



## **Red Hat JBoss A-MQ 6.3**

# **JON Performance Metrics Reference**

Monitoring the broker's performance



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Monitoring the broker's performance

JBoss A-MQ Docs Team

Content Services

[fuse-docs-support@redhat.com](mailto:fuse-docs-support@redhat.com)

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## Abstract

Red Hat JBoss A-MQ provides a number of metrics that can be used to monitor a broker's performance.

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# CHAPTER 1. MONITORING JBOSS A-MQ RESOURCES

## Abstract

Using Red Hat JBoss Operations Network (JON), you can discover, import, and monitor Red Hat JBoss A-MQ resources.

## 1.1. INSTALLATION PROCEDURE

This section describes how to install the JON plug-in for A-MQ.



### IMPORTANT

The JBoss ON for A-MQ plugin pack is not installed with the JON base distribution. You must download and install it separately after you have installed the JON base distribution.

To install **JBoss ON for A-MQ**:

1. Navigate to the Red Hat [Customer Portal](#)>[Downloads](#)>[View All Downloads by Category](#).
2. Select **JBoss ON for A-MQ** under Management in the sidebar menu (or from the **Product** drop-down menu).
3. Click the **Patches** tab to view the latest JBoss ON for A-MQ patch packages.
4. Click **Download** next to the latest patch package Red Hat JBoss ON 3.3 Management Plug-in Pack Update-XX for Red Hat JBoss A-MQ 6 (where the latest update at the time of writing was *Update-06*).
5. Unzip the plugin package, **jon-plugin-pack-amq-3.3.0.GA-update-XX.zip**, to a temporary location.
6. Install the jar files in one of two ways:

- Hot Deploy

Copy the unpacked jar files into the JON `/installDir/server/plugins/` directory. For details, see the [JBoss Operations Network Installation Guide](#).

- JON Server GUI

For details, see the [JBoss Operations Network Installation Guide](#), or watch the video [Installing JBoss Operations Network - Part 4, Installing JON Agent Plugins](#).



## CHAPTER 2. JBOSS ON MANAGED FUSE RESOURCES

### OVERVIEW

Metrics are collected for managed resources that are deployed in Red Hat JBoss Fuse.

- Apache ActiveMQ managed resources
- Apache Camel managed resources
- Apache CXF managed resources
- Apache ServiceMix 3.x managed resources
- Apache ServiceMix 4.x managed resources
- JBoss Fuse managed resources
- Fuse Fabric managed resources



#### NOTE

This guide describes the metrics collected on Apache ActiveMQ-managed resources only. The Performance Metrics Reference for Red Hat JBoss Fuse describes the metrics collected on the other JBoss ON managed resources.



#### IMPORTANT



Newly added resources, such as ActiveMQ queues and topics, will not appear in JON's list of resources until the JON agent discovers and adds them into inventory. By default, the agent scans for services at twenty-four hour intervals, but you can easily change the default interval either through the JON console or by resetting it in the agent's configuration file. For details, see *Setting Discovery Scan Intervals* in the *Configuring JBoss ON Servers and Agents* guide at <https://access.redhat.com/site/documentation/>.




Based on a managed resource's metrics, you can invoke Control Operations on the resource to avoid or correct throughput and performance problems.

### AVAILABILITY STATUS

For all JBoss Fuse managed resources, this metric is of category Availability and of measurement type Dynamic. It indicates the availability status of a resource during a given time slice.

**Table 2.1. Availability Indicators**

Icon	State	Description
	Available (Up)	Resource is running and responding to availability checks.
	Down	Resource is not responding to availability checks.

Icon	State	Description
	Unknown	The agent has no record of the resource's state.  This could be due to the resource having been newly added to inventory, so has not yet been checked for availability. Or it could be that the agent is down.
	Disabled	The resource has been administratively marked as unavailable.  In reality, the resource could be running or stopped. When a resource is disabled, the server ignores availability reports from the agent to prevent unnecessary alerts triggered by known down (or cycling) states.
	Mixed (resource groups only)	Members in a resource group have different availability states.

## PER MINUTE METRICS

Because metrics of type Trends Up and category Throughput continuously increase, the rate of change becomes more important to track than the total number of exchanges. So JBoss ON automatically calculates and creates a secondary Per Minute metric for many of these type of exchanges. By default, the Per Minute metrics, rather than their counterparts, are enabled and charted.

## REFERENCING PROPERTIES IN DYNAMIC GROUP DEFINITION EXPRESSIONS

To reference configuration properties and traits in Dynamic Group Definition expressions, you must use the item's internal name.

## CHAPTER 3. ACTIVEMQ SERVER

### OVERVIEW

<b>Description:</b>	ActiveMQ Server Process
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- Managed Platforms

### CHILD RESOURCE TYPES

- ActiveMQ Server JVM Server

### AUTODISCOVERY PROCESS SCANS

Table 3.1. Metrics

Name	Query
<code>\${processScan.name}</code>	<code>process basename match=^java.* arg -Dactivemq.home match=.*</code>

### CONNECTION PROPERTIES

Table 3.2. Connection Properties

Name	Required	Description	Internal Name
Log Event Sources	yes	The list of log files that can be tracked	<b>logEventSources</b>
ActiveMQ Home	yes	The home directory of the Server	<b>activemq.home</b>
Server Resource Key	yes	Java system property that uniquely identifies this Server	<b>resourceKey</b>
Version File Pattern	yes	File name with Server version	<b>versionFile</b>

Name	Required	Description	Internal Name
Home Directory	yes	System property for home directory	<b>homeProperty</b>
Log File	yes	Name of the log file to track	<b>logFile</b>
Connector Address	no	JMX Service URL	<b>connectorAddress</b>
Principal	no	JMX login principal/username	<b>principal</b>
Credentials	no	JMX login credentials/password	<b>credentials</b>

**NOTE**

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

**METRICS**

none

**CONFIGURATION PROPERTIES**

none

**OPERATIONS**

none

**PACKAGE TYPES**

none

## CHAPTER 4. BROKER SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Broker
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- ActiveMQ Server Platform
- JMX Server Platform
- Servicemix 3 Server Platform
- Servicemix 4 Server Platform
- Fabric Container Platform
- JBoss Fuse Container Platform
- JBossAS Server Platform

### CHILD RESOURCE TYPES

- [Chapter 5, Client Connector Service](#)
- [Chapter 6, Connector Service](#)
- [Chapter 7, Network Connector Service](#)
- [Chapter 8, Queue Service](#)
- [Chapter 9, Topic Service](#)

### CONNECTION PROPERTIES

**Table 4.1. Connection Properties**

Name	Required	Description	Internal Name
Broker Version	no	The version of the broker	<b>BrokerVersion</b>
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>

Name	Required	Description	Internal Name
Description Template	yes		<b>descriptionTemplate</b>
Broker Name	yes	The name of the broker	<b>brokerName</b>

**NOTE**

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

**METRICS****Table 4.2. Metrics**

Name	Type	Description	Internal Name
Total Consumer Count	measurement	Number of message consumers subscribed to destinations on the broker.	<b>TotalConsumerCount</b>
Total Enqueue Count	measurement	Number of messages that have been sent to the broker.	<b>TotalEnqueueCount</b>
Total Enqueue Count per Minute	measurement	Number of messages per minute that have been sent to the broker.	<b>TotalEnqueueCount</b>
Total Dequeue Count	measurement	Number of messages that have been acknowledged on the broker.	<b>TotalDequeueCount</b>
Total Dequeue Count per Minute	measurement	Number of messages per minute that have been acknowledged on the broker.	<b>TotalDequeueCount</b>
Total Message Count	measurement	Number of unacknowledged messages on the broker.	<b>TotalMessageCount</b>
Total Message Count per Minute	measurement	Number of unacknowledged messages on the broker per minute.	<b>TotalMessageCount</b>

Name	Type	Description	Internal Name
Total Forward Count	measurement	Number of messages forwarded from the destination to a networked broker.	<b>TotalForwardCount</b>
Total Forward Count per Minute	measurement	Number of messages forwarded per minute from the destination to a networked broker.	<b>TotalForwardCount</b>
Memory Percent Usage	measurement	Percent of memory limit used.	<b>MemoryPercentUsage</b>
Memory Limit	measurement	Memory limit, in bytes, used for holding undelivered messages before paging to temporary storage.	<b>MemoryLimit</b>

**NOTE**

You must use the internal name to reference Traits in Dynamic Group Definition expressions.

**CONFIGURATION PROPERTIES**

none

**OPERATIONS****Table 4.3. Operations**

Name	Description
Start	Starts the Broker
Stop	Stops the Broker and all its components
Gc	Flushes Broker caches so that the garbage collector can reclaim more memory
Add Connector	Adds a Connector to the broker.
Remove Connector	Removes a Connector from the broker.
Reset Statistics	Reset all broker statistics.

Name	Description
Enable Statistics	Enable broker statistics.
Disable Statistics	Disable broker statistics.
Add Network Connector	Adds a Network Connector to the broker.
Remove Network Connector	Removes a Network Connector from the broker.
Stop Gracefully	Polls queues matching queueName for empty state before stopping
Terminate JVM	Shuts down the JVM.
Add Topic	Adds a Topic destination to the broker.
Add Queue	Adds a Queue destination to the broker.
Remove Topic	Removes a Topic destination from the Broker
Remove Queue	Removes a Queue destination from the Broker
Reload Log 4j Properties	Reloads log4j.properties from the classpath.
Get Transport Connector By Type	The url of transport connector by it's type; e.g. tcp, stomp, ssl, etc.

## PACKAGE TYPES

none



## CHAPTER 5. CLIENT CONNECTOR SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Connector
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- [Chapter 4, Broker Service](#)

### CHILD RESOURCE TYPES

none

### CONNECTION PROPERTIES

Table 5.1. Connection Properties

Name	Required	Description	Internal Name
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>
Description Template	yes		<b>descriptionTemplate</b>
Connector Name	yes	The name of the connector	<b>connectorName</b>



#### NOTE

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

### METRICS

none

### CONFIGURATION PROPERTIES

none

## OPERATIONS

**Table 5.2. Operations**

Name	Description
Connection Count	Returns the connection count
Reset Statistics	Resets the statistics
Enable Statistics	Enables statistics gathering
Disable Statistics	Disables statistics gathering
Start	Starts the Connector
Stop	Stops the Connector

## PACKAGE TYPES

none

## CHAPTER 6. CONNECTOR SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Connector
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- [Chapter 4, Broker Service](#)

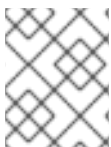
### CHILD RESOURCE TYPES

none

### CONNECTION PROPERTIES

Table 6.1. Connection Properties

Name	Required	Description	Internal Name
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>
Description Template	yes		<b>descriptionTemplate</b>
Connector Name	yes	The name of the connector	<b>connectorName</b>



#### NOTE

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

### METRICS

none

### CONFIGURATION PROPERTIES

none

## OPERATIONS

**Table 6.2. Operations**

Name	Description
Connection Count	Returns the connection count
Reset Statistics	Resets the statistics
Enable Statistics	Enables statistics gathering
Disable Statistics	Disables statistics gathering
Start	Starts the Connector
Stop	Stops the Connector

## PACKAGE TYPES

none

## CHAPTER 7. NETWORK CONNECTOR SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Connector
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- [Chapter 4, Broker Service](#)

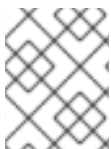
### CHILD RESOURCE TYPES

none

### CONNECTION PROPERTIES

Table 7.1. Connection Properties

Name	Required	Description	Internal Name
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>
Description Template	yes		<b>descriptionTemplate</b>
Connector Name	yes	The name of the connector	<b>connectorName</b>



#### NOTE

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

### METRICS

none

### CONFIGURATION PROPERTIES

none

## OPERATIONS

Table 7.2. Operations

Name	Description
Start	Starts the Connector
Stop	Stops the Connector

## PACKAGE TYPES

none

## CHAPTER 8. QUEUE SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Queue
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- [Chapter 4, Broker Service](#)

### CHILD RESOURCE TYPES

none

### CONNECTION PROPERTIES

Table 8.1. Connection Properties

Name	Required	Description	Internal Name
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>
Description Template	yes		<b>descriptionTemplate</b>
Destination	yes		<b>destination</b>



#### NOTE

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

### METRICS

Table 8.2. Metrics

Name	Type	Description	Internal Name
Enqueue Count	measurement	Number of messages that have been sent to the destination	<b>EnqueueCount</b>

Name	Type	Description	Internal Name
Enqueue Count per Minute	measurement	Number of messages per minute that have been sent to the destination	<b>EnqueueCount</b>
Dequeue Count	measurement	Number of messages that have been acknowledged (and removed) from the destination.	<b>DequeueCount</b>
Dequeue Count per Minute	measurement	Number of messages per minute that have been acknowledged (and removed) from the destination.	<b>DequeueCount</b>
Forward Count	measurement	Number of messages forwarded from the destination to a networked broker.	<b>ForwardCount</b>
Forward Count per Minute	measurement	Number of messages forwarded per minute from the destination to a networked broker.	<b>ForwardCount</b>
Consumer Count	measurement	Number of consumers subscribed to this destination	<b>ConsumerCount</b>
Queue Size	measurement	Number of messages in the destination yet to be consumed. Potentially dispatched but unacknowledged.	<b>QueueSize</b>
Memory Percent Usage	measurement	The percentage of the memory limit used	<b>MemoryPercentUsage</b>

**NOTE**

You must use the internal name to reference Traits in Dynamic Group Definition expressions.

**CONFIGURATION PROPERTIES**

none



## OPERATIONS

**Table 8.3. Operations**

Name	Description
Purge	Removes all of the messages in the queue
Remove Message	Remove a message from the destination by JMS message ID. If the message has been dispatched, it cannot be deleted and false is returned.
Remove Matching Messages	Removes up to a specified number of messages from the destination based on an SQL-92 selection on the message headers or XPATH on the body.
Copy Message To	Copies a message with the given JMS message ID into the specified destination.
Copy Matching Messages To	Copies up to a specified number of messages based on an SQL-92 selecton on the message headers or XPATH on the body into the specified destination.
Move Message To	Moves a message with the given JMS message ID into the specified destination.
Move Matching Messages To	Moves up to a specified number of messages based on an SQL-92 selecton on the message headers or XPATH on the body into the specified destination.
Retry Message	Moves a message with the given JMS message back to its original destination
Does Cursor Have Space	Message cursor has memory space available
Does Cursor Have Messages Buffered	Message cursor has buffered messages to deliver
Cursor Size	Number of messages available to be paged in by the cursor.
Reset Statistics	Resets statistics
Send Text Message	Sends a text message to this destination
Browse	Browse messages sent to this destination

## PACKAGE TYPES

none

## CHAPTER 9. TOPIC SERVICE

### OVERVIEW

<b>Description:</b>	ActiveMQ Topic
<b>Singleton:</b>	no
<b>Plugin:</b>	ActiveMQ

### PARENT RESOURCE TYPES

- [Chapter 4, Broker Service](#)

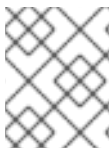
### CHILD RESOURCE TYPES

none

### CONNECTION PROPERTIES

Table 9.1. Connection Properties

Name	Required	Description	Internal Name
Object Name	yes		<b>objectName</b>
Name Template	yes		<b>nameTemplate</b>
Description Template	yes		<b>descriptionTemplate</b>
Destination	yes		<b>destination</b>



#### NOTE

You must use the internal name to reference Configuration Properties in Dynamic Group Definition expressions.

### METRICS

Table 9.2. Metrics

Name	Type	Description	Internal Name
Enqueue Count	measurement	Number of messages that have been sent to the destination	<b>EnqueueCount</b>

Name	Type	Description	Internal Name
Enqueue Count per Minute	measurement	Number of messages per minute that have been sent to the destination	<b>EnqueueCount</b>
Dequeue Count	measurement	Number of messages that have been acknowledged (and removed) from the destination.	<b>DequeueCount</b>
Dequeue Count per Minute	measurement	Number of messages per minute that have been acknowledged (and removed) from the destination.	<b>DequeueCount</b>
Forward Count	measurement	Number of messages forwarded from the destination to a networked broker.	<b>ForwardCount</b>
Forward Count per Minute	measurement	Number of messages forwarded per minute from the destination to a networked broker.	<b>ForwardCount</b>
Consumer Count	measurement	Number of consumers subscribed to this destination	<b>ConsumerCount</b>
Queue Size	measurement	Number of messages in the destination yet to be consumed. Potentially dispatched but unacknowledged.	<b>QueueSize</b>
Memory Percent Usage	measurement	The percentage of the memory limit used	<b>MemoryPercentUsage</b>

**NOTE**

You must use the internal name to reference Traits in Dynamic Group Definition expressions.

**CONFIGURATION PROPERTIES**

none

## OPERATIONS

**Table 9.3. Operations**

Name	Description
Reset Statistics	Resets statistics
Send Text Message	Sends a text message to this destination
Browse	Browse messages to this destination

## PACKAGE TYPES

none