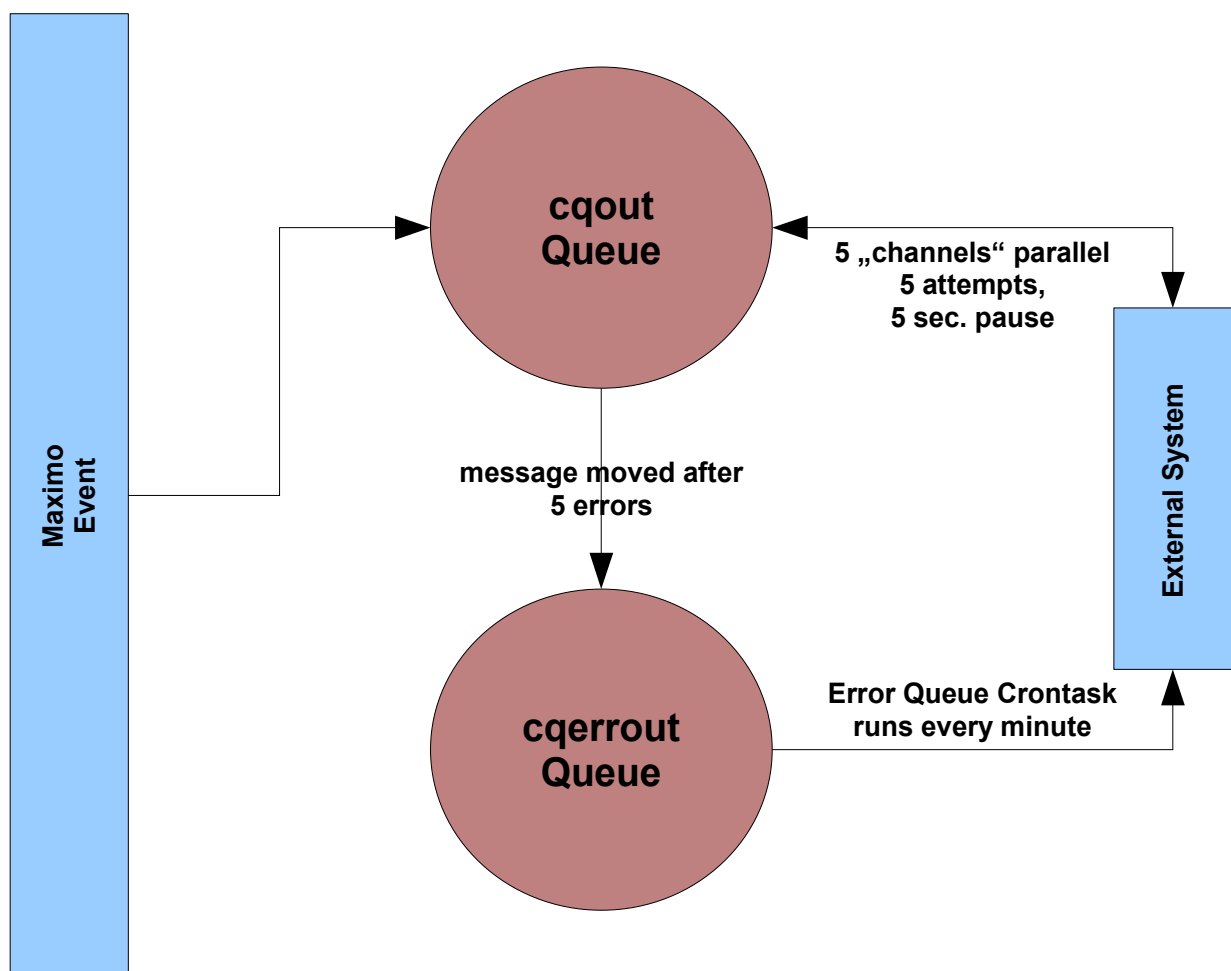


Adding a Continuous Out Queue with additional Error Queue in Maximo 6 / BEA Weblogic

1. Abstract:

A continuous outgoing queue offers the opportunity to send messages from IBM Maximo to other systems in a parallel way. We had one customer case where this methodology was necessary to prevent performance issues.

Overview:



2. Create a new JMS File Store:

The screenshot shows the WebLogic console interface. On the left is a tree view with the following structure:

- Console
- mydomain
 - Servers
 - Clusters
 - Machines
 - Deployments
 - Services
 - JCOM
 - JDBC
 - JMS
 - Connection Factories
 - Templates
 - Destination Keys
 - Stores** (highlighted with a red box)
 - mxintcqinfile
 - mxintsqinfile
 - mxintsqoutfile
 - Distributed Destinations
 - Servers
 - Foreign JMS Servers
 - Messaging Bridge
 - XML
 - JTA
 - SNMP
 - WTC
 - WLEC (deprecated)
 - Joit
 - Virtual Hosts
 - Mail

The main panel displays the 'mydomain> JMS Stores' page. It includes a header with 'Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout'. The page contains an introductory text about JMS stores and two links: 'Configure a new JMS JDBC Store' and 'Configure a new JMS File Store...' (highlighted with a red box). Below this is a table listing existing JMS stores:

Name	Type	
mxintcqinfile	JMSFileStore	
mxintsqinfile	JMSFileStore	
mxintsqoutfile	JMSFileStore	

The second screenshot shows the 'mydomain> JMS File Stores> Create a new JMSFileStore...' configuration page. It has a 'Configuration' tab and a 'Notes' tab. The 'Configuration' tab contains the following fields:

- Name:** mxintcqoutfile (highlighted with a red box)
- Synchronous Write Policy:** Disabled (highlighted with a red box)
- Directory:** d:\bea\jmsstore (highlighted with a red box)

Each field has a warning icon and explanatory text. The 'Create' button is at the bottom right.

Parameter:

Name: mxintcqoutfile

Synchronous Write Policy: Disabled

Directory: d:\bea\jmsstore (If BEA is installed on a different Drive – modify this Parameter according to your Bea Directory)

3. Create a new JMS Server:

The screenshot shows the BEA WebLogic console interface. On the left is a tree view of the domain structure, with 'JMS' > 'Servers' highlighted. The main pane displays the 'mydomain> JMS Servers' page, which includes a table of existing JMS servers and a link to 'Configure a new JMS Server...'. Below this, the 'Create a new JMS Server...' configuration window is open, showing the 'General' tab. The configuration fields are as follows:

Name	Persistent Store	Temporary Template	Bytes Maximum	Messages Maximum
mxintcginserver	mxintcginfile	n/a	-1	-1
mxintsginserver	mxintsginfile	n/a	-1	-1
mxintsgoutserver	mxintsgoutfile	n/a	-1	-1

Configuration Window: Create a new JMS Server...

General Tab:

- Name:** mxintcqoutserver
- Persistent Store:** mxintcqoutfile
- Paging Store:** (none)
- Temporary Template:** (none)
- Expiration Scan Interval:** 30 seconds

The 'Create' button is visible at the bottom right of the configuration window.

Parameter:

Name: mxintcqoutserver
Persistent Store: mxintcqoutfile



mydomain> JMS Servers> mxintcqoutserver

Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

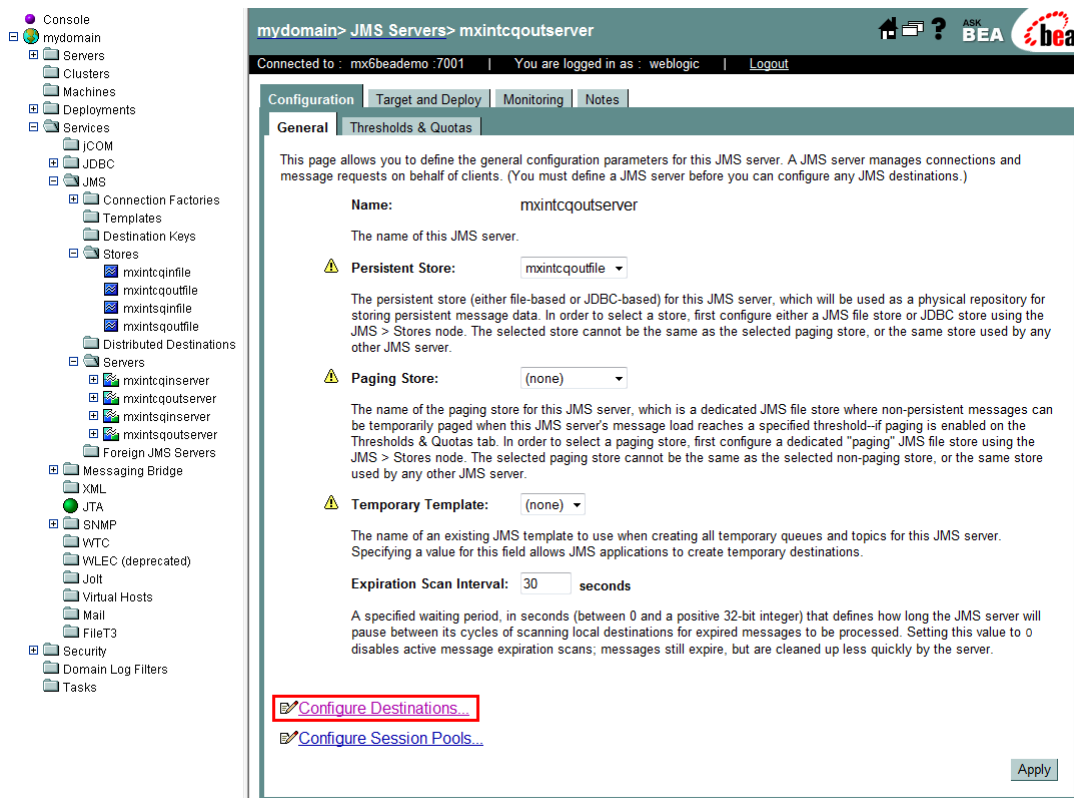
Configuration | Target and Deploy | Monitoring | Notes

Select the server instance or migratable target on which you would like to deploy this JMS Server. Migratable targets define a set of WebLogic Server instances in a cluster that can potentially host an "exactly once" service, such as a JMS server. When a target server or migratable target boots, the JMS server boots as well. If no target WebLogic Server or migratable target is specified, the JMS server will not boot.

Target: **MAXIMOSERVER**

Apply

4. Create the new JMS Queues:



mydomain> JMS Servers> mxintcqoutserver

Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

Configuration | Target and Deploy | Monitoring | Notes

General | Thresholds & Quotas

This page allows you to define the general configuration parameters for this JMS server. A JMS server manages connections and message requests on behalf of clients. (You must define a JMS server before you can configure any JMS destinations.)

Name: mxintcqoutserver
The name of this JMS server.

Persistent Store: mxintcqoutfile
The persistent store (either file-based or JDBC-based) for this JMS server, which will be used as a physical repository for storing persistent message data. In order to select a store, first configure either a JMS file store or JDBC store using the JMS > Stores node. The selected store cannot be the same as the selected paging store, or the same store used by any other JMS server.

Paging Store: (none)
The name of the paging store for this JMS server, which is a dedicated JMS file store where non-persistent messages can be temporarily paged when this JMS server's message load reaches a specified threshold—if paging is enabled on the Thresholds & Quotas tab. In order to select a paging store, first configure a dedicated "paging" JMS file store using the JMS > Stores node. The selected paging store cannot be the same as the selected non-paging store, or the same store used by any other JMS server.

Temporary Template: (none)
The name of an existing JMS template to use when creating all temporary queues and topics for this JMS server. Specifying a value for this field allows JMS applications to create temporary destinations.

Expiration Scan Interval: 30 seconds
A specified waiting period, in seconds (between 0 and a positive 32-bit integer) that defines how long the JMS server will pause between its cycles of scanning local destinations for expired messages to be processed. Setting this value to 0 disables active message expiration scans; messages still expire, but are cleaned up less quickly by the server.

[Configure Destinations...](#)

[Configure Session Pools...](#)

Apply

mydomain> JMS Servers> mxintcqoutserver> JMS Destinations

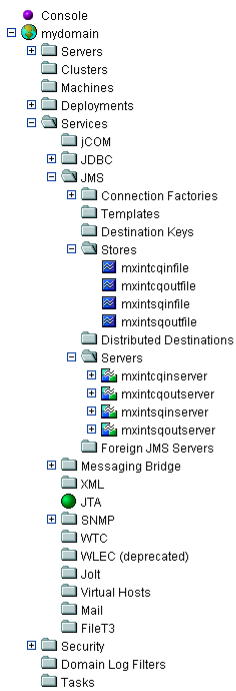
Connected to : mx6beademo :7001 | You are logged in as : beaadmin | Logout

A JMS destination identifies a queue (Point-To-Point) or a topic (Pub/Sub) for a JMS server.

When one or more JMS destinations are configured for this JMS server, this JMS Destination link.

[Configure a new JMS Queue...](#)

[Configure a new JMS Topic...](#)



mydomain> JMS Servers> mxintcqoutserver> JMS Queues> Create a new JMSQueue...

Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

Configuration | Monitoring | Notes

General | Thresholds & Quotas | Overrides | Expiration Policy | Redelivery

This page allows you to define the general configuration parameters for this JMS queue.

Name: mxintcqerrout
The name of this JMS queue.

JNDI Name: jms/mro/int/queues/cqerrout
The JNDI name used to look up this queue within the JNDI namespace.

☒ **Replicate JNDI Name In Cluster**
Specifies whether the JNDI name for this JMS queue (if specified) is replicated across the cluster. If this option is not selected, then the JNDI name for the JMS queue (if specified) is only visible from the server hosting this JMS queue.

Enable Store: default
Specifies whether this queue supports persistent messaging by using the JMS store specified by the JMS server. default means that the queue uses the JMS server's persistent store (if one is defined) and supports persistent messaging. false means that the queue does not support persistent messaging. true means that the queue does support persistent messaging; however, if a JMS store is not defined for the JMS server, then the JMS server will not boot.

Template: (none)
The JMS template from which this queue is derived. A template provides an efficient means of defining multiple destinations with similar attribute settings.

Destination Keys:

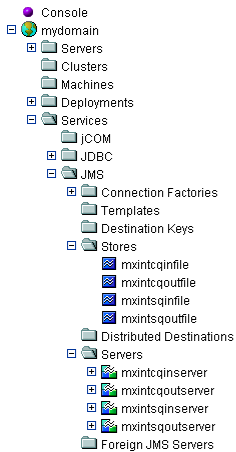
Available	Chosen

The sort ordering for messages that arrive on this destination. The default is FIFO.

Create

Parameter:

Name: mxintcqerrout
JNDI Name: jms/mro/int/queues/cqerrout



mydomain> JMS Servers> mxintcqoutserver> JMS Destinations

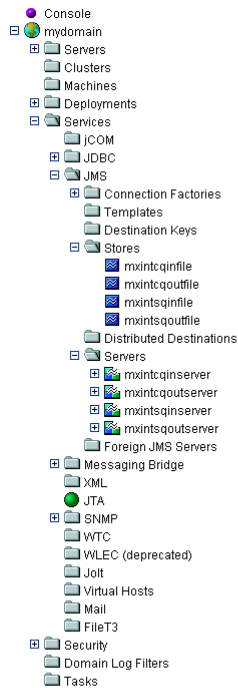
Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

A JMS destination identifies a queue (Point-To-Point) or a topic (Pub/Sub) for a JMS server. After defining a JMS server, you can configure its destinations. You can configure one or more destinations for each JMS server.

This JMS Destinations page displays key information about each JMS destination that has been configured for this JMS server.

[Configure a new JMS Queue...](#)
[Configure a new JMS Topic...](#)
[Customize this view...](#)

Name	Type	JNDI Name	Template	Store Enabled	Durable Subscribers	
mxintcqerrout	JMSQueue	.jms/mro/int/queues/cqerrout	n/a	default	Q	



mydomain> JMS Servers> mxintcqoutserver> JMS Queues> Create a new JMSQueue...

Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

Configuration | Monitoring | Notes

General | Thresholds & Quotas | Overrides | Expiration Policy | Redelivery

This page allows you to define the general configuration parameters for this JMS queue.

Name: mxintcqout

The name of this JMS queue.

JNDI Name: jms/mro/int/queues/cqout

The JNDI name used to look up this queue within the JNDI namespace.

☒ **Replicate JNDI Name In Cluster**

Specifies whether the JNDI name for this JMS queue (if specified) is replicated across the cluster. If this option is not selected, then the JNDI name for the JMS queue (if specified) is only visible from the server hosting this JMS queue.

Enable Store: default

Specifies whether this queue supports persistent messaging by using the JMS store specified by the JMS server. default means that the queue uses the JMS server's persistent store (if one is defined) and supports persistent messaging. false means that the queue does not support persistent messaging. true means that the queue does support persistent messaging; however, if a JMS store is not defined for the JMS server, then the JMS server will not boot.

Template: (none)

The JMS template from which this queue is derived. A template provides an efficient means of defining multiple destinations with similar attribute settings.

Destination Keys:

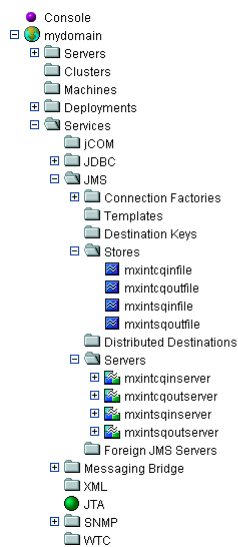
Available	Chosen

The sort ordering for messages that arrive on this destination. The default is FIFO.

Create

Parameter:

Name: mxintcqout
JNDI Name: jms/mro/int/queues/cqout



mydomain> JMS Servers> mxintcqoutserver> JMS Destinations> mxintcqout

Connected to : mx6beademo :7001 | You are logged in as : weblogic | Logout

Configuration | Monitoring | Notes

General | Thresholds & Quotas | Overrides | Expiration Policy | Redelivery

This page allows you to define the message redelivery parameters and an error destination for this JMS queue.

Redelivery Delay Override: 5000

The number of milliseconds (between 0 and a positive 64-bit integer) before rolled back and recovered messages are redelivered. If a JMS template is specified for this destination, a value of -1 means that this value is inherited from the template. Otherwise, -1 means that there is no override.

Redelivery Limit: 5

The number of redelivery tries (between 0 and a positive 32-bit integer) a message can have before it is placed in the error destination. A value of -1 means that this value is inherited from the JMS template, if one is configured. If no JMS template is configured, then -1 means that there is no override.

Error Destination: mxintcqerrout

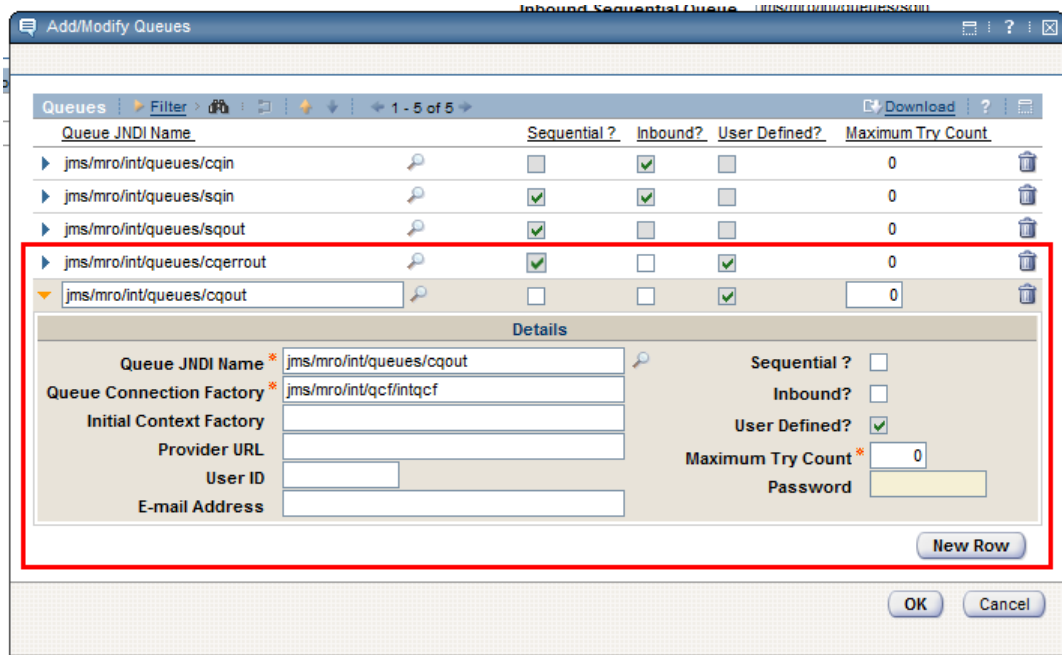
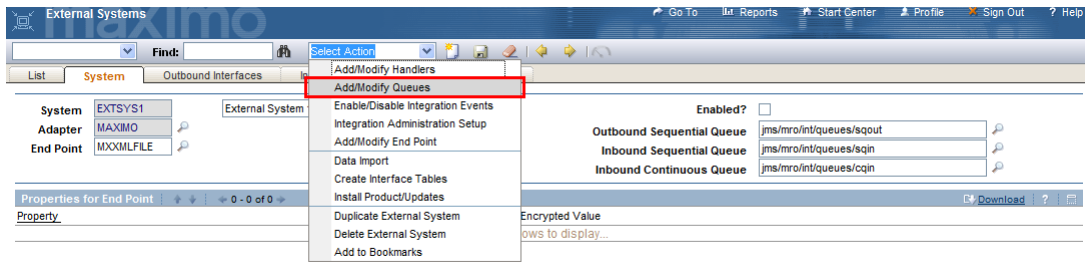
Destination for messages that have reached their redelivery limit, or for expired messages on the destination where the expiration policy is Redirect. If this destination has a template, (none) means that the error destination comes from the template. If this destination has no template, (none) means that there is no error destination configured. (Note: If a redelivery limit is specified, but no error destination is set, then messages that have reached their redelivery limit are simply discarded.)

Apply

Parameter:

Redelivery Delay Override: 5000
Redelivery Limit: 5
Error Destination: mxintcqerrout

5. Add new Queues in Maximo:



Parameter:

Queue JNDI Name: jms/mro/int/queues/cqout
Queue Connection Factory: jms/mro/int/qcf/intqcf
Sequential: false
Inbound: false
Maximum Try Count: 0

Queue JNDI Name: jms/mro/int/queues/cqerrout
Queue Connection Factory: jms/mro/int/qcf/intqcf
Sequential: true
Inbound: false
Maximum Try Count: 0

6. Create a new Cron Task Instance for the Error Destination Queue:

Cron Task Setup

Find: [] Select Action []

Cron Task

Cron Task: JMS Sequential Queue Consumer
Class: psdi.iface.jms.JMSQueueCronTask
Access Level: FULL

Cron Task Instances

Cron Task Instance Name	Schedule	Run as User	Active?
SEQQIN	30s.*.*.*.*.*	MAXADMIN	☒
SEQQOUT	30s.*.*.*.*.*	MAXADMIN	☒
CQERRROUT	30s.*.*.*.*.*	MAXADMIN	☒

Details

Cron Task Instance Name: CQERRROUT
Schedule: 30s.*.*.*.*.*
Run as User: MAXADMIN
Active? ☒
Last Run Timestamp: 12.03.11 10:35

Cron Task Parameters

Parameter	Value	Description
TARGETENABLED	0	
SELECTOR		
QUEUENAME	jms/mro/int/queues/cqerrout	
MESSAGEPROCESSOR	psdi.iface.jms.QueueToDestManagerProcesso	

Parameter:

Duplicate the SQQOUT Cron Task Instance with following parameters.

Cron Task Instance Name: CQERRROUT

Queue Name: jms/mro/int/queues/cqerrout

7. Initial Edits in the Application Deployment Descriptors:

File:

../maximo/applications/maximo/META-INF/application.xml

Before:

```
<!-- List of EJB modules -->
<module>
  <ejb>/mboejb/ejbmodule</ejb>
</module>

<!-- JMS MDB is not deployed by default
<module>
  <ejb>/meajmsejb/ejbmodule</ejb>
</module>
-->
```

After:

Enable the meajmsejb Module:

```
<!-- List of EJB modules -->
<module>
  <ejb>/mboejb/ejbmodule</ejb>
</module>

<!-- JMS MDB is not deployed by default -->
<module>
  <ejb>/meajmsejb/ejbmodule</ejb>
</module>
```

File:

../maximo/applications/maximo/META-INF/deployment-application.xml

Before:

```
<!-- List of EJB modules -->
<module id="EjbModule_1077124925247">
  <ejb>mboejb.jar</ejb>
</module>

<!-- JMS MDB is not deployed by default
<module id="EjbModule_1077124925237">
  <ejb>meajmsejb.jar</ejb>
</module>
-->
```

After:

Enable the mboejb.jar Module:

```
<!-- List of EJB modules -->
<module id="EjbModule_1077124925247">
  <ejb>mboejb.jar</ejb>
</module>

<!-- JMS MDB is not deployed by default -->
<module id="EjbModule_1077124925237">
  <ejb>meajmsejb.jar</ejb>
</module>
```

8. Add an additional Message Driven Bean:

File:

../maximo/applications/maximo/meajmsejb/ejbmodule/META-INF/ejb-jar.xml

```
<!DOCTYPE ejb-jar PUBLIC "-//Sun Microsystems, Inc.//DTD Enterprise JavaBeans 2.0//EN"
    "http://java.sun.com/dtd/ejb-jar_2_0.dtd">

<ejb-jar id="ejb-jar_ID">
    <display-name>MEA JMS EJB Module</display-name>
    <enterprise-beans>

        <message-driven id="MessageDriven_JMSContQueueProcessor_1">
            <ejb-name>JMSContQueueProcessor-1</ejb-name>
            <ejb-class>psdi.iface.jms.JMSContQueueProcessor</ejb-class>
            <transaction-type>Container</transaction-type>
            <message-driven-destination>
                <destination-type>javax.jms.Queue</destination-type>
            </message-driven-destination>
            <env-entry>
                <env-entry-name>MESSAGEPROCESSOR</env-entry-name>
                <env-entry-type>java.lang.String </env-entry-type>
                <env-entry-value>psdi.iface.jms.QueueToMaximoProcessor</env-entry-value>
            </env-entry>
        </message-driven>

        <!-- START SECTION FOR ADDITONAL MDB -->
        <message-driven id="MessageDriven_JMSContQueueProcessor_2">
            <ejb-name>JMSContQueueProcessor-2</ejb-name>
            <ejb-class>psdi.iface.jms.JMSContQueueProcessor</ejb-class>
            <transaction-type>Container</transaction-type>
            <message-driven-destination>
                <destination-type>javax.jms.Queue</destination-type>
            </message-driven-destination>
            <env-entry>
                <env-entry-name>MESSAGEPROCESSOR</env-entry-name>
                <env-entry-type>java.lang.String </env-entry-type>
                <env-entry-value>psdi.iface.jms.QueueToDestManagerProcessor</env-entry-value>
            </env-entry>
        </message-driven>
        <!-- END SECTION FOR ADDITONAL MDB -->
    </enterprise-beans>

    <assembly-descriptor>
        <container-transaction>
            <method>
                <ejb-name>JMSContQueueProcessor-1</ejb-name>
                <method-name>*</method-name>
            </method>

            <trans-attribute>Required</trans-attribute>
        </container-transaction>

        <!-- START SECTION FOR ADDITONAL MDB -->
        <container-transaction>
            <method>
                <ejb-name>JMSContQueueProcessor-2</ejb-name>
                <method-name>*</method-name>
            </method>

            <trans-attribute>Required</trans-attribute>
        </container-transaction>
        <!-- END SECTION FOR ADDITONAL MDB -->
    </assembly-descriptor>
</ejb-jar>
```

File:

../maximo/applications/maximo/meajmsejb/ejbmodule/META-INF/weblogic-ejb-jar.xml
weiteres weblogic-enterprise-bean einfügen, Parameter für max-beans und initial-beans setzen (5)

```
<?xml version="1.0"?>

<!DOCTYPE weblogic-ejb-jar PUBLIC "-//BEA Systems, Inc.//DTD WebLogic 6.0.0 EJB//EN"
"http://www.bea.com/servers/wls600/dtd/weblogic-ejb-jar.dtd">

<!-- Sample MessageDriven bean Weblogic deployment descriptor -->

<weblogic-ejb-jar>

  <weblogic-enterprise-bean>
    <ejb-name>JMSContQueueProcessor-1</ejb-name>
    <message-driven-descriptor>
      <destination-jndi-name>jms/mro/int/queues/cqin</destination-jndi-name>
      <connection-factory-jndi-name>jms/mro/int/qcf/intqcf</connection-factory-jndi-name>
    </message-driven-descriptor>

    <transaction-descriptor>

      <trans-timeout-seconds>600</trans-timeout-seconds>

    </transaction-descriptor>

    <jndi-name>JMSContQueueProcessor-1</jndi-name>
  </weblogic-enterprise-bean>

  <!-- START SECTION FOR ADDITONAL MDB -->
  <weblogic-enterprise-bean>
    <ejb-name>JMSContQueueProcessor-2</ejb-name>
    <message-driven-descriptor>
      <pool>
        <max-beans-in-free-pool>5</max-beans-in-free-pool>
        <initial-beans-in-free-pool>5</initial-beans-in-free-pool>
      </pool>
      <destination-jndi-name>jms/mro/int/queues/cqout</destination-jndi-name>
      <connection-factory-jndi-name>jms/mro/int/qcf/intqcf</connection-factory-jndi-name>
    </message-driven-descriptor>

    <transaction-descriptor>

      <trans-timeout-seconds>600</trans-timeout-seconds>

    </transaction-descriptor>

    <jndi-name>JMSContQueueProcessor-2</jndi-name>
  </weblogic-enterprise-bean>
  <!-- END SECTION FOR ADDITONAL MDB -->
</weblogic-ejb-jar>
```

Change History

Version	Date	Author	Change
Rev.001	11.03.11	Johann Rumpf	Dokument created
Rev.002	14.03.11	Johann Rumpf	Wrong Parameter in the Maximo Queue Dialog corrected.