IBM Web Sphere MQ Installation
Oracle FLEXCUBE Universal Banking
Release 12.1.0.0.0
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1. Configuring IBM WebSphere MQ

1.1 Prerequisite

- ✓ Make sure that WebSphere MQ 6.0 (with JMS Bindings) is installed. If it is not installed then please contact WebSphere MQ Administrator for getting it installed on your machine.
- ✓ X-Windows for using WebSphere MQ Explorer on UNIX machines.

1.2 Binding the Queue with the JNDI provider

IBM provides a tool called JmsAdmin tool for binding (JNDI) the queue managers and queues with the JNDI providers. Right now the most popular JNDI provider is file system JNDI provider. This document lists steps for JNDI binding of the queue managers and queues with the file system JNDI provider.

Follow the steps given in this section to install and configure the OC4J JMS Resource Adapter for WebSphere MQ only i.e. if the application server is Oracle 10g AS and the JMS Provider is IBM WebSphere MQ.

JmsAdmin tool can be found under,

<WEBSPHERE_MQ_HOME>\java\bin (On Windows as well as on UNIX)

where,

WEBPSHERE_MQ_HOME is the directory where IBM WebSphere MQ is installed.

1.2.1 Binding of the Queues Managers and Queues

1. Make sure that you have also installed WebSphere MQ client on the server. This can be confirmed by the presence of folder <WEBPSHERE _HOME>\java\bin.
2. Make sure that all the jar files inside the folder <WEBPSHERE _HOME>\java\lib are included in the classpath.
3. Go to the folder <WEBPSHERE _HOME>\java\bin
4. Open file JMSAdmin.config
5. Now modify the parameter “INITIAL_CONTEXT_FACTORY”. This parameter should be equal to the value com.sun.jndi.fscontext.RefFSContextFactory.

   e.g.:

   INITIAL_CONTEXT_FACTORY=com.sun.jndi.fscontext.RefFSContextFactory

   For Commenting any line use the symbol #

   e.g.:

   #INITIAL_CONTEXT_FACTORY=com.sun.jndi.fscontext.RefFSContextFactory is the commented line.

6. Now modify the parameter called "PROVIDER_URL" in this file to the required value.

   e.g.: PROVIDER_URL=file:/D:/bindings (Windows)

   PROVIDER_URL=file:/home/KERNEL/ bindings (UNIX)

   This parameter indicates a directory on the local disc where the JMS binding file is to be created.This should be an existing directory on the machine.

7. After saving the changes open a new command prompt
8. Go to <WEBPSHERE _HOME>\java\bin
9. Type “jmsadmin” on the prompt and press enter

e.g. <WEBPSHERE _HOME>\java\bin>jmsadmin (windows)

<WEBPSHERE _HOME>/java/bin $ jmsadmin (UNIX)

10. This should clear the command window and give a prompt like

    InitCtx>

11. For creating bindings for the connection to the Queue manager type the following command on the command window.

    define xqcf(<JNDI_MAPPING_OF_QUEUE_MANAGER>) qmanager (<QUEUE_MANAGER_NAME>) host(<IP_ADD_OF_MQ_SERVER_MACHINE>) port(<PORT_OF_QUEUE_MANAGER>) tran(CLIENT)

    e.g. InitCtx>define xqcf(SSIAD_MDB_QCF) qmanager(QM_DDTD0270) host(10.80.161.40) port(1414) tran(CLIENT)

    To create bindings for the connection to the Queue manager that uses **Channels**

    type the following command:

    define xqcf(<JNDI_MAPPING_OF_QM>) CHANNEL(<CHANNEL_NAME>) qmanager (<QUEUE_MANAGER_NAME>) host(<IP_ADD_OF_MQ_SERVER_MACHINE>) port(<PORT_OF_QM>) tran(CLIENT)

    E.g. InitCtx>define xqcf(SSIAD_MDB_QCF) CHANNEL(FLEX.CLIENTS.TCP) qmanager(QM_DDTD0270) host(10.80.161.40) port(1414) tran(CLIENT)

    [***Note: This command has to be given in a single line.***]

    - This defines the JNDI mapping (SSIAD_MDB_QCF) for the queue manager (QM_DDTD0270) running on machine (10.80.4.102) and port (1414)
    - This JNDI mapping (SSIAD_MDB_QCF) should be the same as that is created in MQ.

12. For creating bindings for the queues type the following command on the command window.

DEFINE Q(<QUEUE_NAME>) QUEUE(<QUEUE_NAME>) qmanager (<QUEUE_MANAGER_NAME>)

[***Note: This command has to be given in a single line.***]

e.g.: InitCtx> DEFINE Q(NOTIFY_DEST_QUEUE) QUEUE(NOTIFY_DEST_QUEUE) qmanager (QM_DDTD0270)

- This will bind the queue called " NOTIFY_DEST_QUEUE " by the binding name " NOTIFY_DEST_QUEUE " to the queue manager "QM_DDTD0270". Normally the binding name and the queue name should be the same as shown in this example.

2. Creating and Mapping JMS Resources in WebSphere Application Server

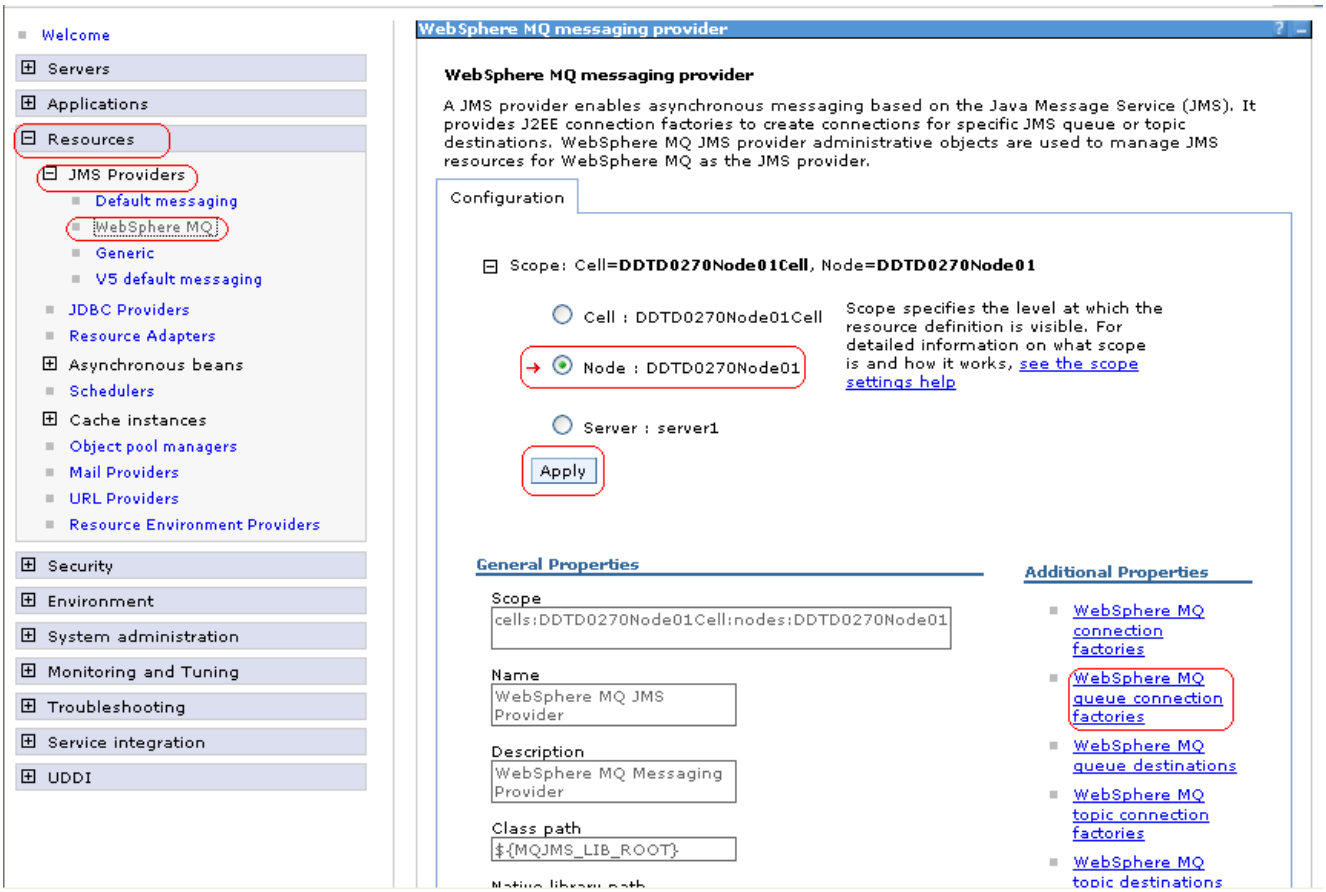
2.1 Creation of WebSphere MQ Queue Connection Factories

1. On the Left Hand Side of the WebSphere Application Server Admin Console, click on **Resources** and Expand the **JMS Providers**.

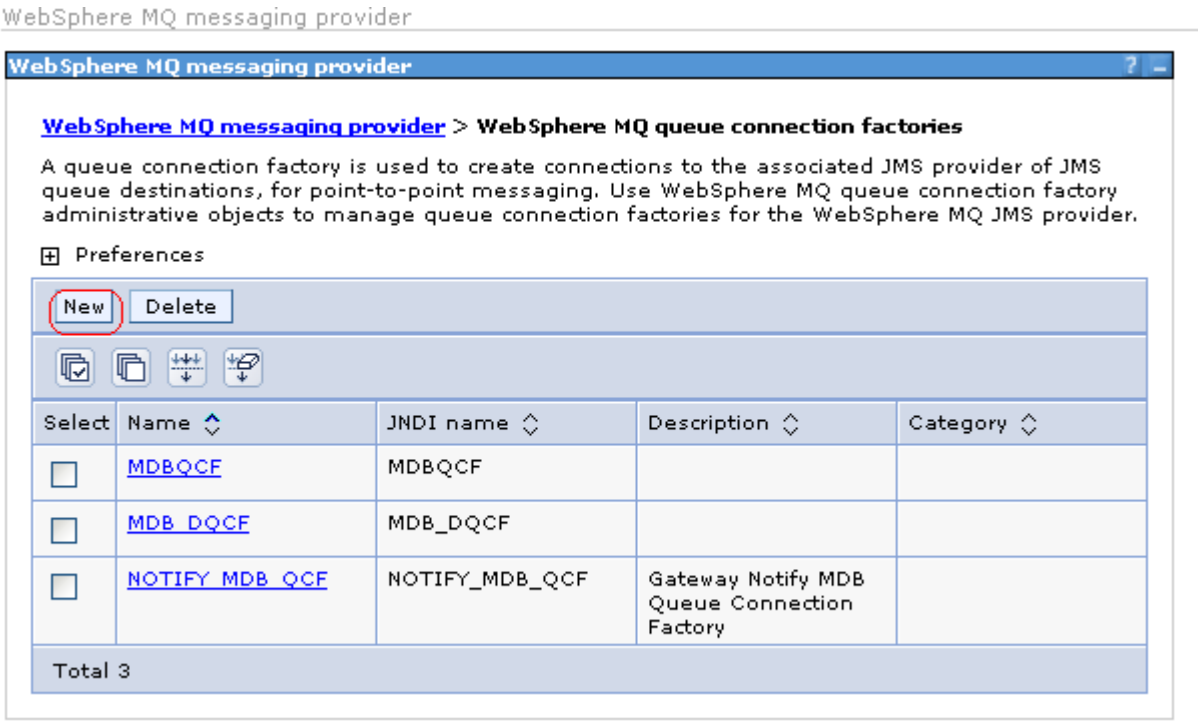
2. Now click on **WebSphere MQ** option.

3. Following screen will be displayed. Select the **Node** Option and then press **Apply**.

4. Now Click on **WebSphere MQ Queue connection factories** listed under Additional Properties



5. Following screen will be displayed. Click on **New**.

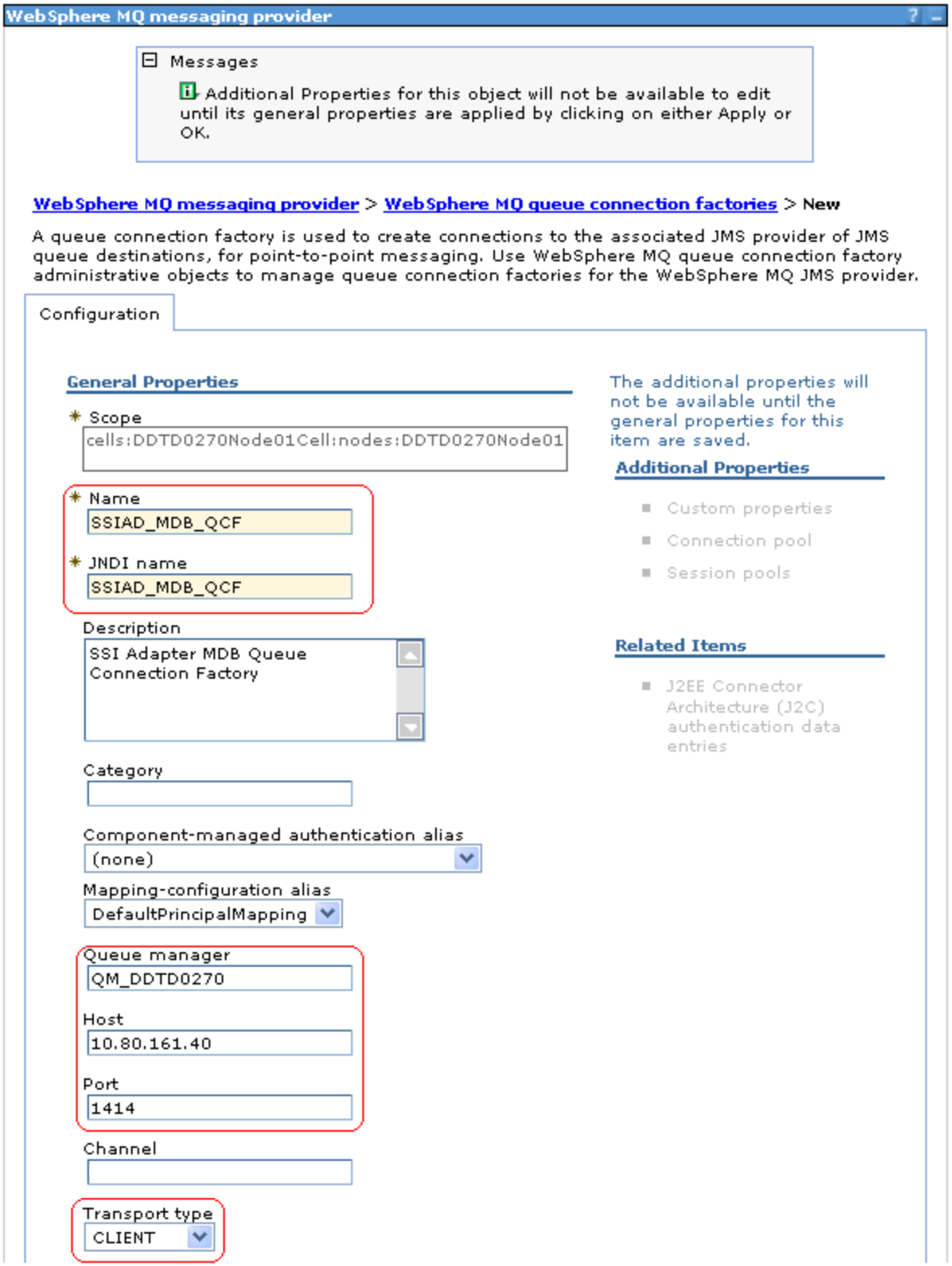


6. Following screen will be displayed.

✓ Configure the details as mentioned below:

Name:	SSIAD_MDB_QCF (Name of the QCF as specified)
JNDI Name:	SSIAD_MDB_QCF (Name of the QCF as specified)
Queue Manager:	Name of the Queue Manager that we create in IBM MQ.
Host:	IP Address of the Machine where IBM MQ is installed.
Port:	1414. (CONFIGURABLE AS PER REQUIREMENT)
Transport Type:	CLIENT

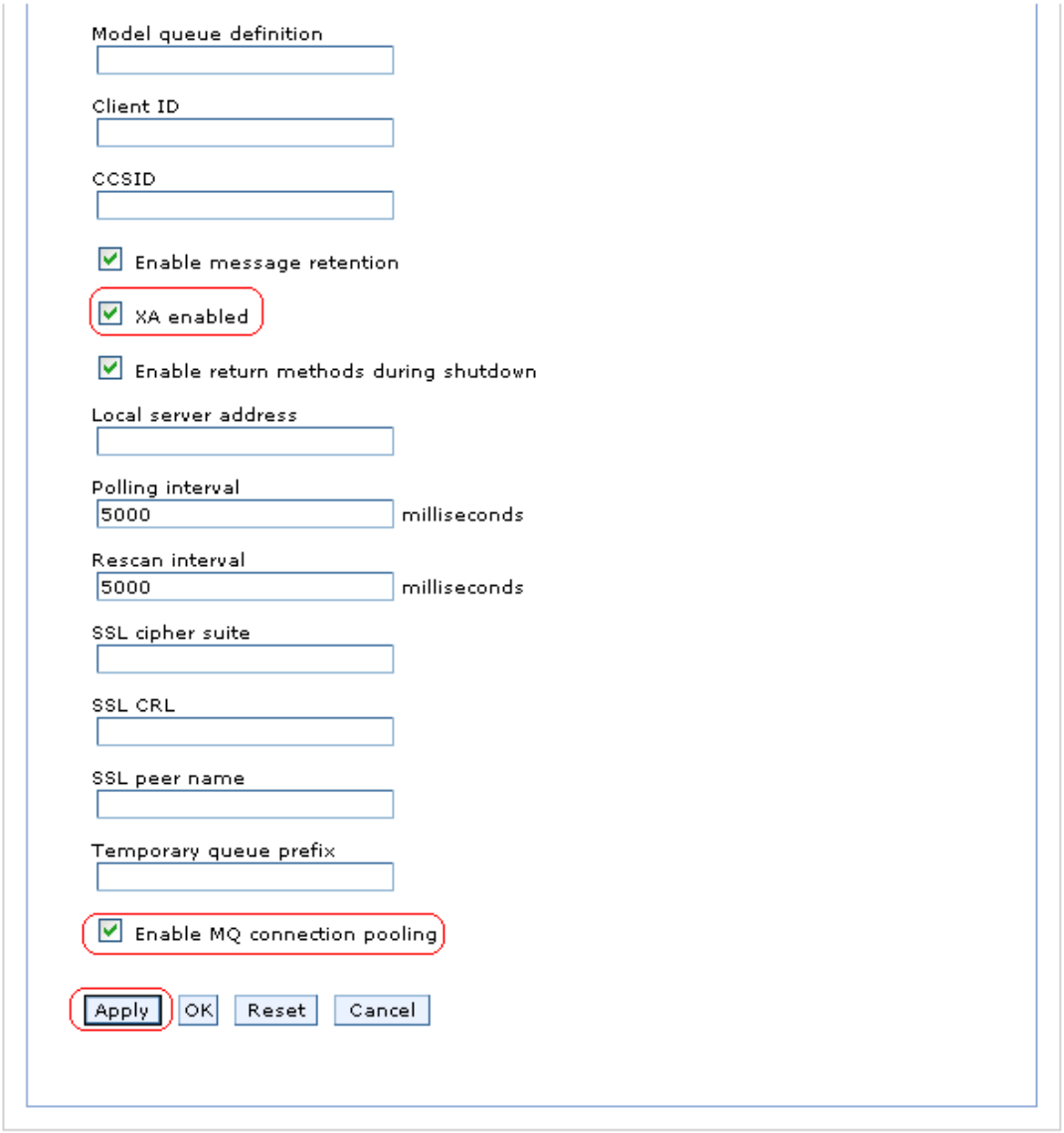
[Note: The rest all fields are optional and can be ignored. Some of the fields will have values which will be defaulted automatically.]


WebSphere MQ messaging provider
Messages
Additional Properties for this object will not be available to edit until its general properties are applied by clicking on either Apply or OK.
WebSphere MQ messaging provider > WebSphere MQ queue connection factories > New
A queue connection factory is used to create connections to the associated JMS provider of JMS queue destinations, for point-to-point messaging. Use WebSphere MQ queue connection factory administrative objects to manage queue connection factories for the WebSphere MQ JMS provider.
Configuration
General Properties
Scope
cells:DDTD0270Node01Cell:nodes:DDTD0270Node01
Name
SSIAD_MDB_QCF
JNDI name
SSIAD_MDB_QCF
Description
SSI Adapter MDB Queue Connection Factory
Category
Component-managed authentication alias
(none)
Mapping-configuration alias
DefaultPrincipalMapping
Queue manager
QM_DDTD0270
Host
10.80.161.40
Port
1414
Channel
Transport type
CLIENT
The additional properties will not be available until the general properties for this item are saved.
Additional Properties
Custom properties
Connection pool
Session pools
Related Items
J2EE Connector Architecture (J2C) authentication data entries

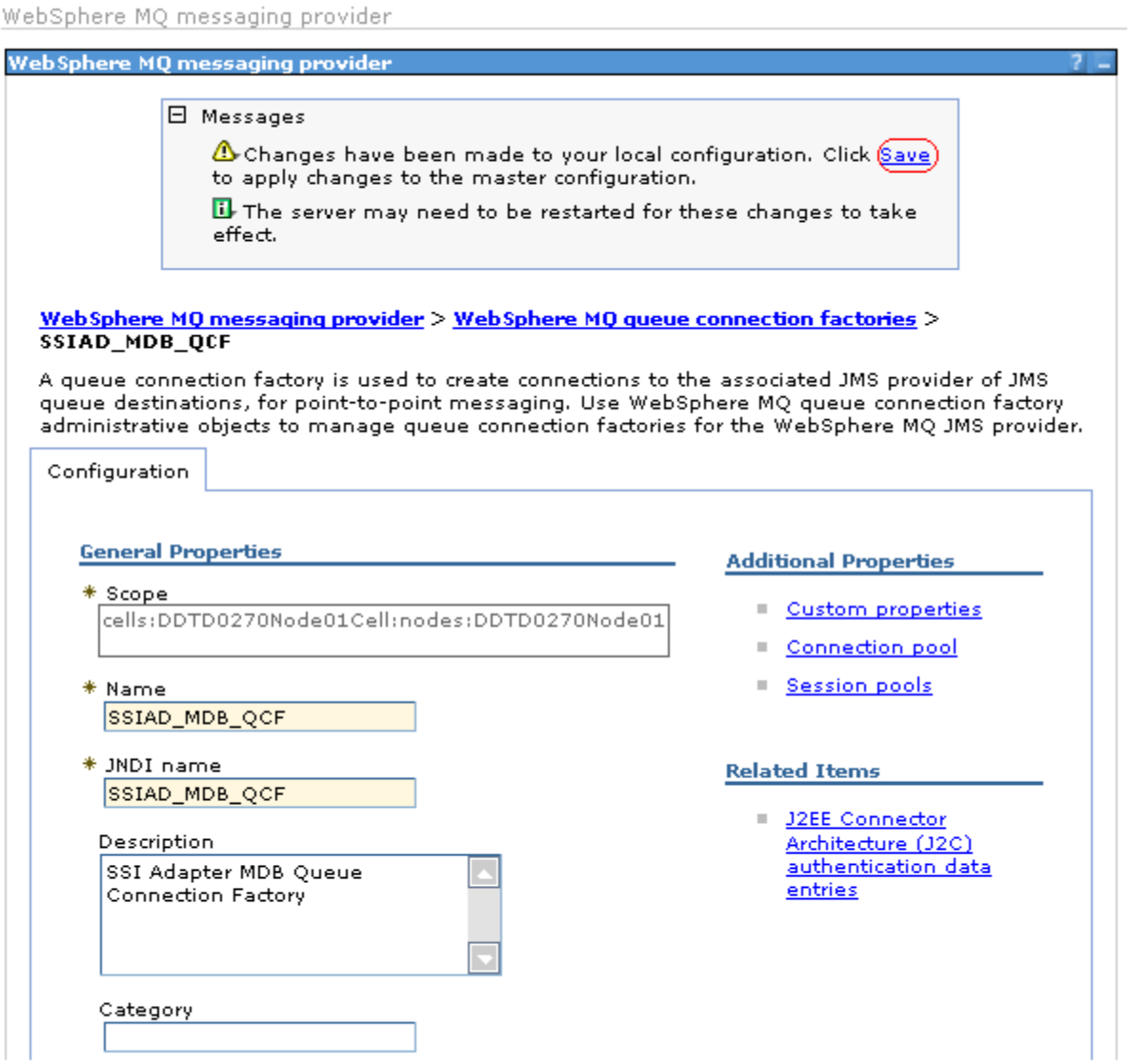
7. Make sure following two are selected,

   - ✓ **XA Enabled**
   - ✓ **Enable MQ connection pooling**

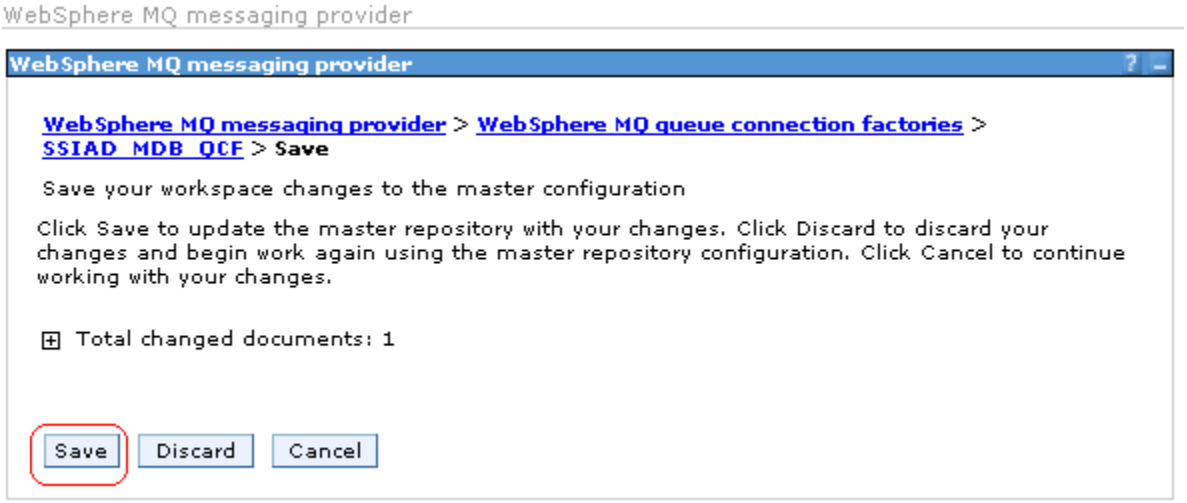
   Then click on **Apply**



8. Following screen will be displayed. Click on **Save**.

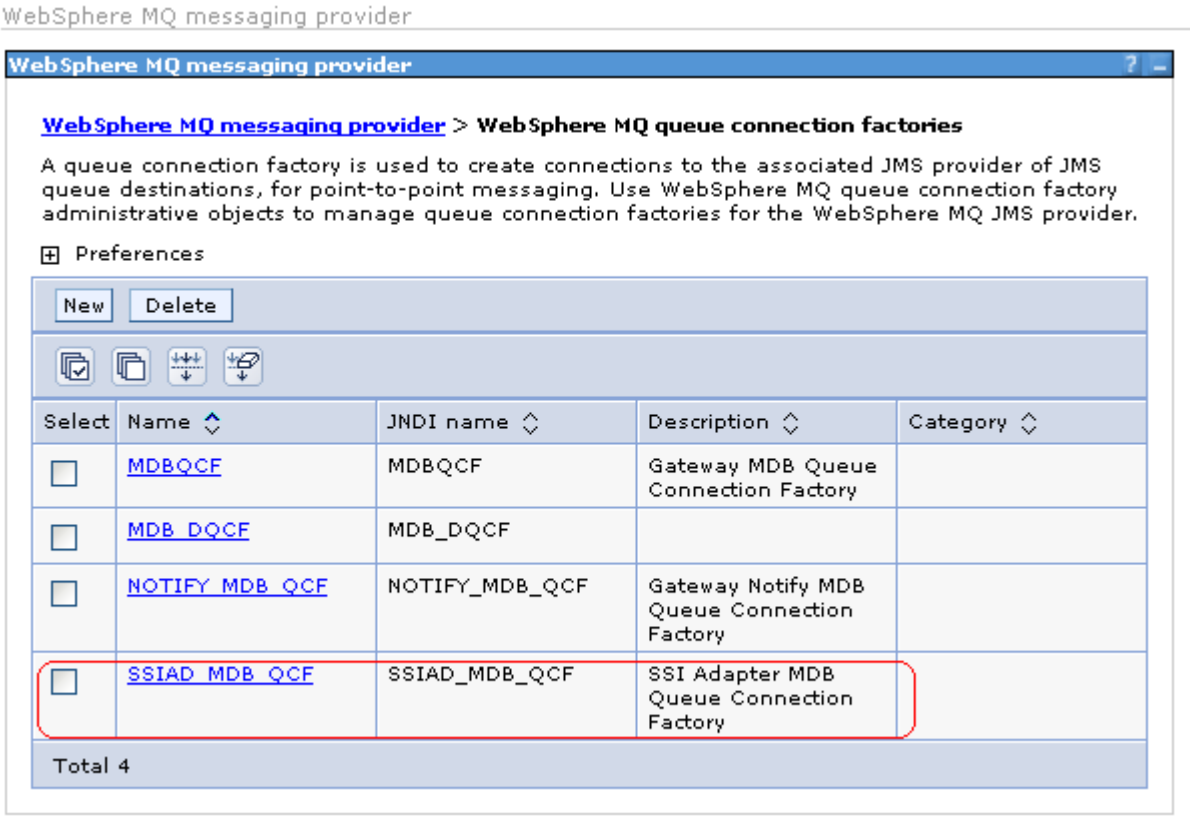


9. Following screen will be displayed. Click on **Save**.



10. Following screen will be displayed.

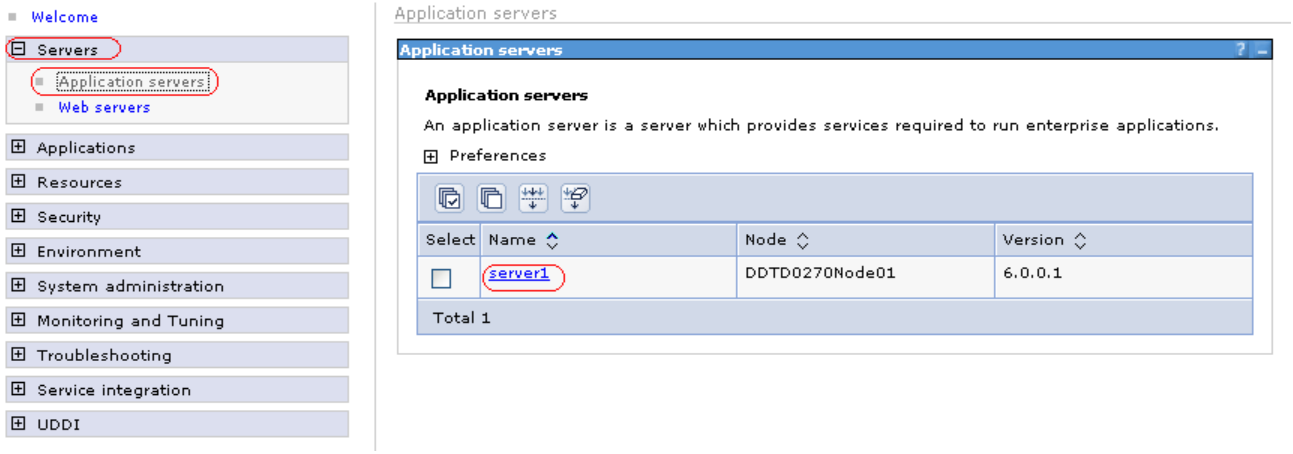
    ✓ It should show the Queue Connection Factory that has been created in the above steps as shown bellow.



2.2 Creation of Message Listener Ports

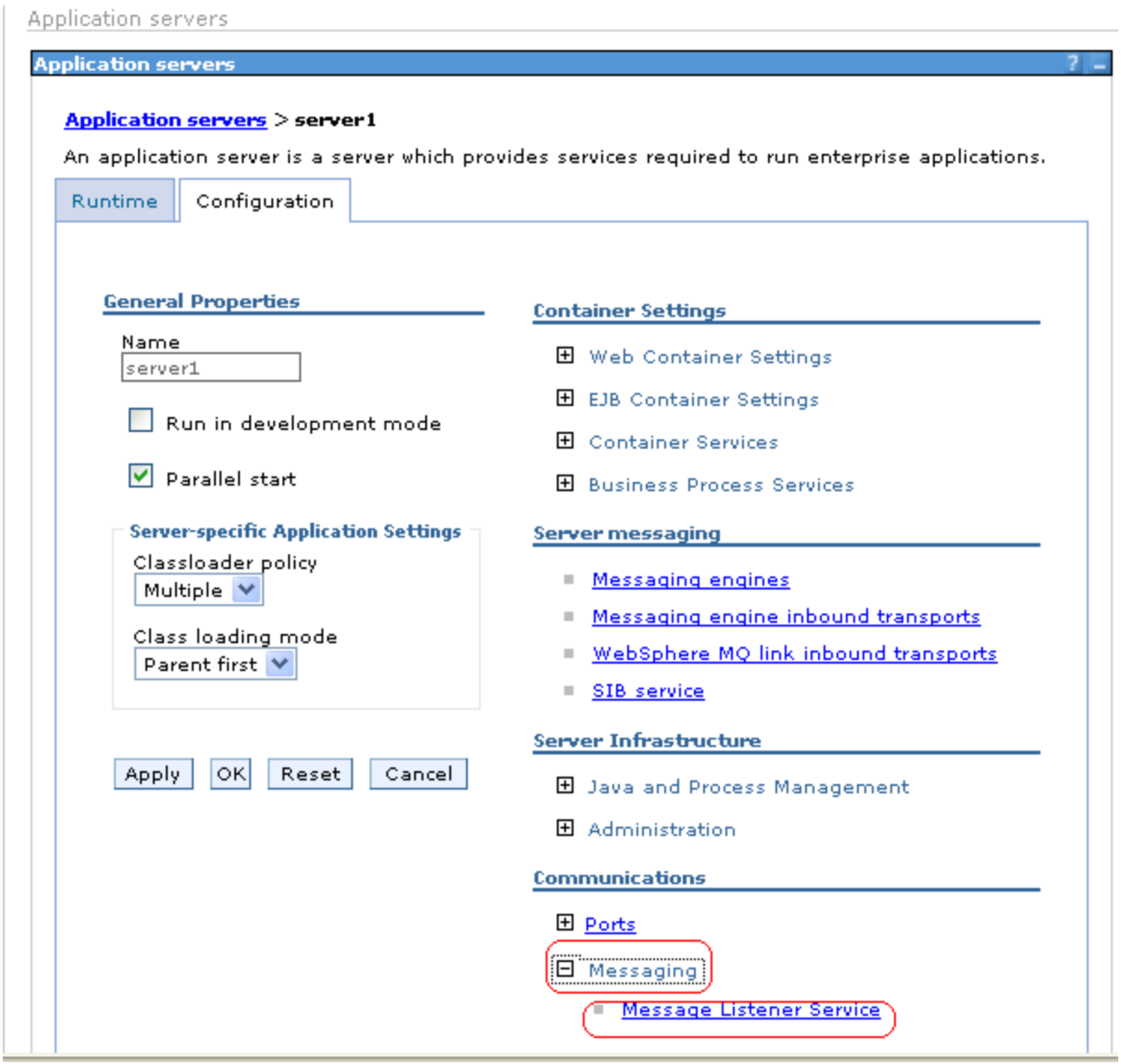
1. On the Left Hand Side Click on Servers and then click on Application Servers.

2. Now Click on **Server1** on Right Hand Side.

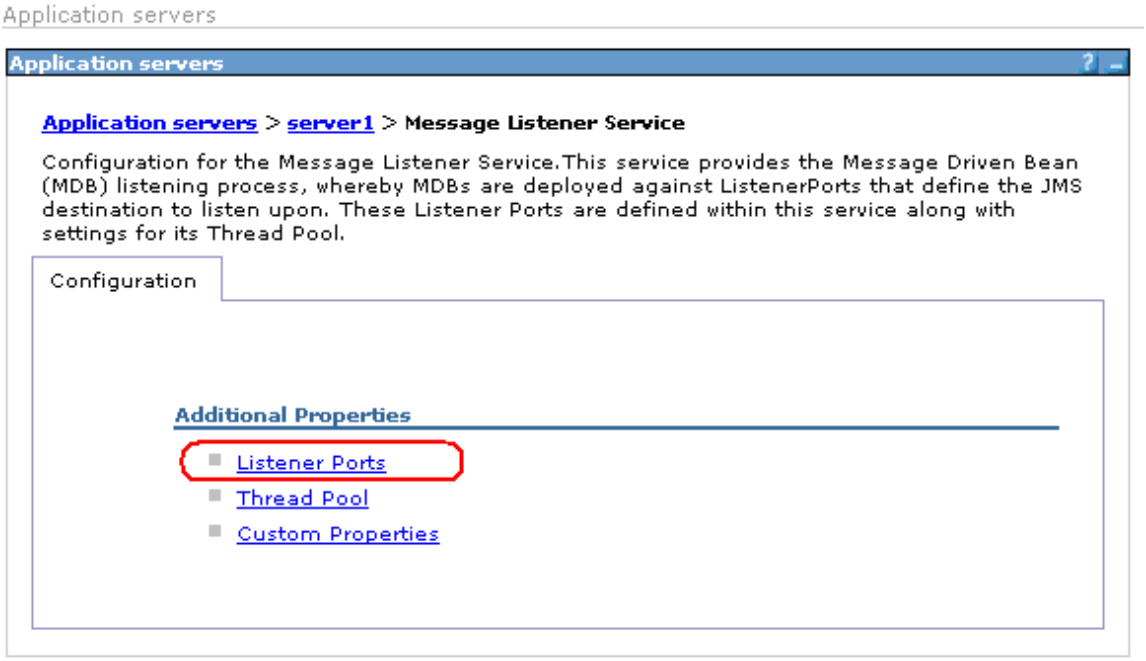


3. Following screen will be displayed.

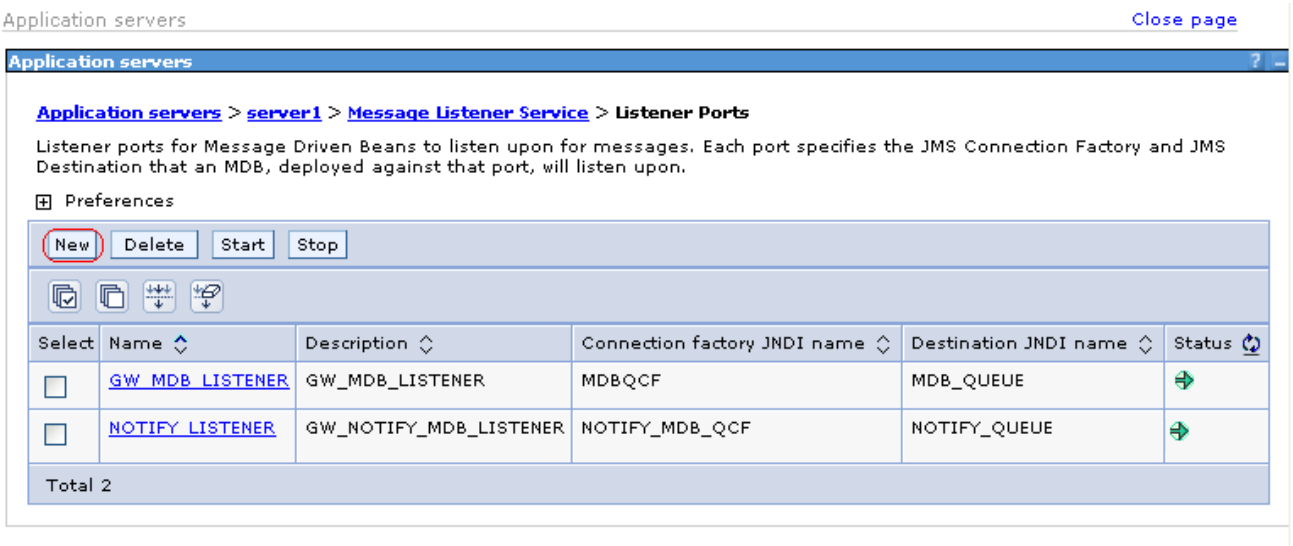
   ✓ Expand **Messaging** under **Communications** and then click on **Message Listener Service**.


Application servers
Application servers
Application servers > server1
An application server is a server which provides services required to run enterprise applications.
Runtime
Configuration
General Properties
Name
server1
Run in development mode
Parallel start
Server-specific Application Settings
Classloader policy
Multiple
Class loading mode
Parent first
Apply
OK
Reset
Cancel
Container Settings
Web Container Settings
EJB Container Settings
Container Services
Business Process Services
Server messaging
Messaging engines
Messaging engine inbound transports
WebSphere MQ link inbound transports
SIB service
Server Infrastructure
Java and Process Management
Administration
Communications
Ports
Messaging
Message Listener Service

4. Following screen will be displayed. Click on **Listener Ports**.



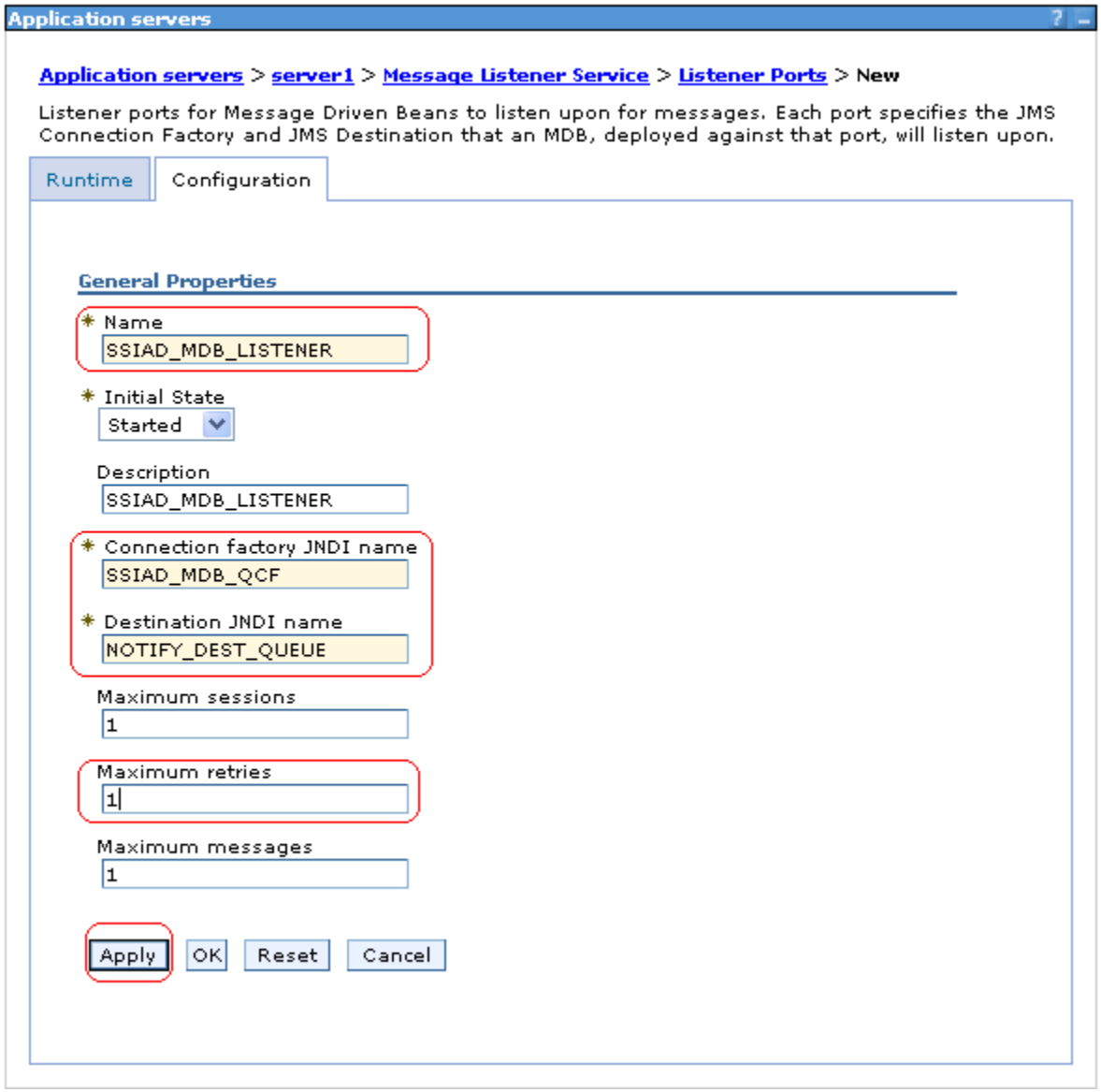
5. Following screen will be displayed. Click on **New**.



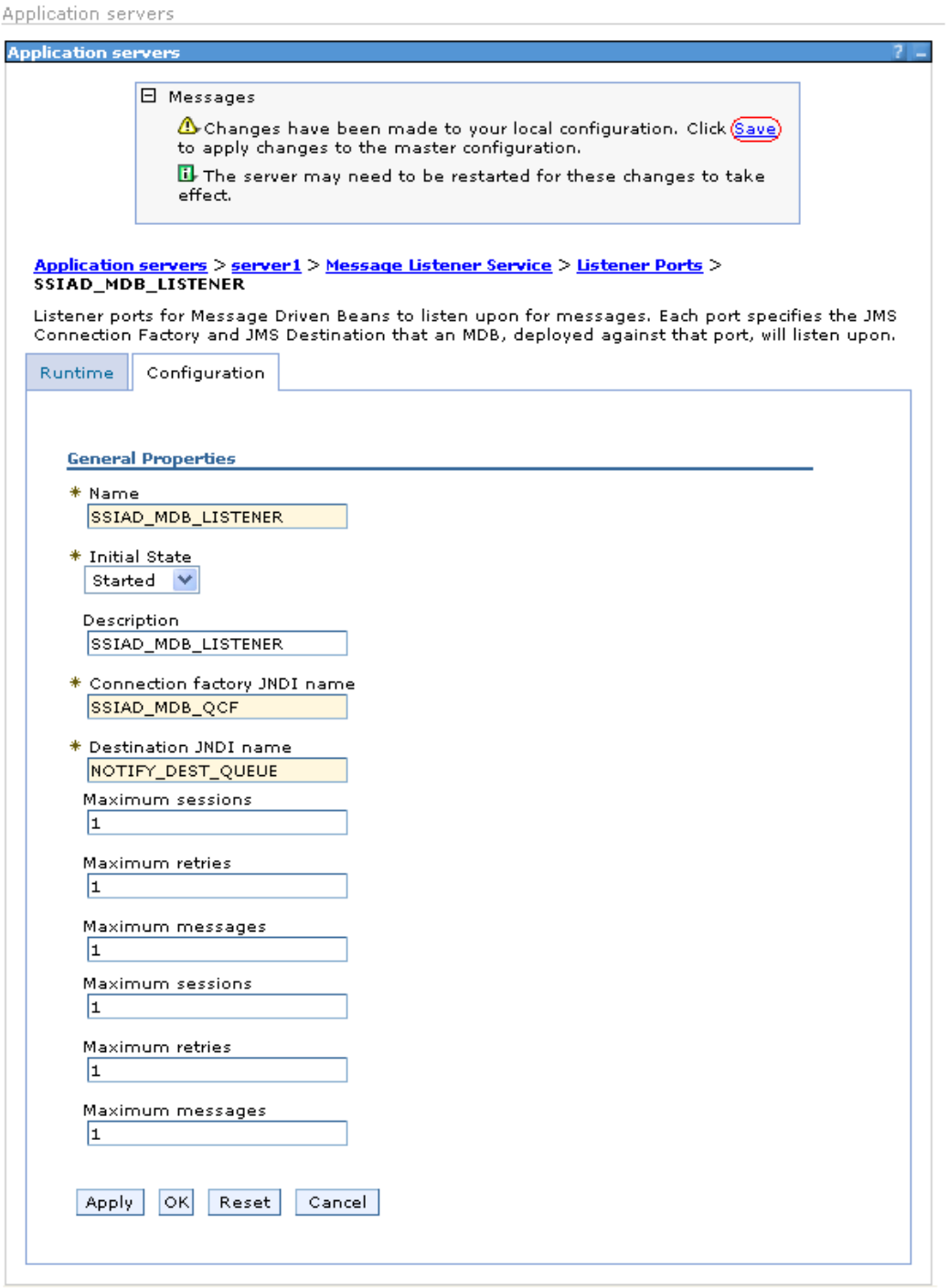
6. Following screen will be displayed. Configure the **Listener Port** with the following details and then click on **Apply**.

Name:	SSIAD_MDB_LISTENER (Name of the Listener can be anything. But remember to give the same name while deploying corresponding MDB)
Initial State:	Started.
Description:	JMSListener Description
Connection Factory JDNI Name:	SSIAD_MDB_QCF (The same name that was created under step 5 for WebSphere MQ queue connection factory. Here specify the name of the Queue Connection Factory of the queue on which Listener has to attached)
Destination Name:	NOTIFY_DEST_QUEUE (The same name that was created under step 8 for Wbsphere MQ queue destinations. Here specify the name of the Queue on which Listener has to attached)
Max Retries	1 (This many number of times message will be re-delivered to MDB before Message Listener port shuts itself down)

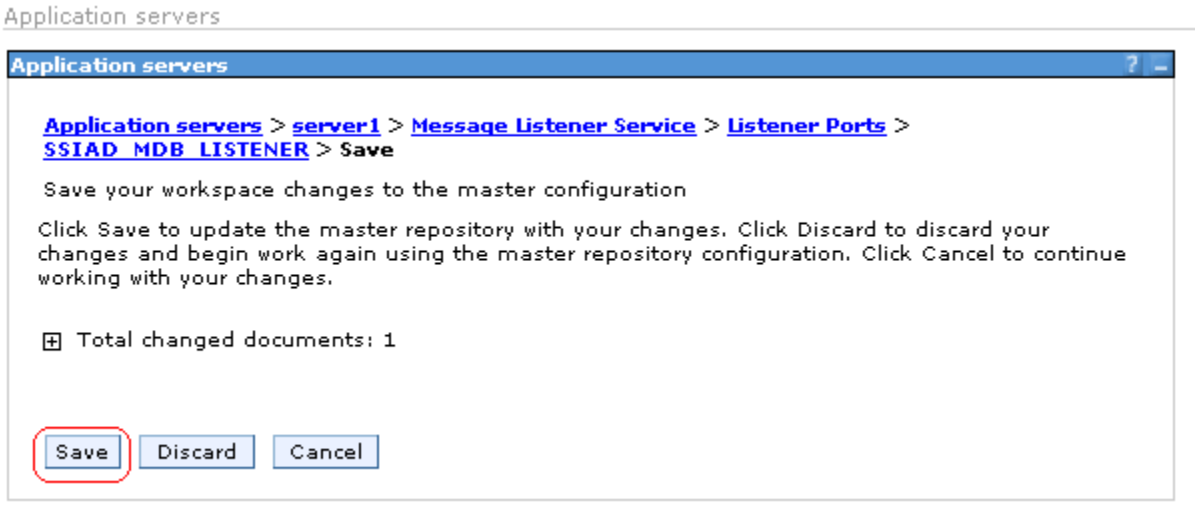
[Note: The rest all values will be de-faulted automatically.]


Application servers
Application servers > server1 > Message Listener Service > Listener Ports > New
Listener ports for Message Driven Beans to listen upon for messages. Each port specifies the JMS Connection Factory and JMS Destination that an MDB, deployed against that port, will listen upon.
Runtime
Configuration
General Properties
Name
SSIAD_MDB_LISTENER
Initial State
Started
Description
SSIAD_MDB_LISTENER
Connection factory JNDI name
SSIAD_MDB_QCF
Destination JNDI name
NOTIFY_DEST_QUEUE
Maximum sessions
1
Maximum retries
1
Maximum messages
1
Apply
OK
Reset
Cancel

7. Following screen will be displayed. Click on **Save**.

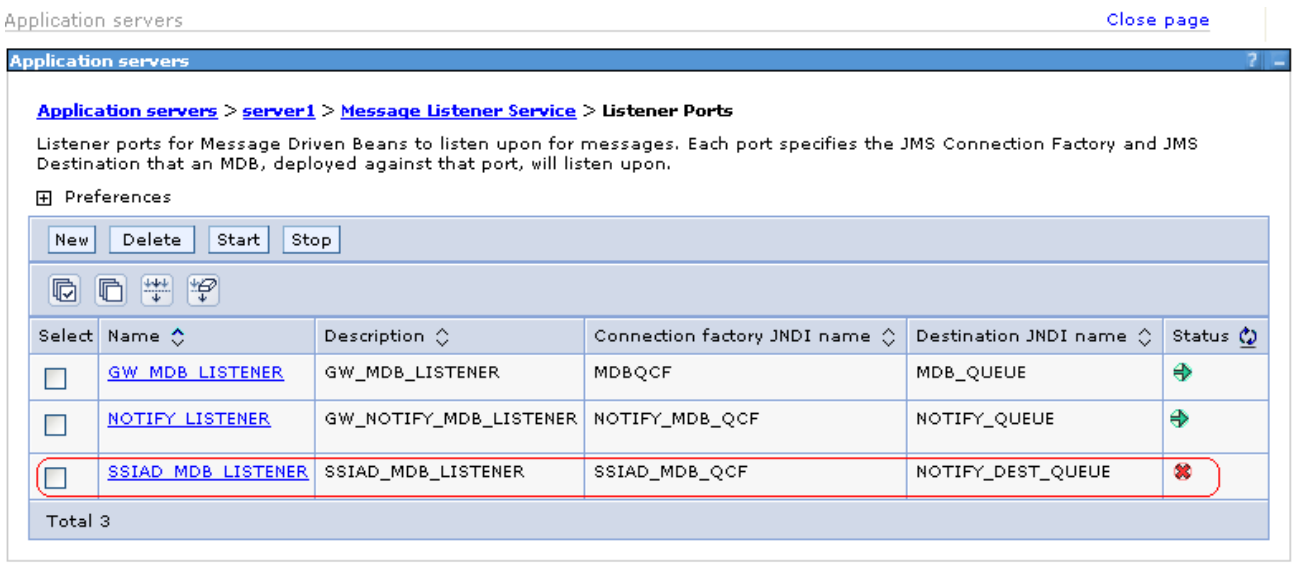


8. Following screen will be displayed. Click on **Save**.

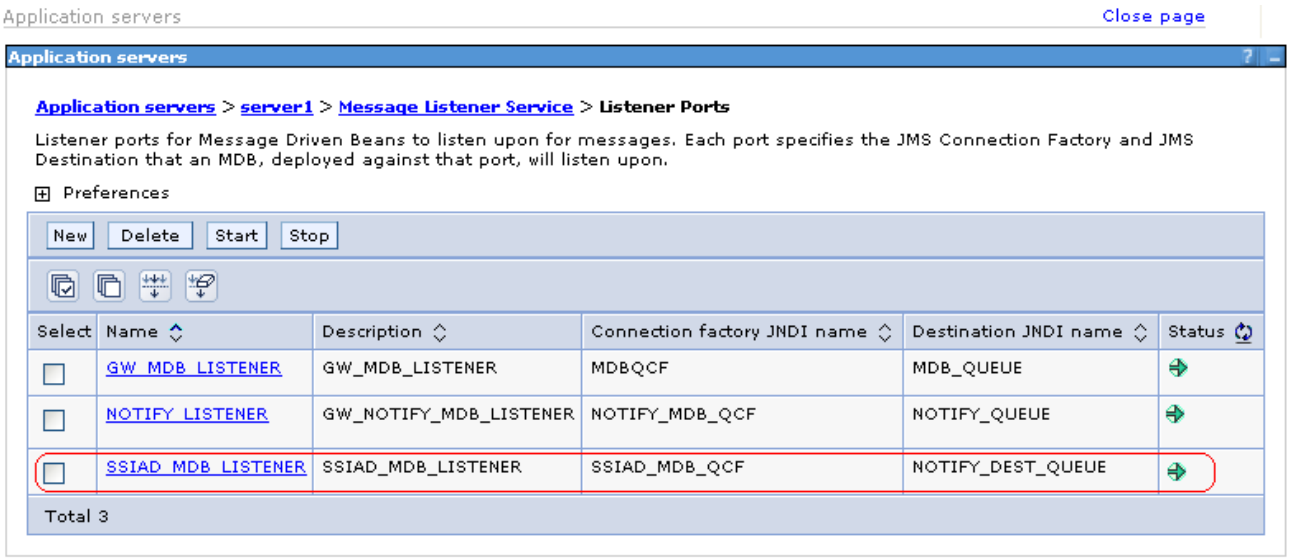


9. Following screen will be displayed.

   ✓ It should show the Listener Port that has been created in the above steps as shown bellow.



10. Restart the Application server then follow steps 1,2,3,4 specified under this section. The Listener Port will be shown as started (as displayed in the following screen).



3. Appendix

3.1 Kernel Installation Documents

Please refer SSIAD_Installation_FCUBSV.UM8.0.0.0.0.0.0.doc.

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