JMS Configuration Using Websphere Default Messaging Provider Oracle Banking Corporate Lending Release 14.6.0.00 [May] [2022]



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1. Purpose

The purpose of this document is to explain the steps required for JMS Configuration in cluster mode using WEBSPHERE DEFAULT MESSAGING PROVIDER for Websphere 8.5.5



2. Introduction

The default messaging provider is installed and runs as part of WebSphere Application Server, and needs no further administration. WebSphere administrative console is used to configure JMS resources for applications and can manage messages and subscriptions associated with JMS destinations.

The default messaging provider is the Java[™] Message Service (JMS) API implementation for messaging (connection factories, JMS destinations, and so on). The concrete destinations (queues and topic spaces) behind the default messaging provider interface are implemented in a service integration bus.

The default messaging provider is based on service integration technologies., this document deals with

Service Bus Creation

A service integration bus consists of one or more bus members. A bus member can be an application server or a cluster. Each bus member will have one (or possibly more in the case of clusters) messaging engine that manages connections to the bus and messages.

- JMS connection factories and service integration A JMS connection factory is used to create connections to JMS resources on a service integration bus.
- JMS queue resources and service integration Creation of JMS queue resources provided by the default messaging provider for JMS point-to-point messaging and supported by a service integration bus.
- Application access to JMS resources
 Describes the application access to Java Message Service (JMS) resources provided by the default
 messaging provider.



3. Pre-Requisites

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

3.1 Nodes

2 nodes are created

| WebSphere, software | | | | | | Welcome | | |
|--|---|--|--------------------------|--------------|-------------------------------------|--------------|--|--|
| View: All tasks | Cell=otsa | 222565Cell01. Profile=Dmgr01 | | | | | | |
| Searcheological and a search and a | Nodes | | | | -7 | | | |
| Welcome | Node | | | | | | | |
| e) Guided Activities | Hour | la anna ha manana andar la W | | | a shareful constitution waters with | a distant 10 | | |
| é Servers | host | Use this page to manage nodes in the application server environment. A node correspond to a physical computer system with a distinct is host address. The following table lists the managed and unmanaged nodes in this cell. The first node is the deployment manager. Add new radies to be address is the use of the distinct and the distinct and the deployment manager. | | | | | | |
| E Applications | noder | to the cell and to this list by o | dicking Add Node. | | | | | |
| E Joba | B interences | | | | | | | |
| + Services | Add Node Remove Node Force Delete Synchronize Full Resynchronize Stop | | | | | | | |
| ± Resources | 0019 | | | | | | | |
| E Runtime Operations | Selec | t Name 🔿 | Host Name 🔘 | Version 0 | Discovery Protocol 🗘 | Status 🖞 | | |
| E Security | You | can administer the following re | sourcesi | | | | | |
| Operational policies | 0 | ofss220239Node02 | ofss220239.in.oracle.com | Base 8.5.5.0 | TCP | • | | |
| Environment | | ofss222565CellManager01 | ofss222565.in.oracle.com | ND 8.5.5.0 | TCP | | | |
| Virtual hosts | | ofss222565Node03 | ofss222565.in.oracle.com | ND 8.5.5.0 | TCP | • | | |
| Update global Web server plugrin configuration WebSphere variables | Tota | 13 | | | | | | |
| Shanded toranes StP application routers Replication domains URI Groups Warning Monitor Monitor | | | | | | | | |
| - Sustem administration | | | | | | | | |
| | | | | | | | | |

3.2 Node Agents

Both the Node Agents are started.

| | | | | | Welcome | |
|---|---|--|--------------------------------------|--|--|--|
| Cellinofss2 | 22555Cell01, Prohiam | Dimp/01 | | | | |
| Node age | rts. | | | | 7 | |
| Node | agents | ide anapte and application conver- | on the code that a code accept man | uses. The ends sourt on | | |
| Use this page to manage node agents and application servers on the node that a node agent manages. The node agent process serves as an intermediary between the application servers on the node and the deployment manager. The node agent process runs on every node and is | | | | | | |
| specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronization, file transfer, and request routing. | | | | | | |
| Preferences | | | | | | |
| Stop Restart Restart all Servers on Node | | | | | | |
| EA. | PA +++ +42 | | | | | |
| G C + Y | | | | | | |
| Select | Name O | Node 🗘 | Host Name 🗘 | Version 🗘 | Status C | |
| You a | an administer the fol | lowing resources: | | | 1.0 | |
| | nodeagent | ofss220239Node02 | ofss220239.in.oracle.com | Base 8.5.5.0 | * | |
| | nodeacent | ofss222565Node03 | ofss222565.in.oracle.com | ND 8.5.5.0 | * | |
| Total | 2 | | | | | |
| | Cellinchez Kode agei Use th interm special and re is Pro- Select You c Total | Cellwoho22355500107, Profile Node agents Use this page to manage in intermediary between the specialized to perform node and request routing. B Preferences Stop Restart Resta Stop Restart Resta Select Name C You can administer the fol Dodeacent Total 2 | Cell-anho222555Cell01, Pretie=Degr01 | Cellenthis2225555Cell01: Prefile=Desp01 Mode agents Use this page to manage node agents and application servers on the node that a node agent manager. The node specialized to perform node-specific administration functions, such as server process monitoring, or and request routing. @ Preferences Stop Restart Restart all Servers on Node @ Preferences Select Name © Node © Host Name © You can administer the following resources: @ preferences @ preferences Select Name © Node © Host Name © You can administer the following resources: @ preferences @ preferences @ preferences Select Name © Node © Host Name © You can administer the following resources: @ preferences @ preferences @ preferences @ preferences Select name © You can administer the following resources: @ preferences @ preferences <t< td=""><td>Cell+aths2225555Cell01: Prefix=Despr01 Mode agents Use this page to manage node agents and application servers on the node that a node agent manages. The node agent process runs on a specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronizal and request routing. @ Preferences Stop Restart Restart all Servers on Node @ Preferences Select Name C Node C You can administer the following resources: @ preferences Image: canot descent ofss220239Node02 preferences Image: canot descent ofss220239Node03 ofss22256SNode03 ofss22256S.in.orade.com ND 8.5.5.0 Total 2</td></t<> | Cell+aths2225555Cell01: Prefix=Despr01 Mode agents Use this page to manage node agents and application servers on the node that a node agent manages. The node agent process runs on a specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronizal and request routing. @ Preferences Stop Restart Restart all Servers on Node @ Preferences Select Name C Node C You can administer the following resources: @ preferences Image: canot descent ofss220239Node02 preferences Image: canot descent ofss220239Node03 ofss22256SNode03 ofss22256S.in.orade.com ND 8.5.5.0 Total 2 | |



3.3 Cluster



3.4 Managed Servers

| /iews All tasks 🔻 | | 10.00 | | | | | - | |
|--|---|------------------|------------------------------|-----------------------------|---------------------|--|--|--|
| | Applicatio | n servers | | | | | - 7 | |
| Welcome | Applic | ation convers | | | | | | |
| Guided Activities | ties Use this case to view a list of the application servers in your environment and the status of each of these servers. You can u | | | | | | | |
| Servers | to char | nge the status o | f a specific application set | vers in your environment ar | o che status of eac | n or chese servers, iou | 2 s can also use this ; Status Q | |
| Newserver | 🛞 Pre | ferences | | | | | | |
| All servers | 1 | l pulue l | Translation Price 1 | | Char Tambak | 1 | | |
| E Server Types | District | Desete | remplates start s | top Restart Immediate | stop Terminate | la l | | |
| WebSphere application servers | 0 | 0 # 9 | | | | | | |
| Web3phere proxy servers On Demand Bouters | | | 1. A. A. | and the second second | Second a | | | |
| PHP servers. | Select | Name Ç | Node Ç | Host Name Ç | Version Q | Cluster Name Q | Status Q | |
| WebSphere Application Server Community | You c | an administer t | he following resources: | | | | | |
| Edition servers | 6 | <u>MS 1</u> | ofss220239Node02 | ofss220239.in.oracle.com | Base 8.5.5.0 | CLUSTER_1 | * | |
| WebSphere MO servers | 10 | MS-2 | ofes222565Node03 | ofst222565.in.oracle.com | ND 8.5.5.0 | CLUSTER 1 | 3 | |
| Web servers | | | | | | | | |
| Apache servers | 8 | server1 | ofss220239Node02 | ofss220239.in.oracle.com | Base 0.5.5.0 | | * | |
| Custom HTTP servers | 10 | server1 | ofis222565Node03 | ofss222565.in.oracle.com | ND 8.5.5.0 | | * | |
| El Clusters | | 70000 | Contraction of the | | and the second | | 1 | |
| | Total 4 | | | | | | | |
| H DataPower | 1000000 | | | | | | | |



3.5 DataSource

Ensure that DataSource required for the MDB ear is created with Target as Cluster_1

| WebSphere, software | | | | | Welcome | | |
|--|---|--|------------------------------|-------------------------|-----------------------------|--|--|
| Applications | Cell=otss222565Cell01, Profile=Dm | gr01 | | | | | |
| 🕑 Jobs | Data sources | | | | ? . | | |
| Services | Data sources | | | | | | |
| E Resources | Use this page to edit the settin | gs of a datasource that is a | ssociated with your selected | JDBC provider. The data | source object supplies your | | |
| Schedulers | application with connections for accessing the database. Learn more about this task in a <u>guided activity</u> . A guided activity provides a list of task steps and more general information about the topic. | | | | | | |
| Object pool managers JMS | Scope: Cell=ofss222565C | Scope: Cell=ofss222565Cell01, Cluster=CLUSTER_1 | | | | | |
| JMS providers | Show scope selection | Show scope selection drop-down list with the all scopes option | | | | | |
| Connection factories | | | | | | | |
| Queue connection factories | Scope specifies the what scope is and be | Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help. | | | | | |
| Topic connection factories | | | | | | | |
| Queues Topics | Cluster=CLUSTER | 1 * | | | | | |
| Topics Activation specifications | | | | | | | |
| - Activation specifications | Preferences | | | | | | |
| E JDBC | New Delete Test cor | Manage state | | | | | |
| JDBC providers | New Delete Test col | mercion manage state | | | | | |
| Data sources Data sources (WebCohere Application Server V4) | | | | | | | |
| Data sources (websphere Application Server V4) | | | | | | | |
| Resource Adapters | Select Name 🗢 | JNDI name 🗘 | Scope 🗘 | Provider 🗘 | Description 🗘 Category 🗘 | | |
| Asynchronous beans Asynchronous | You can administer the follow | ing resources: | | | | | |
| | | ELEVTEST WORLD | Cluster=CLUSTER_1 | Oracla 1DBC Driver | Now IDBC | | |
| 🛨 Mail | - PLEXTEST.WOKED | FLEATESTIWORLD | cluster=ccoster_1 | (XA) | Datasource | | |
| URL | | | | | | | |
| Resource Environment | Total 1 | | | | | | |
| Runtime Operations | | | | | | | |
| - Security | | | | | | | |

3.6 Shared Folder

Shared folders for File Store Creation are required and this folder should be accessible across both the servers (eg, NFS mount). For fail over of messaging engines to another, all servers in cluster require a separate folder. If there are 4 Managed Servers in the clusters then 4 separate folders are required.

Eg,

/scratch/MessageStore/JMS_1/

/scratch/MessageStore/JMS_2/

/scratch/ MessageStore /JMS_3/



4. JMS Configuration

4.1 Service Integration Bus Creation

1) Navigate to Service Integration > Buses > Click on New

| WebSphere. software | | | Welcome |
|---|--|--|--|
| /iew: All tasks | Cell=ofss222565Cell01. Profile=Dmpro | 91 | 1 |
| Welcome © Guided Activities © Servers © Applications © Jobs © Services | Buses A service integration bus support servers and clusters that have be with its bus members. | s applications using message-based and service en added as members of the bus. Applications | noriented architectures. A bus is a group of interconnected connect to a bus at one of the messaging engines associated |
| Runtime Operations | Select Name O | Description | Security O |
| Security | None | | |
| Operational policies | Total 0 | | |
| Environment | | | |
| System administration | | | |
| Users and Groups | | | |
| Monitoring and Tuning | | | |
| Troubleshooting | | | |
| Service integration | | | |
| Buses Service mapping | | | |

2) Enter Name for the new Bus, Uncheck "Bus Security" if security is not enabled during FCUBS property file build and click on Next

| WebSphere. software | | Welcome | |
|-------------------------------|--|---|-----|
| View: All tasks | CreateBus.displayName | | |
| • Welcome | Create a new Service Integration Bu | | - |
| Guided Activities | Create a new Service Integration | Bus. | |
| Servers | → Step 1: Create a | Create a new bus | |
| Applications | new bus | Configure the attributes of your new bus. | |
| · Jobs | (The next step of the wizard depends on | + Enter the name for your new bus | |
| Services | decisions made in the current step) | FCUBS | |
| Resources | Step 2: Confirm | | |
| Runtime Operations | create of new bus | | |
| Security | | Bus security | -11 |
| Operational policies | Next Cancel | | |
| Environment | | | |
| System administration | | | |
| Users and Groups | | | |
| Monitoring and Tuning | | | |
| Troubleshooting | | | |
| Service integration | | | |
| Buses | | | |
| Service mapping Web services | | | |
| WS-Notification | | | |
| | | | |



3) Click on Finish

| WebSphere. software | | Welcome |
|-------------------------------|--------------------------------------|---|
| Mission (11) Analia | CreateBus.displayName | |
| Viewi All tasks | Create a new Service Integration Bus | |
| - Welcome | | |
| Guided Activities | Create a new Service Integration I | aus. |
| ⊕ Servers | Step 1: Create a | Confirm create of new bus |
| Applications | | The following is a summary of your selections. To complete the bus creation, click Finish. If there are |
| Jobs | create of new bus | settings you wish to change, click Previous to review bus settings. |
| Services | | |
| (€ Resources | | Summary of actions: New bus "ECUBS" will be created with bus |
| Runtime Operations | | security setting "Disabled". |
| E Security | | |
| Operational policies | | R |
| Environment | Previous Finish Cancel | |
| System administration | | |
| Users and Groups | | |
| Monitoring and Tuning | | |
| Troubleshooting | | |
| 🖵 Service Integration | | |
| Buses | | |
| Service mapping | | |
| Web services WS-Netification | | |
| () UDM | | |
| (E 0001 | | |

4) New Bus FCUBS is created

| WebSphere. software | | | | Welcome |
|------------------------------|--------------------|---|--|---|
| iew: All tasks 🔻 | Cell=ofss2 | 2565Cell01, Profile=Dmgr01 | | |
| Welcome | Buses | | | 7 |
| Guided Activities | Buses | | | |
| Servers | A servi servers | ce integration bus supports applications using and clusters that have been added as memi | g message-based and service-oriented archite bers of the bus. Applications connect to a bus | ectures. A bus is a group of interconnected s at one of the messaging engines associated |
| Applications | with its | ; bus members. | | |
| Jobs | Pref | ferences | | |
| Services | New | Delete | | |
| Resources | C | D # 9 | | |
| luntime Operations | Select | Name 🗘 | Description 🔿 | Security 🔿 |
| ecurity | You o | an administer the following resources: | | |
| operational policies | | FCUBS | | Disabled |
| nvironment | | | | |
| System administration | Total | 1 | | |
| Users and Groups | | | | |
| Monitoring and Tuning | | | | |
| Troubleshooting | | | | |
| Service integration | | | | |
| - Buses € Service mapping | | | | |
| Web services | | | | |



4.2 Bus Member (File Store Creation)

 Navigate to Service Integration > Buses > Click on FCUBS(new bus Created) > Click on Bus Member under Topology

| | Concern MARCE AND Even Provide | |
|---------------------------------|--|--|
| /iews All tasks 🔻 | Cell+stss222565Cell01. Protile=Dmgr01 | |
| | luses | 2 |
| Welcome | Buses > FCUBS | |
| Juided Activities | A service integration bus supports applications using message-based and service-orient | ed architectures. A bus is a group of interconnected |
| ieniers | servers and clusters that have been added as members of the bus. Applications connect | t to a bus at one of the messaging engines associat |
| Applications | | |
| lobis | Configuration Local Topology | |
| ervices | | |
| esources | | |
| untime Operations | General Properties | Topology |
| Kurity | Name | Bus members |
| perational policies | rubs | THE REPORT AND A DESCRIPTION |
| vironment | UUID | Foreign bus connections |
| ataon administration | D4AFF53950380C28 | Bootstrap members |
| and and formula | Description | Destination resources |
| ars and droops | | Destinations |
| ontoring and Tuning | | Mediations |
| oubleshooting | 2 | Services |
| rvice integration | Inter-engine transport chain | - Tobo and samilars |
| Buses | | - Outbound services |
| Service mapping Wab services | Discard messages | - WS-Notification services |
| WS-Notification | | Reliable messaging state |
| pt . | (%) Contiguration reload enabled | Additional Properties |
| 101 | Default messaging engine high message threshold foono messages | Columnation and Columnation |
| | | Security |
| | Limit the range of available bootstrap members to: | - Web service gateway |
| | | Instances |

2) Click On Add

| WebSphere, software | | | Welcome |
|--------------------------------|-------------------------------------|---|--------------------------------------|
| View: All tasks | Cell=ofss222565Cell01, Profile=Dmgr | 01 | 2 |
| Welcome 3 Guided Activities | Buses > FCUBS > Bus membe | ers | |
| 3 Servers | Bus members are the servers, w | recopnere MQ servers and clusters that have | e been added to the bus. |
| E Applications | Add Remove | | |
| E Jobs | | | |
| E Services | | | |
| e Resources | Select Name 🗘 | Туре 🗘 | Messaging engine policy assistance 🗘 |
| Runtime Operations | None | | |
| e Security | Total 0 | | |
| Operational policies | | | |
| Environment | | | |
| € System administration | | | |
| Users and Groups | | | |



3) Select Cluster and Click on Next

| WebSphere, software | | | | Welcome |
|---|--|--|-----------------------|---------|
| Views All tasks | 5280131 AddbusKember draptay Nam | * | | |
| • Wekome | Add a new bus member | | | |
| Guided Activities | Add a server, cluster or a Web | Sphere MQ server as a new member of the bus- | | |
| · Servera | -> Step 1: Select | Select server, cluster or WebSphere | MQ server | |
| Applications | WebSphere HQ | Choose the server, cluster or WebSphere | | |
| in Jobs | Server - | | | |
| E Services | (The next step of the wizard depends on | O Server | ofes220239Node02:MS_1 | |
| ⊕ Resources | decisions made in the current step) | | | |
| 🕢 Runtime Operations | Step 2: Summary | Cluster | CLUSTER_1 V | |
| 🗈 🕃 Security | | | | |
| Operational policies | | Meosphere ind server | (none) 🔹 | |
| (a) Environment | | | | |
| System administration | First Learned | The second s | | |
| Users and Groups | Cancer | | | |
| and the second se | | | | |

4) Select Scalablity and High Availablity Policy Type and Click on Next.





5) Select File Store and Click on Next



6) Select the Node 1 Message Engine

| WebSphere. software | | | | | | | Welcome |
|---|---|---|------------------|----------|----------------------------|-----------------------|----------------|
| Views All tasks | SIB0131.CreateCustomMETopology. | displayName | | | | | |
| Nuclear and State of | Configure messaging engines | | | | | | |
| wecome D Guided Artivities | Configure the messaging engin | es that will be create | d when the sen | ver clus | ster is added as a bus mem | ber. | |
| Servers | Step 1: Select | Configure me | ssaging engi | nes | | | |
| Applications | server, cluster or WebSphere MQ server | | | | | | |
| j Jobs | Step 1.1: | The collection table shows the messaging engines that will be created when the server clust added as a bus member. At least one messaging engine must be created and message sto | | | | | |
| Services | Messaging engine | must be config | jured for each n | nessagi | ing engine. | | |
| Resources | settings | 100 | 1000 | Fail | Preferred order of servers | Only run on | Is the message |
| Runtime Operations | Step 1.1.1: | Name | Failover? | back? | to run on | preferred servers? | configured? |
| Security | of message | CLUSTER 1.0 | 000- Yes | Yes | ofss220239Node02:MS_1. | Yes | ∆ No |
| Operational policies | | CLUSTER 1.0 | 001- | 12:50 | ofss222565Node031MS_2 | | |
| Environment | -> Step 1.1.2) Configure | FCUBS | Yes | Yes | ofss220239Node021MS_1 | Yes | ∆ •No |
| System administration | messaging engines | | | | | | |
| Users and Groups | (The next step | | | | | | |
| Monitoring and Tuning | of the wizerd depends on | | | | | | |
| Troubleshooting | decisions made | | | | | | |
| Service integration | step) | | | | | | |
| Buses | Step 2: Summary | | | | | | |
| (a) service mapping (a) Web services | and the second second | | | | | | |
| WS-Notfication | Previous Next Cancel | | | | | | |
| UDDI | | | | | | | |



7) Enter the Log Directory Path and Permanent store directory path(shared path across the nodes) and Click on Next

| VebSphere. software | | Welcom |
|--|--|--|
| iervers | SIB0131.ConfigureFileStore.displayNat | me |
| New server All servers Gerver Types | Specify file store properties Provide the properties for the fil | le store |
| WebSphere application servers WebSphere application servers On Demand Routers PHP servers WebSphere Application Server Community Edition servers Generic servers WebSphere MQ servers WebSphere MQ servers Custom HTTP servers Custom HTTP servers Clusters DataPower Core Groups Applications | Step 1: Select server, cluster or WebSphere MQ server Step 1.1: Messaging engine policy assistance settings Step 1.1.1: Select the type of message store Step 1.1.2: Configure messaging engines | Configure file store Specify the properties for the file store Log * Log size 100 MB * Log directory path /scratch/work_area/DEV/JMS/MS_1/lo Store Store Store strings for permanent and temporary stores |
| All applications New Application Install New Middleware Application Application Types Edition Control Center Global deployment settings | → Step 1.1.2.1: Configure file store Step 2: Summary | Permanent and temporary stores * Minimum permanent store size Z00 MB Unlimited permanent store size * Maximum permanent store size |
| Jobs | | 500 MB |
| Services | | Fermanenc store unectory path |
| Resources Schedulers Object pool managers | | /scratch/work_area/DEV/JMS/MS_1/ |
| i JMS ■ JDBC ■ Paraussa Adapters | Previous Next Cancel | |

8) Click on other message engine and set the FileStore

| WebSphere. software | | | | | | | Welcome |
|---|---|---|---|---------------------------|---|--------------------------------------|---|
| View: All tasks | SIB0131 CreateCustomHETopology.d | isplayName | | | | | |
| Welcome | Configure messaging engines | | | | | | |
| E Guided Activities | Configure the messaging engine | is that will be created v | when the ser | ver clu | ster is added as a bus memi | ber, | |
| Servers | Step 1: Select | Configure mess | aging engi | nes | | | |
| New server All servers Enserver Types Clusters | server, cluster or WebSphere MQ server Step 1.1: Messaging engine policy assistance | The collection tab added as a bus m must be configure | le shows the ember. At le ed for each r | mess east or nessag | aging engines that will be on e messaging engine must b ing engine. | eated when the e created and m | server cluster is ressage store settings |
| WebSphere application server clusters Proxy server clusters Generic server clusters | settings Step 1.1.1: Colort the torus | Name | Failover? | Fail back? | Preferred order of servers to run on | Only run on preferred servers? | Is the message store configured? |
| Cluster topology On Demand Router clusters | of message store | CLUSTER 1.000 ECUBS | ≥ Yes | Yes | ofss222565Node03:MS_2, ofss220239Node02:MS_1 | Yes | Yes |
| Dynamic clusters DataPower | → Step 1.1.2: | CLUSTER 1.000 | Yes | Yes | ofss220239Node02:MS_1, ofss222565Node03:MS_2 | Yes | A No |
| E Core Groups | messaging engines | | | | | | |
| Applications | (The next step | | | | | | |
|] Jobs | of the wizard | | | | | | |
| Services | decisions made | | | | | | |
| Resources | in the current step) | | | | | | |
| Schedulers Object pool managers Object pool managers | Step 2: Summary | | | | | | |
| B thec | Previous Next Cancel | | | | | | |
| Resource Adapters | 4., | | | | | | |
| Asynchronous beans | | | | | | | |
| Cache instances | | 20 | | | | | |
| Se Mail | | | | | | | |



9) Click on Next after Setting FileStore for all messaging engines



10) Select Change Heap Sizes and Click on Next





11) Click on Finish





12) Click on Save

| VebSphere. software | | | | | Welcome |
|---|------------------------------|---------------------------------|------------------------------------|-------------------------------------|------------------|
| w: All tasks 🔻 | Cell=otss222365Cell Buses | 01, Profile=Dmgr01 | | 2 | |
| elcome | | Messages | | | 1 |
| uided Activities | | Anima have been mad | a to your local configuration. You | | |
| ervers | | Save dir ttly to the ma | ster configuration. | o can | |
| New server | | Review changes before | saving or discarding. | | |
| All servers | | | and a second second | | |
|] Server Types | | An option to synchronize the | e configuration across multiple n | odes after saving can be enabled in | |
|] Clusters | | Preferences. | | | |
| WebSphere application server clusters | | The server may need to | be restarted for these changes t | o take effect. | |
| Proxy server clusters Generic server clusters | | | | | - |
| Cluster topology | Buses > FCUB | > Bus members | | | |
| On Demand Router clusters | Bus members ar | e the servers, WebSphere MQ ser | vers and clusters that have been | added to the bus. | |
| Dynamic clusters | Preferences | | | | |
|) DataPower | Add Remo | /e | | | |
| E Core Groups | | | | | |
| pplications | | ÷ | | | |
| bs | Select Name 🕻 | | Туре 🗘 | Messaging engine policy assi | istance 🗘 |
| ervices | You can admini | ster the following resources: | | | |
| isources | | <u>u</u> | Cluster | Enabled (Scalability with hig | ph availability) |
| Schedulers | Tabel 4 | | 1 | | |
| Object pool managers | Total 1 | | | | |
| JMS | | | | | |
| JDBC | | | | | |
| Resource Adapters | | | | | |
| Asynchronous beans | | | | | |



4.3 **Destination Queue Creation**

 Navigate to Service Integration > Buses > Click on FCUBS(new bus Created) > Click on Destination under Destination Resources

| WebSphere, software | | Welco |
|--|--|---------------------------------------|
| | Cell=otss222565Cell01, Protile=Dmar01 | |
| New server | | |
| All servers | Buses | ? |
| | | |
| Clusters | Buses > FCUBS | |
| WebSphere application server clusters | A service integration bus supports applications using message-based and service-oriented architectures. A b | us is a group of interconn |
| Proxy server clusters | servers and clusters that have been added as members of the bus. Applications connect to a bus at one of the with its bus members. | the messaging engines as |
| Generic server clusters | | |
| Cluster topology | Configuration Local Topology | |
| On Demand Router clusters Dynamic clusters | | |
| Date Date of a second | | |
| + DataPower | | |
| E Core Groups | General Properties Topolog | 1 |
| Applications | Name Bu | is members |
| labe | FCUBS M | essaging engines |
| | UUID FC | reign bus connections |
| services | | otstran members |
| Resources | D4AFF53550380C28 | otstrap members |
| Schedulers | Description | ion resources |
| Object pool managers | | estinations |
| JMS | | disting |
| JMS providers | | diacions |
| Connection factories | Services | i i i i i i i i i i i i i i i i i i i |
| Queue connection factories | Inter-engine transport chain | |
| Topic connection factories | | bound services |
| Queues | · <u>Q</u> | tbound services |
| Topics Antivation or estimation | Discard messages | 3-Notification services |
| Activation specifications | | liable messaging state |
| IDRC . | Continuation reload enabled | |

2) Click on New

| WebSphere. software | | | | | | Welcome |
|---|----|---|-------------------------|---------------------------|----------------------------|------------------|
| | Ce | ell=otss222565Cell01, Protile=Dmgr01 | | | | |
| New server | | _ | | | | |
| All servers | B | Buses | | | 2 | <u> </u> |
| | | | | | | |
| Clusters | | Buses > FCUBS > Destinations | | | | |
| WebSphere application server clusters | | A bus destination is defined on a service integration | on bus, and is hosted b | y one or more locations v | ithin the bus. Application | ns can attach to |
| Proxy server clusters | | the destination as producers, consumers, or both | to exchange messages. | | | |
| Generic server clusters | | 2 ces | | | | |
| Cluster topology | | New Delete Mediate Unmediate | | | | |
| On Demand Router clusters | | New Delete Mediate Onmediate | | | | |
| Dynamic clusters | | | | | | |
| DataPower | | | | | | |
| | | Select Identifier 🗢 | Bus 🗘 | Type 🗘 | Description 🗘 | Mediation 🗘 |
| Applications | | You can administer the following resources: | | | | |
| ⊕ Jobs | | Default.Topic.Space | FCUBS | Topic space | | |
| Services | | SYSTEM.Exception.Destination.CLUSTER | 1.000- FCUBS | Queue | | |
| Resources | | FCUBS | | | | |
| Schedulers | | SYSTEM.Exception.Destination.CLUSTER FCUBS | 1.001- FCUBS | Queue | | |
| Object pool managers | | Total 3 | | | | |
| E 1M2 | | | | | | |
| JMS providers Connection fortuning | | | | | | |
| Connection factories | | | | | | |
| Topic connection factories | | | | | | |
| - ropic connection factories | | | | | | |



3) Select Queue and Click on Next

| WebSphere. software | | Welcome |
|---|--|---------|
| New server All servers All servers All servers Server Types Custers Gusters VebSphere application server clusters Guster corver clusters Guster topology On Demand Router clusters Dynamic clusters Dynamic clusters Dynamic clusters DoteNover DeteNover Core Groups | Buses Create new destination Create a new destination on this bus. Select destination type Queue Topic space Alias Foreign Foreign | |
| Applications Jobs | Next Cancel | |
| Services Resources Schedulers Object pool managers JMS MC acculder: | | |

4) Enter Identifier as MDB_QUEUE and Click on Next

| WebSphere, software | | | Welcome |
|---|-------------------------------------|--|---------|
| | Cell=ofss222565Cell01, Profile=Dmgr | 01 | |
| Applications | Create new queue | | E |
| All applications New Application | Create a new queue for point-to | -point messaging. | |
| Install New Middleware Application Application Types | → Step 1: Set queue | Set queue attributes | |
| Edition Control Center Global deployment settings | Step 2: Assign the | Configure the attributes of your new queue | |
| 🕀 Jobs | member | MDB_QUEUE | |
| Services | Step 3: Confirm queue | Description | |
| Resources Schedulers Object pool managers | creation | | |
| | | | |
| JMS providers Connection factories Oueue connection factories | Next Cancel | | |
| Topic connection factories Queues Tonice | | | |

5) Select Bus Member as Cluster and Click on Next



| WebSphere. software | | | | Welcome |
|---|----------|--|---|---------|
| New server All servers Server Types | A | Cell=otss222565Cell01, Protile=Dmgr0 Create new queue | 1 | Ξ |
| Custers WebSphere application server clusters Proxy server clusters Clusters Cluster topology On Demand Router clusters Dynamic clusters Dynamic clusters DataPower Clusters ClusterS DataPower ClusterS ClusterS ClusterS ClusterS DataPower ClusterS DataPower DataPowe | l | → Step 1: Set queue for point-to- attributes → Step 2: Assign the queue to a bus member Step 3: Confirm queue creation | Assign the queue to a bus member Assign the queue to a bus member Assign the queue to a bus member that will store and process the messages for the queu Bus member Cluster=CLUSTER_1 | ie. |
| Applications Jobs Services Resources Schedulers | | Previous Next Cancel | | |

6) Click on Finish





7) Click on Save



8) Similarly create Destinations for all the other Queue's required

| WebSphere. software | | | | | | | Welcome |
|---|--|--|--------|-------|-------------|---------------|-------------|
| Core Groups | ell=otss2 | 22565Cell01, Profile=Dmgr01 | | | | | |
| Applications | Buses | | | | | ? | - |
| All applications New Application Install New Middleware Application Application Types Edition Control Center Global deployment settings | Buses > FCUBS > Destinations A bus destination is defined on a service integration bus, and is hosted by one or more locations within the bus. Applications can attach to the destination as producers, consumers, or both to exchange messages. Preferences New, Delete Mediate Unmediate | | | | | | |
| e Jobs | 016 | | | | | | |
| . Services | P | | | | | | |
| Resources | Select | Identifier 🗘 | | Bus 🗘 | Type 🗘 | Description 🗘 | Mediation 😄 |
| Schedulers | You d | an administer the following resources: | | | | | |
| Object pool managers JMS | | Default.Topic.Space | | FCUBS | Topic space | | |
| JMS providers Connection factories | | MDB_QUEUE | | FCUBS | Queue | | |
| Queue connection factories Topic connection factories | | MDB QUEUE DLQ | | FCUBS | Queue | | |
| Queues Topics | | MDB OUEUE RESPONSE | | FCUBS | Queue | | |
| Activation specifications IDBC | | SYSTEM.Exception.Destination.CLUSTER | 1.000- | FCUBS | Queue | | |



5. Resource Creation

5.1 **Queue Creation**

1) Navigate to Resources > JMS > Queues > Select Scope as Cluster and Click on New

| WebSphere. software | | | | | Welcome |
|--|--|--|--|----------------|---------|
| Views All tasks | Cell+otsz22363Cell01, Profile+ | Dingr01 | | - | |
| Welcome Golded Artistics | Queues | | | | |
| B Servers | A JMS queue is used as a d | lestination for point-to-point mes | saging. | | |
| Nex server Al servers Al servers Server Types Custers webSphere application server clusters Proxy server clusters Conserver server clusters Custers topplogy On Demand Router clusters Dynamic clusters Dynamic clusters Core Groups | Show scope specifies t what scope is an Cluster=CLUST Preferences Few Delete Custer States Salest Name | tion drop-down list with the all s the level at which the resource de d how it works, <u>see the scope se</u> TER_1 | copes option finition is visible. For detailed timps help, | Information on | Score A |
| Applications | None | | ······································ | e de traine de | |
| 🛓 Jobs | Total 0 | | | | |
| Services | | | | | |
| Resources Schedulers Object pool managers MS providers Connection factories Queue connection factories Queues connection factories Queues | | | | | |



2) Select "Default messaging provider" and Click on OK

| WebSphere, software | Welcome |
|---|---|
| View: All tasks | Cell=she222565cell01, Prahle=Dmgr01 Domes 2 |
| • Welcome Guided Activities | Queues > Select JMS resource provider |
| 🖃 Servers | Scope cells:ofss222565Cell01:clusters:CLUSTER_1 |
| New server Ad servers Ad servers Servers Evaluation Clusters VikibSphere application server clusters Pray server clusters Generic server clusters Cluster topology On Demand Router clusters Dynamic clusters Dynamic clusters Dynamic clusters Dynamic clusters Dynamic clusters Donese clusters | Select the provider with which to create the Queue. The following providers support the selected resource type and are available at the selected scope. |
| (*) Applications | |
| 🛞 Jobs | |
| Services | |
| 🕞 Resources | |
| Schedulers Object pool managers Ms Ms Ms municipan | |



3) Enter The Name, JNDI Name. Select Bus and Queue Name accordingly and Click on OK

| anterspinates software | weicome |
|--|---|
| Core Groups | Cell=otss222565Cell01, Prohle=Dmgr01 |
| Applications | Queues ? |
| All applications New Application Install New Middleware Application Application Types Edition Control Center Global deployment settings | <u>Queues</u> > MDB_QUEUE A JMS queue is used as a destination for point-to-point messaging. Use JMS queue destination administrative objects to manage JMS queues for th Configuration |
| Jobs | |
| Services | General Properties |
| Resources | Administration |
| Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL | Scope Cluster=CLUSTER_1 Provider Default messaging provider * Name NOB_QUEUE * JND1 name MDB_QUEUE Description |
| Resource Environment | Connection |
| Runtime Operations | Bus name |
| Security | FOBS |
| Operational policies | + Queue name |
| Environment | |
| C Curtan administration | Delivery mode |

4) Similarly create other Queue's required

| WebSphere. software | | | | | | Welcome |
|--|-----|---|---|--|---------------|-------------------|
| New serverAll servers | Que | =otss222565Cell01, Protile=Dmgr01 eues | | | | 2 |
| Genver Types Clusters WebSphere application server clusters Proxy server clusters Generic server clusters Cluster topology On Demand Router clusters Dynamic clusters Dynamic clusters Core Groups | | Queues A JMS queue is used as a destinat ⊆ Scope: Cell=ofss222565CellO ✓ Show scope selection dn Scope specifies the leve what scope is and how i Cluster=CLUSTER 1 | ion for point-to-point messaging 1, Cluster=CLUSTER_1 op-down list with the all scopes 1 at which the resource definitio t works, <u>see the scope settings</u> | i. option n is visible. For detailed i <u>help.</u> | nformation on | |
| Applications Jobs | | Preferences New Delete | | | | |
| Services Resources | | | | | | |
| Schedulers Object pool managers | | Select Name 🛟 | JNDI name 🗘 | Provider 🗇 | Description 🗘 | Scope 🗇 |
| JMS JMS providers Connection factories | | MDB_QUEUE | MDB_QUEUE | Default messaging provider | | Cluster=CLUSTER_1 |
| Queue connection factories Topic connection factories Queues | | MDB QUEUE DLQ | MDB_QUEUE_DLQ | Default messaging provider | | Cluster=CLUSTER_1 |
| Topics Activation specifications JDBC | | MDB QUEUE RESPONSE | MDB_QUEUE_RESPONSE | Default messaging provider | | Cluster=CLUSTER_1 |
| Resource Adapters Asynchronous beans | | Total 3 | | | | |
| Cache instances | | | | | | |



5.2 Connection Factory Creation

 Navigate to Resources > JMS > Queue Connection Factory > Select Scope as Cluster and Click on New

| WebSphere, software | | | - | | | Welcome |
|---|---|---|--|--|---|----------------|
| New server Al servers Al servers Server Types Clusters WebSphere application server clusters Proxy server clusters Claster topology On Demand Router clusters Dynamic clusters Dynamic clusters DataPower Core Groups | · | Cellmans222555Call01, Profiles Queue connection factor Queue connection factor A queue connection factor messaging. Scope: Cell=ofss2225 Show scope sele Scope is ar Cluster=CLUS | ries ries v is used to create connections to 1 65Cell01. Cluster=CLUSTER_1 ction drop-down list with the all so the level at which the resource de how it works, <u>see the scope set</u> TER 1 | the associated JMS provider of copes option finition is visible. For detailed times help. | the JMS queue destinations, for information on | point-to-point |
| +) Applications | | | | | | |
| ±) Jobs | | Preferences | | | | |
| E Services | | New Delete | | | | |
| Resources | | 00 # 9 | | | | |
| Schedulers Object pool managers | | Select Name 🗢 | JNDI name 🗘 | Provider 🔿 | Description 🗘 | Scope 🗘 |
| B JMS | | None | | | | |
| JMS providers Connection factories Queue connection factories | | Total 0 | | | | |

2) Select "Default messaging provider" and Click on OK

| WebSphere. software | | Welcome |
|--|---|-------------------------|
| New server | Cell=otss222565Cell01, Protile=Dmgr01 | |
| All servers | Queue connection factories | 7 |
| Server Types | | |
| Clusters | Queue connection factories > Select JMS resource provider | |
| WebSphere application server clusters Proxy server clusters | Scope cells: ofss222565Cell01: clusters: CLUSTER_1 | |
| Generic server clusters Cluster topology On Demand Router clusters | Select the provider with which to create the Queue connection factory. The following providers support the selecter available at the selected scope. | d resource type and are |
| Dynamic clusters | | |
| DataPower | Default messaging provider | |
| | WebSphere MQ messaging provider | |
| . Applications | | |
| + Jobs | | |
| ± Services | | |
| Resources | | |
| Schedulers | | |
| Object pool managers | | |
| ⊒ JMS | | |
| JMS providers | | |
| Connection factories | | |

Enter Name, JNDI Name, Select Bus Name and Click on OK



| WebSphere. software | | Welcome |
|---|---|---|
| | Cell=ofss222565Cell01, Profile=Dmgr01 | |
| View: All tasks | Queue connection factories | ? . |
| - Welcome | | |
| Guided Activities | Queue connection factories > MDBQCF | |
| Servers | A JMS queue connection factory is used to create connections to the associated JMS provider of JMS qu Use queue connection factory administrative objects to manage JMS queue connection factories for the | default messaging provider. |
| Applications | Configuration | |
| | | |
| Services | | |
| Resources | General Properties | Additional Properties |
| Schedulers Object pool managers JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications JDBC Resource Adapters Asynchronous beans Cache instances Mail URL Resource Environment | Administration Scope Cluster=CLUSTER_1 Provider Default messaging provider + Name MDBQCF + JNDI name MDBQCF Uescription Category | <u>Connection pool</u> <u>properties</u> <u>Related Items</u> <u>JAAS - J2C</u> <u>authentication data</u> <u>Buses</u> |
| Kuntime Operations | | |
| (•) Security | | |
| Operational policies | Connection | |
| Environment | Bus name prupe | |
| System administration | | |
| ★ Users and Groups | Target | |
| Monitoring and Tuning | Target type | |
| Troubleshooting | Bus member name | |
| Service integration | | |

3) Click on Save





5.2.1 Managed Servers SIB Ports

 Navigate to Servers > Websphere Application Servers > SERVER_NAME > Click on Ports under Communications > Note down the port of SIB_ENDPOINT_ADDRESS

| WebSphere, software | | | | | Welcome |
|--|-------------|--|----------------------------|--------|----------------------------|
| | Cell=otss22 | 2565Cell01, Profile=Dmgr01 | | | |
| /iew: All tasks | Application | 1 servers | | | ? |
| Welcome | | | | | |
| Guided Activities | Applica | ation servers > <u>MS_1</u> > Ports | | | |
| - | Specifie | es the TCP/IP ports this server uses for connectio | ns. | | |
| bervers | Pref | ferences | | | |
| New server | | | | | |
| All servers | New | Delete | | | |
| Server Types | R | P 12 | | | |
| WebSphere application servers | | | | | |
| On Demand Routers | Select | Port Name 🛟 | Host 🗘 | Port 🗘 | Transport Details 🗘 |
| PHP servers | You ca | an administer the following resources: | | | |
| WebSphere Application Server Community Edition servers | | BOOTSTRAP ADDRESS | ofss220239.in.oracle.com | 9814 | No associated transports |
| Generic servers WebSphere MQ servers | | CSIV2 SSL MUTUALAUTH LISTENER ADDRESS | ofss220239.in.oracle.com | 9431 | No associated transports |
| Web servers Apache servers | | CSIV2 SSL SERVERAUTH LISTENER ADDRESS | ofss220239.in.oracle.com | 9430 | No associated transports |
| Custom HTTP servers | | DCS LINICAST ADDRESS | * | 9262 | View associated transport |
| Clusters | | Des emekst Abbitess | | 5562 | view associated transport. |
| WebSphere application server clusters | | | | | |
| Proxy server clusters Generic server clusters | | IPC CONNECTOR ADDRESS | localhost | 9640 | No associated transports |
| Cluster topology On Demand Router clusters | | ORB LISTENER ADDRESS | ofss220239.in.oracle.com | 9108 | No associated transports |
| Dynamic clusters DataPower | | OVERLAY TCP LISTENER ADDRESS | * | 11024 | No associated transports |
| Core Groups | | OVERLAY UDP LISTENER ADDRESS | * | 11023 | No associated transports |
| Applications | | | ofer220229 in oracle com | 9429 | No accoriated transports |
| Jobs | | SAS SSE SERVERAGIN EISTENER ADDRESS | orsszzozos, m. oracie, com | 5425 | no associated transports |
| Services | | SIB ENDPOINT ADDRESS | * | 7284 | View associated transports |
| Resources | | | | | |
| Schedulers Object pool managers | | SIB ENDPOINT SECURE ADDRESS | * | 7293 | View associated transport |
| JMS providers Connection factories | | SIB MQ ENDPOINT ADDRESS | * | 5565 | View associated transport |
| Queue connection factories Topic connection factories | | SIB MQ ENDPOINT SECURE ADDRESS | * | 5585 | View associated transport |
| Topics Activation specifications | | SIP DEFAULTHOST | * | 5074 | View associated transport |
| F 1000 | | | | | |

- Similarly navigate to all other managed servers in the cluster and note down the port of SIB_ENDPOINT_ADDRESS
- 3) Prepare the "Provider Endpoint" String as below

<hostname1/IP Address1>:<PORT ofSIB_ENDPOINT_ADDRESS>:BootstrapBasicMessaging

In this case the Provider Endpoint String would be ofss222565:7281:BootstrapBasicMessaging,ofss220239:7284:BootstrapBasicMessaging



Navigate to Resources > JMS > Queue Connection Factory > Click on newly created connection factory

| Iterophieter Suitward | | | | | | welcome |
|---|-------------------------------|---------------------|-----------------------|---------------------------------------|--------------------------|--------------------------|
| | Cell=otss222565Cell0 | 1, Profile=Dmgr01 | | | | |
| View: All tasks | Queue connection fac | tories | | | | ? |
| - Welcome | - | | | | | |
| Guided Activities | Queue connecti | on factories | | | | |
| Servers | A queue connection messaging, | on factory is used | to create connections | to the associated JMS provider o | f the JMS queue destinat | ions, for point-to-point |
| + Applications | Scope: Cell=o | fss222565Cell0 | 1, Cluster=CLUSTER | _1 | | |
| i Jobs | Show s | cope selection dro | p-down list with the | all scopes option | | |
| | Scope | necifies the level | at which the resource | e definition is visible. For detailer | information on | |
| Resources | what se | ope is and how it | works, see the scope | settings help. | | |
| Schedulers | Clust | er=CLUSTER_1 | | • | | |
| Object pool managers | | | | | | |
| ⊒ JMS | Preferences | | | | | |
| JMS providers Connection factories | New Delete |] | | | | |
| Queue connection factories | | 2 | | | | |
| Topic connection factories | | ē | | | | |
| Queues Topics | Select Name 🛟 | | JNDI name 🗘 | Provider 🗘 | Description 🗘 | Scope 🗘 |
| Activation specifications | You can adminis | ter the following i | resources: | | | |
| | MDBQCF | | MDBQCF | Default messaging | | Cluster=CLUSTER_1 |
| Resource Adapters | | | | provider | | |
| Asynchronous beans ■ | Total 1 | | | I | | |
| Cache instances | lotal 1 | | | | | |

4) Update the Provider endpoints as prepared above and Click on OK

| WebSphere. software | | Welcome |
|---|--|---------|
| View: All tasks | | |
| - Welcome | | |
| Guided Activities Guided Activities Second Secon | Category | |
| Servers | Category | |
| New server All servers | | |
| Server Types | Connection | |
| WebSphere application servers WebSphere proxy servers On Demand Routers PHP servers WebSphere Application Server Community Edition servers Generic servers WebSphere MQ servers Apache servers Custom HTTP servers Custom HTTP servers Elusters WebSphere application server clusters Posp server clusters Generic server clusters | Bus name FCUBS Target Target type Bus member name Target significance Preferred ▼ Target inbound transport chain Provider endpoints | |
| Claster Opholy On Demand Router clusters Dynamic clusters DataPower Core Groups Applications | Connection proximity Bus | |
| I labs | | |
| Contant | Quality of Service | |
| | Nonpersistent message reliability | |
| Resources Schedulers Object pool managers JMS MS providers | Express nonpersistent Persistent message reliability Reliable persistent | |
| Connection factories | Advanced Management of | |



5.3 JMS Activation Specifications for Cluster

 Navigate to Resources > JMS > JMS Providers > Click Default messaging provider for the cluster created

| View All tasks Improvides | WebSphere. software | | | Welcome |
|--|---|---------------------------------------|--|---|
| View: Altasks Image: Control of Contro of Contro of Contro of Control of Contro of Control of Control o | | Cell=otss222565Cell01, Profile=Dmgr01 | - | |
| Webcome Image: Second Sec | View: All tasks | IMS providers | | 2 |
| Multicity MSP providers Biddel Activities Biddel Activities Biddel Activities Biddel Activities Connection factories Connection factories Connection factories Connection factories Environment Biddel Activities Dedust Default messaging provider Node=ofss222565Node03.Server=server1 Biddel Activities Default messaging provider Node=ofss222565Node03.Server=server1 Biddel Activities Default messaging provider Node=ofss222565Node03.Server=server1 Biddel Activities Default messaging provider Node=ofss222565Node03.Server=server1 Biderault Default messaging provider | Welcome | ship providers | | |
| A JMS provider analysis massaging based on the Java Message Service (JMS). It provides JZEE connection factories to create connection for JMS destinations. Service: | Guided Artivities | JMS providers | | |
| Services Scope selection drop-down list with the all scopes option Services Scope selection drop-down list with the all scopes option Services Scope selection drop-down list with the all scopes option Schedukins Scope selection drop-down list with the all scopes option Schedukins Scope selection drop-down list with the all scopes option Schedukins Scope selection drop-down list with the all scope selection on what scope is and how it works, <u>see the scope selection belo</u> . Schedukins Object point images Schedukins Object point images Schedukins Object point images Schedukins Object point images Option Schedukins Schedukins Option Schedukins Schedukins Schedukins Option Schedukins Option Schedukins Scope Schedukins Schedukins Default messaging provider Node=ofss222555104003.Server=server1 Schroment Default messaging provid | | A JMS provider enables messaging | based on the Java Message Service (JMS). It | provides J2EE connection factories to create connection |
| Applications Score: Park scores Services Score: Score: <t< td=""><td>) bervers</td><td>for JMS destinations.</td><td></td><td></td></t<> |) bervers | for JMS destinations. | | |
| Jois Show scope selection drop-down list with the all scopes option Services Scope is and how it works, tes the scope selection holp. Schedulers Schedulers Schedulers All scopes JMS All scopes Option factories Image: Schedulers Options Option factories Options Schedulers Options Scope Topic Scope Topic Scope Schedulers Scope Mail Scope Schedulers Default messaging provider Node=ofss22255Node03.Server=server1 Mail Default messaging provider Node=ofss22255Node03.Server=server1 Schedulers Default messaging provider Node=ofss22255Node03.Server=NS_2 Scruttry Default messaging provider Node=ofss22255Node0 | Applications | Scope: =All scopes | | |
| Services Resources • Schedulars • Object pointangers • MS • Subdulars • Object pointangers • MS • Subdulars • Object pointangers • MS providers • Connection factories • Options • Autoritonis bases • Activation specifications • Mail • URL • Parkume Operations • Resource Environment • Default messaging provider <td>Jobs</td> <td>Show scope selection dro</td> <td>p-down list with the all scopes option</td> <td></td> | Jobs | Show scope selection dro | p-down list with the all scopes option | |
| Resource what scope is and how it works, <u>see the scope settings help.</u> Schedulers Object pool managers JMS All scopes AMS Connection factories Opice connection factories Connection factories Opice connection factories Connection factories Autority performance Scope 0 Statution specifications Scope 0 Autority performance Scope 0 Statution specifications Scope 0 Resource Adapters Default messaging provider Node=ofss22256SNode03, Server=server1 Scape 1 Default messaging provider Node=ofss22256SNode03, Server=server1 Mail Default messaging provider Default messaging provider Node=ofss22256SNode03, Server=server1 Mail Default messaging provider Default messaging provider Node=ofss22255SNode03, Server=server1 Resource Environment Default messaging provider Default messaging provider Node=ofss220239Node02, Server=SSNode03 Scyter ad Groups Default messaging provider Default messaging provider Node=ofss220239Node02, Server=MS_1 Scyter ad Groups Default messaging provider Default messaging provider Node=ofss220239Node02, Server=M | Services | Scope specifies the leve | l at which the resource definition is visible. For | detailed information on |
| • Schedulers • Diget pool managers ● JMS • JMS providers • JMS providers • Decommetion factories • Queue connection factories • Queue connection factories • Topics • Achivation specifications • Achivation specifications • Default messaging provider Default messaging provider Ø DBC Default messaging provider Default messaging provider Node=ofss22256SNode03,Server=server1 © Advintemous beans Default messaging provider Default messaging provider Node=ofss22039Node02,Server=server1 @ Mail Default messaging provider Default messaging provider Node=ofss22039Node02,Server=server1 @ Resource Environment Default messaging provider Default messaging provider Node=ofss22039Node02,Server=server1 @ Default messaging provider Default messaging provider Node=ofss22039Node02,Server=server1 Default messaging provider Node=ofss22039Node02,Server=MS_2 @ Default messaging provider Default messaging provider Default messaging provider Node=ofss22039Node02,Server=MS_2 @ Default messaging provider Default messaging provider Default messaging provider Node=ofss22039Node02,Server=MS_2 @ Default messaging provider Default messagin | Resources | what scope is and how it | t works, see the scope settings help. | |
| • Object pool managers ■ MS • MS providers • Connection factories • Queue connection factories • Topic connection factories • Activation specifications BIDBC Befault messaging provider Default messaging provider De | Schedulers | All scopes | • | |
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| | Performance Monitoring Infrastructure (PMI) | Default messaging provide | r Default messaging provider | Cluster=CLUSTER_1 |

2) Under Additional Properties, click Activation specifications



| WebSphere, software | | Welcome |
|--|--|---------------|
| View: All tasks | Cell=ohs222565Cell01, Prohle=Dmgr01 JMS providers ? | 1 |
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| Services Resources | General Properties Additional Properties | |
| Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications DBC Resource Adapters | Scope - Connection factories Cluster=CLUSTER_1 - Queue connection factories Name - Topic connection factories Default messaging provider - Queues Default messaging provider - Topics Default messaging provider - Activation specifications | |

3) Click on New

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| Jobs ⊕ Services | New | Delete | | | | |
| Resources Schedulers Object pool managers | Select None | Name 🗘 | JNDI name 🗘 | Provider 🗘 | Description 🗘 | Scope 🗘 |
| JMS JMS providers Connection factories Queue connection factories Topic connection factories Topics Activation specifications JDBC Besource Adapters Activationus beans | Total | 0 | | | | |

4) Enter Name, JNDI Name, Select Destination Type as Queue and Enter Queue Name, Select Bus and Click on OK



| WebSphere. software | Welc |
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| Cell=otss222565Cell01, Profile | e=Dmgr01 |
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| Welcome | |
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| A JMS activation specifica | ation is associated with one or more message-driven beans and provides the configuration necessary for the |
| Servers receive messages. | |
| Applications Configuration | |
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| - Cabadalara | |
| Object pool managers Administration | n Related Items |
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| - Topics MDB Listener | |
| Activation specifications | |
| JDBC * JNDI name | |
| Resource Adapters | |
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5) Click on Save

| WebSphere. software | | | | | | Welcome | |
|---|---|--|--|---|--------------------------|---------|--|
| View: All tasks | Cell=otss222565Ce | ell01, Profile=Dmgr01 | | | | ? | |
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| ± Services ⊒ Resources | | A The server may need to be restarted for these changes to take effect. | | | | | |
| Schedulers Object pool managers JMS JMS providers Connection factories Queue connection factories Topic connection factories Queues Topics Activation specifications DOC Resource Adapters Asynchronous beans Cache instances Mail ULL | JMS provider A JMS activati messages. | JMS providers > Default messaging provider > Activation specifications A JMS activation specification is associated with one or more message-driven beans and provides configuration necessary for them to receive messages. Preferences New Delete References Select Name JNDI name You can administer the following resources: MDB Listener MDB Listener | | | | | |
| | Total 1 | Total 1 | | | | | |
| | | | | | | | |



6. Application Deployment

- 1) Deploy the EAR with Target as Cluster_1. Except below step rest is usual way of deploying the EAR.
- 2) During deployment give the Activation Specification Created above in the Activation Specification.



6.1 **Restart Servers**

Restart the Admin and Managed Servers.



7. Frequently Asked Questions

7.1 How to Test the Deployment

1) Send a sample message from the any third party application by connecting to

iiop://<hostname or ip>:<BOOTSTRAP_ADDRESS>

eg: iiop://ofss222565:9811

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

Or

- 1) Use the below java program to send a sample message.
- 2) Set Java Home
- 3) Set \$WAS_HOME/runtimes/com.ibm.ws.ejb.thinclient_8.5.0.jar, \$WAS_HOME/runtimes/com.ibm.ws.sib.client.thin.jms_8.5.0.jar and javaee.jar in the CLASSPATH.
- 4) Change the URL, USER, PASSWORD, messageText in the Java Program and Compile.
- 5) Run the program and verify at backend or in MDB log.

import java.util.Hashtable;

import javax.jms.JMSException;

import javax.jms.Queue;

import javax.jms.QueueConnection;

import javax.jms.QueueConnectionFactory;

import javax.jms.QueueSender;

import javax.jms.QueueSession;

import javax.jms.Session;

import javax.naming.Context;

import javax.naming.InitialContext;

import javax.naming.NamingException;



import javax.jms.TextMessage;

public class JMSQueueTest { public JMSQueueTest() { super(); } private Context ctx; private InitialContext initialContext; private QueueConnectionFactory queueCF; private QueueConnection queueConn; private QueueSession queueSession; private Queue queue; private QueueSender queueSender; private final static String JNDI_FACTORY = "com.ibm.websphere.naming.WsnInitialContextFactory"; private final static String JMS_FACTORY = "MDBQCF"; private final static String QUEUE = "MDB_QUEUE"; private final static String URL = "iiop://ofss222565:9811"; private TextMessage txtMessage; private static String USER = "wasadmin"; private static String PASSWORD = "wasadmin123"; private static String messageText = "Hello!"; private InitialContext getInitialContext(String url) throws Exception { Hashtable envHash = new Hashtable(); envHash.put(Context.INITIAL_CONTEXT_FACTORY, JNDI_FACTORY); envHash.put(Context.PROVIDER_URL, url); envHash.put(Context.SECURITY_PRINCIPAL, USER); envHash.put(Context.SECURITY_CREDENTIALS, PASSWORD);

ORACLE

try {

return new InitialContext(envHash);

} catch (NamingException e) {

e.printStackTrace();

return new InitialContext(envHash); }

private void init(Context ctx, String queueName) {

try {

ctx = getInitialContext(URL);

queueCF = (QueueConnectionFactory)ctx.lookup(JMS_FACTORY);

queueConn = queueCF.createQueueConnection();

}

queueSession = queueConn.createQueueSession(false,Session.SESSION_TRANSACTED);

queue = (Queue)ctx.lookup(queueName);

queueSender = queueSession.createSender(queue);

txtMessage = queueSession.createTextMessage();

queueConn.start();

} catch (Exception e) {

e.printStackTrace(); } }

private void close() throws JMSException {

queueSender.close();

queueSession.close();

queueConn.close(); }

private void sendMessage(String message) throws JMSException {

txtMessage.setText(messageText);

queueSender.send(txtMessage); }

public static void main(String[] args) throws Exception {

JMSQueueTest jmsq = new JMSQueueTest();

InitialContext ico = jmsq.getInitialContext(URL);

ORACLE

```
try {
    jmsq.init(ico, QUEUE);
    jmsq.sendMessage(messageText);
} catch (JMSException jmse) {
    jmse.printStackTrace();
} finally {
    jmsq.close(); }
}
```

}

7.2 Warning during Bus Member Creation

During Bus member creation Warning is shown in "Is Further configuration Required?"



Examine the resulting diagram and the messages for the selected messaging engine policy type. Act on the messages as follows:



- 1) To add a server or a node, go back and change the cluster topology before you continue with the current procedure.
- 2) To add or remove messaging engines, under Additional Properties, click Messaging engines and use the options on the resulting pane.
- 3) To correct messaging engine policies, under Additional Properties, click Messaging engine policy maintenance and use the options on the resulting pane.

When the "Is further configuration required" column for the selected messaging engine policy type displays No, the configuration is complete.

7.3 Message Engines Not Gettting Started

Message engine fail to start and gives SIB Service Bus Unavailable error.

- 1) Ensure that shared folders are empty
- 2) Restart the Managed Servers
- 3) Check the Status of message engines

7.4 Cannot Establish Connection Error

When a message is received on the Queue it throws below error

Caused by: com.ibm.websphere.sib.exception.SIResourceException: CWSIC1001E: A client attempted to connect with a remote messaging engine but the connection cannot be completed. Ensure the messaging engine is started: exception com.ibm.ws.sib.jfapchannel.JFapConnectFailedException: CWSIJ0063E: A network connection to host name localhost/127.0.0.1, port 7,276 cannot be established.

- 1) Ensure that Provider EndPoint contains the SIB_ENDPOINT_ADDRESS of all the servers comma separated
- 2) Eg: <hostname1>:<port1>:BootstrapBasicMessaging, <hostname2>:<port 2>:BootstrapBasicMessaging,
- 3) Restart the servers after making changes



7.5 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. Also the FCUBS application needs to be deployed.

7.6 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



8. References

- 1) GATEWAY_Applications_WAS.doc
- 2) Resource_Creation_WAS.doc
- 3) FCUBS_Application_WAS.doc
- 4) <u>http://129.33.205.81/support/knowledgecenter/SSAW57_8.5.5/com.ibm.websphere.nd.iseries.doc/ae/wel</u> <u>c6topmanaging.html</u>
- 5) <u>http://publib.boulder.ibm.com/infocenter/wsdoc400/v6r0/index.jsp?topic=/com.ibm.websphere.pmc.iseries</u> .doc/tasks/tjn9999_.html





FCUBS_JMS_Websphere_Configuration [May] [2022] Version 14.6.0.0.0

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