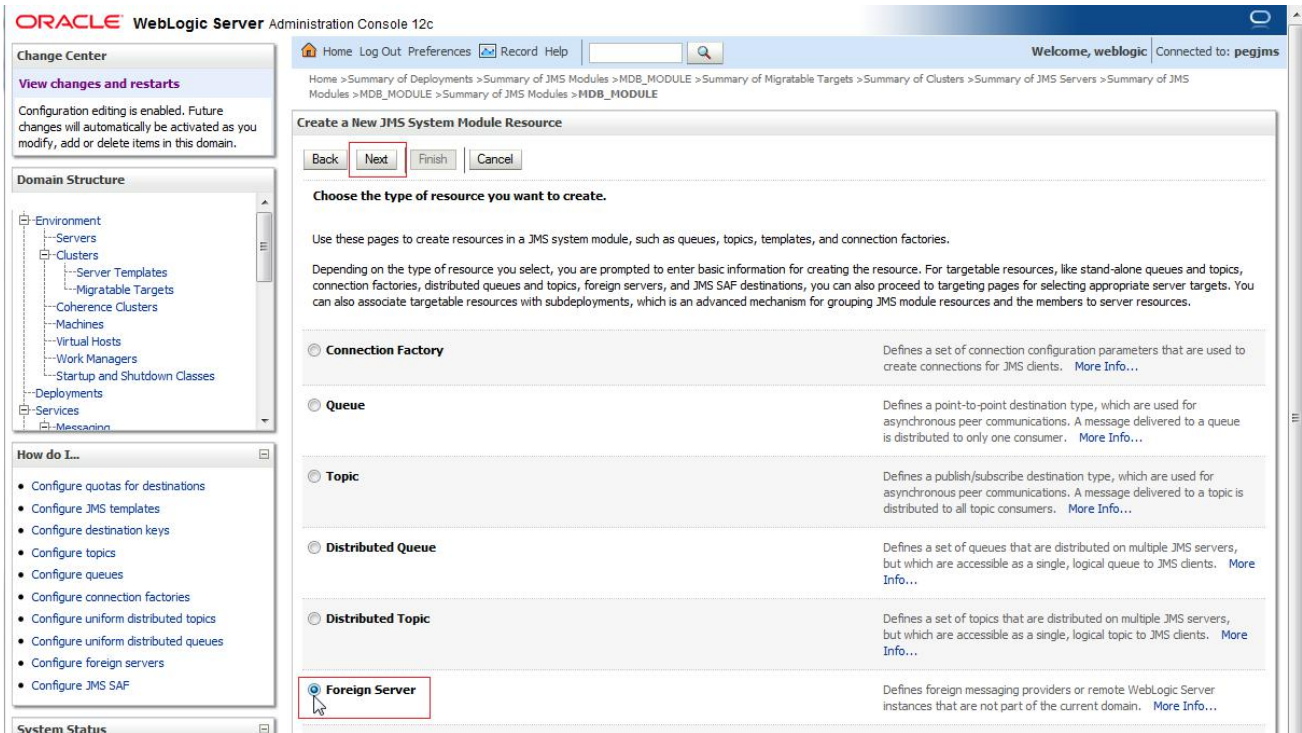
**Summary of Resources**

New Delete Showing 0 to 0 of 0 Previous | Next

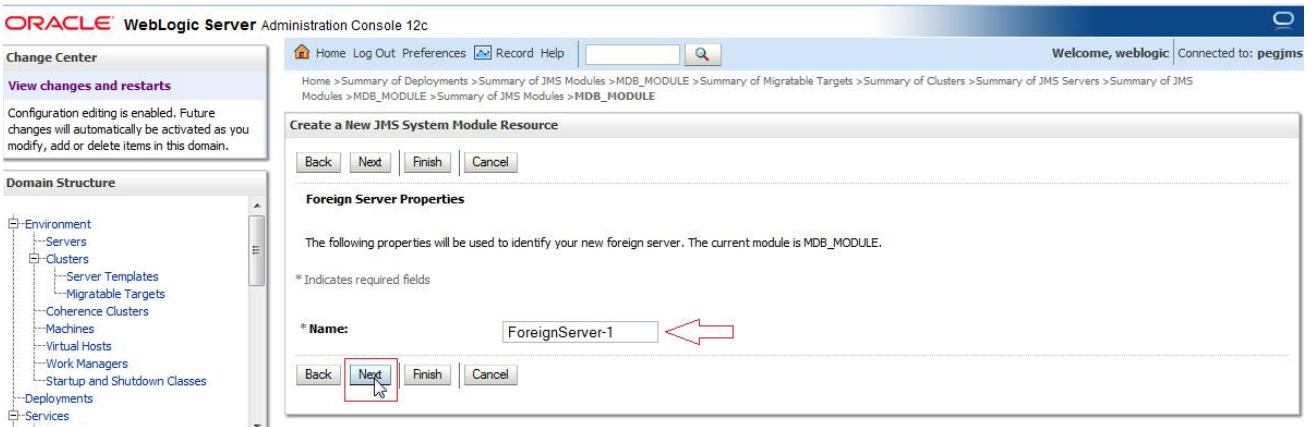
| Name                          | Type | JNDI Name | Subdeployment | Targets |
|-------------------------------|------|-----------|---------------|---------|
| There are no items to display |      |           |               |         |

New Delete Showing 0 to 0 of 0 Previous | Next

### 3) Select Foreign Server and Click on Next

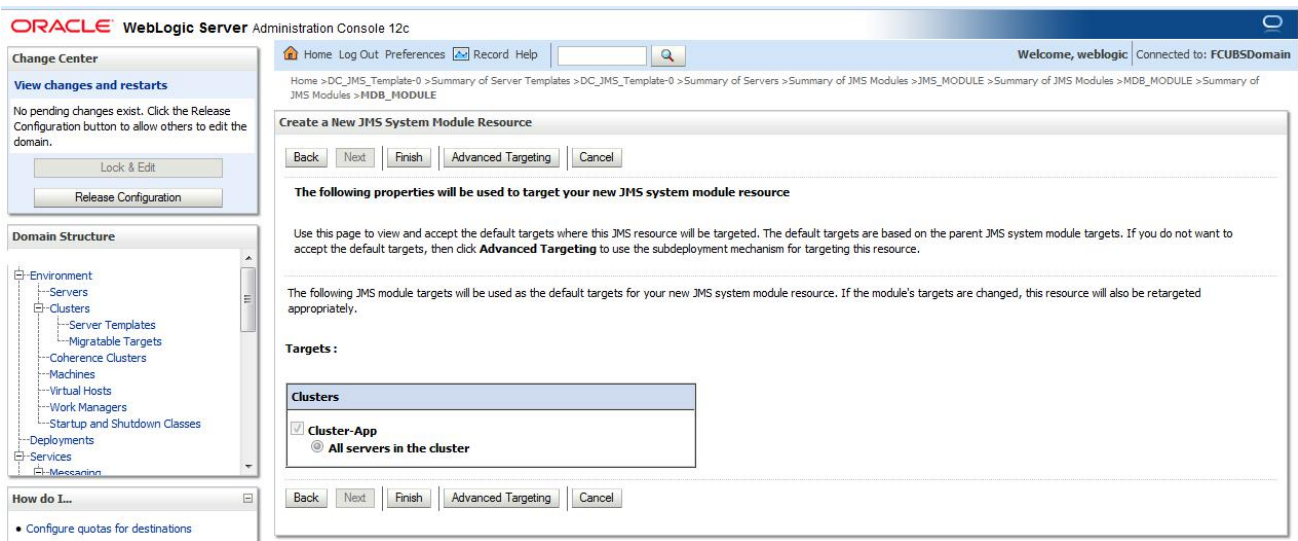


### 4) Enter name and Click on Next

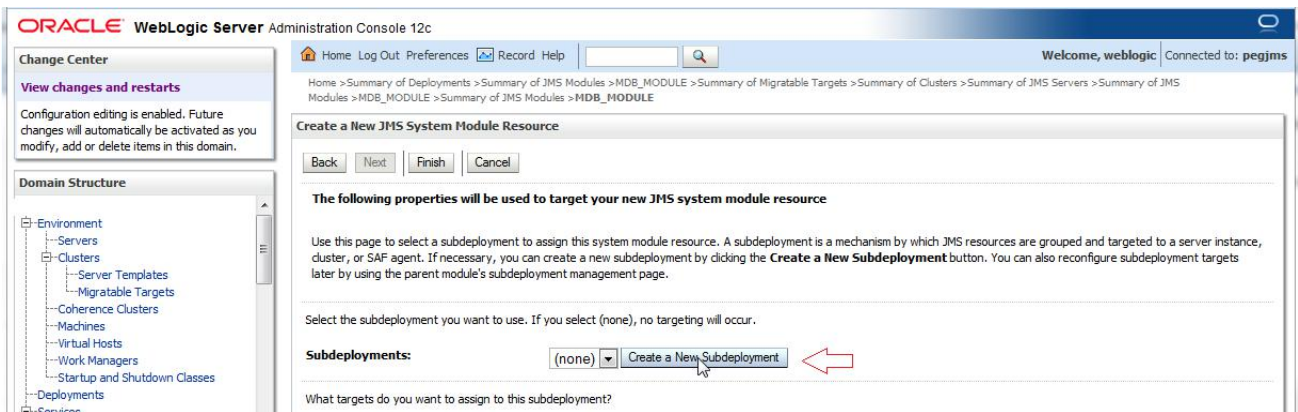




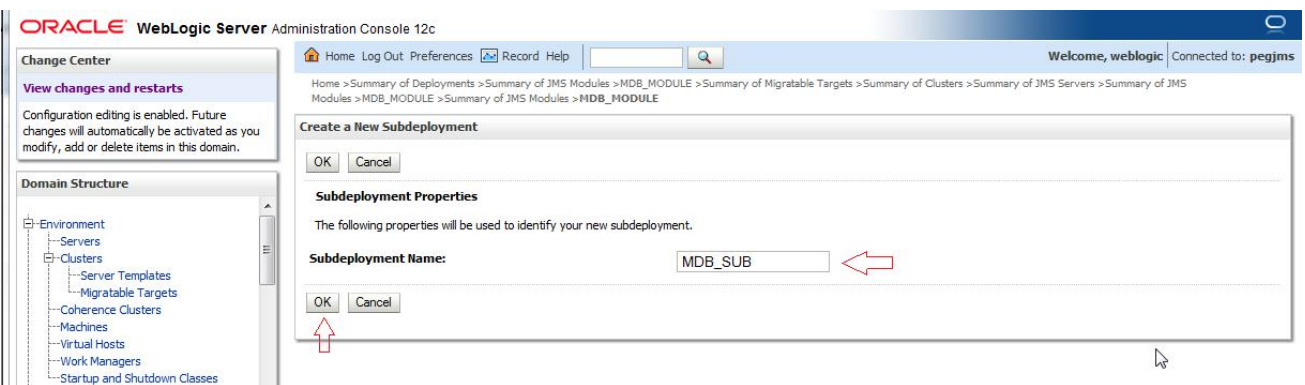
### 5) Click on Advanced Targeting



### 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

**ORACLE WebLogic Server Administration Console 12c**

Home > DC\_JMS\_Template-0 > Summary of Server Templates > DC\_JMS\_Template-0 > Summary of Servers > Summary of JMS Modules > JMS\_MODULE > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE

Welcome, weblogic | Connected to: FCUBSDomain

### Create a New JMS System Module Resource

Back Next Finish Cancel

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

Use this page to select a subdeployment to assign this system module resource. A subdeployment is a mechanism by which JMS resources are grouped and targeted to a server instance, cluster, or SAF agent. If necessary, you can create a new subdeployment by clicking the **Create a New Subdeployment** button. You can also reconfigure subdeployment targets later by using the parent module's subdeployment management page.

Select the subdeployment you want to use. If you select (none), no targeting will occur.

Subdeployments:

What targets do you want to assign to this subdeployment?

Targets:

- Servers**
  - AdminServer
- Clusters**
  - Cluster-App
    - All servers in the cluster
- JMS Servers**
  - JMSServer-1

Back Next Finish Cancel

## 9) Foreign Server is created

**ORACLE WebLogic Server Administration Console 12c**

Home > Summary of Deployments > Summary of JMS Modules > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE

Welcome, weblogic | Connected to: pegjms

Messages

- ✔ All changes have been activated. No restarts are necessary.
- ✔ The foreign server was created successfully.

### Settings for MDB\_MODULE

Configuration Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing resources.

**Name:** MDB\_MODULE The name of this JMS system module. [More Info...](#)

**Descriptor File Name:** jms/mdb\_module-jms.xml The name of the JMS module descriptor file. [More Info...](#)

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection factories, JMS templates, destination sort keys, destination quota, distributed destinations, foreign servers, and store-and-forward parameters.

Customize this table

Summary of Resources

New Delete Showing 1 to 1 of 1 Previous | Next

| Name                                     | Type           | JNDI Name | Subdeployment | Targets     |
|--|----------------|-----------|---------------|-------------|
| <input type="checkbox"/> ForeignServer-1 | Foreign Server | N/A       | MDB_SUB       | Cluster-App |

New Delete Showing 1 to 1 of 1 Previous | Next

## 6.3 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, and System Status. The main content area displays the 'Settings for MDB\_MODULE' page. The 'Configuration' tab is active, showing a summary of resources. A table lists the resources, with 'ForeignServer-1' highlighted. A red arrow points to the 'Name' column of this row.

| 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 Oracle WebLogic Server Administration Console. The left sidebar contains navigation menus for Change Center, Domain Structure, and System Status. The main content area displays the 'Settings for ForeignServer-1' page. The 'Configuration' tab is active, and the 'General' sub-tab is selected. The 'JNDI Connection URL' field is filled with the value 't3://10.184.148.185:7106,10.184.148.189:7107'. A 'Save' button is visible at the top of the configuration area.



### 3) Click on Connection Factories

ORACLE WebLogic Server Administration Console 12c

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

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Settings for ForeignServer-1

Configuration Subdeployment Notes

General Destinations **Connection Factories**

A foreign connection factory represents a connection factory that resides on another server, and which is accessible via JNDI. A remote connection factory can be used to refer to another instance of WebLogic Server running in a different cluster or server, or a foreign provider, as long as that provider supports JNDI.

This page summarizes the foreign connection factories that have been created for this domain.

Customize this table

Foreign Connection Factories (Filtered - More Columns Exist)

New Delete Showing 0 to 0 of 0 Previous | Next

| Name                          | Local JNDI Name | Remote JNDI Name |
|-------------------------------|-----------------|------------------|
| There are no items to display |                 |                  |

New Delete Showing 0 to 0 of 0 Previous | Next

### 4) Create MDBQCF Connection Factory

ORACLE WebLogic Server Administration Console 12c

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

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Create a New Foreign JMS Connection Factory

OK Cancel

Foreign Connection Factory Properties

The following properties will be used to identify your new foreign connection factory.

\* Indicates required fields

\* Name: MDBQCF

Local JNDI Name: MDBQCF

Remote JNDI Name: MDBQCF

OK Cancel

### 5) Click on Destination

ORACLE WebLogic Server Administration Console 12c

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

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Messages

All changes have been activated. However 1 item must be restarted for the changes to take effect.

Settings for ForeignServer-1

Configuration Subdeployment Notes

General Destinations **Connection Factories**

Configuration - Destinations - Tab

A foreign connection factory represents a connection factory that resides on another server, and which is accessible via JNDI. A remote connection factory can be used to refer to another instance of WebLogic Server running in a different cluster or server, or a foreign provider, as long as that provider supports JNDI.

This page summarizes the foreign connection factories that have been created for this domain.

Customize this table

Foreign Connection Factories (Filtered - More Columns Exist)

New Delete Showing 1 to 1 of 1 Previous | Next

| Name   | Local JNDI Name | Remote JNDI Name |
|--------|-----------------|------------------|
| MDBQCF | MDBQCF          | MDBQCF           |

New Delete Showing 1 to 1 of 1 Previous | Next

## 6) Create MDB\_QUEUE

Home > JMS Modules > MDB\_MODULE > ForeignServer-1 > MDB\_MODULE > ForeignServer-1 > Summary of Servers > JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

**Settings for ForeignServer-1**

Configuration | Subdeployment | Notes

General | **Destinations** | Connection Factories

A foreign destination (topic or queue) can be found on a remote server. When this destination is looked up on the local server, a look-up will be performed automatically on the remote JNDI directory, and the object will be returned from that directory.

This page summarizes the foreign destinations that have been created for this domain.

Customize this table

**Foreign Destinations**

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

| Name                          | Local JNDI Name | Remote JNDI Name |
|-------------------------------|-----------------|------------------|
| There are no items to display |                 |                  |

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

ORACLE WebLogic Server Administration Console 12c

Home | Log Out | Preferences | Record | Help

Welcome, weblogic | Connected to: pegjms

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

**Create a New Foreign JMS Destination**

OK | Cancel

**Foreign Destination Properties**

The following properties will be used to identify your new foreign destination.

\* Indicates required fields

\* **Name:**

**Local JNDI Name:**

**Remote JNDI Name:**

OK | Cancel

## 7) Similarly Create MDB\_QUEUE\_RESPONSE, MDB\_QUEUE\_DLQ

ORACLE WebLogic Server Administration Console 12c

Home | Log Out | Preferences | Record | Help

Welcome, weblogic | Connected to: pegjms

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

**Create a New Foreign JMS Destination**

OK | Cancel

**Foreign Destination Properties**

The following properties will be used to identify your new foreign destination.

\* Indicates required fields

\* **Name:**

**Local JNDI Name:**

**Remote JNDI Name:**

OK | Cancel

ORACLE WebLogic Server Administration Console 12c

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: pegjms

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Messages

All changes have been activated. However, 1 item must be restarted for the changes to take effect.

Settings for ForeignServer-1

Configuration Subdeployment Notes

General Destinations Connection Factories

A foreign destination (topic or queue) can be found on a remote server. When this destination is looked up on the local server, a look-up will be performed automatically on the remote JNDI directory, and the object will be returned from that directory.

This page summarizes the foreign destinations that have been created for this domain.

Customize this Table

Foreign Destinations

| Name               | Local JNDI Name    | Remote JNDI Name   |
|--------------------|--------------------|--------------------|
| MDB_QUEUE          | MDB_QUEUE          | MDB_QUEUE          |
| MDB_QUEUE_RESPONSE | MDB_QUEUE_RESPONSE | MDB_QUEUE_RESPONSE |

ORACLE WebLogic Server Administration Console 12c

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: pegjms

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Create a New Foreign JMS Destination

OK Cancel

Foreign Destination Properties

The following properties will be used to identify your new foreign destination.

Indicates required fields

Name: MDB\_QUEUE\_DLO

Local JNDI Name: MDB\_QUEUE\_DLO

Remote JNDI Name: MDB\_QUEUE\_DLO

OK Cancel

ORACLE WebLogic Server Administration Console 12c

Home Log Out Preferences Record Help

Welcome, weblogic Connected to: pegjms

Home > MDB\_MODULE > Summary of Migratable Targets > Summary of Clusters > Summary of JMS Servers > Summary of JMS Modules > MDB\_MODULE > Summary of JMS Modules > MDB\_MODULE > ForeignServer-1 > Configuration

Messages

All changes have been activated. However, 1 item must be restarted for the changes to take effect.

Settings for ForeignServer-1

Configuration Subdeployment Notes

General Destinations Connection Factories

A foreign destination (topic or queue) can be found on a remote server. When this destination is looked up on the local server, a look-up will be performed automatically on the remote JNDI directory, and the object will be returned from that directory.

This page summarizes the foreign destinations that have been created for this domain.

Customize this Table

Foreign Destinations

| Name               | Local JNDI Name    | Remote JNDI Name   |
|--------------------|--------------------|--------------------|
| MDB_QUEUE          | MDB_QUEUE          | MDB_QUEUE          |
| MDB_QUEUE_DLO      | MDB_QUEUE_DLO      | MDB_QUEUE_DLO      |
| MDB_QUEUE_RESPONSE | MDB_QUEUE_RESPONSE | MDB_QUEUE_RESPONSE |

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



# 7. Application Deployment

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

**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...**

- Start and stop a deployed Enterprise application

**Settings for GWMDB**

Overview | Deployment Plan | Configuration | Security | **Targets** | Control | Testing | Monitoring | Notes

Use this page to specify the WebLogic Server instances and clusters to which you want to deploy this Enterprise application. These settings determine where the application is deployed at server startup time.

**Target Assignments**

Change Targets | Showing 1 to 1 of 1 | Previous | Next

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

Change Targets | Showing 1 to 1 of 1 | Previous | Next

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

**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
  - Deployments
- Services
  - Messaging
    - JMS Servers
    - Store-and-Forward Agents
    - JMS Modules
    - Path Services
  - Bridges
  - Data Sources
  - Persistent Stores
  - Foreign JNDI Providers
  - Work Contexts

**How do I...**

- Install an Enterprise application
- Configure an Enterprise application
- Update (redeploy) an Enterprise application
- Start and stop a deployed Enterprise application
- Monitor the modules of an Enterprise application

**Summary of Deployments**

Home > Summary of Environment > Summary of Servers > Summary of Deployments > JMS Modules > MDB\_MODULE > Summary of Environment > Summary of Servers > Summary of Deployments > GWMDB > Summary of Deployments

Control | Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

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

**Customize this table**

**Deployments**

Install | Update | Delete | Start | Stop | Showing 1 to 5 of 5 | Previous | Next

| Name            | State  | Health | Type                   | Deployment Order |
|-----------------|--------|--------|------------------------|------------------|
| FCUBSApp        | Active | OK     | Enterprise Application | 100              |
| GWEJB           | Active | OK     | Enterprise Application | 100              |
| GWMDB           | Active | OK     | Enterprise Application | 100              |
| jax-rs(1.1.1.9) | Active |        | Library                | 100              |
| SWEJB           | Active | OK     | Enterprise Application | 100              |

Install | Update | Delete | Start | Stop | Showing 1 to 5 of 5 | Previous | Next

## 8. Frequently Asked Questions

### 8.1 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

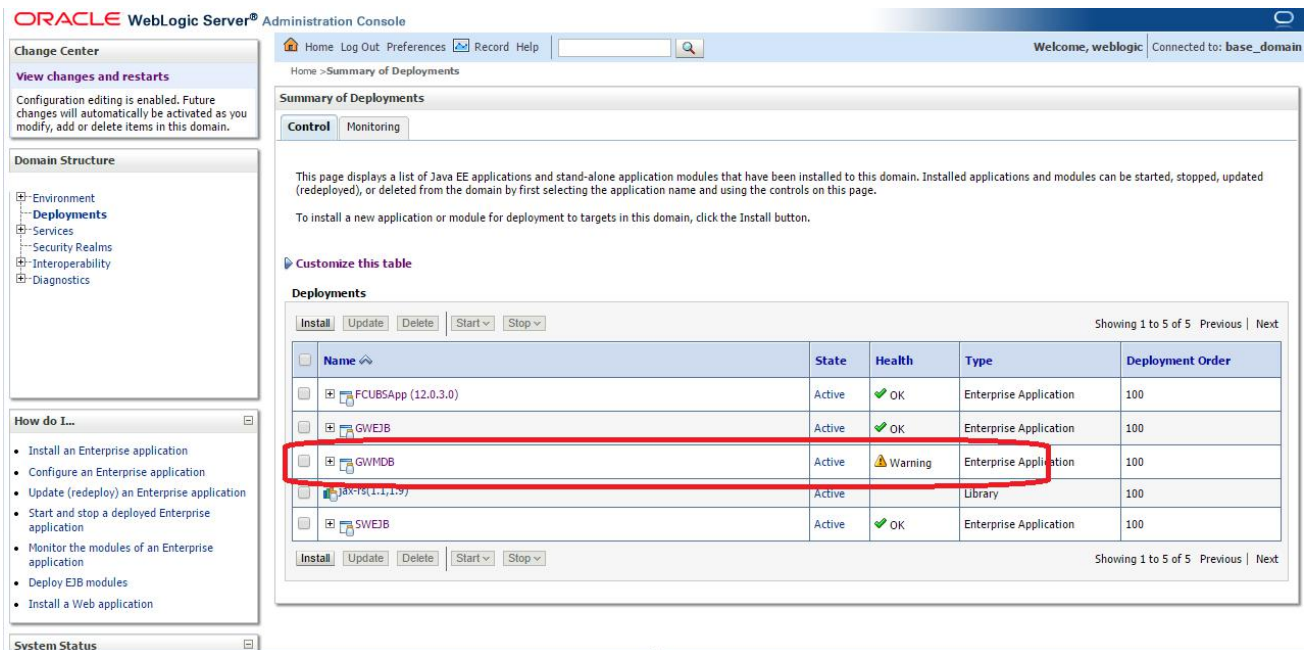
- 1) Foreign Server Creation is not required
- 2) Targets should be given accordingly during SubDeployment Creation

### 8.2 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 content area displays the 'Summary of Deployments' page. A table lists the deployed applications and modules. The 'GWMDB' application is highlighted with a red box, showing a 'Warning' health status. The table has columns for Name, State, Health, Type, and Deployment Order.

| Name                | State  | Health  | Type                   | Deployment Order |
|---------------------|--------|---------|------------------------|------------------|
| FCUB5App (12.0.3.0) | Active | OK      | Enterprise Application | 100              |
| GWJEB               | Active | OK      | Enterprise Application | 100              |
| <b>GWMDB</b>        | Active | Warning | Enterprise Application | 100              |
| JAX-RS(1.1.1.9)     | Active |         | Library                | 100              |
| SWEJEB              | 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.



## 8.3 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.

## 8.4 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.

## 8.5 How to Test the Deployment

1) Navigate to Services → JMS Modules → JMS\_MODULE → MDB\_QUEUE → MONITORING

The screenshot shows the JBoss Administration Console interface. On the left, there is a 'Domain Structure' tree with 'Services' expanded to 'Messaging'. Below it, a 'How do I...' section lists 'Manage distributed queue messages' and 'Configure uniform distributed queues'. The main content area is titled 'Settings for MDB\_QUEUE' and has tabs for 'Configuration', 'Security', 'Monitoring', 'Subdeployment', and 'Notes'. The 'Monitoring' tab is active. It contains instructions on how to view statistics and manage messages. Below this, there is a 'Destinations (Filtered - More Columns Exist)' table with a 'Show Messages' button. The table has columns for 'Name', 'Consumers Current', 'Consumers High', and 'Consumers Total'. Two destinations are listed, both with 64 consumers.

| Name                              | Consumers Current | Consumers High | Consumers Total |
|-----------------------------------|-------------------|----------------|-----------------|
| JMS_MODULE JMS-Server-1@MDB_QUEUE | 64                | 64             | 64              |
| JMS_MODULE JMS-Server-2@MDB_QUEUE | 64                | 64             | 64              |

2) Select any one Server and Click on Show Messages

The screenshot shows the 'Summary of JMS Messages' page in the JBoss Administration Console. The left sidebar is the same as in the previous screenshot. The main content area has a title 'Summary of JMS Messages' and instructions on how to view message details. Below this, there is a 'Message Selector' field with an 'Apply' button. A 'Customize this table' link is present. The table is titled 'JMS Messages (Filtered - More Columns Exist)' and has columns for 'ID', 'CorrId', 'Time Stamp', 'State String', 'JMS Delivery Mode', and 'Message Size'. The table is currently empty, with the text 'There are no items to display' shown below it.

### 3) Click on New and enter the Message in Body and Click on OK

The screenshot shows the 'Produce JMS Message' dialog box. The 'Priority' is set to 4 and 'Delivery Mode' is set to Persistent. The 'Body' field is currently empty.

### 4) Message is Sent

The screenshot shows the 'Summary of JMS Messages' page. A green message indicates 'JMS message sent successfully.' Below this, there is a 'Message Selector' field and an 'Apply' button. A table titled 'JMS Messages (Filtered - More Columns Exist)' shows one message with ID: <257876.1411126889162.0>, Corrid, Time Stamp (Fri Sep 19 17:11:29 IST 2014), State String (receive transaction), JMS Delivery Mode (Persistent), and Message Size (472).

| ID                          | Corrid | Time Stamp                   | State String        | JMS Delivery Mode | Message Size |
|-----------------------------|--------|------------------------------|---------------------|-------------------|--------------|
| ID:<257876.1411126889162.0> |        | Fri Sep 19 17:11:29 IST 2014 | receive transaction | Persistent        | 472          |

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

## 8.6 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 redeploy the EAR
- 2) Create Custom Workmanager and add constraints to limit the number of the max MDB threads

### 8.6.1 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.com/weblogic/weblogic-ejb-jar">
  <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>
      <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-->
    <!-- EJB Resource 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.

## 8.6.2 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

The screenshot shows the 'Create a New Work Manager Component' dialog in the WebLogic Server Administration Console. The 'Work Manager' radio button is selected, and the 'Next' button is highlighted. The dialog also shows other options like 'Response Time Request Class', 'Fair Share Request Class', 'Context Request Class', 'Maximum Threads Constraint', 'Minimum Threads Constraint', and 'Capacity Constraint'.

The screenshot shows the 'Work Manager Properties' dialog in the WebLogic Server Administration Console. The 'Name' field is filled with 'GWMDBWM', and the 'Next' button is highlighted. The dialog also shows a 'Back' button and a 'Cancel' button.

The screenshot shows the 'Select deployment targets' dialog in the WebLogic Server Administration Console. The 'Cluster-App' radio button is selected, and the 'Finish' button is highlighted. The dialog also shows a 'Back' button and a 'Cancel' button.



ORACLE WebLogic Server Administration Console 12c

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

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

Home > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Work Managers > WorkManager-0 > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Servers > Summary of Environment > Summary of Servers > Summary of Work Managers

Messages  
Work Manager created successfully

Summary of Work Managers  
A Work Manager defines a set of request classes and thread constraints that manage work performed by WebLogic Server instances. This page displays the global Work Managers, request classes and thread constraints defined for this domain.  
Global Work Managers are defined at the domain level. You can also define application-level and module-level Work Managers.

Customize this table

Global Work Managers, Request Classes and Constraints

| Name     | Type         | Targets     |
|----------|--------------|-------------|
| GWJDBWMI | Work Manager | Cluster-App |

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

ORACLE WebLogic Server Administration Console 12c

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

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

Home > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Work Managers > WorkManager-0 > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Servers > Summary of Environment > Summary of Servers > Summary of 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

ORACLE WebLogic Server Administration Console 12c

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

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

Home > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Work Managers > WorkManager-0 > Summary of Work Managers > MaxThreadsConstraint-0 > Summary of Servers > Summary of Environment > Summary of Servers > Summary of Work Managers

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

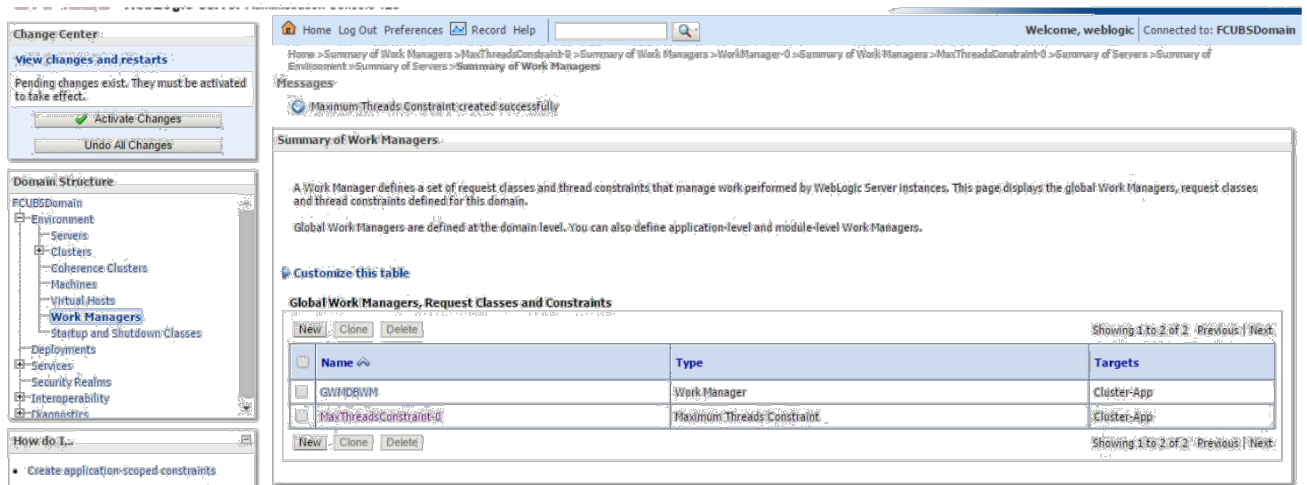
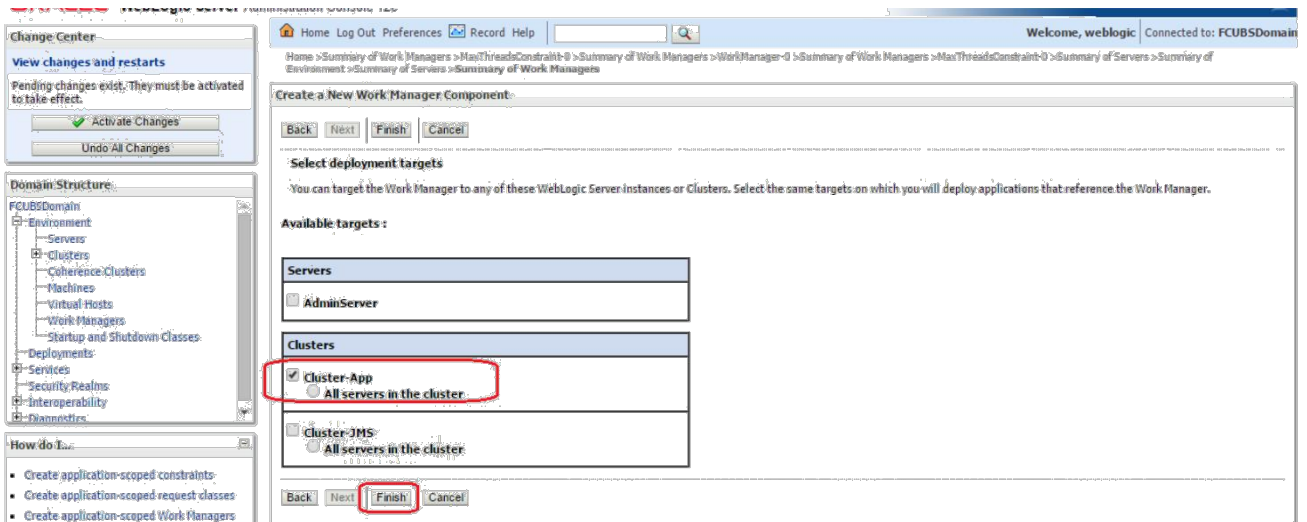
What is the maximum number of concurrent threads to allocate for requests? Enter either a fixed thread count or the name of a Data Source whose size will be used for the constraint.

Count: 25

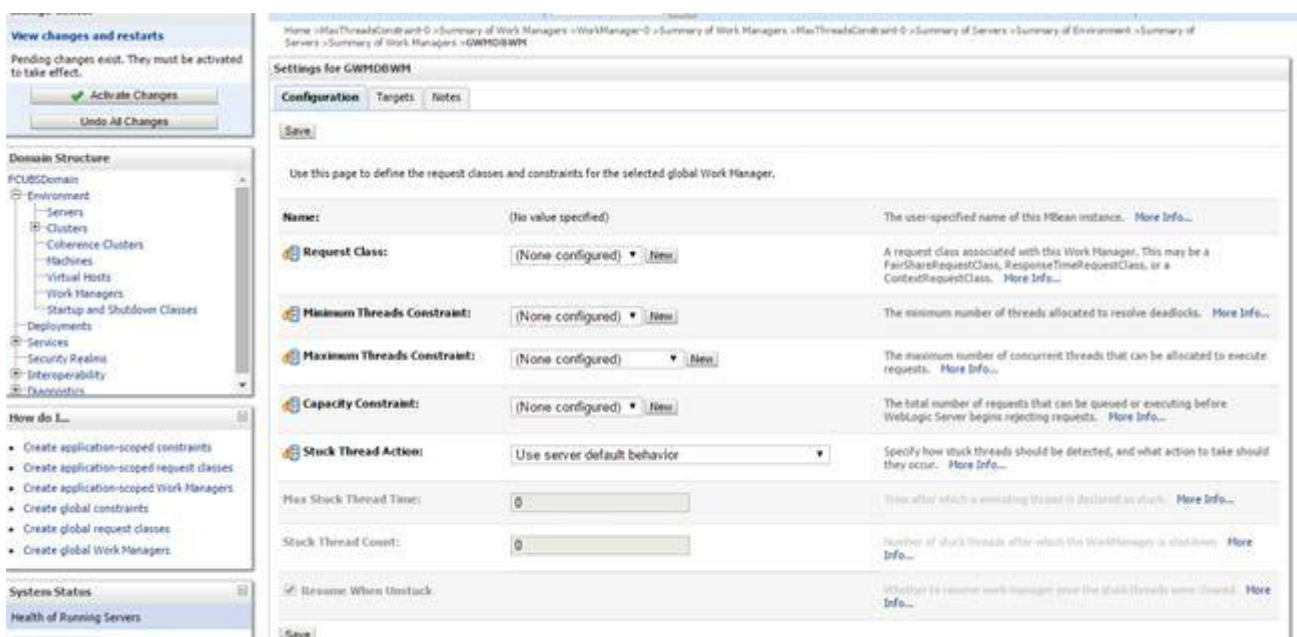
Data Source:

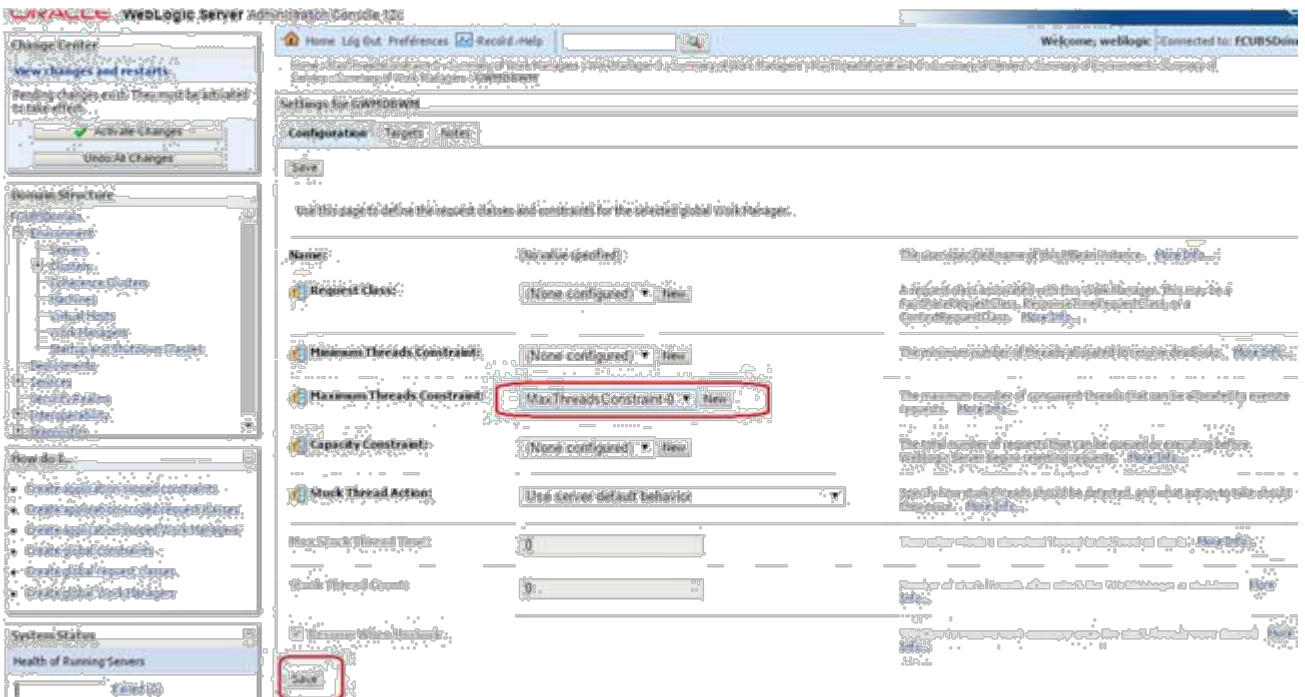
Back Next Finish Cancel





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.

## 8.7 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.

## **8.8 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.

## **8.9 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

## **8.10 References**

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



Oracle Banking Payments  
Weblogic Configuration  
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