



# **Red Hat AMQ 7.2**

## **Using AMQ Console**

For Use with Red Hat AMQ 7.2



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## Abstract

This document describes how to set up and use AMQ Console to manage AMQ components.

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# CHAPTER 1. OVERVIEW

AMQ Console is a web console included in the AMQ Broker installation that enables you to use a web browser to manage AMQ Broker and AMQ Interconnect.

AMQ Console is based on [hawtio](#).

## 1.1. KEY FEATURES

- Monitor your AMQ brokers, routers, and clients
  - View the topology
  - View network health at a glance
- Manage AMQ brokers and routers

## 1.2. KEY CONCEPTS

AMQ Broker and AMQ Interconnect ship with *hawtio*, which is a modular web console for managing Java applications. They also include plug-ins for the broker and router.

## 1.3. SUPPORTED CONFIGURATIONS

The supported web browsers for AMQ Console are Firefox, Chrome, and Internet Explorer. For specific browser versions supported see [AMQ 7 Supported Configurations](#).

## 1.4. DOCUMENT CONVENTIONS

This document uses the following conventions for the **sudo** command and file paths.

### The sudo command

In this document, **sudo** is used for any command that requires root privileges. You should always exercise caution when using **sudo**, as any changes can affect the entire system.

For more information about using **sudo**, see [The sudo Command](#).

### About the use of file paths in this document

In this document, all file paths are valid for Linux, UNIX, and similar operating systems (for example, `/home/...`). If you are using Microsoft Windows, you should use the equivalent Microsoft Windows paths (for example, `C:\Users\...`).



## CHAPTER 2. INSTALLATION

AMQ Console is distributed as a set of plugins that provide the hawtio web console for Java applications, and custom functionality for managing AMQ Broker and AMQ Interconnect. These plugins are included in the AMQ Broker installation. Therefore, before you can use AMQ Console, you must install AMQ Broker. This is a requirement even if you only use AMQ Interconnect.

For more information about installing AMQ Broker, see [Installation](#) in *Using AMQ Broker*.

## CHAPTER 3. GETTING STARTED

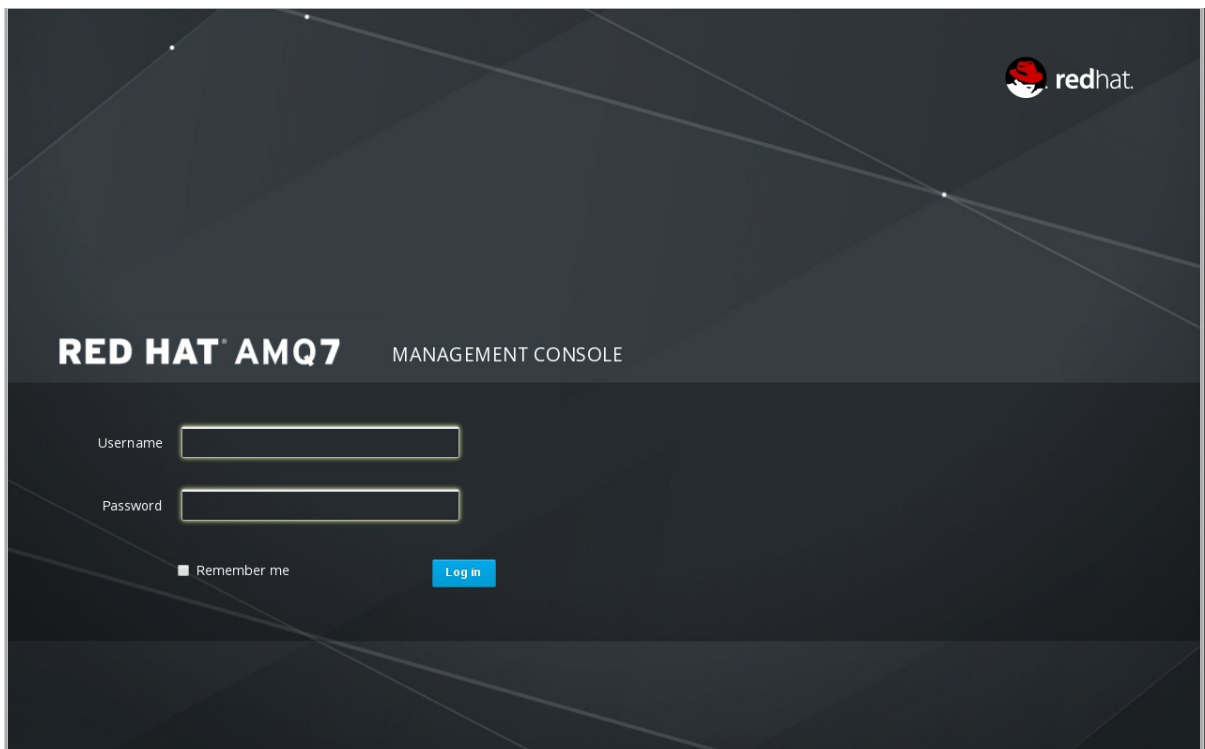
After installing AMQ Console, you can log in and connect to the brokers and routers in your environment.

### 3.1. ACCESSING AMQ CONSOLE

You access AMQ Console through a single broker instance, regardless of how many brokers and routers are installed in your environment.

#### Procedure

1. Start the AMQ broker and router instances that you want to manage in AMQ Console.  
For more information, see:
  - [Starting the Broker](#) in *Using AMQ Broker*
  - [Starting the Router](#) in *Using AMQ Interconnect*
2. Navigate to the web console address for the broker instance that you started.  
The web console address is **http://HOST:PORT/console/login**. If you are using the default address, navigate to <http://localhost:8161/console/login>.



3. Log in to AMQ Console using the default username and password that you created when you created the broker instance.

### 3.2. CONNECTING TO MULTIPLE BROKERS

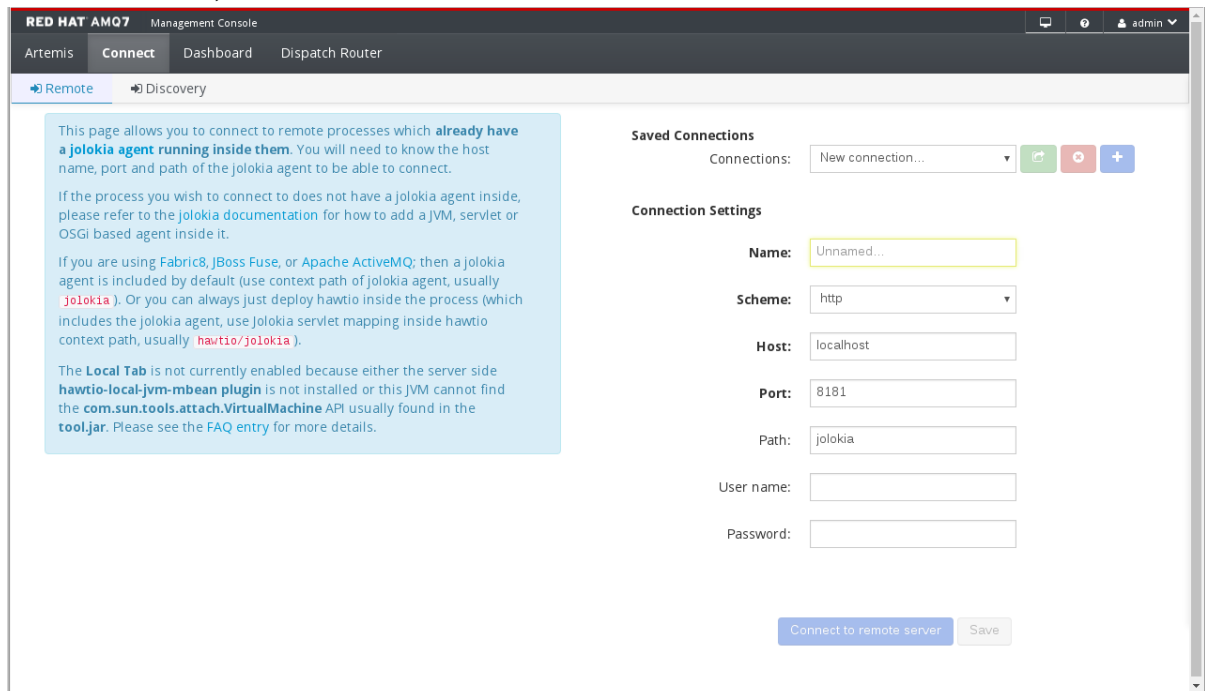
When you access AMQ Console, you are automatically connected to the broker through which you accessed AMQ Console. If you have additional brokers running in your environment, you must connect to them before you can manage them through AMQ Console.

#### Prerequisites

- At least one broker instance must be running.

## Procedure

1. In AMQ Console, click the **Connect** tab.



2. In the **Connection Settings** section, complete the following fields:

### Name

A name that describes the broker instance to which you are connecting.

### Scheme

If you have not configured AMQ Console security, choose **http**. If you have configured security, choose **https**.

### Host

The host name of the web server on the broker instance to which you want to connect. The host is defined in the broker instance's **bootstrap.xml** configuration file, in the **<web>** element. The default host is **localhost**.

### Port

The port number on which to connect on the host. The port is defined in the broker instance's **bootstrap.xml** configuration file, in the **<web>** element. The default port is **8161**.

3. Click **Connect to remote server**.

A new AMQ Console session appears in a new browser window.

## 3.3. CONNECTING TO ROUTERS

Before you can manage AMQ Interconnect from AMQ Console, you must first connect to a router running on your router network. After you connect to a router, you can access and manage any router on the network using the **Dispatch Router** page.

### Prerequisites

- At least one AMQ Interconnect router must be running.

- The router must have a listener configured to accept HTTP connections.  
For more information, see [Section 4.4, “Configuring AMQ Interconnect for AMQ Console”](#).

### Procedure

1. In AMQ Console, click the **Dispatch Router** tab.  
A connection page appears.
2. Enter the **Address** and **Port** of the router to which you want to connect.
3. If necessary, enter your **Username** and **Password** to authenticate with the router.
4. Click **Connect**.  
The **Overview** page appears, showing a list of all routers running on your network.

## CHAPTER 4. CONFIGURATION

### 4.1. SETTING UP USER ACCESS TO AMQ CONSOLE

You can access AMQ Console using the broker login credentials. The following table provides information about different methods to add additional broker users to access AMQ Console:

Authentication Method	Description
Guest Authentication	<p>Enables anonymous access. In this configuration, any user who connects without credentials or with the wrong credentials will be authenticated automatically and assigned a specific user and role.</p> <p>For more information, see <a href="#">Enabling Guest Access</a> in <i>Using AMQ Broker</i>.</p>
Basic User and Password Authentication	<p>For each user, you must define a username and password and assign a security role. Users can only log into AMQ Console using these credentials.</p> <p>For more information, see <a href="#">Enabling Password Authentication</a> in <i>Using AMQ Broker</i>.</p>
LDAP Authentication	<p>Users are authenticated and authorized by checking the credentials against user data stored in a central X.500 directory server.</p> <p>For more information, see <a href="#">Adding Certificate-Based Authentication</a> in <i>Using AMQ Broker</i>.</p>

### 4.2. SECURING AMQ CONSOLE AND AMQ BROKER CONNECTIONS

To allow AMQ Console to access resources on the broker, specify the permitted origin URLs that can access it by editing the **allow-origin** parameters in the access management configuration file on the broker.

#### Prerequisite

- You must first upgrade to AMQ Broker 7.1.0, during which the access management configuration file named **jolokia-access.xml** is added to the broker instance. For more information about upgrading, see [Upgrading Your Broker to 7.1.0](#) in *Using AMQ Broker*.

#### Procedure

- Open the ***BROKER\_INSTANCE\_DIR*/etc/jolokia-access.xml** file in a text editor.
- Within the `<cors>` section, edit the **allow-origin** settings to add each URL that you want to allow to access AMQ Console. For example:

```
<cors>
  <!-- allow access to web console from localhost -->
  <allow-origin>https://localhost:8161/*</allow-origin>
  <!-- Check for the proper origin on the server side, too -->
  <strict-checking/>
</cors>
```

- 
- 3. Save the file.

### Related Information

- <https://www.w3.org/TR/cors/>
- <https://jolokia.org/reference/html/security.html>

## 4.3. SECURING NETWORK ACCESS TO AMQ CONSOLE

To secure AMQ Console when it is being accessed over a WAN or the internet, use SSL to specify that network access uses **https** instead of **http**.

### Prerequisites

The following should be located in the ***BROKER\_INSTANCE\_DIR/etc/***:

- Java KeyStore (.jks)
- Java TrustStore (only if you want to require client authentication)

### Procedure

1. Open the ***BROKER\_INSTANCE\_DIR/etc/bootstrap.xml*** file.
2. In the **`<web>`** element, add the following attributes:

```
<web bind="https://localhost:8161"
      path="web"
      keyStorePath="<path_to_KeyStore>"
      keyStorePassword="<password>"
      clientAuth="<true/false>"
      trustStorePath="<path_to_TrustStore>"
      trustStorePassword="<password>"
      ...
</web>
```

#### **bind**

Change the URI scheme to **https**.

#### **keyStorePath**

The path of the KeyStore file. For example:

```
keyStorePath="${artemis.instance}/etc/keystore.jks"
```

#### **keyStorePassword**

The KeyStore's password.

#### **clientAuth**

Specifies whether client authentication is required. The default is **false**, but you can change it to **true** to enable authentication.

#### **trustStorePath**

The path of the TrustStore file. This attribute is only needed if `clientAuth` is `true`.

#### **trustStorePassword**

The TrustStore's password.

## 4.4. CONFIGURING AMQ INTERCONNECT FOR AMQ CONSOLE

To access AMQ Interconnect from AMQ Console, you must add a listener that accepts incoming WebSocket traffic from AMQ Console.

### Procedure

1. Open the router's configuration file.  
The default router configuration file is located at `/etc/qpid-dispatch/qdrouterd.conf`. If you have multiple routers, you should open the configuration file of the router through which you want to connect to AMQ Console.
2. Add an incoming connection for AMQ Console management traffic.

```
listener {
  name: NAME
  role: normal
  host: HOST
  port: PORT
  http: yes
  ...
}
```

#### **name**

The name of the incoming connection.

#### **role**

Set this to `normal`.

#### **host**

Either an IP address (IPv4 or IPv6) or hostname.

#### **port**

The port number or symbolic service name.

#### **http**

Set this to `yes`.

3. If necessary, secure the AMQ Console connection to the router.  
By default, the router does not authenticate or encrypt the AMQ Console connection, which means that any user can connect to the router anonymously through AMQ Console.

However, you can configure the router to use SASL to authenticate incoming connections from AMQ Console. This means that for users to access the router through AMQ Console, they must provide their credentials and be authenticated by the router.

- a. In the router configuration file, set up SASL.  
For more information, see [Setting Up SASL for Authentication and Payload Encryption in Using AMQ Interconnect](#).
- b. Configure a secure SASL mechanism for the AMQ Console listener.

For more information, see [Adding SSL/TLS Client Authentication to an Incoming Connection](#) in *Using AMQ Interconnect*.



## CHAPTER 5. MONITORING YOUR AMQ DEPLOYMENT

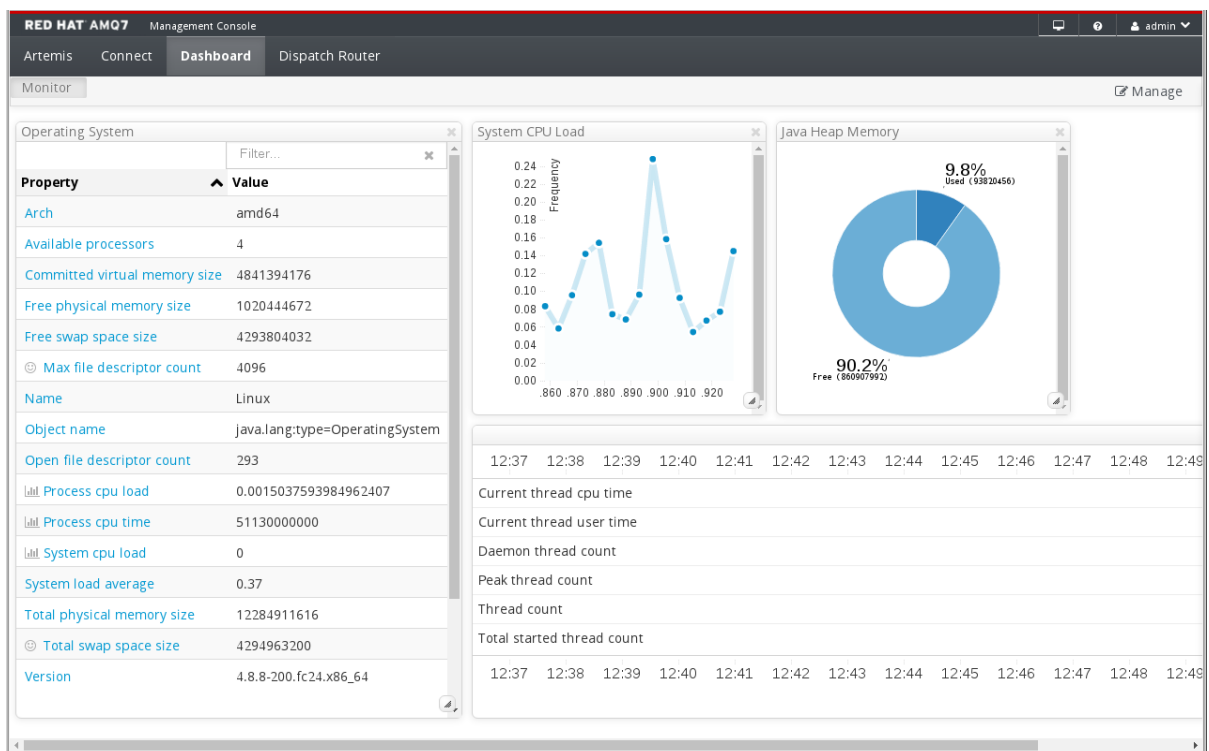
You can use the AMQ Console Dashboard page to monitor the status of AMQ, including brokers and routers. You can also create your own dashboards to display the real-time charts, diagrams, and metrics most important to you.

### 5.1. VIEWING A DASHBOARD

Dashboards provide you with real-time data about your AMQ environment.

#### Procedure

1. In AMQ Console, click the **Dashboard** tab.  
The **Monitor** dashboard appears displaying real-time data about *hawtio*.



2. To switch to a different dashboard, click a dashboard tab.

### 5.2. CREATING AMQ DASHBOARDS

You can create new dashboards to display real-time data for AMQ Broker and AMQ Interconnect.

#### Procedure

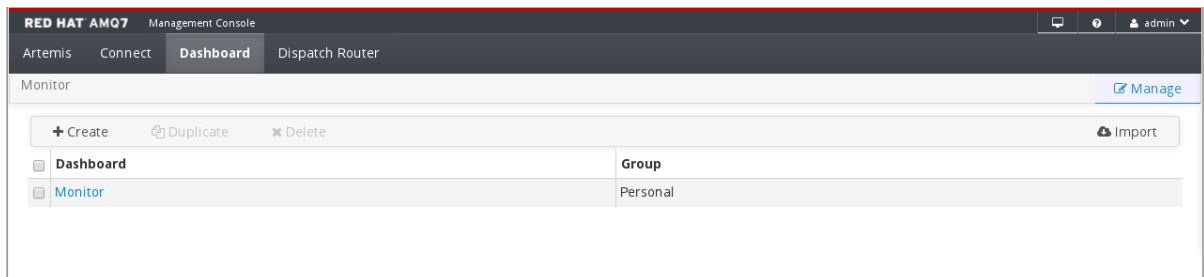
1. [Create a new dashboard.](#)
2. Do any of the following:
  - [Add AMQ Broker data to the dashboard.](#)
  - [Add AMQ Interconnect data to the dashboard.](#)
3. [Change the dashboard layout as needed.](#)

### 5.2.1. Creating a New Dashboard

Dashboards contain widgets, each of which can display a chart, diagram, or metrics. You can create as many dashboards as needed.



#### Procedure

1. In AMQ Console, click the **Dashboard** tab.
2. On the navigation bar, click **Manage**.  
The **Manage** page appears displaying a list of existing dashboards.



3. Do one of the following:


To...	Do this...
Create a new, blank dashboard	Click <b>Create</b> .
Create a dashboard similar to an existing dashboard	<ol style="list-style-type: none"> <li>1. Click the checkbox next to an existing dashboard.</li> <li>2. Click <b>Duplicate</b>.</li> </ol>

4. To change the name of the dashboard:
  - a. Hover over the dashboard name and click the pencil icon (  ).
  - b. Enter a new name for the dashboard and then click the checkmark icon (  ).

### 5.2.2. Adding AMQ Broker Data to the AMQ Console Dashboard

You can add any of the available queue and topic charts to a dashboard.

#### Procedure

1. Click the **Artemis** tab.
2. You can display [Display a chart that you want to add to a dashboard](#)
3. On the navigation bar, click the Add icon (  ).  
The **Dashboard** tab appears displaying a list of available dashboards.
4. Select the dashboard (or dashboards) on which you want the chart to appear, and then click **Add View To Dashboard**.

The chart is added to the dashboards you selected.

### 5.2.3. Adding AMQ Interconnect Data to the AMQ Console Dashboard

You can add any of the available Dispatch Router charts that are based on AMQ Interconnect status details.

#### Procedure





1. Click the **Dispatch Router** tab.
2. Display a chart that you want to add to a dashboard.  
You can display [charts about router status](#).
3. Click **Add this chart to a dashboard**.  
The **Dashboard** tab appears displaying a list of available dashboards.
4. Select the dashboard (or dashboards) on which you want the chart to appear, and then click **Add View To Dashboard**.  
The chart is added to the dashboards you selected.

### 5.2.4. Changing the Layout of a Dashboard

Dashboards contain widgets, which display metrics, diagrams, and charts. You can change the way these widgets are displayed on a dashboard.

#### Procedure

- Do any of the following:

To...	Do this...
Move or rearrange widgets	Click and drag a widget to a new position on the dashboard.
Change the title of a widget	<ol style="list-style-type: none"> <li>1. Hover over the widget's title bar and click the Edit icon (  ).</li> <li>2. Enter a name for the widget and then click the checkmark icon (  ).</li> </ol>
Resize a widget	In the bottom-right corner of the widget, click and drag the resize icon (  ).
Remove a widget from the dashboard	In the widget's title bar, click the close icon (  ).

## CHAPTER 6. MANAGING AMQ BROKER

You can use AMQ Console to view important information about AMQ Broker brokers and manage the following resources:

- Incoming network connections (acceptors)
- Addresses
- Queues

### 6.1. VIEWING DETAILS ABOUT THE BROKER

You can view configuration properties and their values to see how the broker is configured.

#### Procedure

- On the **Artemis** tab, in the folder tree, select a broker. A list of configuration properties are displayed for the broker.
  - **Connections** - Displays information about the client connections.
  - **Sessions** - Displays information about the client sessions.
  - **Consumers** - Displays information about the client consumers.
  - **Producers** - Displays information about the session producers.
  - **Addresses** - Displays information about the addresses.
  - **Queues** - Displays information about the queues.
  - **Diagrams** - Displays diagram of all AMQ Broker resources in your topology, including brokers (masters and slaves), producers and consumers, addresses, and queues.
  - **Attributes** - Displays information about the configured attributes.
  - **Operations** - Displays information about the operations that can be executed on the server.
  - **Chart** - Displays real-time data for the selected attributes.

ID	Client ID	Users	Protocol	Session Count	Remote Address	Local Address	Creation Time
1750579152			CORE	0	/10.8.244.45:43376	tcp://172.16.201.24:61616	Mon Oct 09 09:52:19 EDT 2...
784652517		ACTIVEMQ.CLUSTER.ADMI...	CORE	2	/10.8.244.45:43374	tcp://172.16.201.24:61616	Mon Oct 09 09:52:19 EDT 2...
-2122979082			CORE	0	/10.8.244.45:43382	tcp://172.16.201.24:61616	Mon Oct 09 09:52:19 EDT 2...
2079784574			CORE	0	/10.8.244.227:43994	tcp://172.16.201.24:61616	Mon Oct 09 09:52:20 EDT 2...
537288566			CORE	0	/10.8.244.227:44000	tcp://172.16.201.24:61616	Mon Oct 09 09:52:20 EDT 2...
-1586434611			CORE	0	/10.8.245.14:53276	tcp://172.16.201.24:61616	Mon Oct 09 09:53:01 EDT 2...
-106455119		ACTIVEMQ.CLUSTER.ADMI...	CORE	2	/10.8.245.14:53280	tcp://172.16.201.24:61616	Mon Oct 09 09:53:02 EDT 2...
-1637188463			CORE	0	/10.8.245.14:53278	tcp://172.16.201.24:61616	Mon Oct 09 09:53:02 EDT 2...
-496275065			CORE	0	/10.8.245.14:53284	tcp://172.16.201.24:61616	Mon Oct 09 09:53:02 EDT 2...

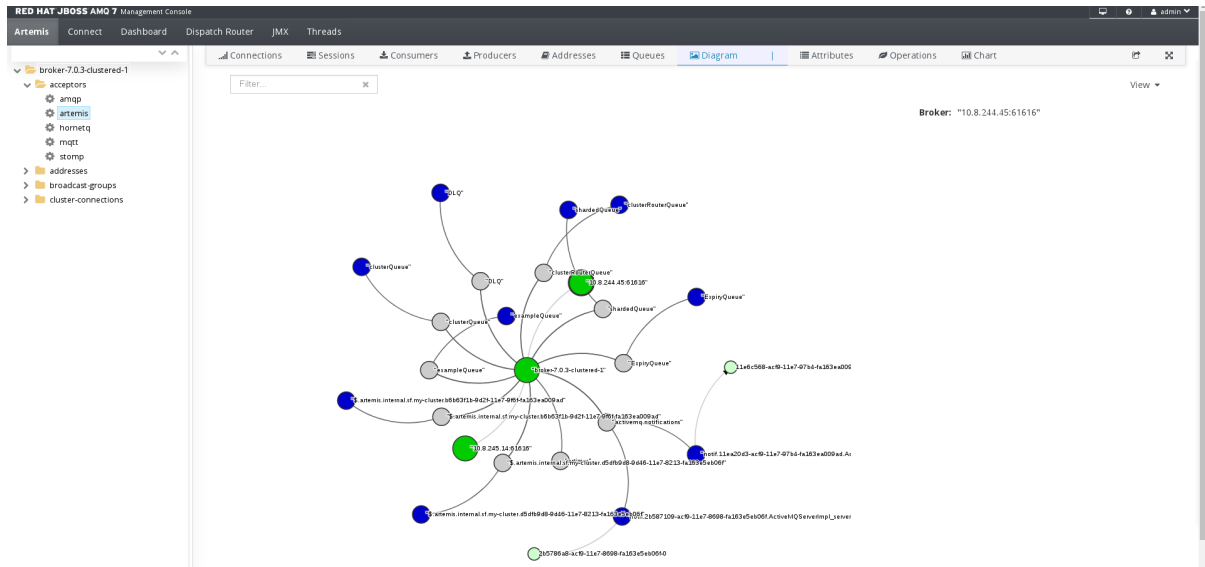
Total Items: 9

### 6.2. VIEWING THE BROKER DIAGRAM

You can view a diagram of all AMQ Broker resources in your topology, including brokers (masters and slaves), producers and consumers, addresses, and queues.

## Procedure

1. On the **Artemis** tab, click **Diagram**.  
This example shows three brokers with 10 queues.



2. To change what objects are displayed on the diagram, click the **View** drop-down and select the items that you want to be displayed.

## 6.3. VIEWING ACCEPTORS

You can view details about the acceptors configured for the broker.

### Procedure

1. On the **Artemis** tab, in the folder tree, expand the **acceptors** folder.
2. Click an acceptor to view details about how it is configured.  
This example shows the configuration properties for the **amqp** acceptor, which is the default acceptor provided for the AMQP protocol:


The screenshot shows the Red Hat JBoss AMQ 7 Management Console interface. The left sidebar displays the folder tree for 'broker-7.0.3-clustered-1' with the 'acceptors' folder expanded, showing 'amqp', 'artemis', 'hornetq', 'mgt', and 'stomp'. The main area shows the 'Attributes' view for the 'amqp' acceptor. The configuration properties are listed in a table:

Property	Value
Factory class name	org.apache.activemq.artemis.core.remoting.impl.netty.NettyAcceptorFactory
Name	amqp
Object Name	org.apache.activemq.artemis.broker="broker-7.0.3-clustered-1";component=acceptors;name="amqp"
Parameters	("tcpReceiveBufferSize": "1048576", "port": "5672", "host": "0.0.0.0", "protocols": "AMQP", "useEpoll": "true", "tcpSendBufferSize": "1048576")
Started	true

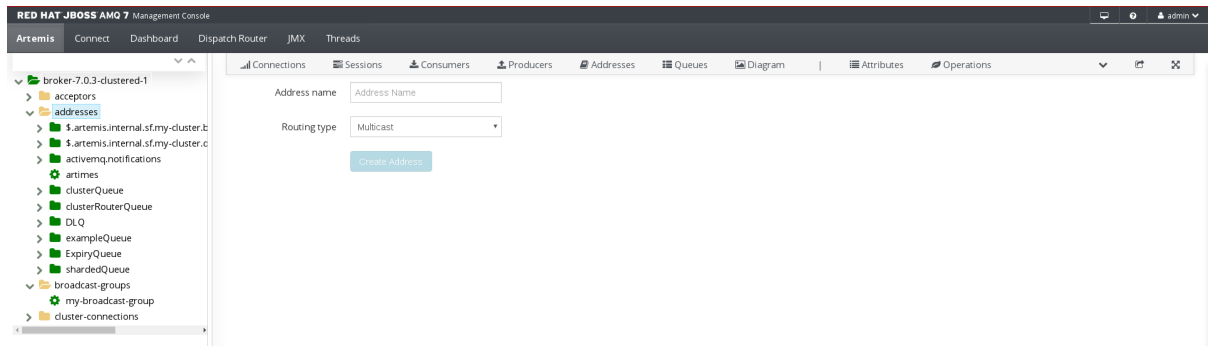
## 6.4. MANAGING ADDRESSES AND QUEUES

### 6.4.1. Creating Addresses

#### Procedure

1. In the folder tree, select a broker.
2. On the navigation bar, click  drop-down icon, and then click **Create**.

A page appears for creating an address.



3. Complete the following fields:

#### Address name

The routing name of the address.

#### Routing type

Select one of the following options:

- **Multicast** - Messages sent to this address will be distributed to all subscribers in a publish-subscribe manner.
- **Anycast** - Messages sent to this address will be distributed to only one subscriber in a point-to-point manner.
- **Both** - Enables you to define more than one routing type per address. However, this typically results in an anti-pattern and is therefore not recommended.




#### NOTE

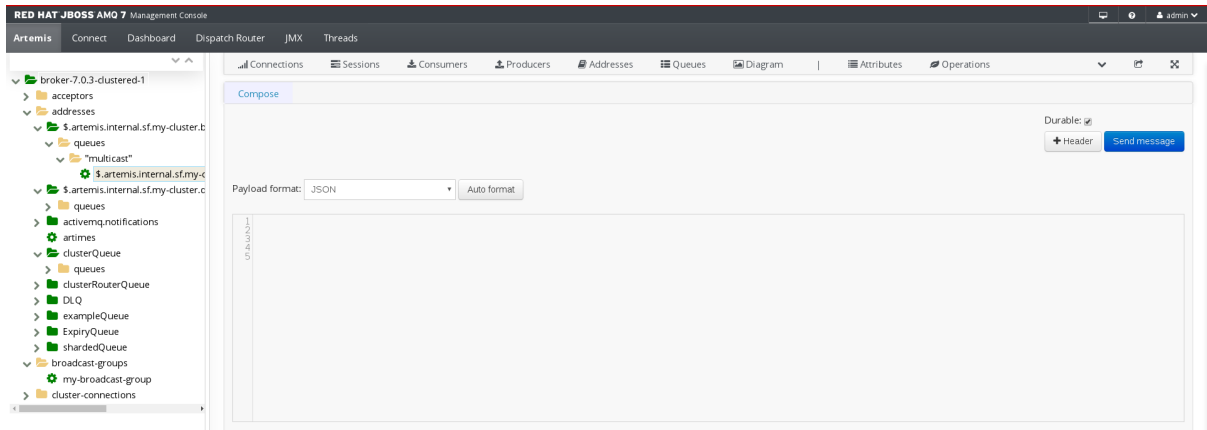
If an address does use both routing types, however, and the client does not show a preference for either one, the broker typically defaults to the **anycast** routing type. The one exception is when the client uses the MQTT protocol. In that case, the default routing type is **multicast**.

4. Click **Create Address**.

## 6.4.2. Sending Messages to an Address

### Procedure

1. In the folder tree, select an address.
2. On the navigation bar, click  drop-down icon, and then click **Send**.  
A page appears for you to compose the message.




3. If necessary, click the **Header** button to add message header information.
4. Enter the message body.
5. In the **Payload format** drop-down, select an option for the format of the message body, and then click **Auto format**.  
The message body is formatted in a human-readable style for the format you selected.
6. Click **Send message**.  
The message is sent.
7. To send additional messages, change any of the information you entered, and then click **Send message**.

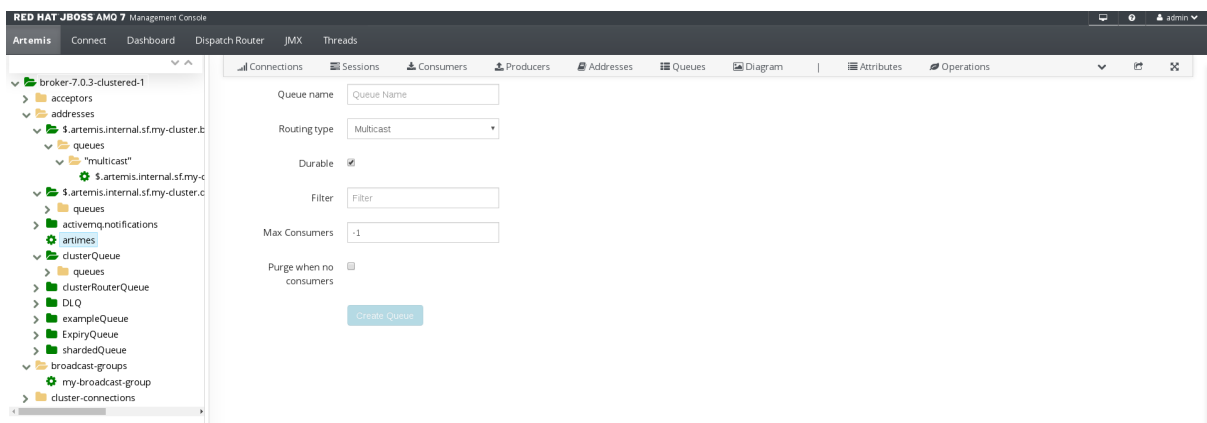
### 6.4.3. Creating Queues

#### Prerequisites

- The address to which you want to bind the queue must exist.

#### Procedure

1. In the folder tree, select the address to which you want to bind the queue.
2. On the navigation bar, click  drop-down icon, and then click **Create**.  
A page appears for you to create the queue.



3. Complete the following fields:

**Queue name**

A unique name for the queue.

**Routing type**

Select one of the following options:

- **Multicast** - Messages sent to this address will be distributed to all queues bound to the address.
- **Anycast** - Only one queue bound to the parent address will receive a copy of the message. Messages will be distributed evenly among all of the queues bound to the address.

**Durable**

If you select this option, the queue and its messages will be persistent.

**Filter**

The username to be used when connecting to the broker.

**Max Consumers**

The maximum number of consumers that can access the queue at a given time.

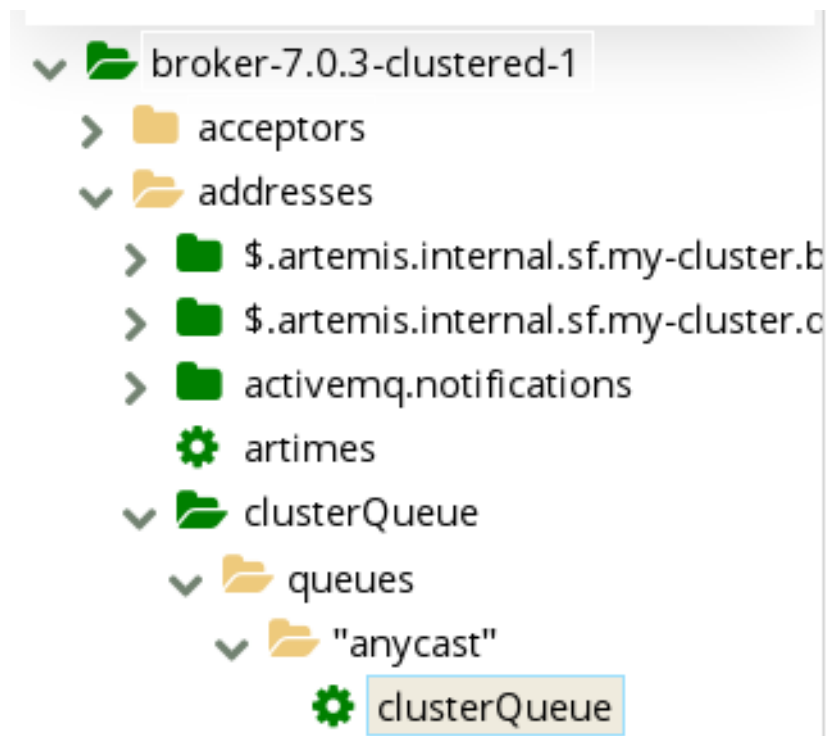
**Purge when no consumers**

If selected, the queue will be purged when no consumers are connected.

4. Click **Create Queue**.

The queue is created. You can access it in the folder tree under the address to which it is bound. Queues for an address are organized into a **Queues** folder. Within the **Queues** folder, queues are further organized by routing type (**MULTICAST** and **ANYCAST**).


In this example, the **clusterQueue** queue is located within the **clusterQueue** address:

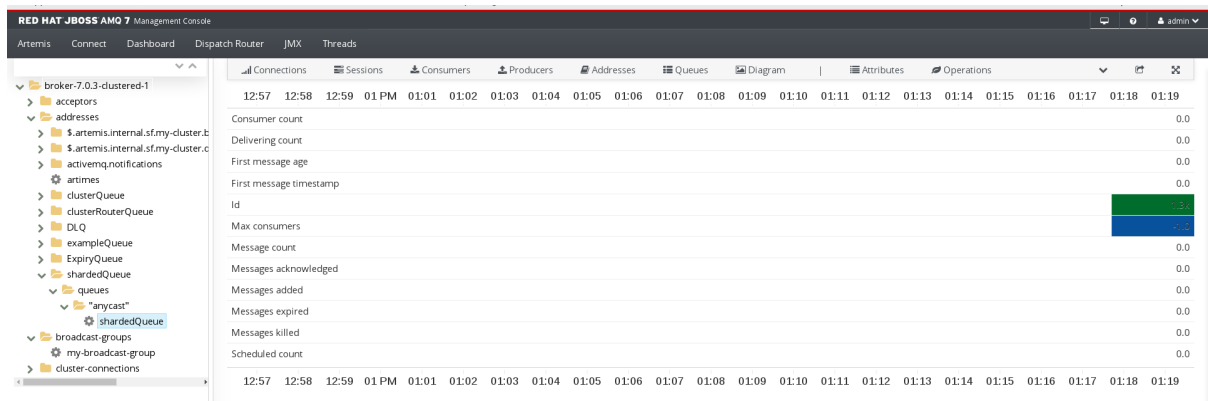
**6.4.4. Checking the Status of a Queue**




Charts provide a real-time view of the status of a queue on a broker.

## Procedure

1. In the folder tree, navigate to a queue.  
To view a chart for multiple queues for an address, select the **ANYCAST** or **MULTICAST** folder that contains the queues.
2. On the navigation bar, click  drop-down icon, and then click **Chart**.  
A chart is displayed showing real-time data for all of the queue's attributes.




3. If necessary, select different criteria for the chart:
  - a. On the navigation bar, click  drop-down icon, and then click **Edit Chart**.
  - b. In the **Attributes** list, select one or more attributes that you want to include in the chart.  
To select multiple attributes, press and hold the **Ctrl** key and select each attribute.
  - c. Click the **View Chart** button.  
The chart is displayed based on the criteria you selected.

### 6.4.5. Browsing Queues

Browsing a queue displays all of the messages in the queue. You can also filter and sort the list to find specific messages.

## Procedure

1. In the folder tree, navigate to a queue.  
Queues are located within the address to which they are bound.
2. On the navigation bar, click  drop-down icon, and then click **Browse**.  
The messages in the queue are displayed. By default, the first 200 messages are displayed.

Message ID	User ID	Type	Durable	Priority	Timestamp	Expires	Redelivered
3907	ID:a26e70a6-9fd0-1...	3	true	4	1506110408525	0	false
3914	ID:a2beda9c-9fd0-1...	3	true	4	1506110409052	0	false
3921	ID:a30384c2-9fd0-1...	3	true	4	1506110409502	0	false
3928	ID:a353c7a8-9fd0-1...	3	true	4	1506110410028	0	false
3935	ID:a397fc9e-9fd0-1...	3	true	4	1506110410475	0	false
3942	ID:a3e88da4-9fd0-1...	3	true	4	1506110411003	0	false
3949	ID:a42d85ea-9fd0-1...	3	true	4	1506110411455	0	false
3956	ID:a4753c50-9fd0-1...	3	true	4	1506110411925	0	false
3963	ID:a4c18796-9fd0-1...	3	true	4	1506110412425	0	false
3970	ID:a50f808c-9fd0-1...	3	true	4	1506110412936	0	false
3977	ID:a5549fe2-9fd0-1...	3	true	4	1506110413389	0	false
3984	ID:a5a7f008-9fd0-1...	3	true	4	1506110413935	0	false
3991	ID:a5ee84e-9fd0-1...	3	true	4	1506110414387	0	false


- To browse for a specific message or group of messages, do one of the following:

To...	Do this...
Filter the list of messages	In the <b>Filter messages</b> text field, enter a filter criteria and then press <b>Enter</b> .
Sort the list of messages	In the list of messages, click a column header. To sort the messages in descending order, click the header a second time.

- To view the content of a message, click the message ID. You can view the message header, properties, and body.

## 6.4.6. Sending Messages to a Queue

### Procedure

- In the folder tree, select the queue to which you want to send the message.
- On the navigation bar, click  drop-down icon, and then click **Send**. A page appears for you to compose the message.

- If necessary, click the **Header** button to add message header information.
- Enter the message body.
- In the **Payload format** drop-down, select an option for the format of the message body, and then click **Auto format**.

The message body is formatted in a human-readable style for the format you selected.

6. Click **Send message**.  
The message is sent.
7. To send additional messages, change any of the information you entered, and click **Send message**.

### 6.4.7. Resending Messages to a Queue

You can resend previously sent messages.

#### Procedure

1. [Browse for the message you want to resend](#).
2. Click the checkbox next to the message that you want to resend.
3. Click the **Resend** button.  
The message is displayed.
4. Update the [message header and body](#) as needed, and then click **Send message**.

### 6.4.8. Moving Messages to a Different Queue

You can move one or more messages in a queue to a different queue.

#### Procedure

1. [Browse for the messages you want to move](#).
2. Click the checkbox next to each message that you want to move.
3. Click the **Move** button.  
A confirmation dialog box appears.

**Are you sure?**

Move message to:

You cannot undo this operation.  
Though after the move you can always move the message back again.

Move

Cancel

4. Enter the name of the queue to which you want to move the messages, and then click **Move**.

### 6.4.9. Deleting Queues

You can delete a queue or purge all of the messages from a queue.

## Procedure

1. [Browse for the queue you want to delete or purge.](#)
2. Do one of the following:

To...	Do this...
Delete a message from the queue	<ol style="list-style-type: none"><li>1. Click the checkbox next to each message you want to delete.</li><li>2. Click the <b>Delete</b> button.</li></ol>
Purge all messages from the queue	<ol style="list-style-type: none"><li>1. On the navigation bar, click <b>Delete</b>.</li><li>2. Click the <b>Purge queue</b> button.</li></ol>
Delete the queue	<ol style="list-style-type: none"><li>1. On the navigation bar, click <b>Delete</b>.</li><li>2. Click the <b>Delete queue</b> button.</li></ol>

## CHAPTER 7. MANAGING AMQ INTERCONNECT

You can use AMQ Console to view important information about AMQ Interconnect routers and the router network, change a router's configuration, and add new routers to the network.

### 7.1. VIEWING INFORMATION ABOUT THE ROUTER NETWORK

You can view details about routers, message addresses, links, and connections. You can also view the status of the router network.

#### 7.1.1. Viewing Router Details

You can view a list of routers in the router network. You can also view detailed attributes for each router.

##### Procedure

1. On the **Dispatch Router** tab, click **Overview**.
2. In the folder tree, click **Routers**.  
The **Routers** page appears, displaying information about each router on the network.
3. To view additional details for a router, click a router in the table.  
To sort the list of routers, click a column header. To sort the routers in descending order, click the header a second time.

##### Related Information

- [Viewing the Router Topology](#)

#### 7.1.2. Viewing Message Address Details

You can view a list of message-routed and link-routed addresses known to the router.

##### Procedure

1. On the **Dispatch Router** tab, click **Overview**.
2. In the folder tree, click **Addresses**.  
The **Addresses** page appears, displaying information about each message address known to the router.
3. To view additional details for a message address, click an address in the table.  
To sort the list of addresses, click a column header. To sort the addresses in descending order, click the header a second time.

#### 7.1.3. Viewing Link Details

You can view a list of AMQP links attached to the router from clients (senders and receivers), from and to other routers in the network, to other containers (such as brokers), and from the tool itself.

##### Procedure

1. On the **Dispatch Router** tab, click **Overview**.

2. In the folder tree, click **Links**.  
The **Links** page appears, displaying information about each link attached to the router.
3. To view additional details for a link, click a link in the table.  
To sort the list of links, click a column header. To sort the links in descending order, click the header a second time.

#### 7.1.4. Viewing Connection Details

You can view a list of connections to the router from clients (senders and receivers), from and to other routers in the network, and to other containers (such as brokers).

##### Procedure

1. On the **Dispatch Router** tab, click **Overview**.
2. In the folder tree, click **Connections**.  
The **Connections** page appears, displaying information about each connection to or from the router.
3. To view additional details for a connection, click a connection in the table.  
To sort the list of connections, click a column header. To sort the connections in descending order, click the header a second time.

#### 7.1.5. Viewing Recent Log Entries

You can view recent log entries for all of the routers in your router network.

##### Procedure

1. On the **Dispatch Router** tab, click **Overview**.
2. In the folder tree, click **Logs**.  
The **Recent Log Entries** page appears, showing a list of the logging modules along with the level at which they're enabled and the number of available log entries.
3. Click a logging module to view its log entries.

##### Related Information

- [Fetching Logs](#)
- [Logging Module Descriptions](#) in *Using AMQ Interconnect*

#### 7.1.6. Viewing the Router Topology

You can view a graphical topology of the router network to see how the routers are connected.

##### Procedure

1. On the **Dispatch Router** tab, click **Topology**.  
The router topology is displayed.
2. To view more information about the topology, do one of the following:

To view...	Do this...
Details about links between a client and router	Click a client.
Details about a router in the network	Click the router.
Details about a connection between routers	Click the connection arrow.

## Related Information

- [Viewing Router Details](#)

### 7.1.7. Viewing Charts About Router Status

You can view charts about the real-time status of a router, policy, message address, or link.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. To view additional details about a management entity, select an entity in the folder tree.  
The entity's attributes are displayed. The **Value** column shows the value for the router you selected, and the **Aggregate** column (if applicable) shows the aggregate value for the entire router network.

The values and aggregate values of these attributes can be either static or dynamic. Static values do not change unless you change them (for example, the **Id** of the **router**). However, the values of some attributes change in real time (for example, the **Delivery Count** for an **address**), and are designated by a chart icon.

4. To view the real-time value of an attribute in a chart, click the chart icon next to the attribute's value or aggregate value.

## 7.2. MODIFYING ROUTERS

AMQ Console provides a list of router management entities that enable you to quickly make temporary updates to the following for any router in your router network:

- Network connections (listeners and connectors)
- Routing mechanisms (message routing and link routing)
- Logging
- Security (SSL/TLS)

If you modify a router by updating a router management entity, the changes take effect immediately. However, the changes will be lost if the router is stopped. To make permanent changes to a router, you

should edit the router's configuration file. For more information, see [Configuration](#) in *Using AMQ Interconnect*.

### 7.2.1. Creating Network Connections

You can create incoming and outgoing network connections for a router.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Do one of the following:
  - To create an incoming connection, click **listener**.
  - To create an outgoing connection, click **connector**.
4. On the toolbar, click **Create**.  
The attributes become editable.
5. Update the attributes as needed.  
At a minimum, you must update the **Name** to ensure that this network connection is unique. You can hover over an attribute to see a definition of the attribute.

For additional information about network connections, see [Network Connections](#) in *Using AMQ Interconnect*.

6. Click **Create**.

### 7.2.2. Deleting Network Connections

You can delete incoming and outgoing network connections for a router.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Do one of the following:
  - To delete an incoming connection, click **listener**.
  - To delete an outgoing connection, click **connector**.
4. Click the listener or connector that you want to delete.  
The connection is displayed with all of its attributes.
5. On the toolbar, click **Delete**.



### 7.2.3. Defining a Message Address Routing Configuration

You can specify the routing pattern to be used for a message address.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **address**.
4. On the toolbar, click **Create**.  
The attributes become editable.
5. Update the attributes as needed.  
At a minimum, you must update the **Name** to ensure that this address configuration is unique.  
You can hover over an attribute to see a definition of the attribute.

For additional information about message routing, see [Configuring Message Routing](#) in *Using AMQ Interconnect*.

6. Click **Create**.
7. If this message address should be routed to a queue on a broker, add an autolink.
  - a. In the folder tree, click **autoLink**.
  - b. On the toolbar, click **Create**.
  - c. Update the attributes as needed.  
At a minimum, you must update the **Name** to ensure that this autolink is unique. You can hover over an attribute to see a definition of the attribute.

For additional information about autolinks, see [Configuring Waypoints and Autolinks](#) in *Using AMQ Interconnect*.

### 7.2.4. Deleting a Message Address Routing Configuration

If you do not want messages with a particular address prefix to be routed in a particular way, you can delete the message address configuration that defines the routing pattern for those message addresses.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **address**.
4. Click the message address configuration you want to delete.  
The address is displayed with all of its attributes.

5. On the toolbar, click **Delete**.

### 7.2.5. Creating Link Routes

You can create link routes to connect a client to a broker.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Add an incoming link route:
  - a. Click **linkRoute**.
  - b. On the toolbar, click **Create**.  
The attributes become editable.
  - c. Set the **Dir** to **In**.
  - d. Update the remaining attributes as needed.  
At a minimum, you must update the **Name** to ensure that this link route is unique. You can hover over an attribute to see a definition of the attribute.  
  
For additional information about link routing, see [Configuring Link Routing](#) in *Using AMQ Interconnect*.
  - e. Click **Create**.
4. Repeat Step 3 to create an outgoing link route.  
For this link route, the **Dir** should be set to **Out**.

### 7.2.6. Deleting Link Routes

To delete a link route, you should delete both the incoming and outgoing link route entities.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **linkRoute**.
4. Click the incoming link route you want to delete.  
The link route is displayed with all of its attributes.
5. On the toolbar, click **Delete**.
6. Click the outgoing link route.

7. On the toolbar, click **Delete**.

### 7.2.7. Updating Logging Modules

For each logging module, you can set the logging level, and update where the log messages are sent and how they are formatted.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **log**.
4. Click a logging module, and then click **Update**.
5. Update the logging module's attributes as needed.  
You can hover over an attribute to see a definition of the attribute.

For additional information about logging, see [Configuring Logging Modules](#) in *Using AMQ Interconnect*.

6. Click **Update**.

#### Related Information

- [Logging Modules You Can Configure](#) in *Using AMQ Interconnect*

### 7.2.8. Fetching Logs

You can fetch logs for any of the routers in the router network.

#### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the configuration entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The configuration entities are displayed for the router you selected.
3. Expand the **Log** folder.
4. Click a log, and then click **Fetch**.  
The log is sent to the destination defined in its **Output** attribute.

#### Related Information

- [Viewing Recent Log Entries](#)
- [Using AMQ Interconnect Logs](#)

## 7.2.9. Creating SSL/TLS Profiles

You can create SSL/TLS profiles to enable a router's network connections to be secured.

### Prerequisites

Before you can set up SSL/TLS, you must have the following files in PEM format:

- An X.509 CA certificate (used for signing the router certificate for the SSL server authentication feature).
- A private key (with or without password protection) for the router.
- An X.509 router certificate signed by the X.509 CA certificate.

### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **sslProfile**.
4. On the toolbar, click **Create**.  
The attributes become editable.
5. Update the attributes as needed.  
At a minimum, you must update the **Name** to ensure that this SSL/TLS profile is unique. You can hover over an attribute to see a definition of the attribute.

For additional information about SSL/TLS profiles, see [Setting Up SSL for Encryption and Authentication](#) in *Using AMQ Interconnect*.

6. Click **Create**.

## 7.2.10. Deleting SSL/TLS Profiles

You can delete SSL/TLS profiles that you no longer want to use.

### Procedure

1. On the **Dispatch Router** tab, click **Entities**.  
A page appears displaying all of the management entities for the router.
2. At the top of the folder tree, select a router from the drop-down menu.  
The management entities are displayed for the router you selected.
3. Click **sslProfile**.
4. Click the SSL/TLS profile you want to delete.  
The SSL/TLS profile is displayed with all of its attributes.
5. On the toolbar, click **Delete**.

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