Oracle GL Adapter IBM WebSphere MQ Installation
Oracle FLEXCUBE Universal Banking
Release 12.1.0.0.0
[October] [2015]

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1. Configuring IBM WebSphere MQ

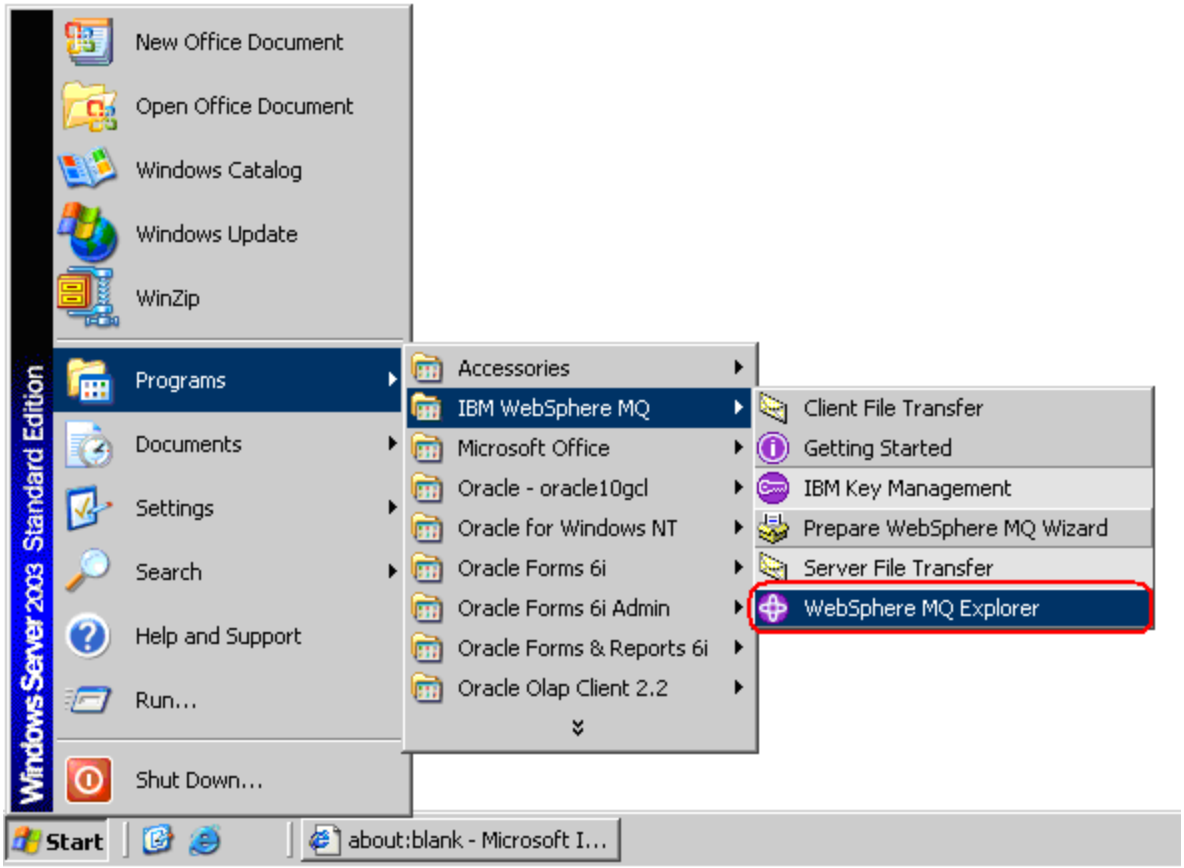
1.1 Prerequisite

- ✓ 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.

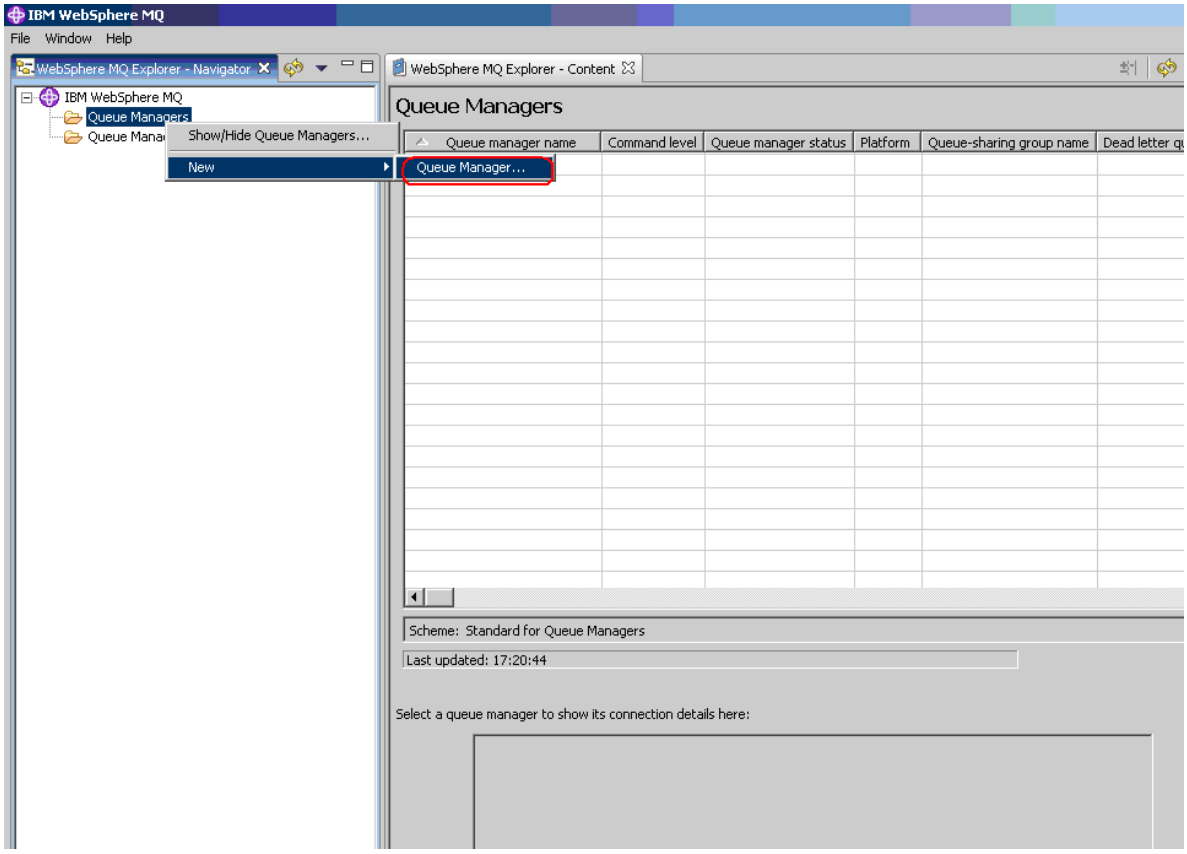
1.2 Creating Queue Manager

1.2.1 Using WebSphere MQ Explorer

1. Go to Start→Programs→IBM WebSphere MQ→ WebSphere MQ Explorer.



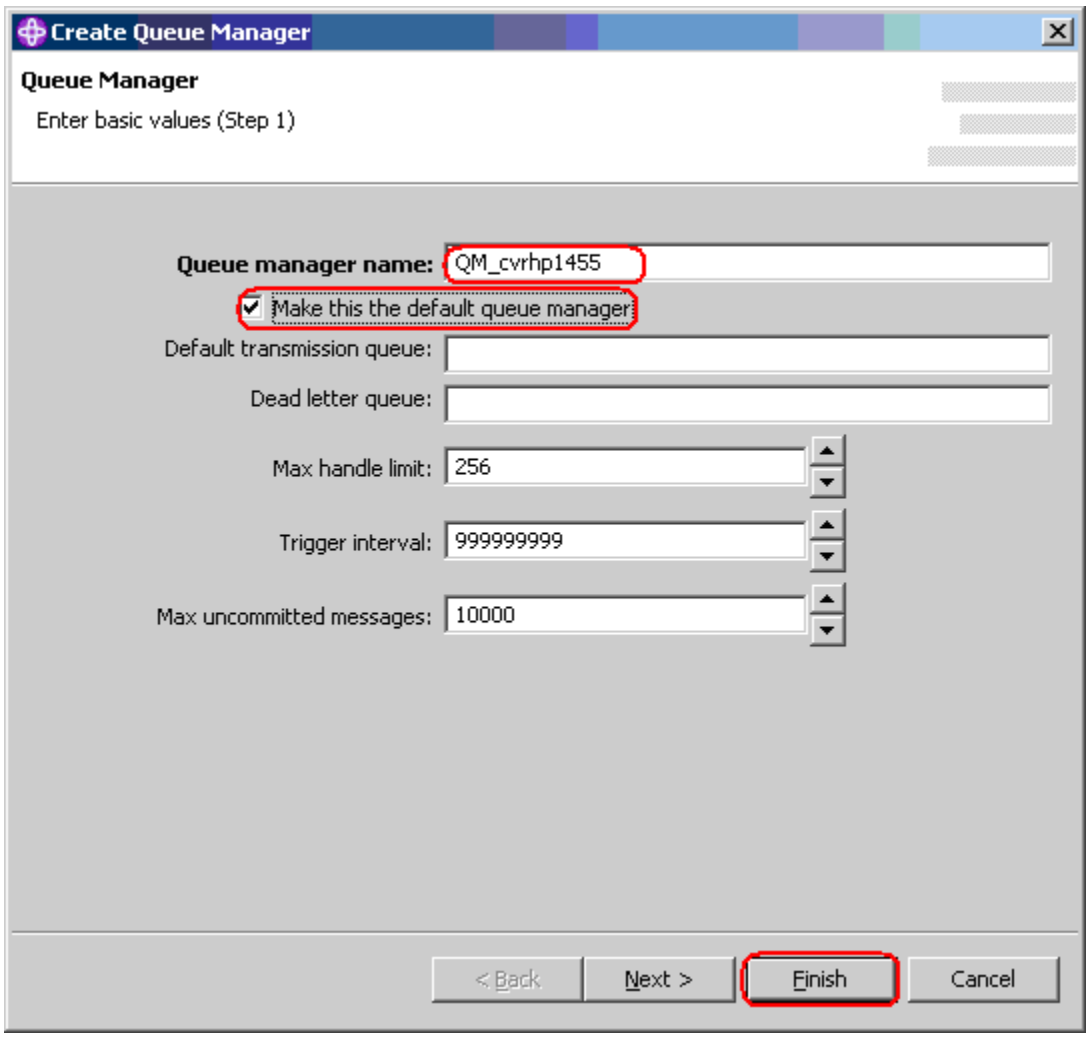
2. Right-click on the queue manager's icon, from the popup menu select New, and select Queue Manager.


IBM WebSphere MQ
File
Window
Help
WebSphere MQ Explorer - Navigator
IBM WebSphere MQ
Queue Managers
Queue Mana
Show/Hide Queue Managers...
New
Queue Manager...
WebSphere MQ Explorer - Content
Queue Managers
Queue manager name
Command level
Queue manager status
Platform
Queue-sharing group name
Dead letter q
Scheme: Standard for Queue Managers
Last updated: 17:20:44
Select a queue manager to show its connection details here:

3. Give the name of the Queue Manager

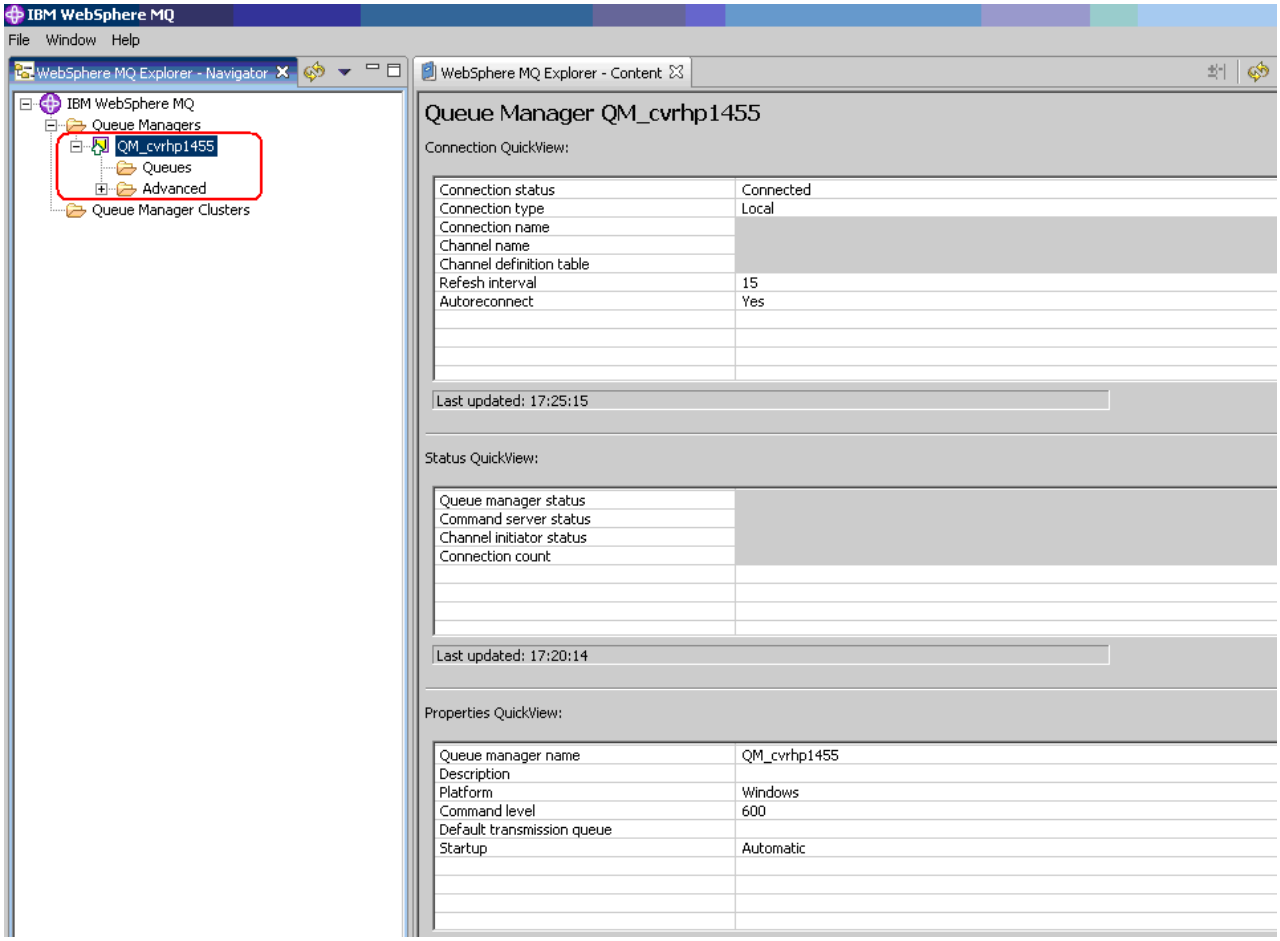
✓ Click on the check box specifying Make this the default Queue Manager

✓ Click on Finish



4. Following screen shall be displayed

[Note: Make sure that the Queue Manager is started and Running]



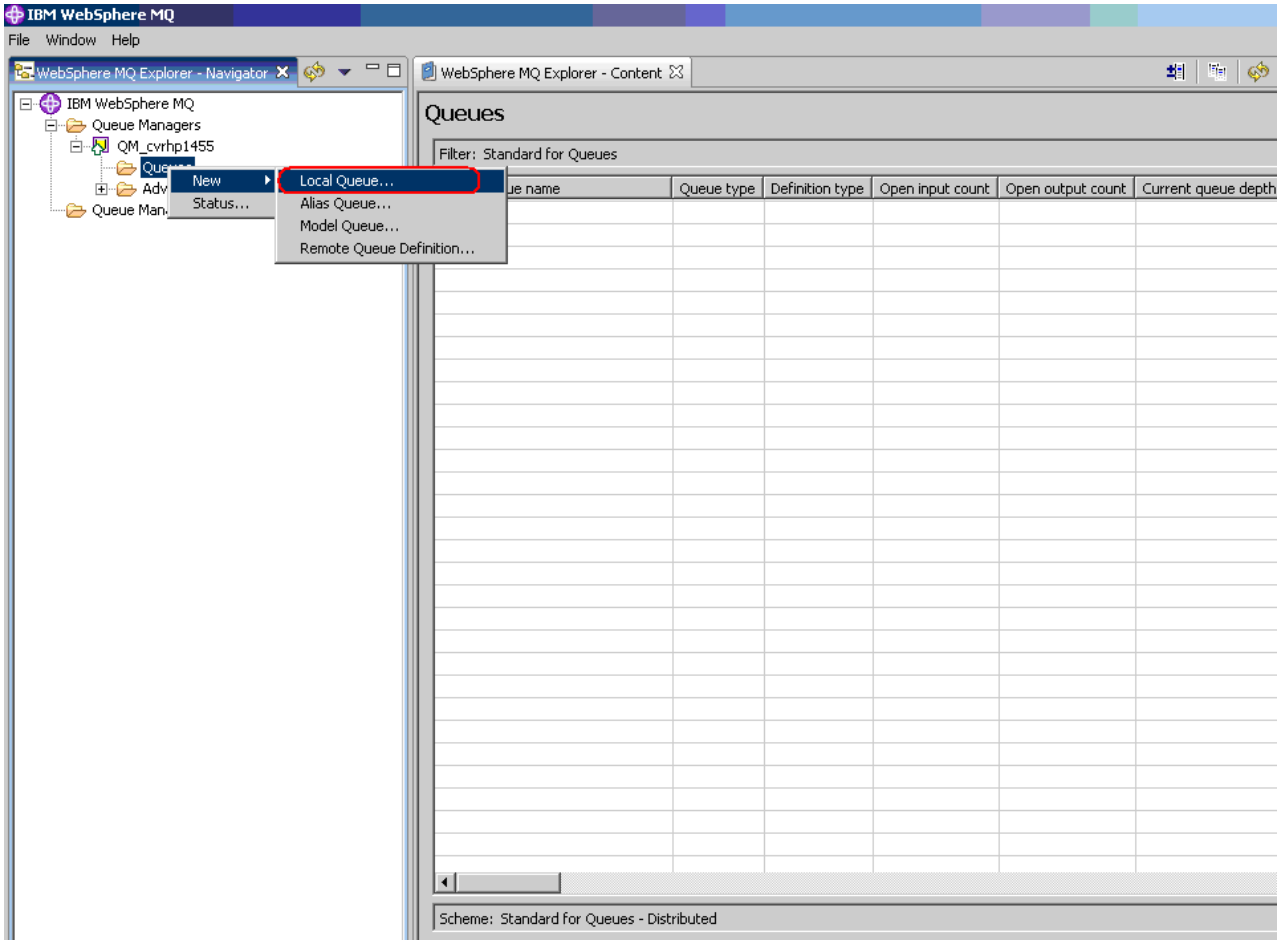
1.3 Creating Queues in that Queue manager

1.3.1 Using WebSphere MQ Explorer

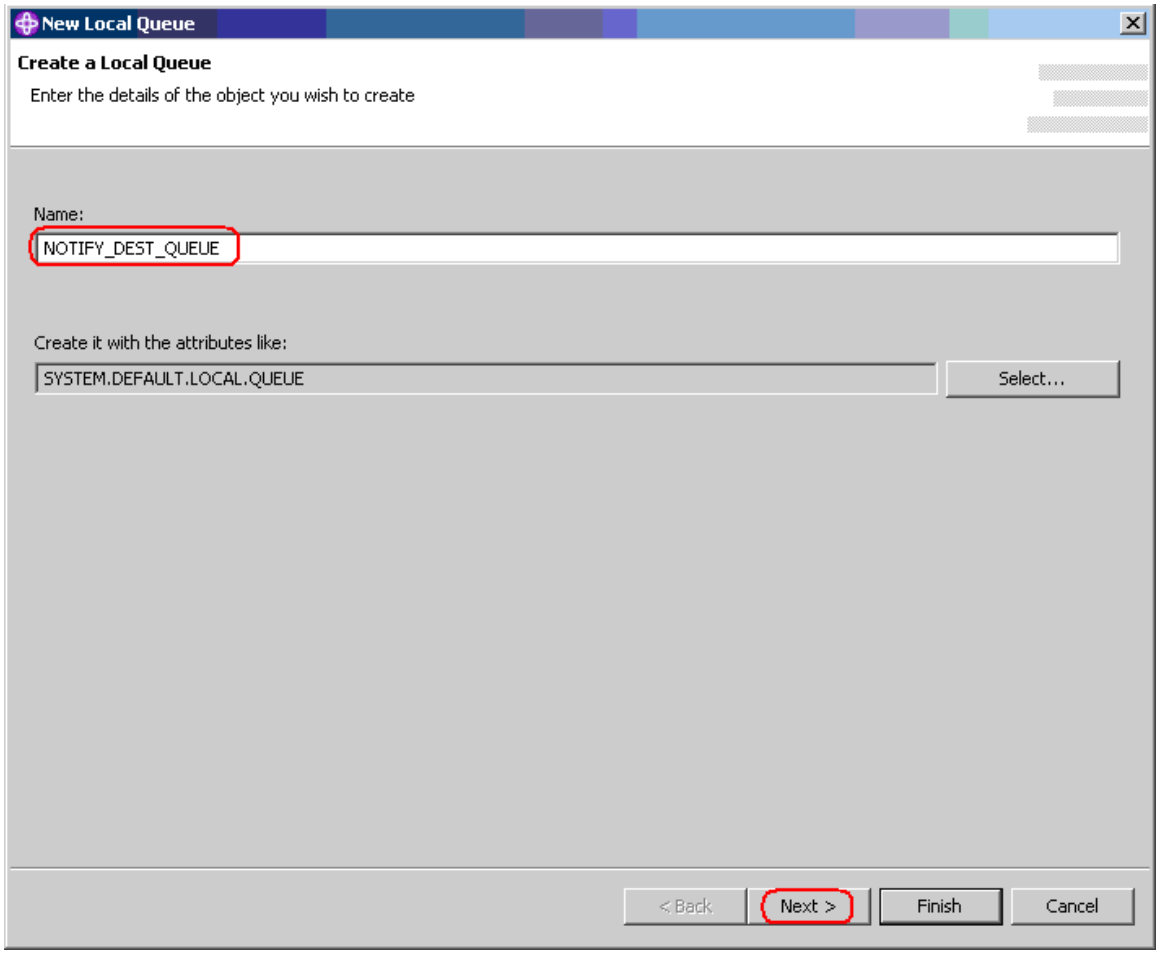
1. Open the queue manager in the explorer which was created as in section 1.2

   ✓ Right-click on the queues icon.

   ✓ From the popup menu select New, and then select Local Queue as shown bellow.

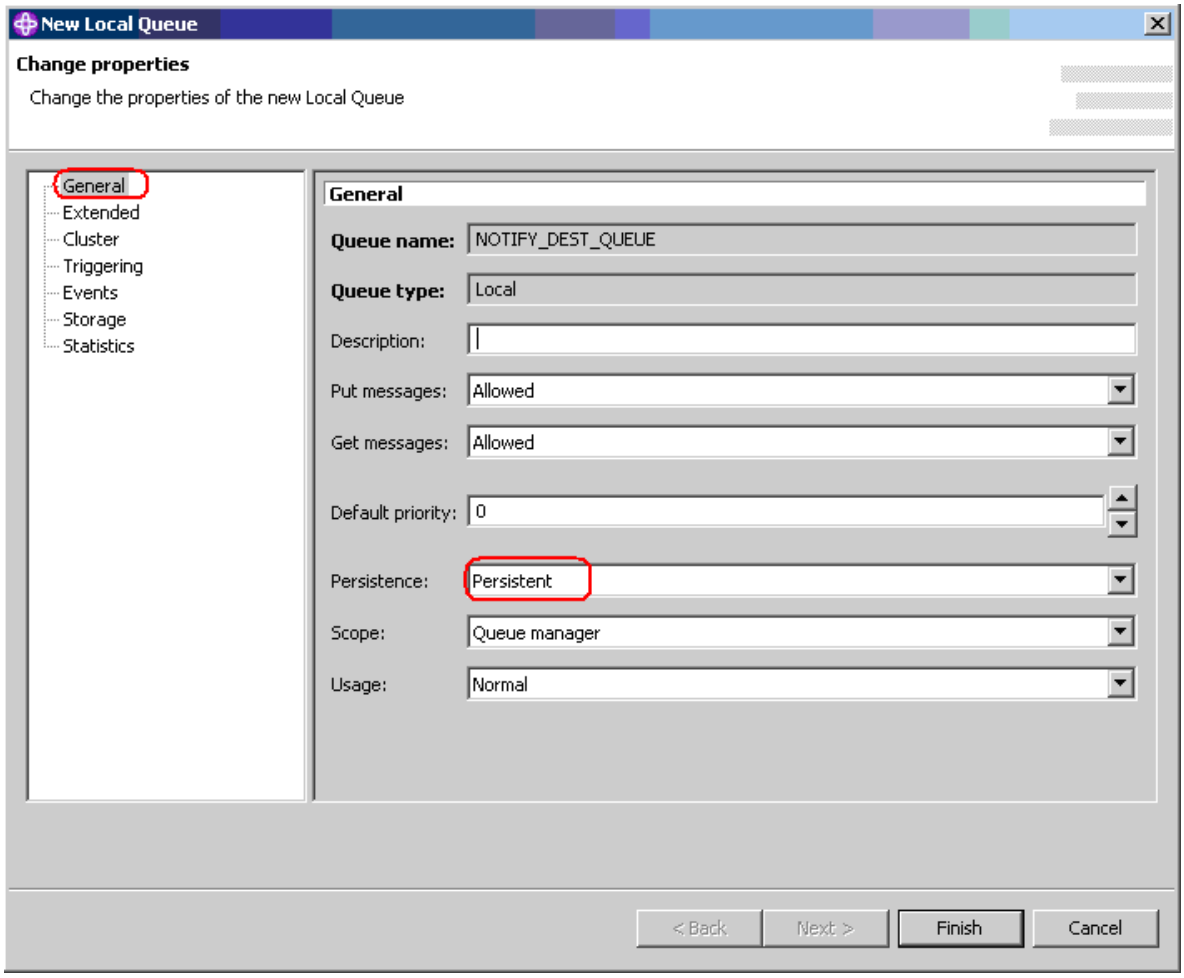


2. Following screen will be displayed. Type the Name of the Queue and then Click on Next.



3. Following screen will be displayed.

   ✓ In General Properties Tab for Persistence Attribute, select **Persistent** from drop down list.

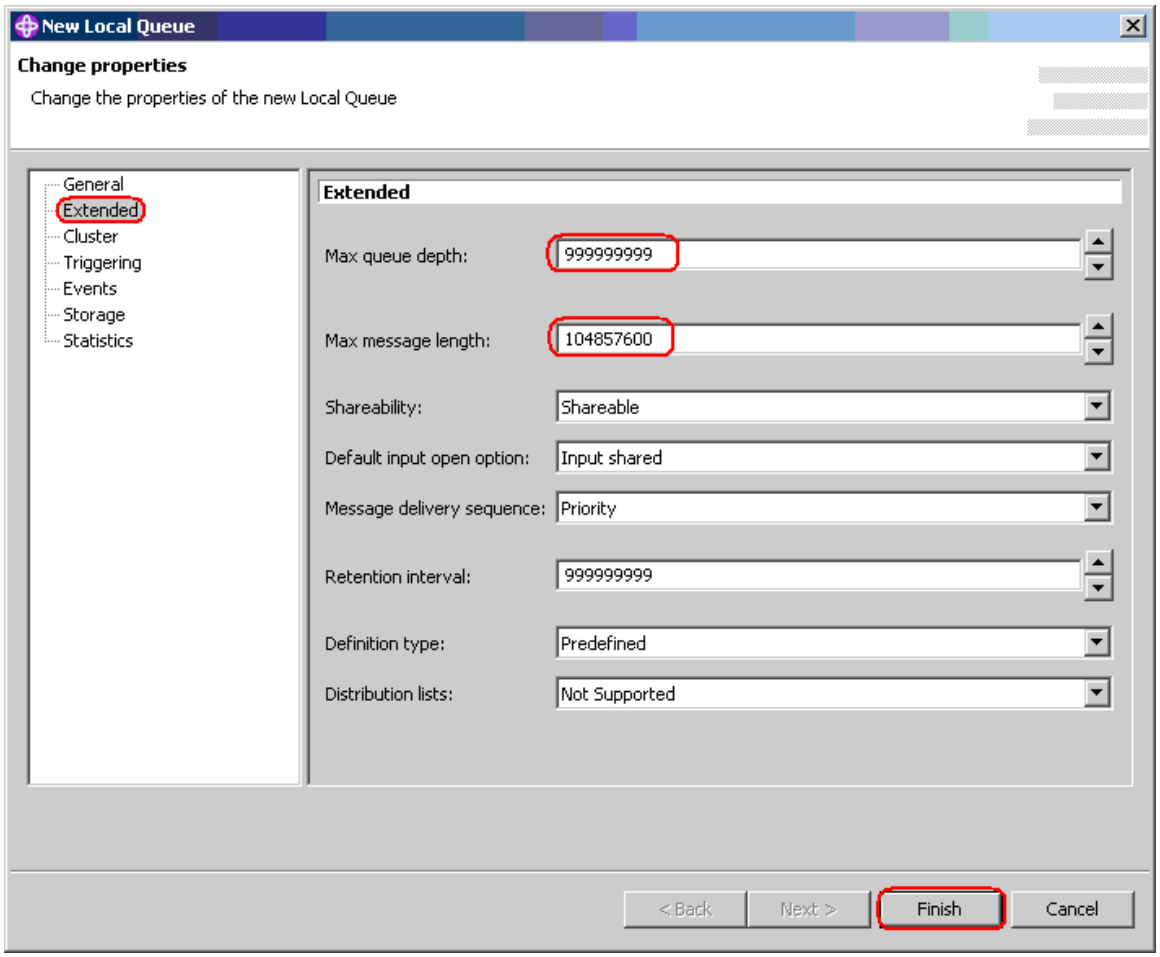


4. Click on Extended on the Left Hand side. Following screen will be displayed.

   ✓ For **Max queue depth**, enter **999999999**.

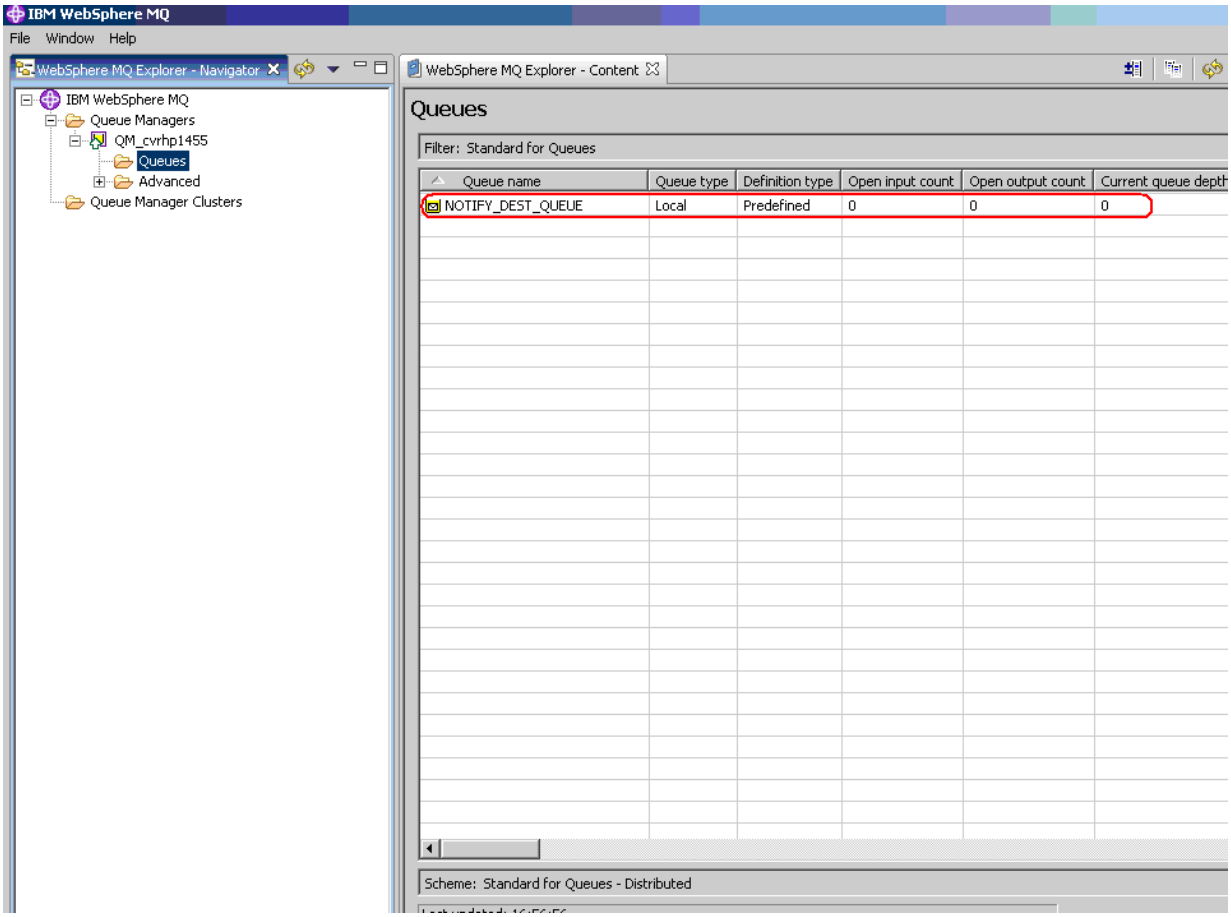
   ✓ For **Max message length**, enter **104857600**.

   ✓ Click on Finish.



5. Following screen will be displayed.

   ✓ Make sure that the Queue is displayed in Contents Window.



1.4 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.

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.

1.4.1 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 is listed 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. This parameter indicates context factory of the Messaging Server and same property is supposed to be maintained in the properties file.

   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:/C:/jmsobj (Windows)

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

   This parameter indicates a directory on the local disc where the JMS binding file is to be created. Same property is supposed to be maintained in the KERNEL properties file. 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. C:\IBM\WebSphereMQ\java\bin>jmsadmin (windows)

   $ jmsadmin (UNIX)

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

    InitCtx>

    Here the bindings for the Queue manager and the queues will be created.

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

    define qcf(<JNDI_MAPPING_OF_QUEUE_MANAGER>) qmgr(<QUEUE_MANAGER_NAME>) host(<IP_ADD_OF_MQ_SERVER_MACHINE>) port (<PORT_OF_QUEUE_MANAGER>) tran (CLIENT)

    e.g. InitCtx>define qcf (ADOGL_MDBQCF) qmgr(QM_cvrhp1453) host (10.80.4.102) port(1414) tran(CLIENT)

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

This defines the JNDI mapping (ADOGL_MDBQCF) for the queue manager (QM_cvrhp1455) running on machine (10.70.4.56) and port (1414)

This JNDI mapping (ADOGL_MDBQCF) should be the same as that maintained in the properties file (ADOGL_MDB_Prop.properties) parameter (ADOGL_MDB_JMS_QCF) value.

e.g. ADOGL_MDB_JMS_QCF= ADOGL_MDBQCF

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

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

e.g.: InitCtx> DEFINE Q(NOTIFY_DEST_QUEUE) QUEUE(NOTIFY_DEST_QUEUE) QMGR(QM_cvrhp1455)

This will bind the queue called "NOTIFY_DEST_QUEUE" by the binding name "NOTIFY_DEST_QUEUE" to the queue manager "QM_cvrhp1455". 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

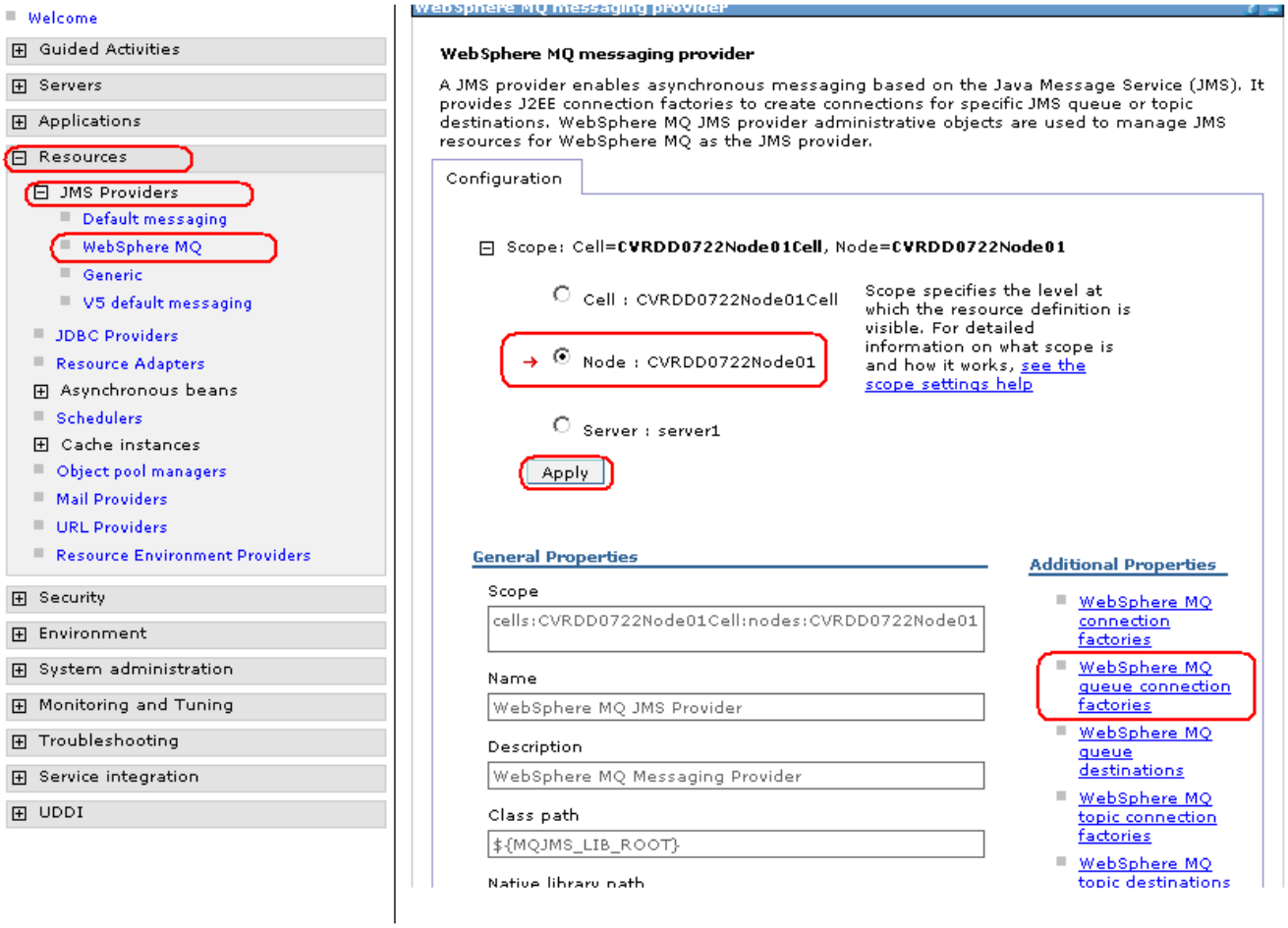
2.1 Creation of WebSphere MQ Queue Connection Factories

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

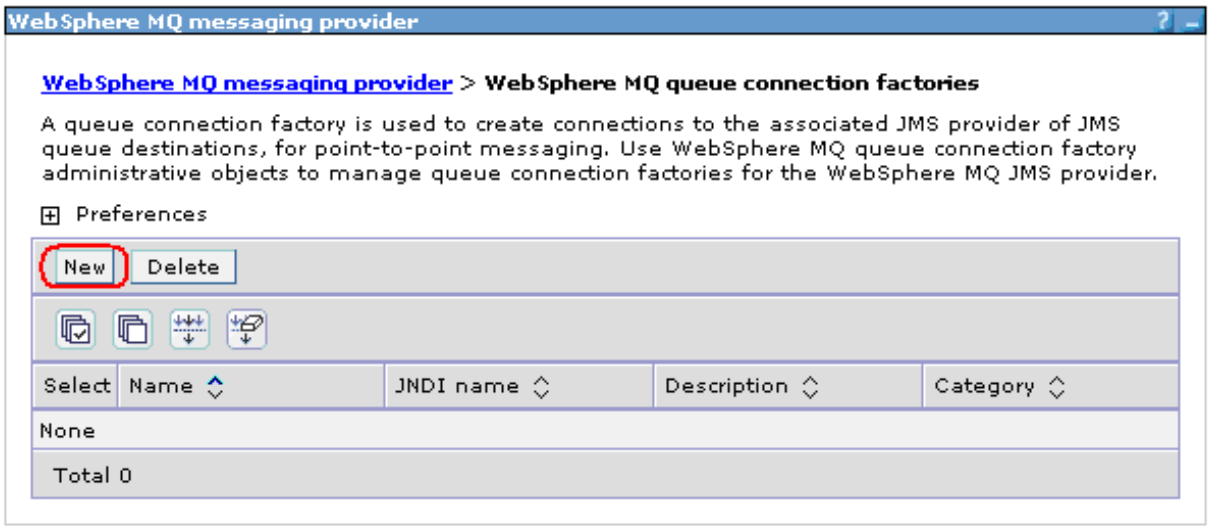
2. Now click on **WebSphere MQ** option.

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**.

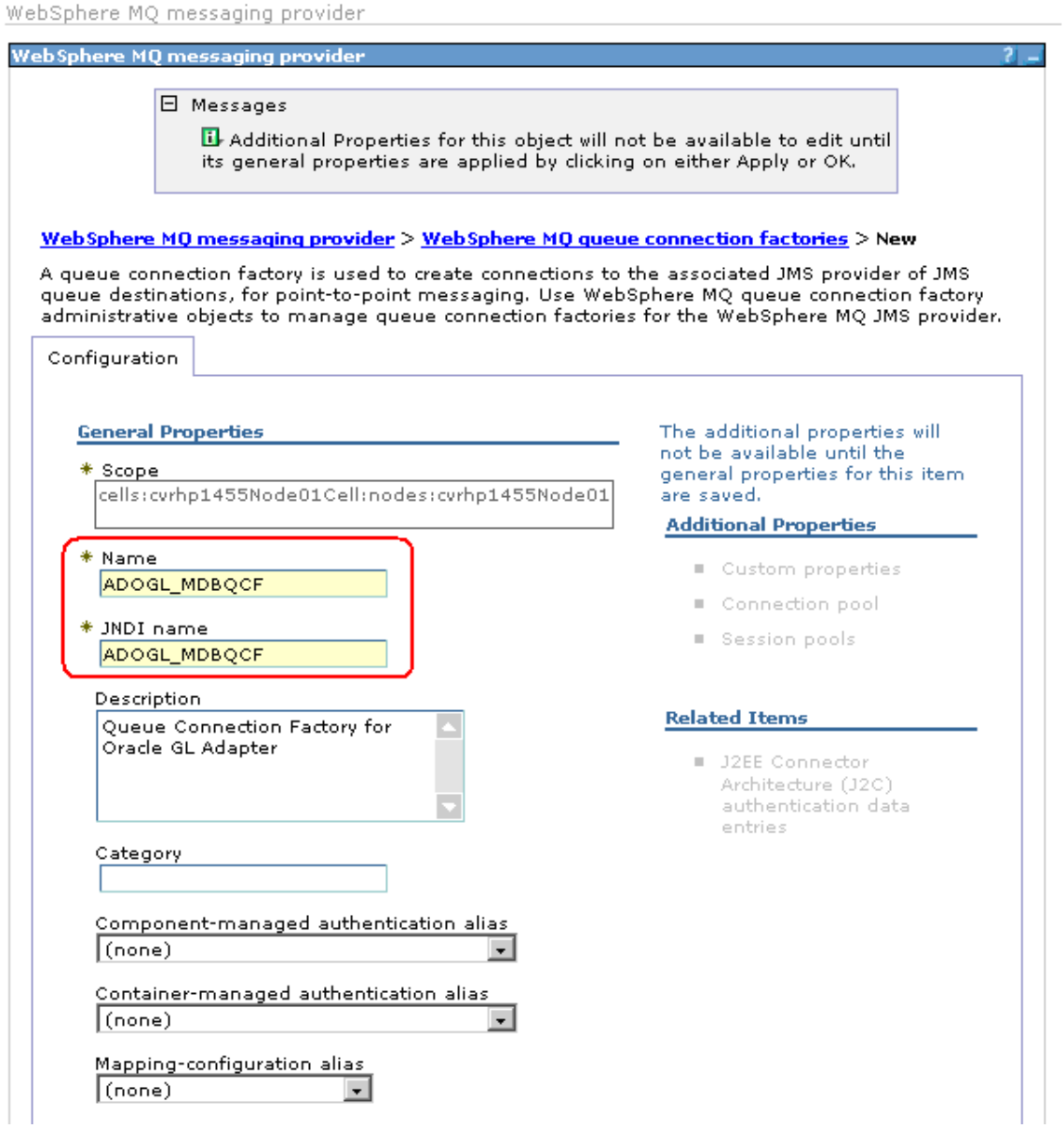


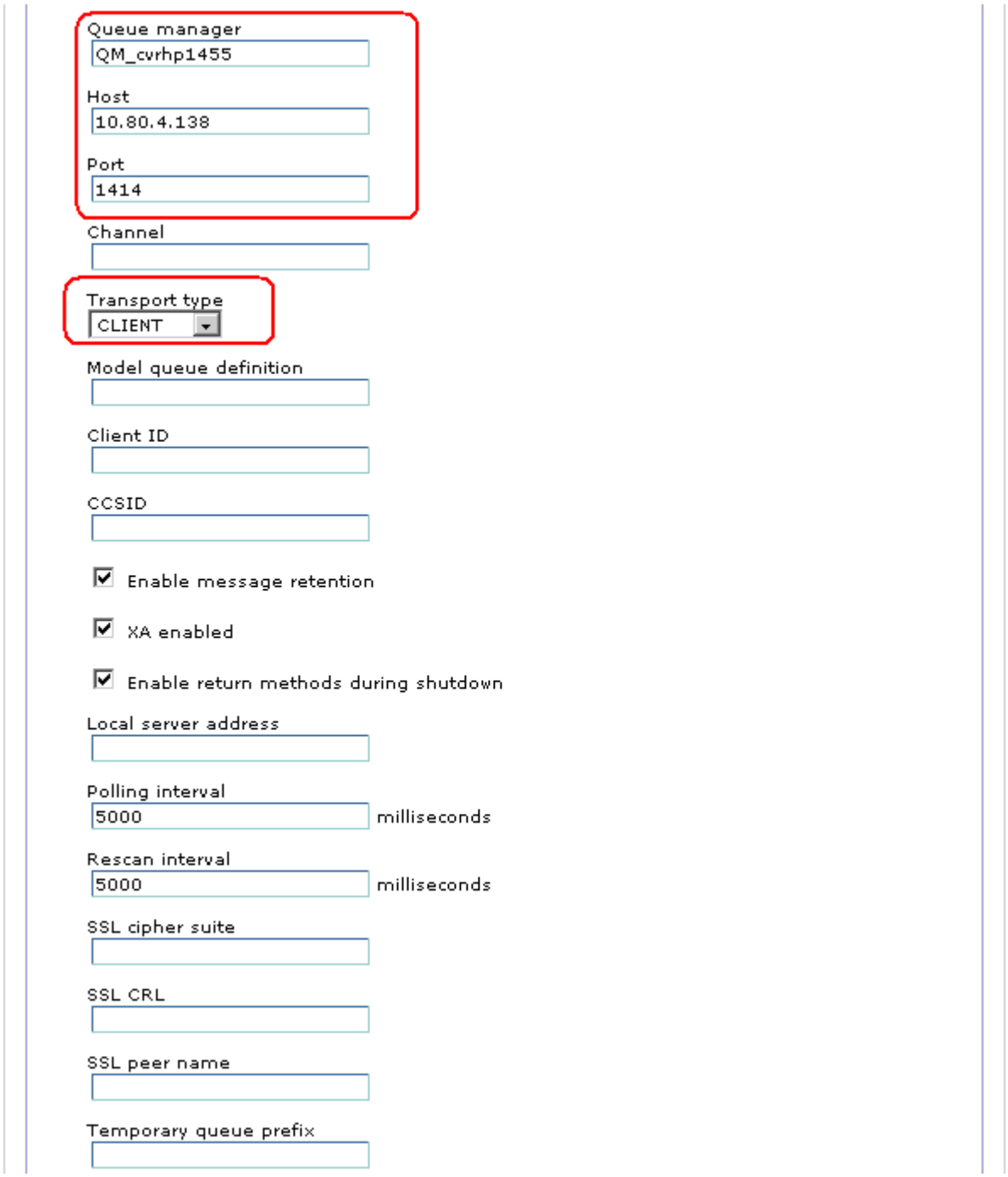
6. Following screen will be displayed.

   ✓ Configure the details as mentioned below:

Name:	ADOGL_MDBQCF (Name of the QCF as specified)
JNDI Name:	ADOGL_MDBQCF (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.]

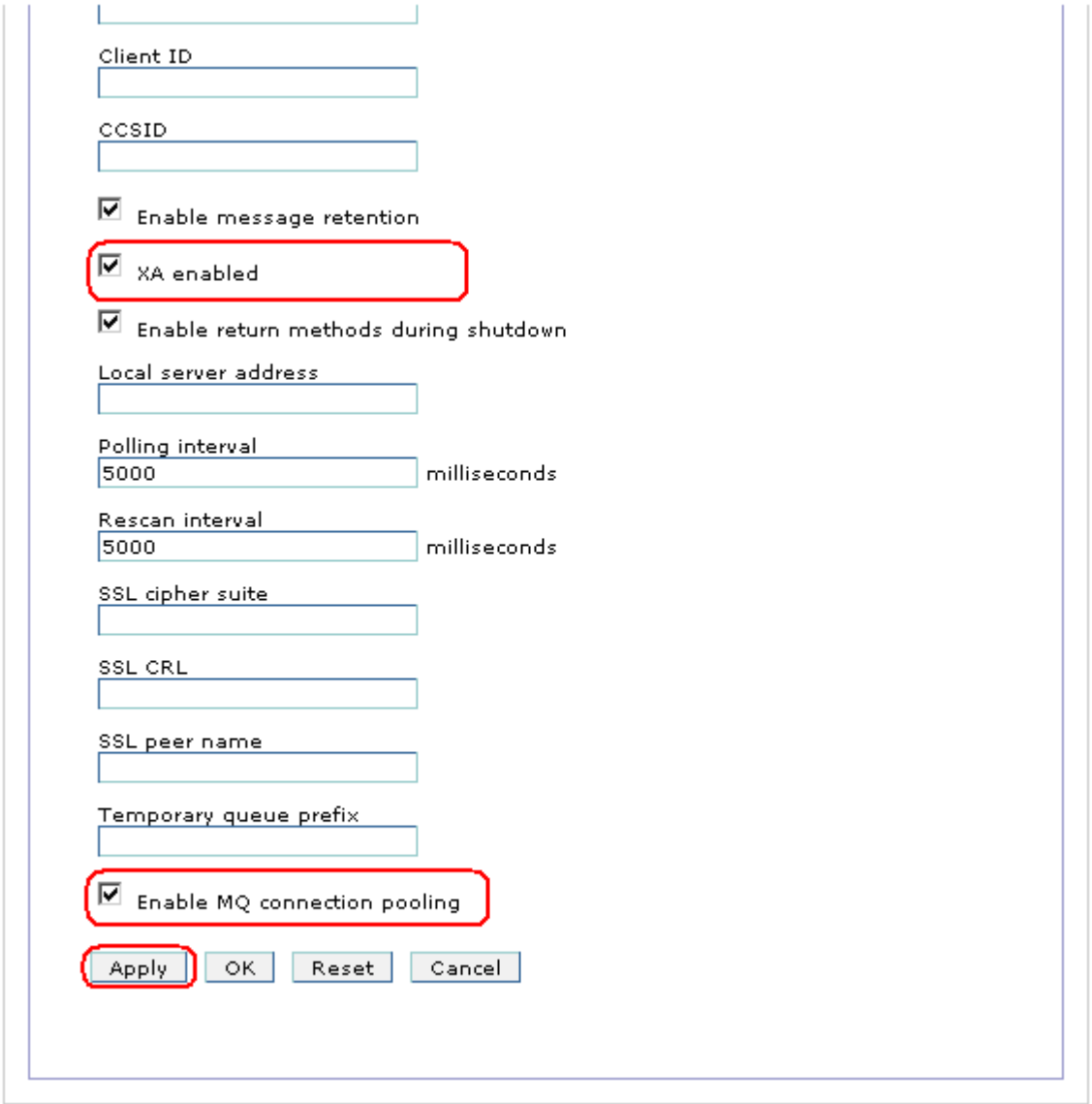



Queue manager
QM_cvrhp1455
Host
10.80.4.138
Port
1414
Channel
Transport type
CLIENT
Model queue definition
Client ID
CCSID
Enable message retention
XA enabled
Enable return methods during shutdown
Local server address
Polling interval
5000
milliseconds
Rescan interval
5000
milliseconds
SSL cipher suite
SSL CRL
SSL peer name
Temporary queue prefix

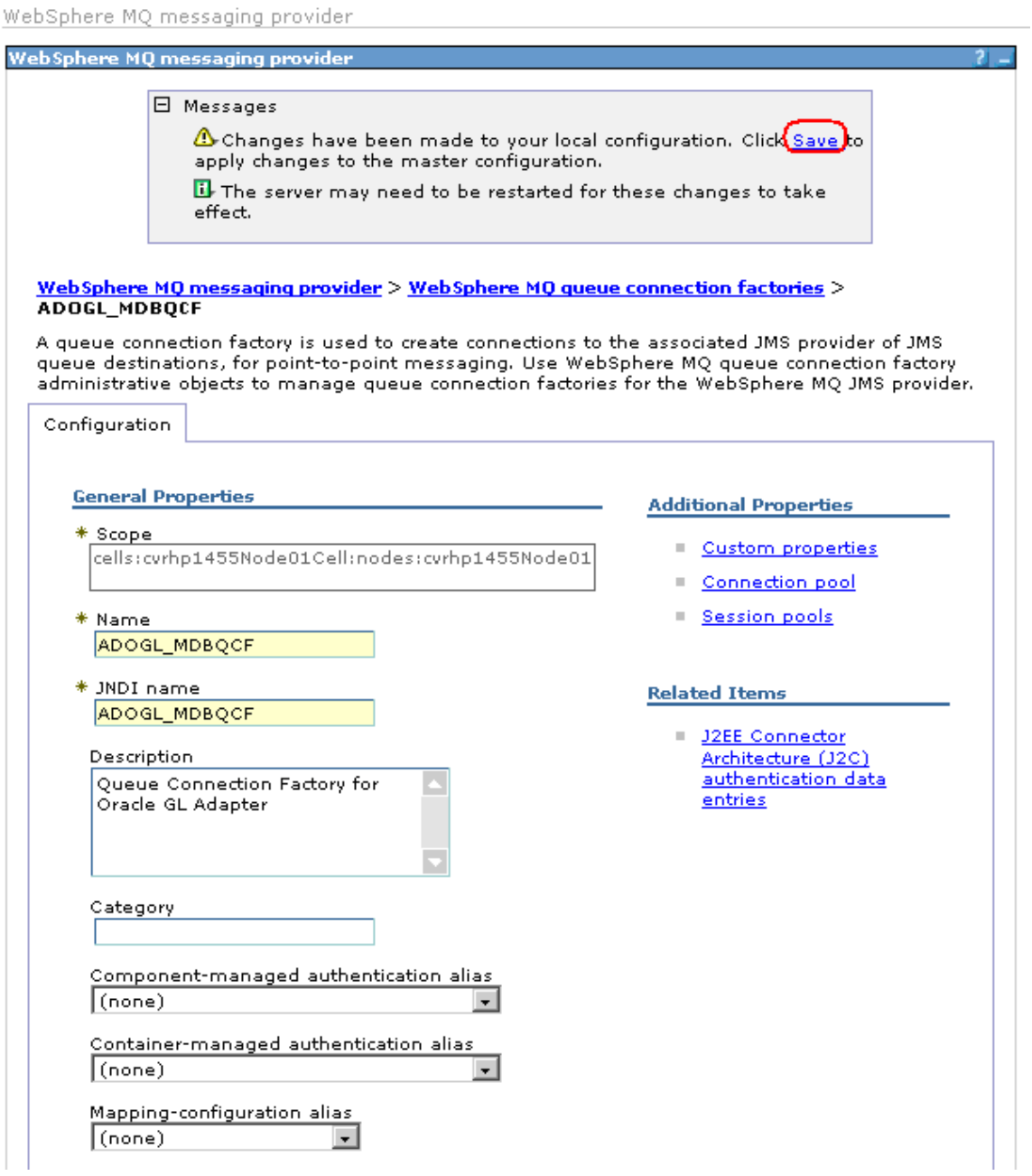
7. Make sure following two are selected,

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

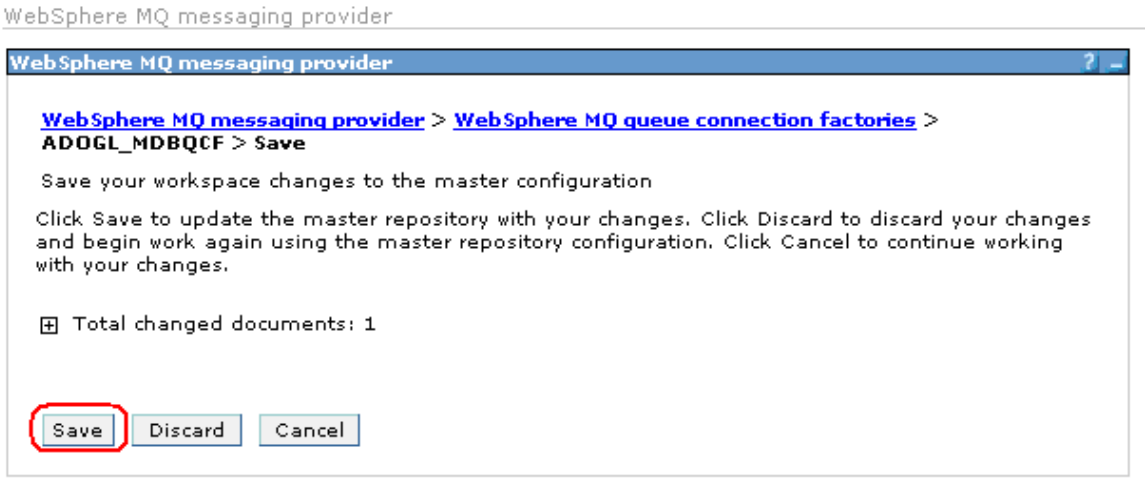
   Then click on **Apply**



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

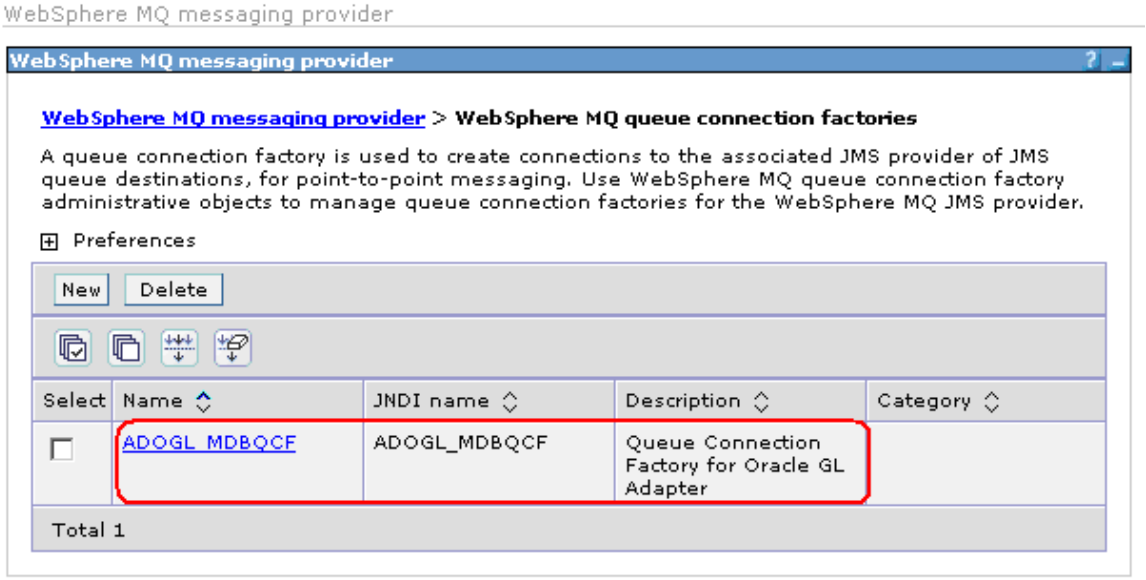


9. Following screen will be displayed. Click on **Save**.



10. Following screen will be displayed.

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



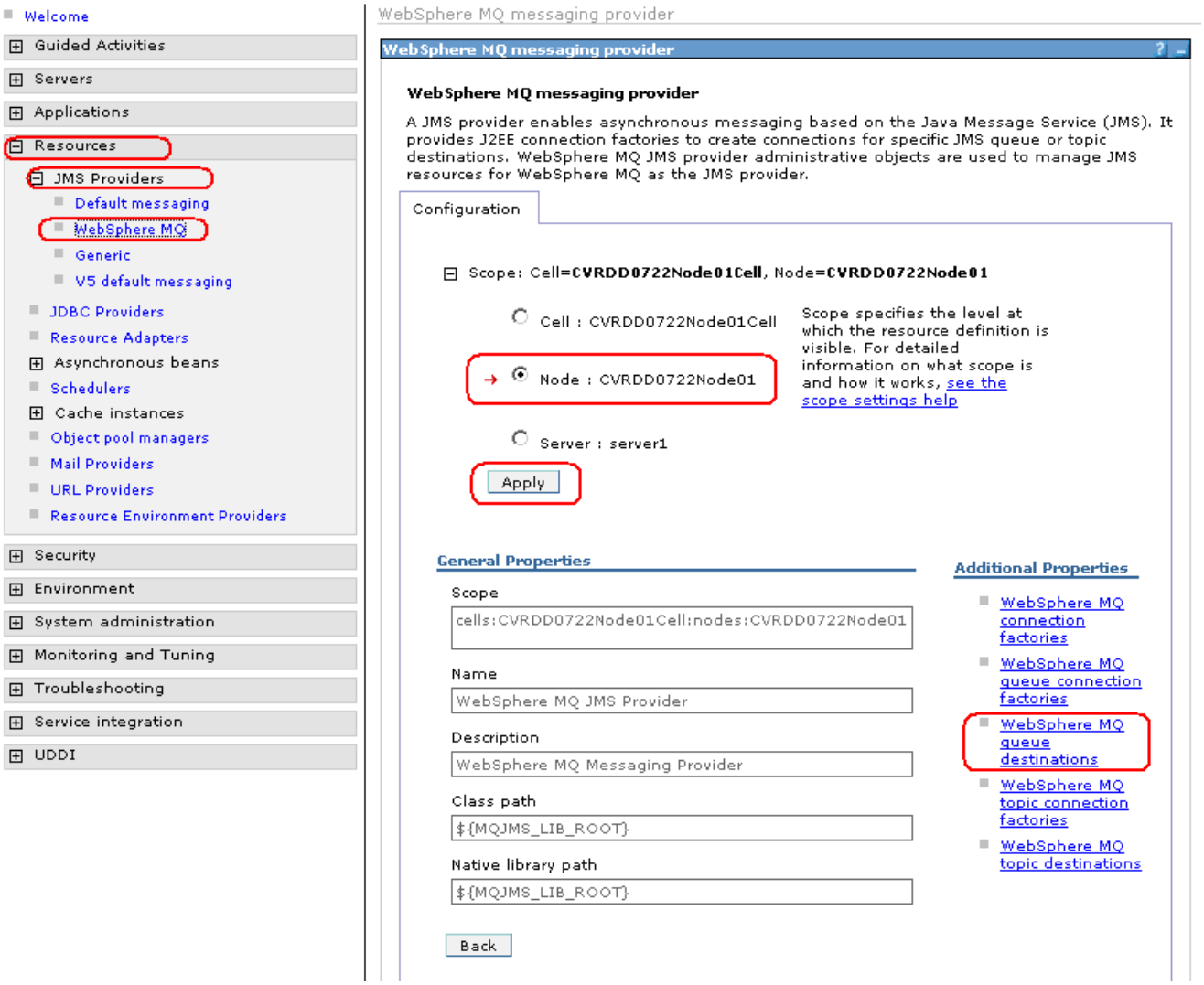
2.2 Creation of WebSphere MQ Queue Destinations

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 destinations** listed under Additional Properties

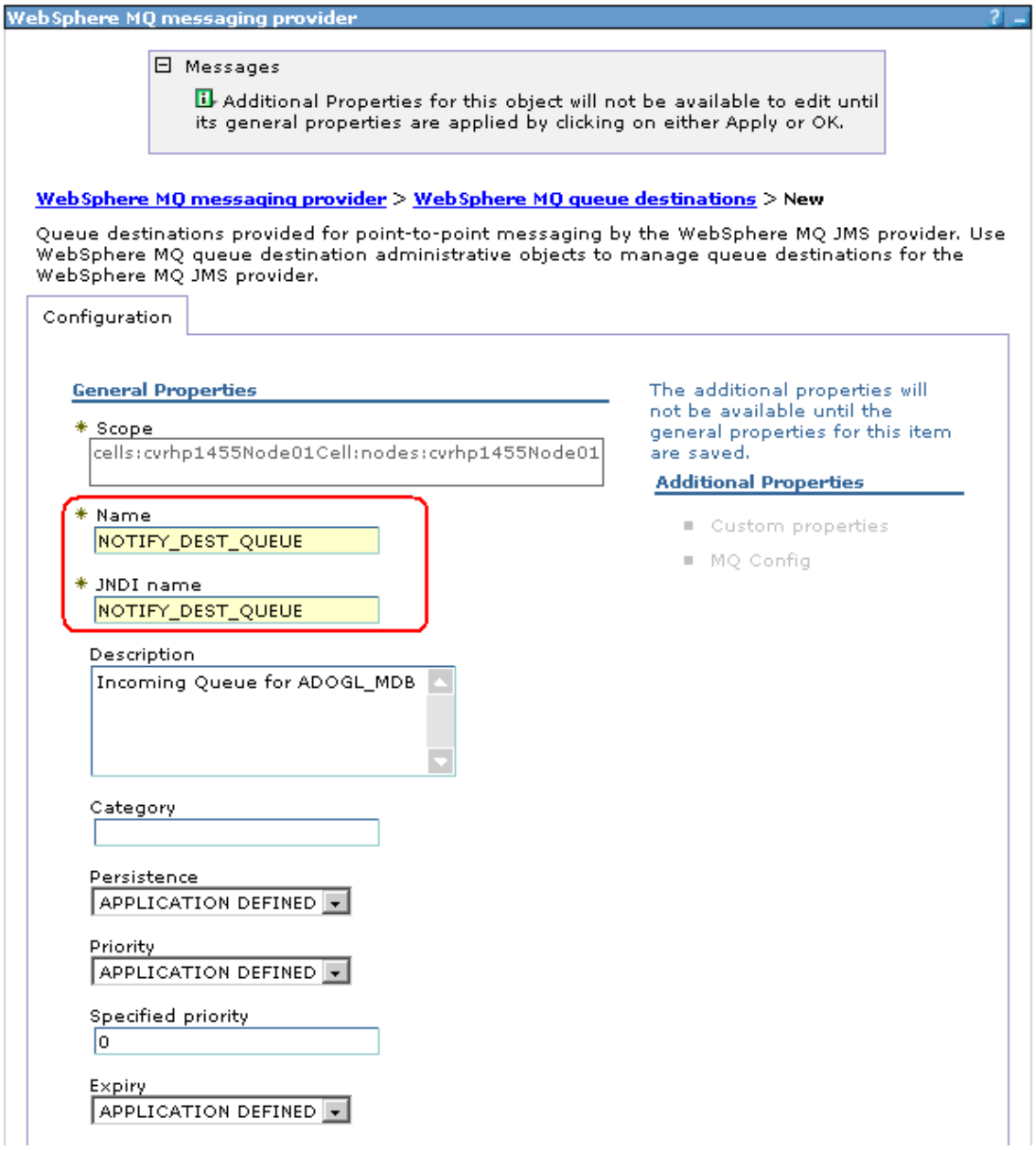


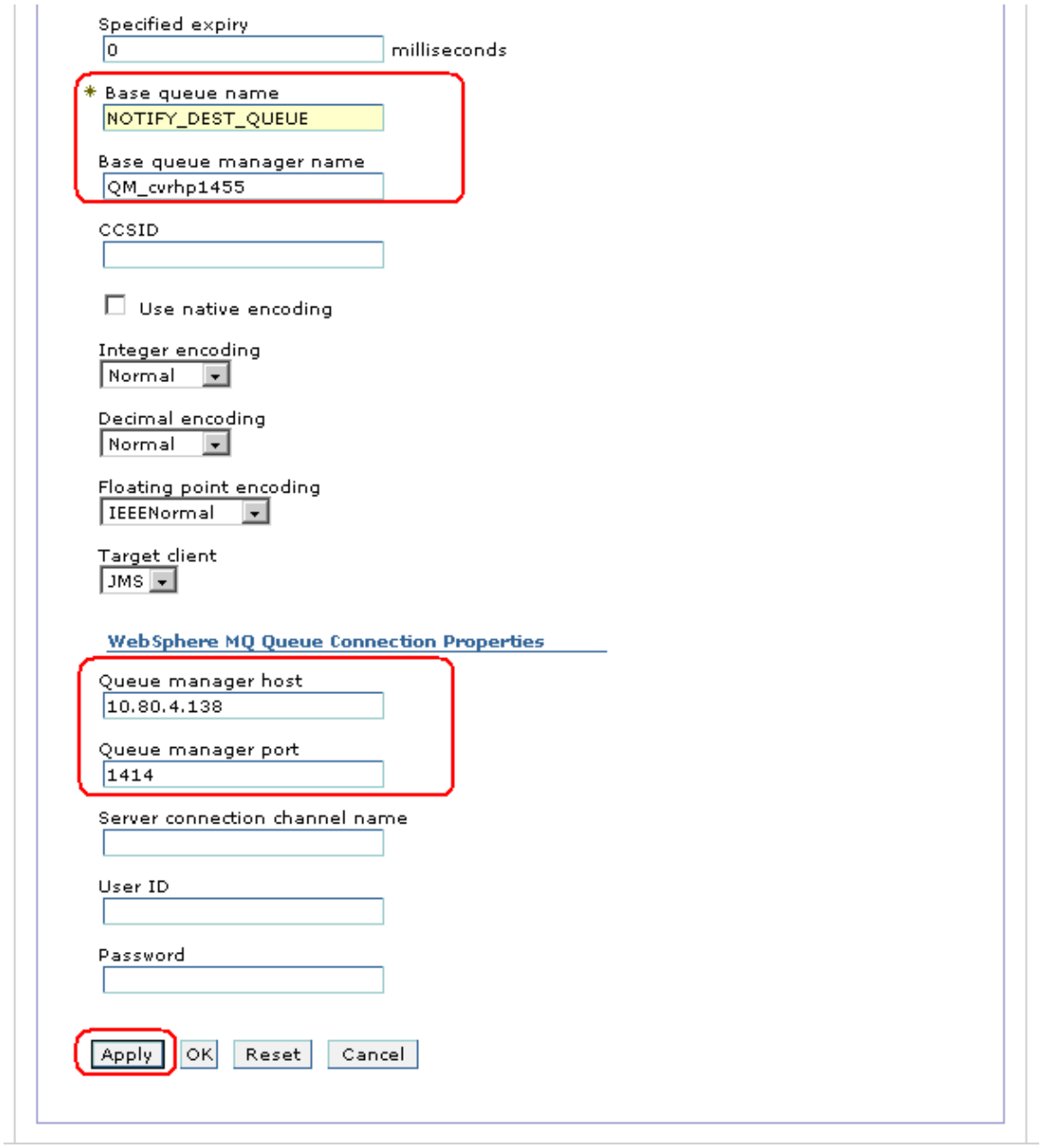
5. Following screen will be displayed. Click on **New**.

6. Following screen will be displayed. Configure with the details as mentioned below and click on **Apply**.

Name:	NOTIFY_DEST_QUEUE (Name of the queue as specified)
JNDI Name:	NOTIFY_DEST_QUEUE (Name of the queue as specified)
Base Queue Name:	NOTIFY_DEST_QUEUE (Name of the queue as specified)
Queue Manager Host:	IP Address of the Machine where the IBM MQ server is installed.
Port:	1414. MQ Port (CONFIGURABLE AS PER REQUIREMENT)

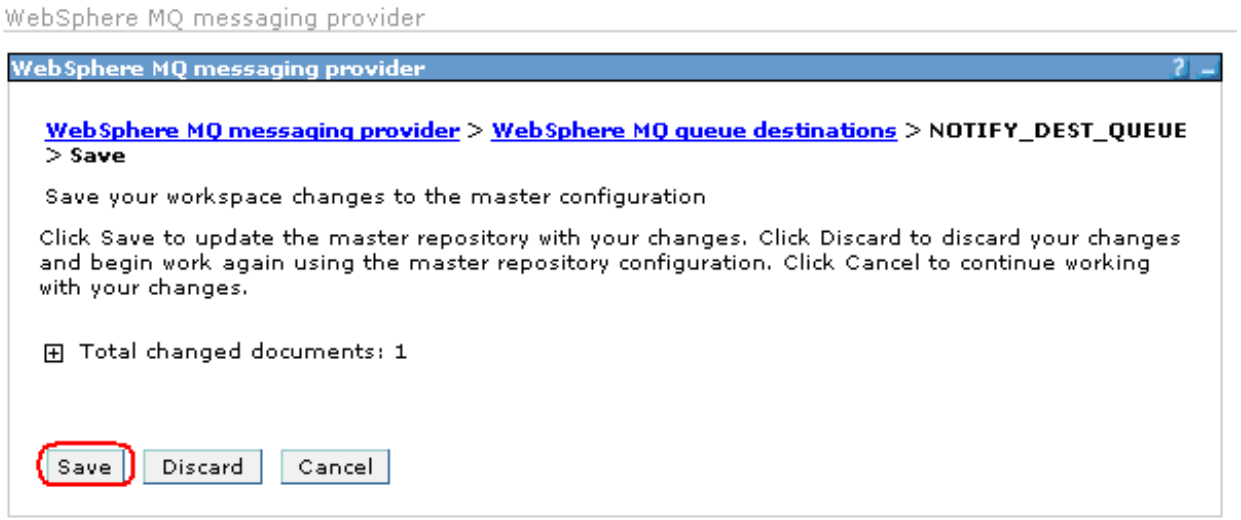
[Note: The Rest of the fields are optional and some are de-faulted automatically and hence can be ignored.]


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 destinations > New
Queue destinations provided for point-to-point messaging by the WebSphere MQ JMS provider. Use WebSphere MQ queue destination administrative objects to manage queue destinations for the WebSphere MQ JMS provider.
Configuration
General Properties
Scope
cells:cvrhp1455Node01Cell:nodes:cvrhp1455Node01
Name
NOTIFY_DEST_QUEUE
JNDI name
NOTIFY_DEST_QUEUE
Description
Incoming Queue for ADOGL_MDB
Category
Persistence
APPLICATION DEFINED
Priority
APPLICATION DEFINED
Specified priority
0
Expiry
APPLICATION DEFINED
The additional properties will not be available until the general properties for this item are saved.
Additional Properties
Custom properties
MQ Config


Specified expiry
0
milliseconds
* Base queue name
NOTIFY_DEST_QUEUE
Base queue manager name
QM_cvrhp1455
CCSID
Use native encoding
Integer encoding
Normal
Decimal encoding
Normal
Floating point encoding
IEEENormal
Target client
JMS
WebSphere MQ Queue Connection Properties
Queue manager host
10.80.4.138
Queue manager port
1414
Server connection channel name
User ID
Password
Apply
OK
Reset
Cancel

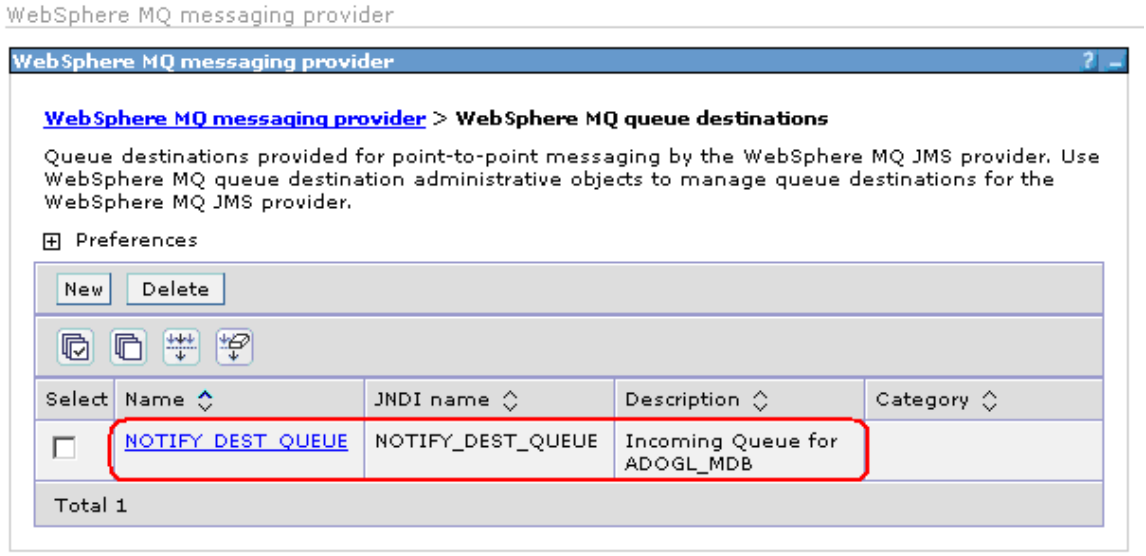
7. Following screen will be displayed. Click on **Save.**

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



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

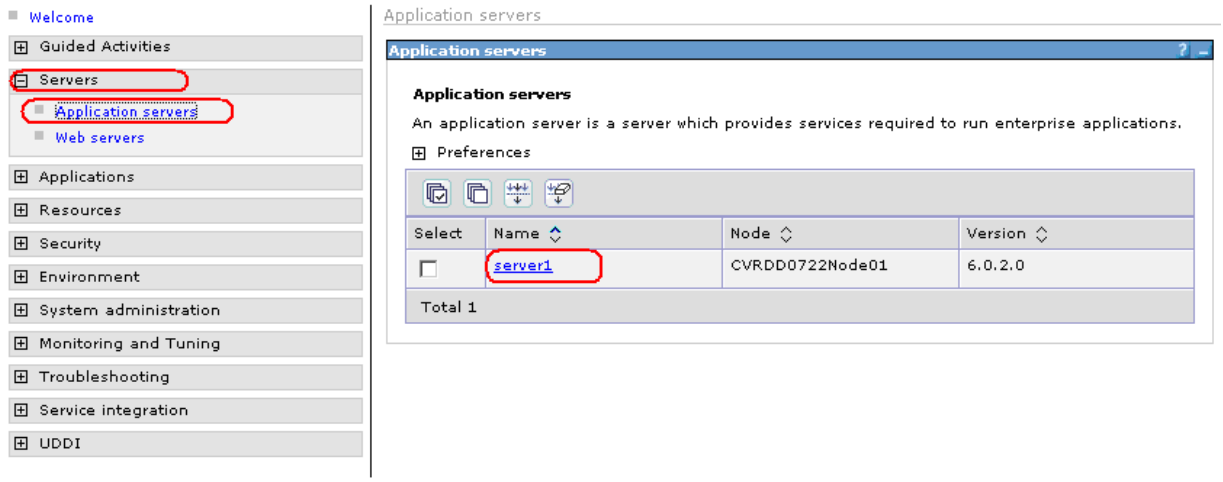
✓ It should show the Queue that has been created in the above steps as shown bellow.



2.3 Creation of Message Listener Ports

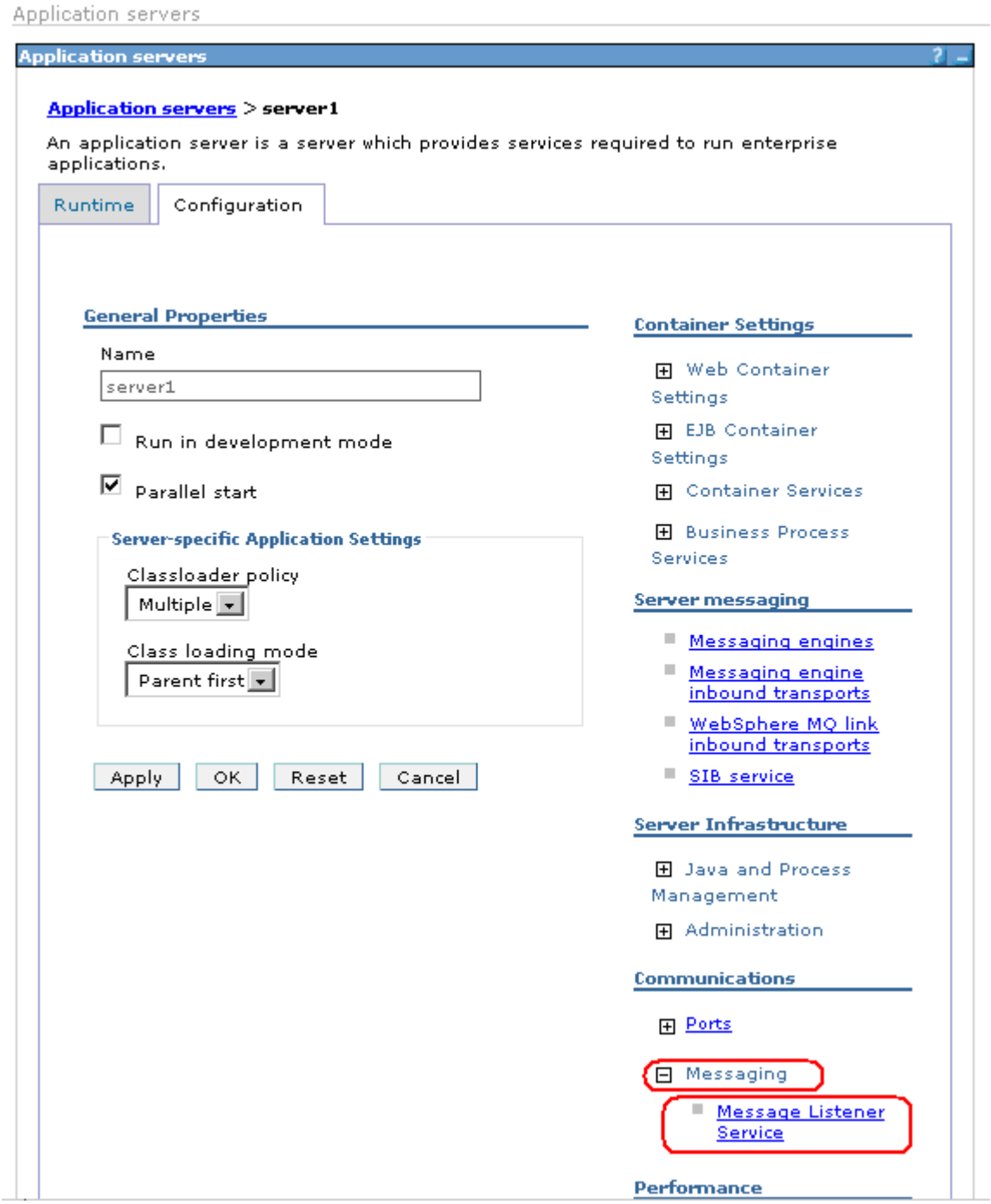
1. On the Left Hand Side Click on Servers and then click on Application Servers.

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**.



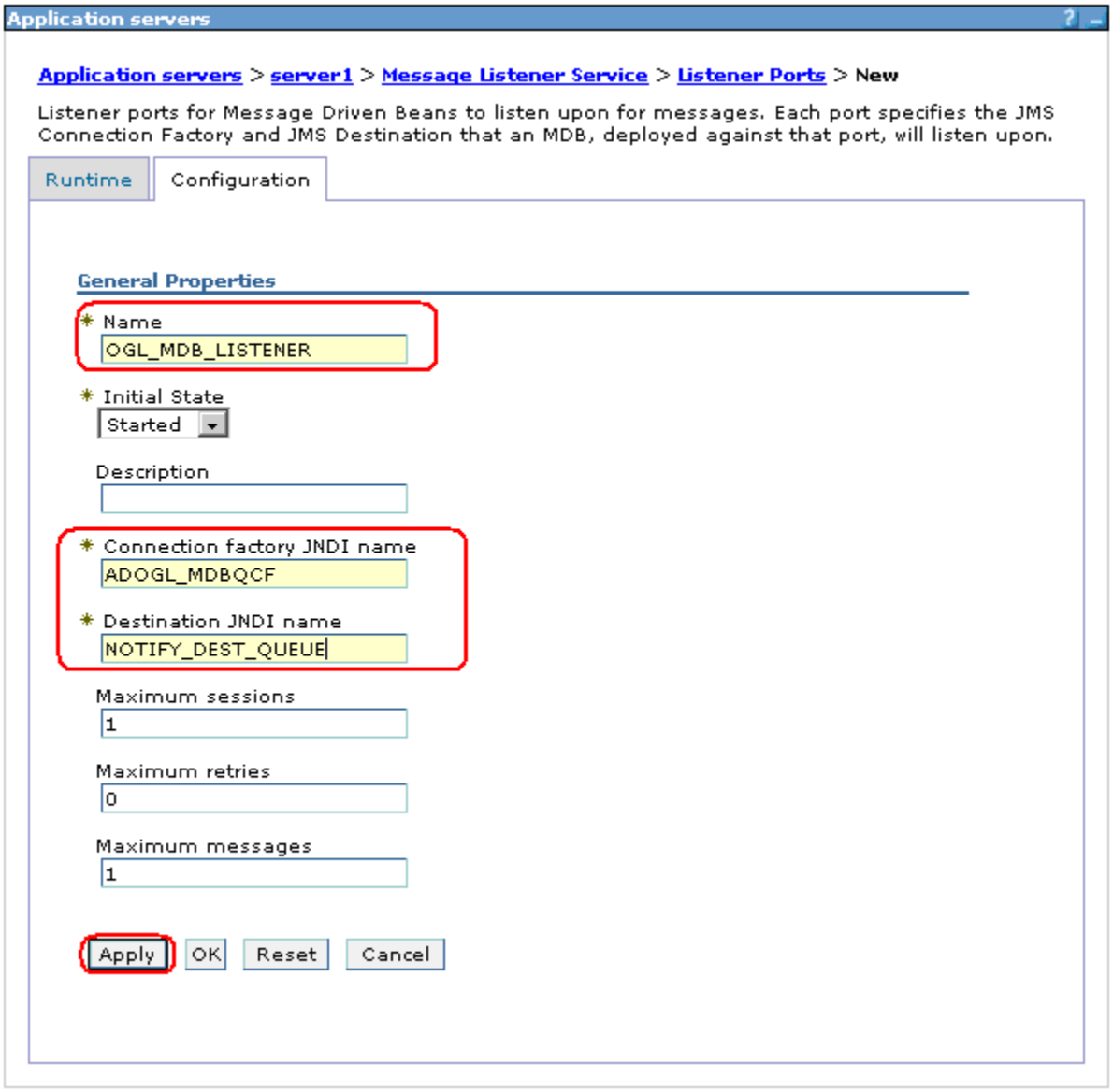
4. Following screen will be displayed. Click on **Listener Ports**.

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

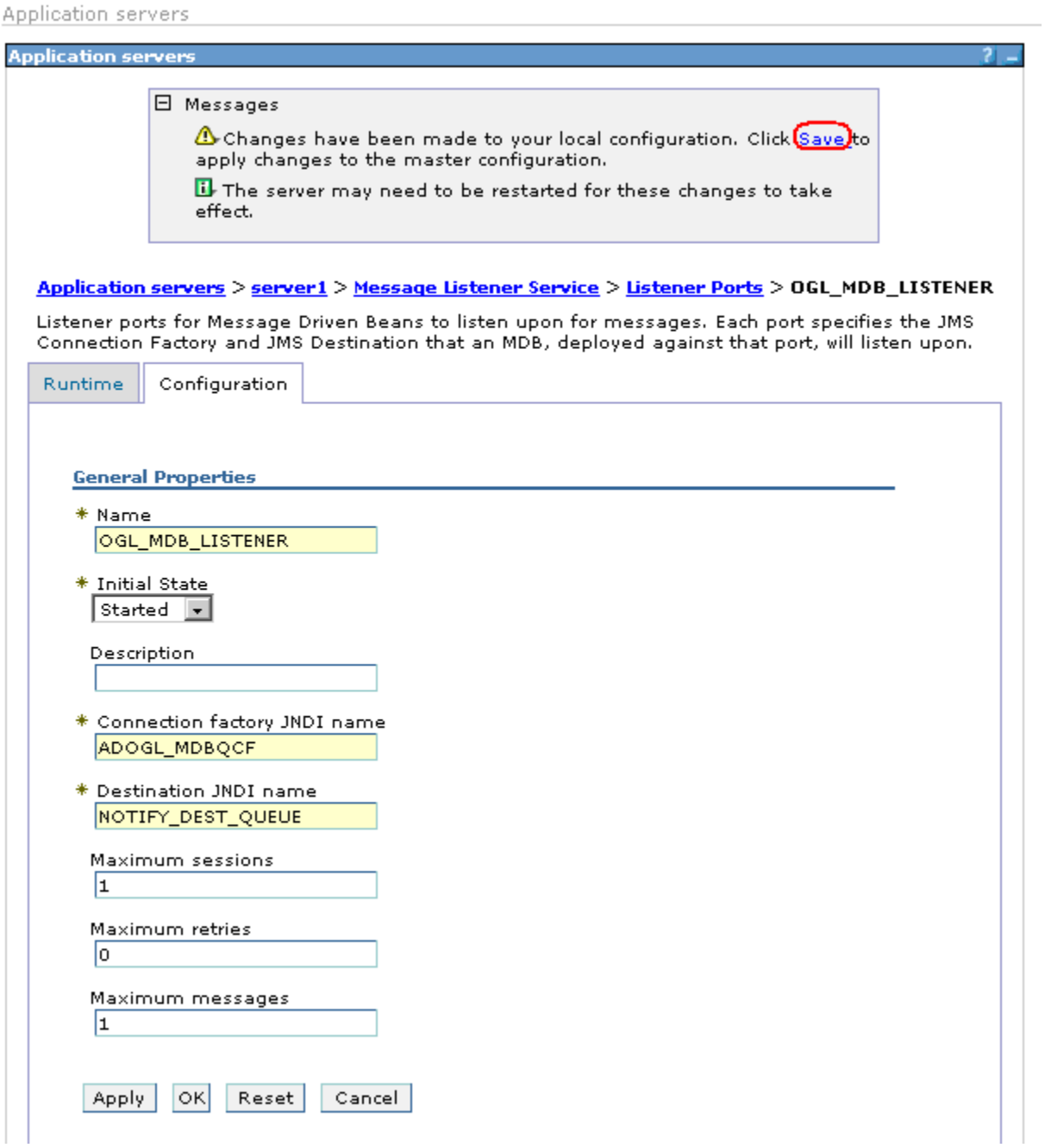
6. Following screen will be displayed. Configure the **Listener Port** with the following details and then click on **Apply**.

Name:	OGL_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:	ADOGL_MDBQCF(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)

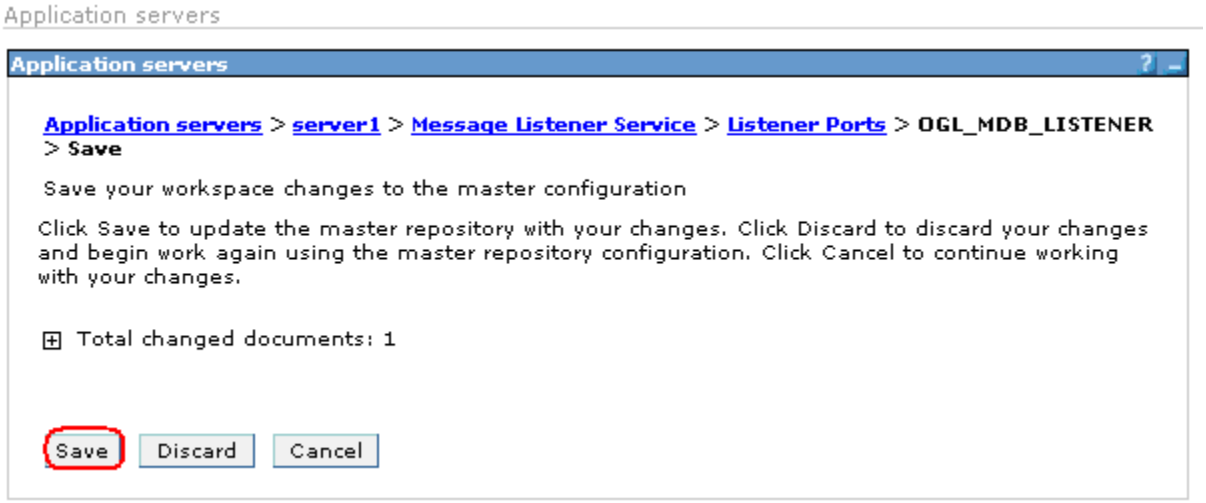
[Note: The rest all values will be de-faulted automatically.]


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
OGL_MDB_LISTENER
Initial State
Started
Description
Connection factory JNDI name
ADOGL_MDBQCF
Destination JNDI name
NOTIFY_DEST_QUEUE
Maximum sessions
1
Maximum retries
0
Maximum messages
1
Apply
OK
Reset
Cancel

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



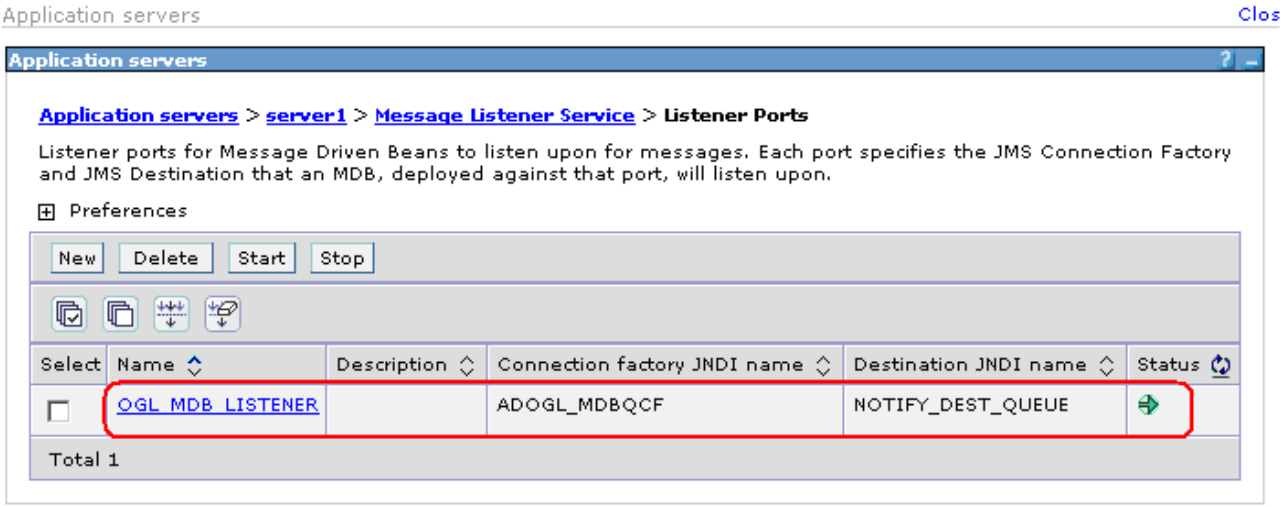
8. Following screen will be displayed. Click on **Save**.



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 Oracle GL Adapter Installation Documents

Please refer ADOGL_Installation_FCUBSV.UM7.2.0.0.0.0.0.doc.

Oracle GL Adapter IBM WebSphere MQ Installation
[October] [2015]
Version 12.1.0.0.0

Oracle Financial Services Software Limited
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Goregaon (East)
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Fax:+91 22 6718 3001
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