RTView® TIBCO® EMS Monitor
User's Guide

Version 6.7

RTView®

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Preface

Welcome to the RTView® TIBCO® EMS Monitor User's Guide.

Read this preface for an overview of the information provided in this guide and the documentation conventions used throughout, additional reading, and contact information. This preface includes the following sections:

About This Guide

The RTView® TIBCO® EMS Monitor User's Guide describes how to install, configure and use the Monitor.

Document Conventions

This guide uses the following standard set of typographical conventions.

Convention	Meaning
italics	Within text, new terms and emphasized words appear in italic typeface.
boldface	Within text, directory paths, file names, commands and GUI controls appear in bold typeface.

Courier	Code examples appear in Courier font:
	`amnesiac > enable`
	`amnesiac # configure terminal`

< >	Values that you specify appear in angle brackets: **interface <ipaddress>**

Additional Resources

This section describes resources that supplement the information in this guide. It includes the following information:

Release Notes

The following online file supplements the information in this user guide. It is available on the SL Technical Support site at http://www.sl.com/support/.

Documentation and Support Knowledge Base

For a complete list and the most current version of SL documentation, visit the SL Support Web site located at http://www.sl.com/support/documentation/. The SL Knowledge Base is a database of known issues, how-to documents, system requirements, and common error messages. You can browse titles or search for keywords and strings. To access the SL Knowledge Base, log in to the SL Support site located at http://www.sl.com/support/.

Contacting SL

This section describes how to contact departments within SL.

Internet

You can learn about SL products at http://www.sl.com.

Technical Support

If you have problems installing, using, or replacing SL products, contact SL Support or your channel partner who provides support. To contact SL Support, open a trouble ticket by calling 415 927 8400 in the United States and Canada or +1 415 927 8400 outside the United States.

You can also go to http://www.sl.com/support/.

CHAPTER 1 Quick Start

This chapter is intended for those customers evaluating EMSMON for purchase and describes the basic steps required to install, configure, and start EMS Monitor using default settings while using Tomcat as the application server. The steps listed in this chapter represent only the basic flow needed to get the Monitor up and running. See "Introduction", "Configuration", and "Deployment" for additional installation, setup, configuration, and deployment options/ details.

This chapter contains:

Prerequisites for Windows and UNIX/Linux Installations

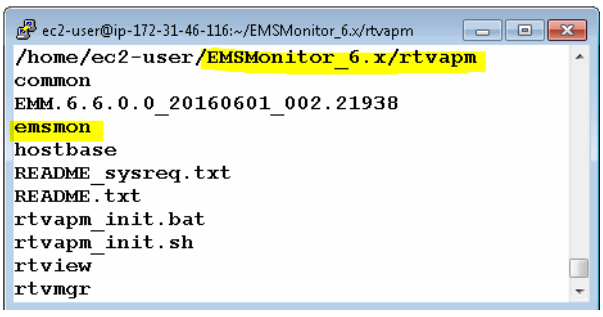
- Java JDK 1.7. or 1.8
- TIBCO EMS 4+
- Application Server (for example, Tomcat 6.0+)

UNIX/Linux Quick Start Steps

1. Download **EMSMonitor_<version>.zip** to your local UNX/Linux server.
2. Extract the files:

   unzip -a EMSMonitor_<version>.zip

   If correctly installed, you should see an **rtvapm** directory (in your installation directory) with **emsmon** as a subdirectory.



3. Create a project directory as follows:

In the **rtvapm/emsmon/projects** directory, create a directory named **mysample**. Copy the contents of the **rtvapm/emsmon/sample** directory to your **mysample** directory.

4. Set the **JAVA_HOME** environment variable to point to your Java installation. For example:

   export JAVA_HOME=/opt/Java/jdk1.7.0

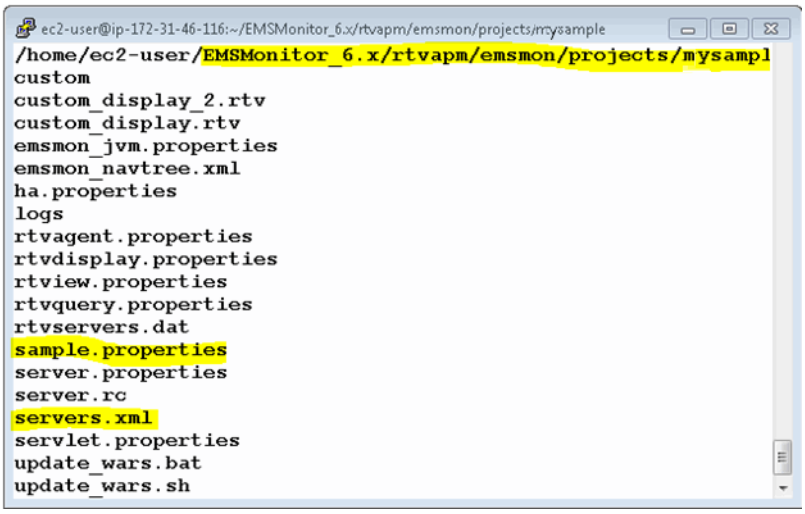
5. Set the environment variable **TIBJMS_ROOT** to point to your TIBCO EMS installation. For example:

   export TIBJMS_ROOT=/opt/tibco/ems/8.1

6. To set up the **$RTVAPM_HOME** environment variable (initialize the command window), navigate to the **rtvapm** directory and run the following script:

   ../rtvapm_init.sh

7. Navigate to **rtvapm/emsmon/projects/mysample** and edit the **servers.xml** file to include the EMS servers that you want to monitor. See "Configuring Data Collection" for additional information.



The following is an example of an edited **servers.xml** file in which two servers, **SLHOST10** and **EMS-SERVER**, are defined:

```
<?xml version="1.0" ?>
  <dataset xmlns="www.sl.com" version="1.0">
  <table key="Servers">
  <tc name="Name" type="string" index="false" />
  <tc name="URL" type="string" index="false" />
  <tc name="Agent" type="string" index="false" />
  <tc name="User" type="string" index="false" />
  <tc name="Password" type="string" index="false" />
  <tr name="">
  <td>SLHOST10</td>
  <td>tcp://SLHOST10:7010,tcp://SLHOST10:7011</td>
  <td/>
  <td>admin</td>
  <td>admin</td>
  </tr>
  <tr name="">
  <td>EMS-SERVER</td>
  <td>tcp://192.168.200.171:6010</td>
```

```
<td/>
<td>admin</td>
<td>XQIf08</td>
</tr>
 </table>
</dataset>
```

8. Edit the **sample.properties** file (using **vi**, for example) and make the following changes:

   a. Confirm location of the TIBCO EMS jar files

   ```
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjms.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjmsadmin.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms-2.0.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms.jar
   ```

   b. Uncomment the following properties to monitor all topics and queues:

   ```
   collector.sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:''
   collector.sl.rtview.cache.config=ems_queues_cache_source.rtv $queuePattern:''
   ```

   c. Add the following property to change to white style sheet:

   ```
   sl.rtview.stylesheet=rtv_whitestyles,rtv_flat,rtv_html5
   ```

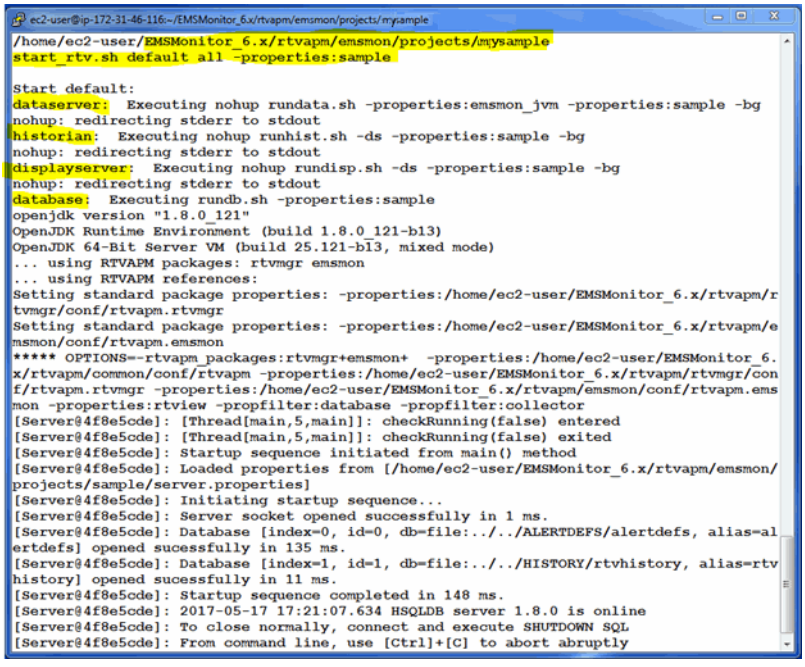
   d. Add the following properties for proper font adjustment.

   ```
   sl.rtview.cp=%RTV_HOME%/lib/rtvfonts.jar
   sl.rtview.global=rtv_fonts.rtv
   ```

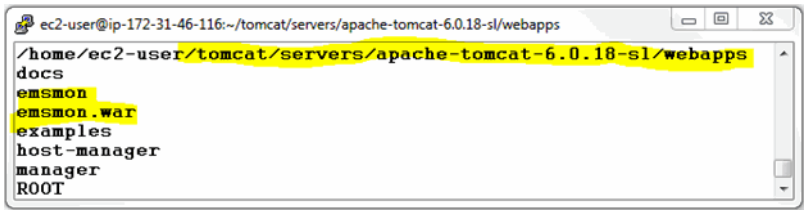
   See “Configuring Data Collection” for additional information.

9. From the **mysample** directory, type the following command (EMSMON automatically recognizes this command) to start all the required EMSMON components:

   start_rtv.sh default all -properties:sample



10. Copy the **emsmon.war** file located in the **$RTVAPM_HOME/emsmon/webapps** directory to the Tomcat **webapps** directory.



11. If you are going to deploy the Monitor as a web browser, start Tomcat. If you are going to deploy the Monitor as a desktop application, skip this step. For example, start Tomcat by navigating to the **bin** directory (in the Tomcat home directory) and type:

    /home/ec2-user/tomcat/servers/apache-tomcat-6.0.18-sl/bin> **startup.sh**

12. You can deploy the Monitor as a web browser or as a desktop application.

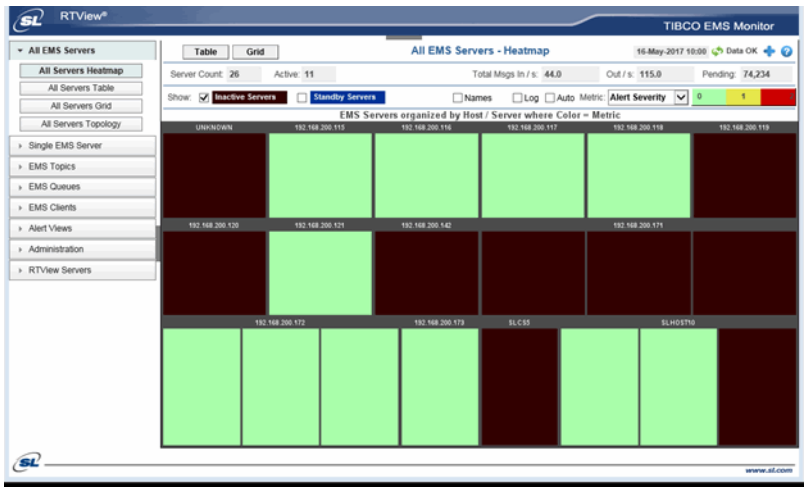
- To deploy the Monitor as a web browser:

  Open a browser and view the monitor using **http://localhost:8080/emsmon** using **admin**/**admin** as the login/password (**8080** is the default Tomcat port).

- To deploy the Monitor as a desktop application:

  Type the following in an initialized command window, and use **admin**/**admin** as the login/password:

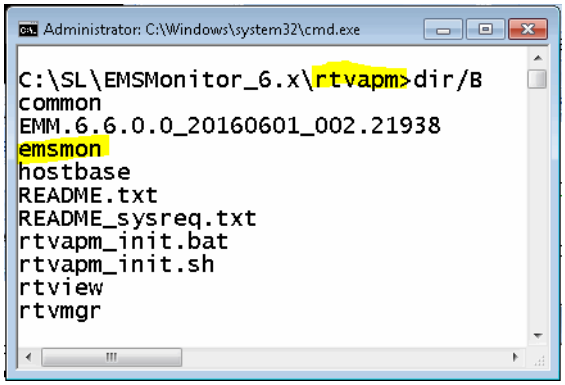
  runv.sh -ds –properties:sample



Windows Quick Start Steps

1. Download **EMSMonitor_<version>.zip** to your local Windows server.
2. Extract the files in **EMSMonitor_<version>.zip** using right mouse-click >"**Extract All...**"

   If correctly installed, you should see an **rtvapm** directory (in your installation directory) with **emsmon** as a subdirectory.



3. Create a project directory as follows:

   In the **rtvapm\emsmon\projects** directory, create a directory named **mysample**. Copy the contents of the **rtvapm\emsmon\sample** directory to your **mysample** directory.

4. Set the **JAVA_HOME** environment variable to point to your Java installation. For example:

   set JAVA_HOME=C:\Java\jdk1.7.0

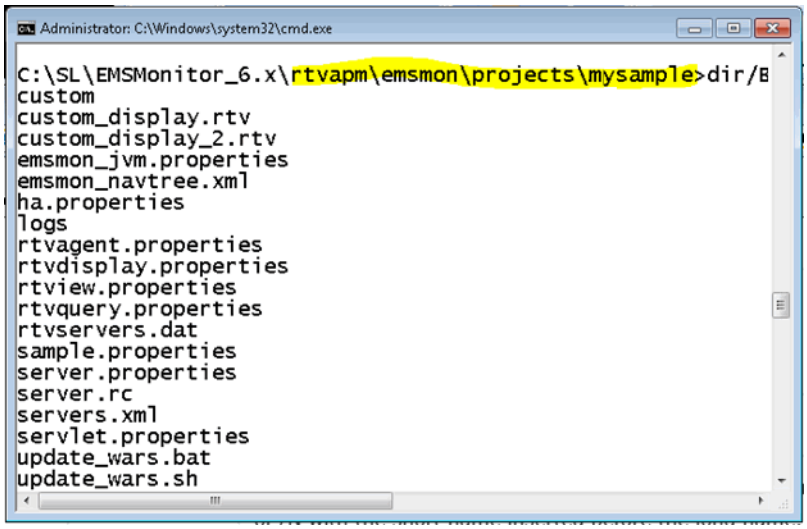
5. Set the environment variable **TIBJMS_ROOT** to point to your TIBCO EMS installation. For example:

   set TIBJMS_ROOT=C:\opt\tibco\ems\6.1

6. To set up the **%RTVAPM_HOME%** environment variable, navigate to the **rtvapm** directory and run the following:

   rtvapm_init.bat

7. Navigate to **rtvapm\emsmon\projects\mysample** and edit the **servers.xml** file to include the EMS servers that you want to monitor. See "Configuring Data Collection" for additional information.



The following is an example of an edited **servers.xml** file in which two servers, **SLHOST10** and **EMS-SERVER**, are defined:

```
<?xml version="1.0" ?>
  <dataset xmlns="www.sl.com" version="1.0">
  <table key="Servers">
  <tc name="Name" type="string" index="false" />
  <tc name="URL" type="string" index="false" />
  <tc name="Agent" type="string" index="false" />
  <tc name="User" type="string" index="false" />
  <tc name="Password" type="string" index="false" />
  <tr name="">
  <td>SLHOST10</td>
  <td>tcp://SLHOST10:7010,tcp://SLHOST10:7011</td>
  <td/>
  <td>admin</td>
  <td>admin</td>
  </tr>
  <tr name="">
  <td>EMS-SERVER</td>
  <td>tcp://192.168.200.171:6010</td>
  <td/>
  <td>admin</td>
  <td>XQIf08</td>
  </tr>
   </table>
  </dataset>
```

8. Edit the **sample.properties** file with a text editor and make the following changes:

   a. Confirm location of the TIBCO EMS jar files

   ```
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjms.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjmsadmin.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms-2.0.jar
   collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms.jar
   ```

   b. Uncomment the following properties to monitor all topics and queues:

   ```
   collector.sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:''
   collector.sl.rtview.cache.config=ems_queues_cache_source.rtv $queuePattern:''
   ```

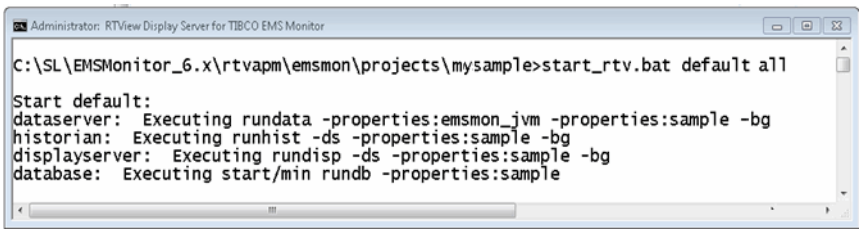
   c. Add the following property to change to white style sheet:

   ```
   sl.rtview.stylesheet=rtv_whitestyles,rtv_flat,rtv_html5
   ```

   See “Configuring Data Collection” for additional information.

9. From the **mysample** directory, type the following command (EMSMON automatically recognizes this command) to start all the required EMSMON components:

   start_rtv.bat default all -properties:sample



10. Copy the **emsmon.war** file located in the **%RTVAPM_HOME%\emsmon\webapps** directory to the Tomcat **webapps** directory.
11. Start Tomcat. For example:

    C:\tomcat\apache-tomcat\apache-tomcat-6.0.18-sl\bin> **startup.bat**

12. You can deploy the Monitor as a web browser or as a desktop application.

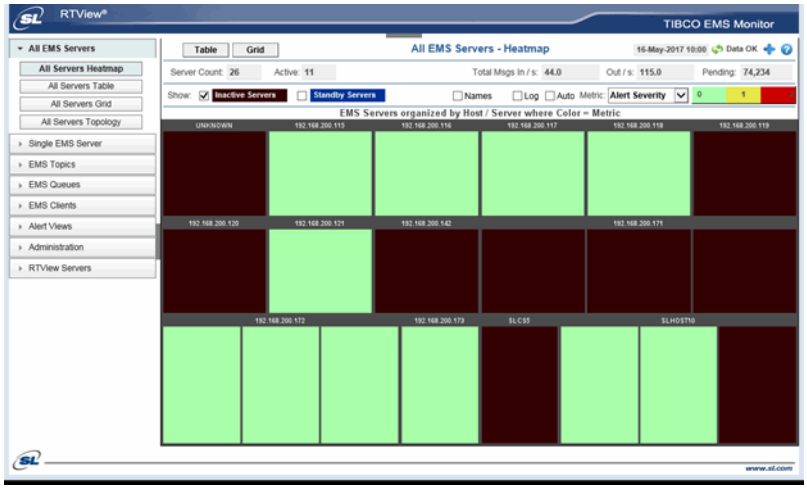
- To deploy the Monitor as a web browser:

  Open a browser and view the Monitor using **http://localhost:8080/emsmon** (**8080** is the default Tomcat port). Use **admin**/**admin** as the login/password.

- To deploy the Monitor as a desktop application:

  Type the following in an initialized command window, and use **admin**/**admin** as the login/password:

  runv -ds –properties:sample



See “Configuration”, “Deployment”, and “Using the Monitor” for additional information about the configuration options, deployment options, and the various displays available in the Monitor.

CHAPTER 2 Introduction

This section contains the following:

Overview

The Monitor takes the time and guesswork out of monitoring and troubleshooting TIBCO® Enterprise Messaging System™ deployments, providing a centralized view of both real-time and historical performance metrics across numerous EMS Servers.

The Monitor enables TIBCO users to continually assess and analyze the health and performance of their EMS infrastructure, gain early warning of issues with historical context, and effectively plan for capacity of their EMS Servers. It does so by aggregating and analyzing key performance metrics across all servers, topics, queues, consumers and producers, and presents the results, in real time, through meaningful dashboards as data is collected.

Users also benefit from pre-defined rules and alerts that pin-point critical areas to monitor in most EMS environments and allow for customization of thresholds to let users fine-tune when alert events should be activated.

The Monitor also contains alert management features so that the life cycle of an alert event can be managed to proper resolution. All of these features allow you to know exactly what is going on at any given point, analyze the historical trends of the key metrics, and respond to issues before they can degrade service levels in high-volume, high-transaction environments.

The Monitor can be deployed as a stand-alone desktop client or as a Web application run in a browser.

Monitor Standalone and Solution Package

The Monitor can be installed as a standalone monitoring system for technical support teams to monitor the health and performance of their EMS infrastructure. It can also be installed as a Solution Package within the RTView Enterprise Monitor product. RTView Enterprise Monitor is an end-to-end monitoring platform that allows application support teams to understand how infrastructure, middleware, and application performance data affect the availability and health of the entire application. When the Monitor is used as a Solution Package, the TIBCO® Enterprise Messaging System™ metrics and health state are but one source of information that determines the entire health state of the application. See the *RTView Enterprise Monitor User's Guid*e, which is available on the SL Product Documentation website, for more information.

System Requirements

Please refer to the **README_sysreq.txt** file from your product installation. A copy of this file is also available on the product download page.

Installation

EMS Monitor can be used as a standalone monitoring system for technical support teams. To install EMS Monitor, download the **EMSMonitor_<version>.zip** archive, and unzip the **EMSMonitor_<version>.zip** file into a directory of your choosing.

EMS Monitor can also be installed as a Solution Package within the RTView Enterprise Monitor product. If you are licensed for RTView Enterprise Monitor and are installing the Monitor as a Solution Package, see the *RTView Enterprise Monitor User Guid*e, which is available on the SL Product Documentation website, for more information.

File Extraction Considerations

On Windows systems, using the extraction wizard of some compression utilities might result in an extra top-level directory level based on the name of the **.zip** file. The additional directory is not needed because the **.zip** files already contain the **rtvapm** top-level directory. This extra directory must be removed before clicking the **Next** button that performs the final decompression.

To convert text files on UNIX/Linux systems to the native format, use the **-a** option with unzip to properly extract text files. Then, to fix execution permissions for all ***.sh** scripts, go to the **rtvapm** directory and execute:

. ./rtvapm_init.sh

Setup

This section describes how to setup your system for the Monitor.

Create a Project Directory

Create a project directory by copying the default settings files into your own project settings directory. Creating this project directory ensures that your projects are not overwritten when the Monitor software is upgraded. Instructions in this documentation also assume you created this project directory. All examples (of configurations, property settings, command execution and so forth) refer to the project directory.

Note: Copy these default settings files only once and do so ***before*** you begin configuring EMS Monitor.

To Create a Project Directory:

Create a project settings directory in the **emsmon/projects** directory and name it **mysample**. For example:

emsmon/projects/mysample

Copy all files from the **emsmon/projects/sample** directory into the **mysample** project directory you just created.

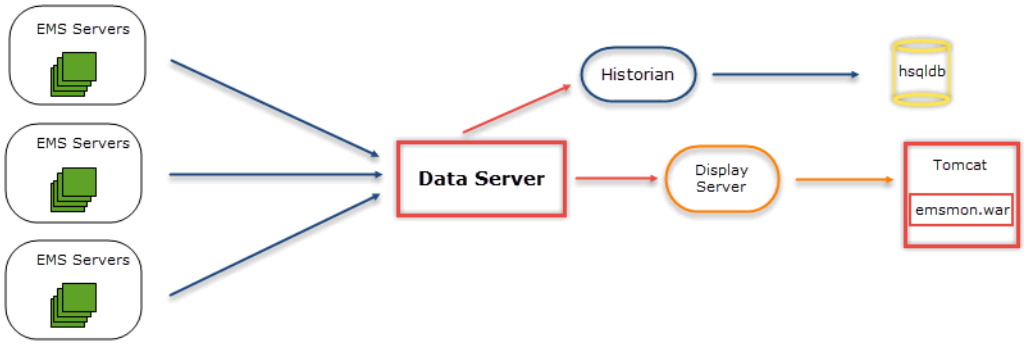
Set TIBCO Environment Variables

Set the environment variable **TIBJMS_ROOT**. This describes to EMS Monitor where TIBCO EMS is installed. EMS Monitor requires the TIBCO EMS jars to operate.

Name	Description	Example
TIBJMS_ROOT	The TIBCO EMS installation directory. This is only required if you are using an EMS transport for your TIBCO Hawk agents. If you installed RTView using the Windows installer, this variable may already be set globally on your system.	**c:\TIBCO\ems**

Architecture

The typical EMSMON deployment involves a Data Server collecting data from EMS Servers, storing the data in internal memory caches, and then providing the data to the Historian and to the Display Server (or Display Viewer) for use in the Monitor. The basic EMSMON deployment diagram looks like the image below.



Listed below are some basic definitions for the various components in EMS Monitor:

- **Data Server**: This Java process is responsible for accessing metrics from EMS Servers via the JMS Admin API, storing data into internal memory caches, providing data to the Display Server and the Historian, and running the alert rules.
- **Data Historian**: This Java process stores and compacts data from the Data Server into a relational database for archival purposes. The default database used is hsqldb.
- **Display Server**: This Java process, which communicates directly with the Data Server to get the latest data, is responsible for generating HTML and AJAX web pages in the browser in order to show the real-time EMS metrics. An application server (Tomcat, for example) is used in conjunction with the Display Server to deploy the EMSMON servlet, which handles the client requests and receives updates from the Display Server. The servlet and Display Server are also responsible for user and role-based entitlements.
- **Display Viewer**: (optional) This Java application, which can be deployed on desktops as an alternative to the Display Server, communicates directly to the Data Server and provides the same user interface as the browser version.

Upgrading the Monitor

This section describes the steps necessary to upgrade existing RTView EMS Monitor applications. It is organized by version. To upgrade your application, follow the steps for each version between the version you are upgrading from and the version to which you are upgrading.

- "Version 6.7"
- "Version 6.6"
- "Version 6.5"
- "Version 6.4"
- "Version 6.3"

Version 6.7

Sender/receiver deployments

If you are using the sender/receiver deployment and upgrading projects from versions previous to 3.6, you need to modify properties files after upgrading in the following cases:

1. If the project properties files overwrite the **sender.sl.rtview.sub=$rtvAgentTarget** property, change it to use the new **sender.sl.rtvapm.dataxfr.target** property using the URL you specified for the **$rtvAgentTarget**. For example:

sender.sl.rtview.sub=$rtvAgentTarget:'localhost:3172'

would be changed to

sender.sl.rtvapm.dataxfr.target=id=default url=localhost:3172 packages=all

2. If the project properties file adds additional targets using the **sender.sl.rtview.cache.config** property, change it to use the new **sender.sl.rtvapm.dataxfr.target** property using the URL you specified for the **$rtvAgentTarget** and a new unique ID. For example:

sender.sl.rtview.cache.config=pck_rtvagent_sender.rtv
$rtvAgentTarget:'otherhost:3172'

would be changed to

sender.sl.rtvapm.dataxfr.target=id=target2 url=otherhost:3172 packages=all

If your project properties file did not overwrite either of the above, the default sender/receiver properties values were used and therefore no changes are needed.

Version 6.6

A missing index that prevented the correct storage of pending message count and pending message size in the **EmsDurables** cache and history has been fixed.

To upgrade, drop the **EMS_DURABLES_TABLE** from your RTVHISTORY database and recreate the table with the appropriate table creation SQL statement for your platform. These SQL statements are available in the **rtvapm\emsmon\dbconfig** directory.

Version 6.5

No upgrade steps required.

Version 6.4

No upgrade steps required.

Version 6.3

The types of several rate metrics were converted to real numbers to account for the loss of resolution when compaction (by averaging the metrics) occurred.

Follow the appropriate alter table SQL syntax to apply the change to your supported DB platforms (Oracle not needed).

DB2

```
ALTER TABLE "EMS_CONSUMERS"
ALTER COLUMN "consumerByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_CONSUMERS"
ALTER COLUMN "consumerMessageRate" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_DURABLES"
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_DURABLES"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_PRODUCERS"
ALTER COLUMN "producerByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_PRODUCERS"
ALTER COLUMN "producerMessageRate" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "inboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "outboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUETOTALS"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_QUEUES"
ALTER COLUMN "inboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUES"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUES"
ALTER COLUMN "outboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUES"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUES"
```

```
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_QUEUES"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_ROUTES"
ALTER COLUMN "outboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_ROUTES"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_ROUTES"
ALTER COLUMN "inboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_ROUTES"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "inboundBytesRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "outboundBytesRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_SERVERINFO"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;

ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "inboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "outboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICTOTALS"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;
```

```
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "inboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "inboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "outboundByteRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "outboundMessageRate" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "pendingMessageCount" SET DATA TYPE DOUBLE;
ALTER TABLE "EMS_TOPICS"
ALTER COLUMN "pendingMessageSize" SET DATA TYPE DOUBLE;
```

SQL Server

```
ALTER TABLE [EMS_CONSUMERS]
ALTER COLUMN [consumerByteRate] FLOAT
ALTER TABLE [EMS_CONSUMERS]
ALTER COLUMN [consumerMessageRate] FLOAT

ALTER TABLE [EMS_DURABLES]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_DURABLES]
ALTER COLUMN [pendingMessageSize] FLOAT

ALTER TABLE [EMS_PRODUCERS]
ALTER COLUMN [producerByteRate] FLOAT
ALTER TABLE [EMS_PRODUCERS]
ALTER COLUMN [producerMessageRate] FLOAT

ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [inboundByteRate] FLOAT
ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [inboundMessageRate] FLOAT
ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [outboundByteRate] FLOAT
ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [outboundMessageRate] FLOAT
```

```
ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_QUEUETOTALS]
ALTER COLUMN [pendingMessageSize] FLOAT

ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [inboundByteRate] FLOAT
ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [inboundMessageRate] FLOAT
ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [outboundByteRate] FLOAT
ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [outboundMessageRate] FLOAT
ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_QUEUES]
ALTER COLUMN [pendingMessageSize] FLOAT

ALTER TABLE [EMS_ROUTES]
ALTER COLUMN [outboundByteRate] FLOAT
ALTER TABLE [EMS_ROUTES]
ALTER COLUMN [outboundMessageRate] FLOAT
ALTER TABLE [EMS_ROUTES]
ALTER COLUMN [inboundByteRate] FLOAT
ALTER TABLE [EMS_ROUTES]
ALTER COLUMN [inboundMessageRate] FLOAT

ALTER TABLE [EMS_SERVERINFO]
ALTER COLUMN [inboundBytesRate] FLOAT
ALTER TABLE [EMS_SERVERINFO]
ALTER COLUMN [inboundMessageRate] FLOAT
ALTER TABLE [EMS_SERVERINFO]
ALTER COLUMN [outboundBytesRate] FLOAT
ALTER TABLE [EMS_SERVERINFO]
ALTER COLUMN [outboundMessageRate] FLOAT
ALTER TABLE [EMS_SERVERINFO]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_SERVERINFO]
```

```
ALTER COLUMN [pendingMessageSize] FLOAT

ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [inboundByteRate] FLOAT
ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [inboundMessageRate] FLOAT
ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [outboundByteRate] FLOAT
ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [outboundMessageRate] FLOAT
ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_TOPICTOTALS]
ALTER COLUMN [pendingMessageSize] FLOAT

ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [inboundByteRate] FLOAT
ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [inboundMessageRate] FLOAT
ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [outboundByteRate] FLOAT
ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [outboundMessageRate] FLOAT
ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [pendingMessageCount] FLOAT
ALTER TABLE [EMS_TOPICS]
ALTER COLUMN [pendingMessageSize] FLOAT
```

MySQL

```
ALTER TABLE "EMS_CONSUMERS"
MODIFY "consumerByteRate" DOUBLE ,
MODIFY "consumerMessageRate" DOUBLE ;

ALTER TABLE "EMS_DURABLES"
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE ;

ALTER TABLE "EMS_PRODUCERS"
```

```
MODIFY "producerByteRate" DOUBLE ,
MODIFY "producerMessageRate" DOUBLE ;

ALTER TABLE "EMS_QUEUETOTALS"
MODIFY "inboundByteRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ,
MODIFY "outboundByteRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE ;

ALTER TABLE "EMS_QUEUES"
MODIFY "inboundByteRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ,
MODIFY "outboundByteRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE ;

ALTER TABLE "EMS_ROUTES"
MODIFY "outboundByteRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
MODIFY "inboundByteRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ;

ALTER TABLE "EMS_SERVERINFO"
MODIFY "inboundBytesRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ,
MODIFY "outboundBytesRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE;

ALTER TABLE "EMS_TOPICTOTALS"
MODIFY "inboundByteRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ,
MODIFY "outboundByteRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
```

```
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE ;

ALTER TABLE "EMS_TOPICS"
MODIFY "inboundByteRate" DOUBLE ,
MODIFY "inboundMessageRate" DOUBLE ,
MODIFY "outboundByteRate" DOUBLE ,
MODIFY "outboundMessageRate" DOUBLE ,
MODIFY "pendingMessageCount" DOUBLE ,
MODIFY "pendingMessageSize" DOUBLE ;
```

SyBase

Altering the data type of columns in a Sybase table requires enabling the “select into” option for your database. Consult with your DB Admin on the correct procedure for your installation.

```
ALTER TABLE "EMS_CONSUMERS" MODIFY "consumerByteRate" FLOAT
ALTER TABLE "EMS_CONSUMERS" MODIFY "consumerMessageRate" FLOAT

ALTER TABLE "EMS_DURABLES" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_DURABLES" MODIFY "pendingMessageSize" FLOAT

ALTER TABLE "EMS_PRODUCERS" MODIFY "producerByteRate" FLOAT
ALTER TABLE "EMS_PRODUCERS" MODIFY "producerMessageRate" FLOAT

ALTER TABLE "EMS_QUEUETOTALS" MODIFY "inboundByteRate" FLOAT
ALTER TABLE "EMS_QUEUETOTALS" MODIFY "inboundMessageRate" FLOAT
ALTER TABLE "EMS_QUEUETOTALS" MODIFY "outboundByteRate" FLOAT
ALTER TABLE "EMS_QUEUETOTALS" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_QUEUETOTALS" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_QUEUETOTALS" MODIFY "pendingMessageSize" FLOAT

ALTER TABLE "EMS_QUEUES" MODIFY "inboundByteRate" FLOAT
ALTER TABLE "EMS_QUEUES" MODIFY "inboundMessageRate" FLOAT
ALTER TABLE "EMS_QUEUES" MODIFY "outboundByteRate" FLOAT
ALTER TABLE "EMS_QUEUES" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_QUEUES" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_QUEUES" MODIFY "pendingMessageSize" FLOAT
```

```
ALTER TABLE "EMS_ROUTES" MODIFY "outboundByteRate" FLOAT
ALTER TABLE "EMS_ROUTES" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_ROUTES" MODIFY "inboundByteRate" FLOAT
ALTER TABLE "EMS_ROUTES" MODIFY "inboundMessageRate" FLOAT

ALTER TABLE "EMS_SERVERINFO" MODIFY "inboundBytesRate" FLOAT
ALTER TABLE "EMS_SERVERINFO" MODIFY "inboundMessageRate" FLOAT
ALTER TABLE "EMS_SERVERINFO" MODIFY "outboundBytesRate" FLOAT
ALTER TABLE "EMS_SERVERINFO" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_SERVERINFO" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_SERVERINFO" MODIFY "pendingMessageSize" FLOAT

ALTER TABLE "EMS_TOPICTOTALS" MODIFY "inboundByteRate" FLOAT
ALTER TABLE "EMS_TOPICTOTALS" MODIFY "inboundMessageRate" FLOAT
ALTER TABLE "EMS_TOPICTOTALS" MODIFY "outboundByteRate" FLOAT
ALTER TABLE "EMS_TOPICTOTALS" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_TOPICTOTALS" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_TOPICTOTALS" MODIFY "pendingMessageSize" FLOAT

ALTER TABLE "EMS_TOPICS" MODIFY "inboundByteRate" FLOAT
ALTER TABLE "EMS_TOPICS" MODIFY "inboundMessageRate" FLOAT
ALTER TABLE "EMS_TOPICS" MODIFY "outboundByteRate" FLOAT
ALTER TABLE "EMS_TOPICS" MODIFY "outboundMessageRate" FLOAT
ALTER TABLE "EMS_TOPICS" MODIFY "pendingMessageCount" FLOAT
ALTER TABLE "EMS_TOPICS" MODIFY "pendingMessageSize" FLOAT
```

CHAPTER 3 Configuration

This section provides step-by-step instructions for configuring EMS Monitor. You configure EMS Monitor by editing property files and executing scripts. Property files are located in your project directory. Example default settings are provided in the **rtvapm/emsmon/projects/sample** directory. For details about properties, see "Monitor Properties". For details about scripts, see "Monitor Scripts".

This section includes:

Overview

This section describes how to configure the Monitor as a standalone application.

Basic Steps

Some of the configuration steps described here are required (where noted) and others are optional.

- Step 1 (required): "Configuring Data Collection". Define the TIBCO EMS Servers, Queues, and Topics to be monitored, as well as optionally enabling collection of Producers, Consumers, and Connections in your project directory. This step must be performed before running any deployment of the Monitor.
- Step 2 (optional): "Configure the Database". Configure a production database.
- Step 3(optional): "Enabling Collection of Historical Data". Configure a production database.
- Step 4(optional): "Configure Alert Notification". Configure alerts to execute an automated action (for example, to send an email alert).
- Step 5(optional): "Configure High Availability". Configure redundant system components with failover capability.
- Step 6(required): "Configure RTView Servers". Configure the RTView Servers.

Assumptions

This document assumes that:

- you installed the Monitor per instructions in "Installation".
- you use the configuration files provided and retain their file names. If you change a **.properties** file name, you must specify the name on the command line.

Initializing a Command Prompt or Terminal Window

To start any RTView process (Data Server, Historian, Viewer and so forth), you must first initialize a command line window on the host. Unix scripts are Bourne shell compatible.

To initialize a command line window, execute the **rtvapm_init** script. For example:

Windows

Go to your EMS Monitor installation directory and type:

rtvapm_init

UNIX

The script used to initialize a terminal window depends on whether you are in csh or rsh (e.g. Linux, Mac OS X). With a Bourne shell, open a terminal window, go to your EMS Monitor installation directory and type:

../rtvapm_init.sh

Configuring Data Collection

This section describes how to collect data from the EMS Servers you want to monitor. This part of the EMS Monitor configuration is required.

You define the EMS Servers you want to monitor by editing the **servers.xml** file. By default, the EMS Servers that are routed to by the EMS Servers defined in this XML file are auto-discovered and subsequently monitored. These instructions give you the option to turn off auto-discovery, which is off by default.

Also by default, all EMS Topics and Queues are monitored for all defined and auto-discovered EMS Servers. In some cases it is desirable to limit the number of queues and topics to those that are of interest. Doing so can reduce the data load on the Monitor. These instructions give you the option to select the EMS Queues and Topics to monitor.

NOTE: LINUX users might see inconsistently aligned labels in displays. To resolve, set the client browser to download the fonts used by the server. Open the **rtvapm/common/conf/rtvapm.properties** file on the Display Server host machine and uncomment the following two lines:

#sl.rtview.cp=%RTV_HOME%/lib/rtvfonts.jar

#sl.rtview.global=rtv_fonts.rtv

At this point you have:

- Verified your system requirements.
- Installed EMS Monitor.
- Set up EMS Monitor.

To configure data collection:

1. Change directory to your project directory.

2. Specify the EMS Servers you want to monitor in the **servers.xml** file, which is located in your project directory. The following is the default **servers.xml** file, which defines the local EMS Server on the default port:

```
<?xml version="1.0" ?>
<dataset xmlns="www.sl.com" version="1.0">
<table key="Servers">
    <tc name="Name" type="string" index="false" />
    <tc name="URL" type="string" index="false" />
    <tc name="Agent" type="string" index="false" />
    <tc name="User" type="string" index="false" />
    <tc name="Password" type="string" index="false" />
    <tr name="">
     <td>Local</td>
     <td>tcp://localhost:7222</td>
     <td />
     <td />
     <td />
    </tr>
</table>
</dataset
```

3. Enter each EMS Server to be monitored, where:

   URL -- is the complete URL for the EMS Server. A comma-separated list of URLs is used to designate fault tolerant server pairs.

   Name -- is the name of your EMS Server. This field is optional. If no entry is made, the URL is used to designate the server in the Monitor.

   Agent -- (This field is currently not used.)

   User -- is the user name to use when creating this connection. This field is optional.

   Password -- is the password to use when creating this connection. This field is optional.

Note: By default, servers which are routed to by the servers defined in this file are automatically discovered (you have the option to turn off auto-discover in subsequent steps).

The following is an example of an edited **servers.xml** file in which two servers are defined, **SLHOST10** and **Branch12**:

- **SLHOST10** provides the main and fault tolerant URLs with no user information.
- **Branch12** includes two URLs, the user name and the password associated with that user name.

```
<?xml version="1.0" ?>
<dataset xmlns="www.sl.com" version="1.0">
<table key="Servers">
<tc name="Name" type="string" index="false" />
<tc name="URL" type="string" index="false" />
<tc name="Agent" type="string" index="false" />
<tc name="User" type="string" index="false" />
<tc name="Password" type="string" index="false" />
<tr name="">
<td>SLHOST10</td>
<td>tcp://SLHOST10:7010,tcp://SLHOST10:7011</td>
<td />
<td />
<td />
</tr>
<tr name="">
<<td>Branch12</td>
<td>tcp://192.168.200.171:6010,tcp://192.168.200.171:6011</td>
<td />
<<td>admin</td>
<<td>XQIf08</td>
</tr>
</table>
</dataset>
```

4. If you need to provide encrypted passwords (rather than expose server password names in a clear text file), do the following. If not, skip this step.

   To provide encrypted passwords, use the “encode_string” utility:

   In an initialized command window, execute the following script where ***mypassword*** is your plain text password (this password will be encrypted).

   encode_string jmsadm mypassword

   You then receive an encrypted password for copying and pasting into the XML password field. For example:

   encrypted value: 013430135501346013310134901353013450134801334

5. If you want to turn off the auto-discovery of servers found via route definitions, do the following. If not, skip this step.

   To turn off auto-discovery of servers via routes, open the **sample.properties** file, located in your project directory.

   Add the following line to the file:

   collector.sl.rtview.jmsadm.discoverServersByRoute=false

6. By default, collecting connections, producers, and consumers data is disabled. To enable collecting connections, producers, and consumers data, edit your sample.properties and uncomment the following lines:

   ```
   #collector.sl.rtview.cache.config=ems_connections_cache_source.rtv
   ```

```
#collector.sl.rtview.cache.config=ems_producers_cache_source.rtv
#collector.sl.rtview.cache.config=ems_consumers_cache_source.rtv
```

7. By default, collection of all available EMS Queues and EMS Topics is enabled. To avoid performance issues due to large amounts of destinations, the collection of each type of data has been limited per Data Server to **2000** rows by default. To modify this limit, edit the following line in your sample.properties:

```
collector.sl.rtview.jmsadm.maxMetricsRowCount=2000
```

8. If you want to limit the topics and queues monitored (rather than monitoring all topics and queues for all defined and auto-discovered servers), do the following.
   - Open the sample.properties file located in your project directory.
   - Define filter patterns to specify the subsets of EMS topics or queues you want monitored. When a pattern is defined, only topics or queues that match that pattern are monitored. Multiple patterns may be defined. The following contains examples of filter patterns (in comments):

```
#
# Default Patterns used to monitor ALL EMS topics or queues
#
sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:''
sl.rtview.cache.config=ems_queues_cache_source.rtv $queuePattern:''
#
# Sample patterns used to monitor specific subsets of EMS topics or queues
#
#sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:sl.topic.*
#sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:*.tibems.>
#sl.rtview.cache.config=ems_queues_cache_source.rtv
$queuePattern:*.messageserver.>
#sl.rtview.cache.config=ems_queues_cache_source.rtv
$queuePattern:tibco.stress.test.qa.iteration.test93
```

9. If you want to modify the default values for the update rates for various server-related caches, you can add the following substitutions to your sample.properties file.

   Server-Related Caches

   Add the following substitution to your **sample.properties** file to modify the default value (15000 milliseconds) for the EmsServerInfo, EmsAdmStats, EmsBridges, EmsDurables, EmsRoutes, EmsFTServerTable, EmsListenPorts, EmsServerRouteTable, EmsServerTable, EmsUsers, and EmsDestinations caches:

```
collector.sl.rtview.sub=$emsServerUpdatePeriod:15000
```

   Queues and Topics Caches

   Add the following substitution to your **sample.properties** file to modify the default value (30000 milliseconds) for EmsQueues and EmsTopics caches:

```
collector.sl.rtview.sub=$emsQueueUpdatePeriod:30000
collector.sl.rtview.sub=$emsTopicUpdatePeriod:30000
```

   Producers, Consumers, and Connections Caches

   Add the following substitution to your **sample.properties** file to modify the default value (60000 milliseconds) for EmsProducers, EmsConsumers, and EmsConnections caches:

```
collector.sl.rtview.sub=$emsProducerUpdatePeriod:60000
collector.sl.rtview.sub=$emsConsumerUpdatePeriod:60000
collector.sl.rtview.sub=$emsConnectionUpdatePeriod:60000
```

Note: When modifying your update rates, you should take your system architecture and number of elements per cache into account and ensure that you are not changing your update rates to values that might negatively impact system performance.

Note: After you complete all required configuration steps and you start the RTView Data Server, you can verify this configuration by viewing the **dataserver.log** file, located in the logs directory.

Configure the Database

The Monitor is delivered with a default memory resident HSQLDB database, which is suitable for evaluation purposes. However in production deployments, we recommend that you deploy one of our supported databases. For details, see the *RTView Core® User's Guide*.

This section describes how to setup an alternate (and supported) database.

Database Requirements

The Monitor requires two database connections that provide access to the following information:

- **Alert Settings**

  The ALERTDEFS database contains alert administration and alert auditing information. The values in the database are used by the alert engine at runtime. If this database is not available, the Self-Service Alerts Framework under which alerts are executed will not work correctly.

- **Historical Data**

  The RTVHISTORY database contains the historical monitoring data to track system behavior for future analysis, and to show historical data in displays.

To Configure the Monitor Database:

You configure the database by editing properties in the **sample.properties** file, located in your project directory. You will also copy portions of the **database.properties** template file (located in the **common\dbconfig** directory) into your **sample.properties** file and then modify your **sample.properties** file.

1. Install a database engine of your choice. Supported database engines are Oracle, Sybase, Microsoft SQL Server, MySQL and DB2.

   NOTE: The default page size of DB2 is 4k. It is required that you create a DB2 database with a page size of 8k. Otherwise, table indexes will not work.

2. Open the **sample.properties** file, which is located in your project directory, and make the following edits:

   a. Designate the location of the jar where the JDBC driver resides in your environment as follows:

   collector.sl.rtview.cp=JDBCDriverClassPath

where **JDBCDriverClassPath** is the location of the JDBC driver file to use when connecting to your database. For example:

collector.sl.rtview.cp=/opt/oracle/ora92/jdbc/lib/ojdbc14.jar

b. Open the database.properties template file, which is located in the **common\dbconfig** directory, and copy from the "Define the ALERTDEFS DB" section the line that corresponds to your supported database into your **sampler.properties** file. For example, if your database is MySQL you copy the following:

#sl.rtview.sql.sqldb=ALERTDEFS myusername mypassword jdbc:mysql://myhost:3306/myinstance com.mysql.jdbc.Driver - false true

c. Uncomment the line you just copied (delete **#**). For example:

sl.rtview.sql.sqldb=ALERTDEFS myusername mypassword jdbc:mysql://myhost:3306/myinstance com.mysql.jdbc.Driver - false true

d. Edit the properties you just copied by replacing the following as appropriate:

myusername - User name to enter into this database when making a connection.

URL - Full database URL to use when connecting to this database using the specified JDBC driver.

JDBCDriverClass - Fully qualified name of the JDBC driver class to use when connecting to this database.

mypassword - Password to enter into this database when making a connection. If there is no password, use "**-**".

Encrypt Password

If you need to provide an encrypted password (rather than expose server password names in a clear text file), use the **encode_string** command window option in an initialized command window with the following syntax:

encode_string sql mypassword

where **mypassword** is your plain text password.

For example:

encode_string sql mypassword

You then receive an encrypted password that you enter as your password. For example:

013430135501346013310134901353013450134801334

e. In the **sample.properties** file, copy from the "Define the RTVHISTORY DB" section the lines that corresponds to your supported database. For example, if your database is MySQL you copy the following:

sl.rtview.sql.sqldb=RTVHISTORY myusername mypassword jdbc:mysql://myhost:3306/myinstance com.mysql.jdbc.Driver - false true

#

historian.sl.rtview.historian.driver=com.mysql.jdbc.Driver

historian.sl.rtview.historian.url=jdbc:mysql://myhost:3306/myinstance

historian.sl.rtview.historian.username=myusername

historian.sl.rtview.historian.password=mypassword

f. Edit the properties you just copied by replacing the following (as previously) for driver, url, username, and password. For example:

historian.sl.rtview.historian.driver=**myDriver**
historian.sl.rtview.historian.url=**myurl**
historian.sl.rtview.historian.username=**myusername**
historian.sl.rtview.historian.password=**mypassword**

3. Save the **sample.properties** file.

4. Manually create database tables. If your configured database user has table creation permissions, then you only need to create the Alerts tables. If your configured database user does not have table creation permission, then you must create both the Alert tables and the History tables.

To create tables for your database, use the **.sql** template files provided for each supported database platform, which is located in the **dbconfig** directory of the **common**, **<*>mon** (where ***** = the Monitor initials, for example, **tbemon**, **bw6mon**, **bwmon** or **emsmon)**, and **rtvmgr** directories:

- **Alerts**
  rtvapm/common/dbconfig/create_common_alertdefs_tables_<db>.sql
- **History**
  rtvapm/<*>mon/dbconfig/create_<*>mon_history_tables_<db>.sql
  where **<*>** = the Monitor initials (for example, **tbemon**, **bw6mon**, **bwmon** or **emsmon**)
  rtvapm/rtvmgr/dbconfig/create_rtvmgr_history_tables_<db>.sql
  where **<db>** ={**db2**, **mysql**, **oracle**, **sqlserver**, **sybase**}
  where **<*>** = the Monitor initials (for example, **tbemon**, **bw6mon**, **bwmon** or **emsmon**)

NOTE: The standard SQL syntax is provided for each database, but requirements can vary depending on database configuration. If you require assistance, consult with your database administrator.

The most effective method to load the **.sql** files to create the database tables depends on your database and how the database is configured. Some possible mechanisms are:

- **Interactive SQL Tool**
  Some database applications provide an interface where you can directly type SQL commands. Copy/paste the contents of the appropriate **.sql** file into this tool.
- **Import Interface**
  Some database applications allow you to specify a **.sql** file containing SQL commands. You can use the **.sql** file for this purpose.

Before loading the **.sql** file, you should create the database and declare the database name in the command line of your SQL client. For example, on MySQL 5.5 Command Line Client, to create the tables for the Alert Settings you should first create the database:

create database myDBName;

before loading the **.sql** file:

mysql -u myusername -mypassword myDBName <
create_common_alertdefs_tables_mysql.sql;

If you need to manually create the Historical Data tables, repeat the same process. In some cases it might also be necessary to split each of the table creation statements in the **.sql** file into individual files.

Third Party Application
If your database does not have either of the two above capabilities, a third party tool can be used to enter SQL commands or import **.sql** files. Third party tools are available for connecting to a variety of databases (RazorSQL, SQLMaestro, Toad, for example).

You have finished configuring the databases. Proceed to Configure Alert Notification.

Enabling Collection of Historical Data

By default, EMS Monitor does not save some types of historical data to the database by default. You can enable collection of the following types of historical data:

- "Enabling Collection of EMS Connections, Producers, and Consumers Historical Data"
- "Enabling Optional Historical Caches"
- "Enabling Collection of Tomcat Historical Data"

Enabling Collection of EMS Connections, Producers, and Consumers Historical Data

By default, historical EMS Connections, Producers, and Consumers data is not saved to the database. To enable the collection of this historical data, perform the following steps:

1. Navigate to **rtvapm/emsmon/conf/** and open the **rtvapm.emsmon.properties** file.
2. Find the **HISTORIAN PROPERTIES** section in the file.
3. Copy the following three lines:

```
#sl.rtview.sub=$EMS_CONNECTIONS_TABLE:EMS_CONNECTIONS
#sl.rtview.sub=$EMS_PRODUCERS_TABLE:EMS_PRODUCERS
#sl.rtview.sub=$EMS_CONSUMERS_TABLE:EMS_CONSUMERS
```

4. Paste the lines into your **sample.properties** file and uncomment the lines (delete the **#** in front of each line) so that it looks like this:

```
sl.rtview.sub=$EMS_CONNECTIONS_TABLE:EMS_CONNECTIONS
sl.rtview.sub=$EMS_PRODUCERS_TABLE:EMS_PRODUCERS
sl.rtview.sub=$EMS_CONSUMERS_TABLE:EMS_CONSUMERS
```

5. Save your **sample.properties** file.

Enabling Optional Historical Caches

There are three optional caches that collect and store inbound/outbound message counts and bytes into the RTV_HISTORY database: **EmsServerInfoExt**, **EmsQueuesExt**, and **EmsTopicsExt**. By default, these caches are not enabled and do not store data in the RTV_HISTORY database. To enable them, add the following lines to your **sample.properties** file:

```
collector.sl.rtview.sub=$EMS_SERVERINFOEXT_TABLE:EMS_SERVERINFOEXT
collector.sl.rtview.sub=$EMS_QUEUESEXT_TABLE:EMS_QUEUESEXT
collector.sl.rtview.sub=$EMS_TOPICSEXT_TABLE:EMS_TOPICSEXT
```

Enabling Collection of Tomcat Historical Data

By default, Tomcat historical data is not collected and saved to the database. To enable collection of Tomcat historical data, add the following properties to your **sample.properties** file and save:

```
collector.sl.rtview.sub=$TOMCAT_GLOBALREQUESTSTATS_TABLE:TOMCAT_GLOBALREQUESTSTATS
collector.sl.rtview.sub=$TOMCAT_WEBMODULESTATS_TABLE:TOMCAT_WEBMODULESTATS
collector.sl.rtview.sub=$TOMCAT_WEBMODULETOTALS_TABLE:TOMCAT_WEBMODULETOTALS
```

Configure RTView Servers

This section describes how to configure the RTView Servers. This step is required if you need to modify port settings or deploy Java processes on different hosts. Otherwise, this step is optional.

The manner in which you configure the RTView Servers depends on whether you deploy the Monitor as a Desktop Application or a Web Application.

NOTE: Browser deployments also require an application server such as Tomcat, which is not included. See the Deployment section for details.

Java Processes

There are four Java processes included with the Monitor that are used in the Desktop and Browser deployment options. By default, it is assumed that these Java processes run on one host and that no configuration changes are needed. However, if these processes are distributed across several hosts, or if the default port definitions for these processes need to be modified, then configuration file settings must also be modified to allow all Monitor components to communicate with each other.

Java Process	Description	Default Port(s)	Deployment	
			Desktop	Browser
RTView Viewer	Java desktop version of the Monitor.	N/A	×	
RTView Data Server	Gathers performance metrics.	Default Port=**3178** Default JMX Port = **3168**	×	×
RTView Historian	Retrieves data from the RTView Data Server and archives metric history to a database.	Default JMX Port=**3167**	×	×
RTView Display Server	Collects the data and generates the displays that the Application Server uses to produce the web pages.	Default Port=**3179** Default JMX Port = **3169**		×

See the following instructions to modify port settings or deploy Java processes on different hosts:

- “Desktop Deployment” on page 35 - Stand-alone desktop client
- “Browser Deployment” on page 35 - Web application

Desktop Deployment

Perform the following steps only if you are not using the default port settings or you are deploying Java processes on different hosts (rather than on a single host).

To modify desktop deployment settings:

1. Open the **sample.properties** file, located in your project directory, and add the following properties:

   dataserver.sl.rtview.dataserver.port – To designate the port on the Data Server. The default is **dataserver.sl.rtview.dataserver.port=3178**.

   dataclient.sl.rtview.dataserver – To indicate the host and port, or the HTTP connection describing how clients (Viewer and Historian) connect to the Data Server. The default is **dataclient.sl.rtview.dataserver=//localhost:3178**.

2. Copy and paste the following properties into the **sample.properties** file and edit as needed to define the JMX ports for monitoring the Data Server and Historian:

   ```
   dataserver.sl.rtview.jvm=-Dcom.sun.management.jmxremote.port=3168
   historian.sl.rtview.jvm=-Dcom.sun.management.jmxremote.port=3167
   ```

You have finished configuring the RTView Servers. Proceed to Configure the Database.

Browser Deployment

Perform the following steps only if you are not using the default port settings or you are deploying Java processes on different hosts (rather than on a single host).

To modify browser deployment settings:

1. Open the **sample.properties** file, located in your project directory, and add the following properties:

   dataserver.sl.rtview.dataserver.port – To designate the port on the Data Server. The default is **dataserver.sl.rtview.dataserver.port=3178**.

   dataclient.sl.rtview.dataserver – To indicate the host and port, or the HTTP connection describing how clients (the Historian) connect to the Data Server. The default is **dataclient.sl.rtview.dataserver=//localhost:3178**.

2. Copy and paste the following properties into the **sample.properties** file and edit as needed to define the JMX ports for monitoring the Data Server and Historian:

   ```
   dataserver.sl.rtview.jvm=-Dcom.sun.management.jmxremote.port=3168
   historian.sl.rtview.jvm=-Dcom.sun.management.jmxremote.port=3167
   ```

3. Change the Display Server port by opening the **sample.properties** file and adding the following property:

   displayserver.sl.rtview.port – To indicate the port used for the Display Server. The default is **displayserver.sl.rtview.displayserver.port=3179**.

4. Open the **rtvdisplay.properties** file and edit the following:

   DisplayServerHost – To indicate to the servlet where the Display Server is located. The default is **DisplayServerHost=localhost**.

DisplayServerPort – To indicate to the servlet the port used by the Display Server. This must match the number specified in the previous property (**displayserver.sl.rtview.displayserver.port**). The default is **DisplayServerPort=3179**.

5. Open the **servlet.properties** file and edit the following:

   ServiceHost - To indicate to the servlet where the Data Server is located when HTTP connections are used. The default is **ServiceHost=localhost**.

   ServicePort – To indicate to the servlet the port used by the Data Server. This must match the number specified in **dataserver.sl.rtview.dataserver.port**. The default is **ServicePort=3178**.

6. Copy and paste the following property into the **sample.properties** file and edit as needed to define the JMX port for the Display Server:

   ```
   displayserver.sl.rtview.jvm=-Dcom.sun.management.jmxremote.port=3169
   ```

7. Rebuild the war files for your application server by executing the following scripts:

   Windows:

   update_wars.bat

   UNIX:

   ./update_wars.sh

You have finished configuring the RTView Servers. Proceed to Configure the Database.

Configure Alert Notification

The Monitor provides alerts concerning conditions in your system through RTView alerts. This section describes how to configure the alerts to execute an automated action.

By default, alerts execute a **.bat** script. The script, by default, is not configured to execute an automated action. However, you can uncomment a line in the script that prints alert data to standard output. Or, you can modify the script to execute an automated action (such as sending an email alert).

There are two options for configuring Monitor alert notification:

- “Using a Batch File or Shell Script” on page 37

This technique requires switching to an OS-specific set of alert definitions that execute the appropriate file type. Windows and UNIX alert definition files are provided with the Monitor. A sample batch file and a sample shell script are also provided which are customized as needed.

- “Using the Java Command Handler” on page 39

The Java source for the Monitor Java command handler is provided to facilitate customization.

When you uncomment the line in the script that prints alert data to standard output, both the scripts and the Java command handler output alert information to standard output. The alert output appears in the Data Server log file, or in the command window or shell in which the Data Server was started. The following is a sample output from the alert command script:

```
  ----- Alert command script executed: DOMAINNAME=MYMON-1, ALERTNAME=someAlert,
ALERTINDEX=alertIndex1~alertIndex2, ALERTID=1075, ALERTSEVERITY=2, ALERTTEXT=High Alert
Limit exceeded current value: 100.0 limit: 80.0 #####
```

Using a Batch File or Shell Script

A sample batch file, **my_alert_actions.bat**, and a sample shell script, **my_alert_actions.sh**, which are located in the **common/bin** directory, are provided as templates that you can modify as needed. Use the appropriate file for the platform that hosts Monitor processes. By default, both scripts send alert information to standard output. To uncomment the line in the script so that alert data prints to standard output in:

- "Windows Batch File," next
- "UNIX/Linux Shell Script" on page 37

Windows Batch File

1. Copy the **my_alert_actions.bat** file, located in the **common/bin** directory, into your project directory.

2. Open the **rtvapm.properties** file, located in the **rtvapm\common\conf** directory, in a text editor.

3. Verify the following properties are set as follows:

   ```
   # command to execute for new alerts
   sl.rtview.alert.notifiercommandnew=system cmd '$alertActionScript.$scriptEnding $domainName +$alertName+ "+$alertIndex+" +$alertID+ +$alertSeverity+ +$alertText'
   # command to execute on the first severity change
   sl.rtview.alert.notifiercommandfirstsevchange=system cmd '$alertActionScript.$scriptEnding $domainName +$alertName+ "+$alertIndex+" +$alertID+ +$alertSeverity+ +$alertText'
   ```

4. Open the **my_alert_actions.bat** file, located in your project directory, and uncomment the echo line (near the end of the file) to print alert information to standard output. Or, you can modify the script to execute an automated action (such as sending an email alert).

5. Restart the Data Server.

UNIX/Linux Shell Script

1. Copy the **my_alert_actions.sh** file, located in the **common/bin** directory, into your project directory.

2. Open the **rtvapm.properties** file, located in the **rtvapm/common/conf/** directory, in a text editor.

3. Verify the following properties are set as follows:

   ```
   # command to execute for new alerts
   sl.rtview.alert.notifiercommandnew=system cmd '$alertActionScript.$scriptEnding $domainName +$alertName+ "+$alertIndex+" +$alertID+ +$alertSeverity+ +$alertText'
   # command to execute on the first severity change
   ```

```
sl.rtview.alert.notifiercommandfirstsevchange=system cmd
'$alertActionScript.$scriptEnding $domainName +$alertName+ "+$alertIndex+"
+$alertID+ +$alertSeverity+ +$alertText'
```

4. Open the **sample.properties** file, located in your project directory, and copy/paste the following into it:

```
sl.rtview.cmd_line=-sub:$scriptEnding:bat
sl.rtview.cmd_line=-sub:$alertActionScript:my_alert_actions
```

5. Change the **bat** suffix to **sh** and **my_alert_actions** to **./my_alert_actions**.

6. Save the **sample.properties** file.

7. Open the **my_alert_actions.sh** file, located in your project directory, and uncomment the echo line (near the end of the file) to print alert information to standard out. Or, you can modify the script to execute an automated action (such as sending an email alert).

8. Restart the Data Server.

Batch File or Shell Script Substitutions

The default **my_alert_actions** scripts use the substitutions described in the table below. When you customize the script, you can use a use substitution to get any of the columns in the alert table. To do this, modify the **sl.rtview.alert.notifiercommandnew** and **sl.rtview.alert.notifiercommandfirstsevchange** properties from Step 3 (above) to replace the default substitutions with the substitutions you want to use. You must make corresponding modifications to your script to use modified substitution values.

The substitution names map to the names of the columns in the alert table. Convert the column name to camel case and if it does not start with Alert, prepend alert to it. For example, to use the value of the **Alert Name** column, use **$alertName**. To use the value of the **ID** column, use **$alertID**. To use the value of the **Row Update Time** column, use **$alertRowUpdateTime**. The following table contains the substitutions used by the default **my_alert_actions** scripts:

Argument	Description	Values
$alertId	This substitution specifies the unique ID for the alert. For example: **alertId = 1004**	Text or Numeric
$alertIndex	This substitution specifies which source triggered the alert. With tabular objects, the first column of data is typically the **Index** column. The value in the **Index** column is a name that uniquely identifies each table row. The **alertIndex** uses the **Index** column name. For example, if the **CapactityLimitAllCaches** alert is configured to monitor all of your caches, and to trigger when any of the caches exceed the specified capacity threshold, the **alertIndex** indicates specifically which cache triggered the alert. With scalar objects, which do not have a table and therefore do not have a column (the **useTabularDataFlag** property is **False**), the **alertIndex** is blank. For example: **alertIndex = MyCache01**	Text or Numeric

$alertName =	This substitution specifies the name of the alert. For example: **alertName = CapacityLimitAllCaches**	Values vary.
$alertSeverity	This substitution specifies the severity level of the alert. **0**: The alert limit has not been exceeded therefore the alert is not activated. **1**: The alert warning limit has been exceeded. **2**: The alert alarm limit has been exceeded. For example: **alertSeverity = 1**	Numeric
$alertText	This substitution specifies the text that is displayed when the alert executes. For example: **alertText = High Warning Limit exceeded, current value: 0.9452 limit: 0.8**	Text
$alertTime	This value is the time the alert was initially generated.	Text

Using the Java Command Handler

1. Open the **custom_handlers.properties** file, located in the **rtvapm\common\conf** directory, in a text editor.

2. Locate the following text in the **custom_handlers.properties** file and select it for copying:

#sl.rtview.alert.notifiercommandnew=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable

#sl.rtview.alert.notifiercommandfirstsevchange=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable

3. Open the **sample.properties** file, located in your project directory, and paste the selected text into it.

4. In the **sample.properties** file, uncomment the lines you just pasted to enable the Java command handler.

5. Verify that the **rtvapm_custom.jar** file is built per the Customizing the Java Command Handler instructions.

6. Open the **custom_handler.properties** file and verify that the following line is the correct path to the **rtvapm_custom.jar**. If it is not the correct path, copy the line into the **sample.properties** file in your project directory and edit the path as needed.

sl.rtview.cp=./custom/lib/rtvapm_custom.jar

7. Save the **sample.properties** file.

8. Restart the Data Server using the following command line argument:

   Windows

   -properties:%RTVAPM_HOME%/common/conf/custom_handlers

   UNIX

-properties:$RTVAPM_HOME/common/conf/custom_handlers

Customizing the Java Command Handler

The source for the Monitor Java handler is provided in the **RtvApmCommandHandler.java** file, located in the **\projects\sample\custom\src\com\sl\rtvapm\custom** directory of your Monitor installation directory. By default, the handler prints the alert data to standard output. To change this behavior perform the following steps:

1. Open the **RtvApmCommandHandler.java** file.
2. Modify the **OutputAlertString** method as needed. You can replace this method with your own if you modify the **invokeCommand** method to call it, and your method accepts the same arguments as **OutputAlertString**.
3. Save the **RtvApmCommandHandler.java** file.
4. Compile **RtvApmCommandHandler.java** and rebuild **rtvapm_custom.jar** using the supplied script (**make_classes.bat** or **make_classes.sh**) in the **\projects\sample\custom\src** directory.
5. Restart the Data Server using the following command line argument:

   Windows

   -properties:%RTVAPM_HOME%/common/conf/custom_handlers

   UNIX

   -properties:$RTVAPM_HOME/common/conf/custom_handlers

Java Command Handler Substitutions

When you customize the Java Command Handler, there is no need to modify the **sl.rtview.alert.notifiercommandnew** and **sl.rtview.alert.notifiercommandfirstsevchange** properties in the **custom_handlers.properties** file. The entire alert table row is passed into the Java Command Handler for each alert that notifies so that all information regarding those alerts is available. The following substitutions are used:

Argument Description

- **$alertNotifyType -** This substitution specifies to show the value of the notification type so you can use the same command for all notifications. Values are **NEW_ALERT**, **CLEARED_ALERT**, **FIRST_SEV_CHANGE** or **COLUMN_CHANGED**.
- **$alertNotifyCol -** This substitution only applies when the **notifyType** is **COLUMN_CHANGED**. Specifies to use a semi-colon delimited list of column names that changed from the **alertNotifierColumns**.
- **$alertNotifyTable -** This substitution specifies the row in the alert table that corresponds to this notification into the command.

Additional Optional Properties

- **sl.rtview.alert.notifiercommandcleared** - Set this to the command to execute when an alert is cleared. By default, no command is configured. To execute a script, copy the **notifiercommandnew** line and replace **$alertActionScript** with the name of the script you want to execute. To execute a custom Java command, see the example in **common\conf\custom_handlers.properties**.

- **sl.rtview.alert.notifiercommandchanged** - Set this to the command to execute when a column in the alert table changes. To execute a script, copy the **notifiercommandnew** line and replace **$alertActionScript** with the name of the script you want to execute. To execute a custom Java command, see the example in **common\conf\custom_handlers.properties**. This must be used in conjunction with the **sl.rtview.alert.notifiercolumns** property
- **sl.rtview.notifiercolumns** - Set this to the name of one or more columns to execute the **sl.rtview.alert.notifiercommandchanged** notification when they change. For multiple columns, use a semi-colon delimited list. Note that this should be limited to the minimum number of necessary columns, preferably less than **5**, as a large number of columns increases the persistence load on the central alert server.

Notification Persistence

To prevent duplication and missed notifications after restart or failover, you must configure the Data Server for alert persistence.

Configure High Availability

High Availability (HA) mitigates single point of failure within EMS Monitor by providing a means of defining redundant system components, together with failover capability, for users of those components.

When using HA, components are designated **PRIMARY** and **BACKUP**. If the **PRIMARY** component fails, failover occurs to the **BACKUP** component. If the **PRIMARY** component is subsequently restarted, the **BACKUP** component allows the newly restarted component to take the primary role and return to its backup role.

EMS Monitor HA Standalone Version

EMS Monitor is available with a High Availability (HA) Data Server configuration. The **project/sample** directory provides an example of HA Data Server with EMS Monitor. The example assumes the availability of two machines, **PRIMARYHOST** and **BACKUPHOST**, which are defined by environment variables of the same name.

EMS Monitor is configured by using the **primary** and **backup** configurations in “rtvservers.dat”, with start_rtv in place of the **default** configuration.

The primary Data Server is run on **PRIMARYHOST**; the backup Data Server is run on **BACKUPHOST**; the other EMS Monitor components failover between the Data Servers as appropriate. Assuming the environment variables **PRIMARYHOST** and **BACKUPHOST** are set correctly, EMS Monitor components on the primary machine are started as normal using the **primary** configuration (instead of the default configuration) with the **start_rtv** command. The backup EMS Monitor Data Server on the backup machine is started using the **backup** configuration with the **start_rtv** command.

To start the HA configuration, first start the primary EMS Monitor components on the primary machine using the **primary** configuration with the **start_rtv** command. For example:

Windows

```
start_rtv primary
```

UNIX

start_rtv.sh primary

Then start the backup EMS Monitor Data Server on the backup machine using the **backup** configuration with the **start_rtv** command. For example:

Windows

start_rtv backup

UNIX

start_rtv.sh backup

The appropriate property files and propfilters for the primary and backup Data Servers are defined in the "rtvservers.dat" file under the **primary** and **backup** configurations. The property values controlling HA, used by the EMS Monitor Data Servers, are defined in the **ha.properties** file.

CHAPTER 4 Deployment

This section describes how to deploy the Monitor components. This section includes:

Overview

The Monitor can be deployed as a stand-alone desktop client or as a web application that runs in a browser. Evaluation environments can use the provided HSQLDB database. Production environments require a supported JDBC- or ODBC-enabled relational database to store historical information. Supported databases are MySql, SyBase, Oracle, SqlServer and DB2.

The RTView Historian and RTView Data Server are typically deployed on the same host. However, these processes can optionally be configured on separate hosts. Doing so can increase performance in deployments that need to support many end users or systems with large TIBCO servers.

- "Desktop Application Deployment"

  If you choose the desktop option, the Monitor desktop application needs to be installed at each client.

- "Web Application Deployment"

  If you choose the browser option, clients need only a browser and Adobe Flash installed. The RTView Display Server, RTView Data Server, RTView Historian and Application Server are typically installed on the same host.

Desktop Application Deployment

This section describes how to deploy the Monitor as a desktop application. You deploy the Monitor using the **start_rtv** script (and stop the Monitor using the **stop_rtv** script). In a desktop deployment, the stand-alone desktop client connects directly to an RTView Data Server that gathers performance metrics. For desktop deployments, the following processes are started: the RTView Data Server, Historian and Viewer desktop application, as well as the database.

NOTE: The RTView Data Server, Historian and Display Server can be run as Windows Services. For details, see "RTView Server Components as Windows Services".

To deploy the Monitor as a desktop application:

- "Windows"
- "UNIX/Linux"

Windows

1. Initialize a command window. Go to your Monitor installation directory and type:

   rtvapm_init

2. Change directory (**cd**) to the **emsmon\projects\mysample** directory.

3. In the **projects\mysample** directory, start the Monitor applications by typing:

   start_rtv default all –properties:sample

   where **–properties:sample** is the properties file in which you configured your system.

NOTE: The **start_rtv default all –properties:sample** command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv default dataserver –properties:sample** starts the Data Server, and **start_rtv default historian –properties:sample** starts the Historian. Use the **stop_rtv all** script to stop Monitor applications.

4. Start the Viewer by typing:

   runv -ds –properties:sample

5. Login. The default user name and password are:

   User Name: **demo**

   Password: **demo**

   The Monitor main display opens.

UNIX/Linux

1. Initialize a terminal window. The script used to initialize a terminal window depends on whether you are in csh or rsh (e.g. Linux, Mac OS X). With a Bourne shell, open a terminal window, go to your Monitor installation directory and type:

. . / rtvapm_init.sh

2. Change directory (**cd**) to the **emsmon / projects / mysample** directory.

3. In the **projects / mysample** directory, start the Monitor applications by typing:

   start_rtv.sh default –properties:sample

   where **–properties:sample** is the properties file in which you configured your system.

NOTE: The **start_rtv.sh** default command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv.sh default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv.sh default dataserver –properties:sample** starts the Data Server, and **start_rtv.sh default historian –properties:sample** starts the Historian. Use the **stop_rtv.sh all** script to stop Monitor applications.

4. Start the Viewer by typing:

   runv.sh -ds –properties:sample

5. Login. The default user name and password are:

   User Name: **demo**

   Password: **demo**

   The Monitor main display opens.

Web Application Deployment

This section describes how to deploy the Monitor as a web application. You deploy the Monitor using the **start_rtv** script (and stop the Monitor using the **stop_rtv** script). For web application deployments the following processes are started: the RTView Data Server, Historian and Display Server, as well as the database and an application server.

NOTE: The RTView Data Server, Historian and Display Server can be run as Windows Services. For details, see “RTView Server Components as Windows Services”.

To deploy the Monitor as a web application:

- “Windows”
- “UNIX/Linux”

Windows

1. Copy the **.war** files, located in the **rtvapm \ emsmon \ webapps** director and deploy them to your Application Server.

2. Start your Application Server.

3. Initialize a command window. Go to your Monitor installation directory and type:

   rtvapm_init

4. Change directory (**cd**) to the **emsmon\projects\mysample** directory.

5. In the **projects\mysample** directory, start the Monitor applications by typing:

   start_rtv default all –properties:sample

   where **–properties:sample** is the properties file in which you have configured your system.

NOTE: The **start_rtv default** command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv default dataserver –properties:sample** starts the Data Server, **start_rtv default historian –properties:sample** starts the Historian and **start_rtv default displayserver –properties:sample** starts the Display Server. Use the **stop_rtv** script to stop Monitor applications.

6. Open a Web browser and browse to the following URL to open the Monitor:

   http://host:port/emsmon

   Where **host** is the IP or host name where your Application Server is running, **port** is the port used by your Application Server. The login display opens in the Web browser.

   Login. The default user name and password are:

   User Name: **admin**

   Password: **admin**

   The main Monitor display opens.

UNIX/Linux

1. Copy the **.war** files, located in the **rtvapm/emsmon/webapps** directory and deploy them to your Application Server.

2. Start your Application Server.

3. Initialize a terminal window. The script used to initialize a terminal window depends on whether you are in csh or rsh (e.g. Linux, Mac OS X). With a Bourne shell, open a terminal window, go to your Monitor installation directory and type:

   ../rtvapm_init.sh

4. Change directory (**cd**) to the **emsmon/projects/mysample** directory.

5. In the **projects/mysample** directory, start the Monitor applications by typing:

   start_rtv.sh default all –properties:sample

   where **–properties:sample** is the properties file in which you have configured your system.

NOTE: The **start_rtv.sh** default command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv.sh default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv.sh default dataserver –properties:sample** starts the Data Server, **start_rtv.sh default historian –properties:sample** starts the Historian and **start_rtv.sh default displayserver –properties:sample** starts the Display Server. Use the **stop_rtv.sh** script to stop Monitor applications.

6. Open a Web browser and browse to the following URL to open the Monitor:

   http://host:port/emsmon

   Where **host** is the IP or host name where your Application Server is running and **port** is the port used by your Application Server. The login display opens in the Web browser.

   Login. The default user name and password are:

   User Name: **demo**

   Password: **demo**

   The main Monitor display opens.

RTView Server Components as Windows Services

This section describes how to configure an RTView process (Data Server, Historian, Display Server) to run as a Windows service. To illustrate, we use the EMS Monitor in our examples.

To Configure the Data Server, Historian or Display Server to run as a Windows Service

1. Add the following lines to the **sample.properties** file.

```
##########################
# WINDOWS SERVICES
# Install EMS Monitor servers as Windows services
#
installservice.sl.rtview.cmd_line=-install_service
installservice.sl.rtview.cmd_line=-dir:%RTVAPM_STARTUP%
uninstallservice.sl.rtview.cmd_line=-uninstall_service
#
```

NOTE: The environment variable %RTVAPM_STARTUP% is set by run script to the directory where the script was started.

2. For each Windows service you want to create, add the following line and replace **name** with a name you choose for the service:

   name.sl.rtview.cmd_line=service:name

Note: Each service must have a unique name and the beginning of the property entered must match the name of the service.

For example, choose **EMSMonData** as the name for starting a Data Server as a Windows service and **EMSMonDisp** to indicate a name for starting a Display Server as a Windows service.

```
##########################
# WINDOWS SERVICES
# Install EMS Monitor servers as Windows services
#
installservice.sl.rtview.cmd_line=-install_service
installservice.sl.rtview.cmd_line=-dir:%RTVAPM_STARTUP%
uninstallservice.sl.rtview.cmd_line=-uninstall_service
EMSMonData.sl.rtview.cmd_line=-service:EMSMonData
EMSMonDisp.sl.rtview.cmd_line=-service:EMSMonDisp
#
```

To install and run

Execute the following scripts to start the service:

NOTE: These scripts must be run in an initialized command window.

rundata -propfilter:installservice -propfilter:EMSMonData

rundisp -propfilter:installservice -propfilter:EMSMonDisp

To uninstall

Execute the following scripts to uninstall the services:

NOTE: These scripts must be run in an initialized command window.

rundisp -propfilter:uninstallservice -propfilter:EMSMonDisp

rundata -propfilter:uninstallservice -propfilter:EMSMonData

Starting the Monitor

This section describes the basic workflow for starting the Monitor when using Tomcat as your application server.

UNIX/Linux:

1. Change directory (**cd**) to **rtvapm** directory (in your installation directory) and type the following to initialize the command window.

   ../rtvapm_init.sh

2. Navigate to **rtvapm/emsmon/projects/sample** and type the following to start all required EMSMON components:

   start_rtv.sh default all -properties:sample

NOTE: The **start_rtv.sh** default command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv.sh default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv.sh default dataserver –properties:sample** starts the Data Server, **start_rtv.sh default historian –properties:sample** starts the Historian and **start_rtv.sh default displayserver –properties:sample** starts the Display Server. Use the **stop_rtv.sh** script to stop Monitor applications.

3. Navigate to the **bin** directory (in your Tomcat installation directory) and type the following to start Tomcat:

   startup.sh

4. Open a browser and go to **localhost:8080/emsmon** (login ID/Password is **admin**/**admin**).

   The Monitor opens.

5. In the Monitor, go to **Administration>**"RTView Cache Tables" and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than zero). If not, there is a problem with the connection to the Data Server. See "Troubleshooting".

Windows

1. Change directory (**cd**) to **rtvapm** directory (in your installation directory) and type the following to initialize the command window.

   rtvapm_init.bat

2. Navigate to **rtvapm\emsmon\projects\sample** and type the following to start all required EMSMON components:

   start_rtv.bat default all -properties:sample

   NOTE: The **start_rtv.bat** default command starts all the Monitor applications at once. You can start each Monitor application individually: **start_rtv.bat default database** starts the default HSQLDB database (suitable for testing purposes), **start_rtv.bat default dataserver –properties:sample** starts the Data Server, **start_rtv.bat default historian –properties:sample** starts the Historian and **start_rtv.bat default displayserver –properties:sample** starts the Display Server. Use the **stop_rtv.bat** script to stop Monitor applications.

3. Navigate to the **bin** directory (in your Tomcat installation directory) and type the following to start Tomcat:

   startup.sh

4. Open a browser and go to **localhost:8080/emsmon** (login ID/Password is **admin**/**admin**).

   The Monitor opens.

5. In the Monitor, go to **Administration>**"RTView Cache Tables" and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than zero). If not, there is a problem with the connection to the Data Server. See "Troubleshooting".

Shutting Down the Monitor

This section describes the basic workflow for shutting down the Monitor when using Tomcat as your application server.

UNIX/Linux

1. Change directory (**cd**) to the **rtvapm** directory (in your installation directory).
2. Execute the following to stop all EMSMON processes:

   ../stop_rtv.sh all

   Optionally, you can use **grep** to ensure that all RTView-related services are stopped. Execute **ps –ef |grep rtv** to determine the Process Identifier of the processes still running and **kill -9 <ProcessId>** to terminate any that remain active.
3. Navigate to the command window in which Tomcat is running and press **Ctrl-c** to stop Tomcat.

Windows

1. Change directory (**cd**) to the **rtvapm** directory (in your installation directory).
2. Execute the following to stop all EMSMON processes:

   stop_rtv.bat all

   Optionally, you can use **Task Manager** to ensure that all RTView-related services are stopped. Open Task Manager and look for Java sessions with **hsqldb** or **rtv** in the execute statement and terminate any that remain active.
3. Navigate to the command window in which Tomcat is running and press **Ctrl-c** to stop Tomcat.

Troubleshooting

This section includes:

Log Files

When a Monitor component encounters an error, an error message is output to the console and/or to the corresponding log file. If you encounter issues, look for errors in the following log files, located in the **rtvapm/emsmon/projects/sample/logs** directory:

- **dataserver.log**
- **displayserver.log**
- **historian.log**

Logging is enabled by default. If you encounter issues with log files, verify the **logs** directory exists in the **rtvapm/emsmon/projects/sample/logs** directory.

JAVA_HOME

If the terminal window closes after executing the **start_rtv** command, verify that **JAVA_HOME** is set correctly.

Linux users: JAVA_HOME is required for Tomcat.

Permissions

If there are permissions-related errors in the response from the **start_rtv** command, check ownership of the directory structure.

Network/DNS

If any log file shows reference to an invalid URL, check your system's hosts file and check with your Network Administrator that your access to the remote system is not being blocked.

Verify Data Received from Data Server

1. In the Monitor, go to **Administration>**"RTView Cache Tables" and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than 0). If not, there is a problem with the connection to the Data Server. Continue to the next step.

2. Verify the connection parameters in your **sample.properties** file.

3. Shut down the monitor and all processes. See "Shutting Down the Monitor" for more information.

4. After all processes stop, start the monitor and all processes. See "Starting the Monitor" for more information.

5. In the Monitor, go to **Administration>**"RTView Cache Tables" and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than zero).

Verify Port Assignments

If the Viewer, Display Server or Historian fail to connect to the Data Server, or they receive no data, verify the ports are assigned correctly in your properties files and do the following:

1. Shut down the monitor and all processes. See "Shutting Down the Monitor" for more information.

2. After all processes stop, start the monitor and all processes. See "Starting the Monitor" for more information.

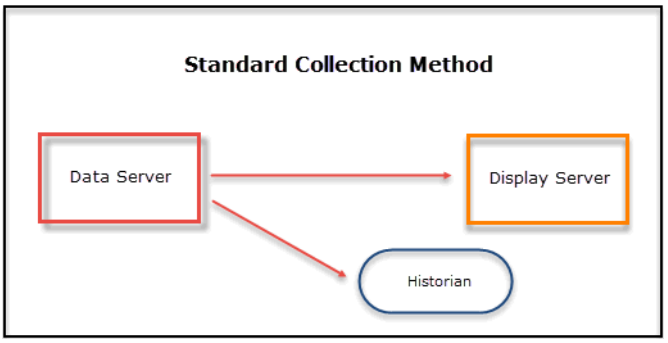
3. In the Monitor, go to **Administration>**"RTView Cache Tables" and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than zero). If not, there is a problem with the connection to the Data Server.

Restarting the Data Server

If the Viewer, the Display Server or the Historian fails to connect to the Data Server or receives no data, verify the ports are assigned correctly in your properties files and then restart the Data Server.

Sender/Receiver: Distributing the Load of Data Collection

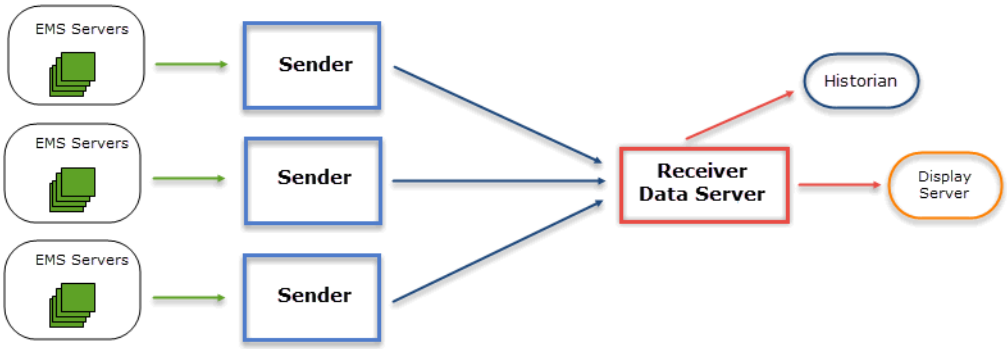
The standard method of collecting data involves one Data Server that sends the data to the Display Server and the Historian. For example:



This method is optimized to deliver data efficiently when large tables and high data volumes are involved. There is, however, an alternative method of collecting data: the Sender/Receiver Data Collection Method. This collection method allows you to configure EMS Monitor so that you have a Data Server (Receiver) that collects data from one or more remote Senders. This type of configuration could be useful in the following scenarios:

1. When dividing the collection load across different machines is more efficient

   In the Sender/Receiver Data Collection Method, the Senders are configured as lightweight Data Servers without history being configured and whose primary purpose is to collect and aggregate data from their respective local EMS Servers that they then send to the full-featured Data Server (Receiver). The benefit of this type of configuration comes from balancing the load of the data collection. The Senders collect data exclusively from the EMS Servers in their network and send the data to the Receiver, which collects the data and sends it to the EMS Monitor Display Server, the Historian, and the Viewer. The following illustration provides one configuration example:

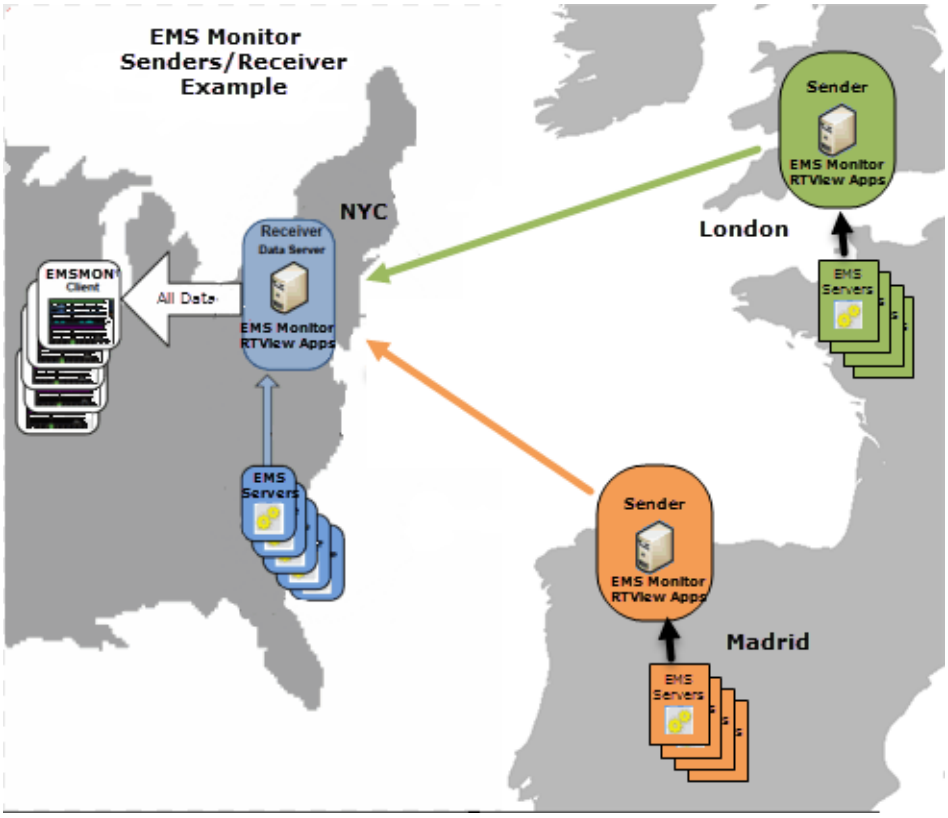


2. When firewall limitations prevent the Receiver Data Server from receiving data directly, Senders behind the firewall can be configured to send data to the Receiver

   In the Standard Collection Method, the client must specify the network address of the Data Server to which it wants to connect, which might not be allowed due to security restrictions. In these situations, the Sender/Receiver Collection Method could be considered since the Receiver does not need to know the network addresses of the Senders because it simply opens the port and passively receives data from any defined Sender.

Example

The following example contains Senders in London and Madrid that collect data from their associated EMS Servers and send the data to a Receiver Data Server in New York City. The Receiver takes the collected data from London and Madrid along with data collected from its own associated EMS Servers and sends it to the EMS Monitor displays.



Receiver Data Server -- NYC	Sender -- London	Sender -- Madrid
• Automatically detects and gathers data from its local EMS Servers. • Receives data from London and Madrid Senders. • Aggregates data. • Provides data to the EMS Monitor displays.	• Automatically detects and gathers data from its local EMS servers. • Sends data to the NYC Data Server.	• Automatically detects and gathers data from its local EMS Servers. • Sends data to the NYC Data Server.

Setting Up the Sender/Receiver Configuration

The following steps outline the workflow for setting up a Sender/Receiver configuration:

Sender

1. In your project directory, add all of the EMS Servers to which you want to connect in the **servers.xml** file.

2. Rename the **sample.properties** file to something meaningful to you (for example, **mysample.properties**).

3. Verify that your **servers.xml** file location is specified in your **mysample.properties** file.

4. On each host where you want to configure a sender, verify that you can collect data from your local EMS Servers by starting the viewer using:

   runv -properties:mysample

   Verify that each **servers.xml** file on each host only lists the EMS Servers that are locally accessible. See **Configure Data Collection** for more information.

Note: Make sure all Senders are correctly configured so that they only collect data from their local connections. Incorrect configurations could lead to impaired performance.

---

5. If the data is being collected correctly, add the following to the **mysample.properties** file:

   sender.sl.rtview.sub=$rtvAgentTarget:'[IPofReceiver]:3172'

   sender.sl.rtview.sub=$rtvAgentName:[AgentName]

   where

   IPofReceiver = actual hostname or IP address of the Receiver's system

   and

   AgentName = name descriptive of the Sender's location

6. To start the Sender, add the **propfilter** and **properties** arguments as such:

   rundata -propfilter:sender -properties:mysample

7. Repeat Step 6 for each host where you want to execute a Sender to collect EMS data.

   You can name all your sender properties files the same (for example, **mysample.properties** and **servers.xml**) on each host, thus allowing you to execute Senders the same way. You will only need to modify the **$rtvAgentName** in the **mysample.properties** file and the list of EMS Servers in the **servers.xml** file for each host.

Receiver

1. If the Receiver has local connections to EMS Servers, you will need to add the servers to the **servers.xml** file and make sure the file location of the **servers.xml** file is specified in the **mysample.properties** file.

2. Run the Receiver Data Server with the properties file:

   rundata -propfilter:receiver -properties:mysample

   Typically, Receiver Data Servers do not have any local EMS Server connections and, hence, can be run without the properties argument. For example:

   rundata -propfilter:receiver

CHAPTER 5 Using the Monitor

This section describes how to read and use Monitor displays. This section includes:

Overview

This section describes the general operation of the EMS Monitor and the user interface. This section includes:

- "Monitor Main Display" on page 57: Describes the EMS Monitor display that opens by default as well as the navigation tree.
- "Heatmaps" on page 59: Describes how to read heatmaps.
- "Tables" on page 61: Describes how to read tables.
- "Trend Graphs" on page 66: Describes how to read trend graphs.
- "Title Bar Functionality" on page 67: Describes the top layer of the title bar shared by EMS Monitor displays.
- "Export Report" on page 68: Allows you to quickly export reports for displays, or for tables and grid objects in a display, to a PDF file.

Monitor Main Display

The **All Servers Heatmap** is the default display of the EMS Monitor. This color-coded heatmap provides a good starting point for immediately getting the status of all your Data Servers.

Note: Typically, it takes about 30 seconds after a server is started to appear in an EMS Monitor display. By default, data is collected every 15 seconds, and the display is refreshed 15 seconds after that.

Each rectangle (node) in the heatmap represents a server, where color is representative of the selected **Metric**. Click on a node to drill down to the "Single Server Summary" display to view detailed performance metrics for a specific server. Mouse-over nodes to view details about server performance and status. Or, you can use the **Table** (convenience button) to see details for all servers.

To illustrate how the Monitor main page might be used, let us use a commonly encountered EMS issue as an example. If a consumer connection is lost but remains registered as a durable, messages being sent to the consumer start getting backed up. The messages are stored in memory, causing the **messageMemoryPct** value (the amount of memory used by messages on the server) to gradually increase. When it reaches 100% data starts getting lost. This type of issue is clearly visible in the Monitor--before it becomes an issue--when you select the **All Pending Messages** view in the Monitor main page.

Navigation Tree

The EMS Monitor navigation tree (in the left panel) is organized as follows:

- "All EMS Servers": The displays in this section present performance metrics and the most critical alert status for all EMS Servers in various formats, including a heatmap, a table, a grid and a topological map.
- "Single EMS Server": The displays in this section present detailed performance metrics and connection information for a specific EMS Server.
- "EMS Topics": The displays in this section present several views of performance metrics for destinations, including views by destination and views by server.
- "EMS Clients": The displays in this section present performance metrics for all server connections, including users, routes between servers, producers, consumers and durables connected to a specific EMS Server.
- "Alert Views": The display in this section presents the status of all alerts across all EMS Servers, and allows you to track, manage and assign alerts.
- "Administration": The displays in this section enable you to set global alerts and override alerts. You can also view internal data gathered and stored by RTView (used for troubleshooting with SL Technical Support).
- "RTView Servers View": The displays in this section enable you to view performance metrics gathered by RTView, and monitor all RTView Servers.

Heatmaps

Heatmaps organize your EMS resources (servers, topics, queues, consumers, and producers) into rectangles and use color to highlight the most critical value in each. Heatmaps enable you to view various alert metrics in the same heatmap using drop-down menus. Each metric has a color gradient bar that maps relative values to colors. In most heatmaps, the rectangle size represents the number of EMS resources in the rectangle; a larger size is a larger value. Heatmaps include drop-down menus to filter data by. The filtering options vary among heatmaps.

For example, the **All Servers Heatmap** (shown above) contains a **Metric** drop-down menu with options to show **Alert Severity**, **Alert Count**, **Connections**, **Pending Messages**, as well as other metrics. Menu options vary according to the data populating the heatmap. **Alert Severity** is selected and its corresponding color gradient  bar is shown. Each rectangle represents an EMS Server. A red rectangle in the heatmap indicates that one or more resources associated with that EMS Server currently has an alert in an alarm state. The yellow rectangles in the heatmap indicate that one or more resources associated with that EMS Server currently have an alert in a warning state. A green rectangle would indicate that no alert is in a warning or alarm state.

In most heatmaps, you can also drill-down to more detail by clicking a rectangle in the heatmap. Or, open a new window by using the ✚ button and then drill-down. The drill-down opens a display that contains relevant and more detailed data.

As previously mentioned, each Metric drop-down menu option has a color gradient bar that maps relative values to colors. The following summarizes the heatmap color code translation for typical heatmaps:

Alert Impact

The product of the maximum **Alert Severity** multiplied by the maximum **Criticality** of alerts in a given heatmap rectangle. Values range from **0 - 10**, as indicated in the color gradient bar, where **10** is the highest **Alert Impact**.

Alert Severity

The maximum alert level in the item (index) associated with the rectangle. Values range from **0 - 2**, as indicated in the color gradient bar, where **2** is the highest Alert **Severity.**

-- Metrics that have exceeded their specified **ALARM LEVEL** threshold have an **Alert Severity** value of **2**. For a given rectangle, this indicates that one or more metrics have reached their alert thresholds.

-- Metrics that have exceeded their specified **WARNING LEVEL** threshold have an **Alert Severity** value of **1**. For a given rectangle, this indicates that one or more metrics have reached their warning thresholds.

-- Metrics that have not exceeded either specified threshold have an **Alert Severity** value of **0**. For a given rectangle, this indicates that no metrics have reached their warning or alert thresholds.

Alert Count

The total number of critical and warning alerts in a given item (index) associated with the rectangle. The color gradient bar  numerical values range from **0** to the maximum count of alerts currently in the heatmap. The middle value in the gradient bar indicates the average alert count.

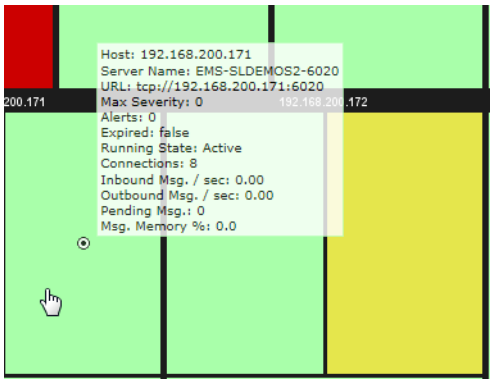
Criticality

The maximum level of **Criticality** (rank of importance) in a given item (index) associated with the rectangle. Values range from **0** to **5**, as indicated in the color gradient bar,  where **5** is the highest Criticality.

Criticality is specified in the Service Data Model by your administrator. **Criticality** values range from **A** to **E**, where **A** is the highest Criticality (level **5** maps to a Criticality of **A** and level **1** maps to a **Criticality** of **E** with equally spaced intermediate values).

Mouse-over

The mouse-over functionality provides additional detailed data in a tooltip when you mouse-over a heatmap. The following figure illustrates mouse-over functionality in a heatmap object. In this example, when you mouse-over a host, details are shown such as alert count, number of connections, and pending messages.



Log Scale

Typically, heat maps provide the Log Scale option, which enables visualization on a logarithmic scale. This option should be used when the range in your data is very broad. For example, if you have data that ranges from the tens to the thousands, then data in the range of tens will be neglected visually if you do not check this option. This option makes data on both extreme ranges visible by using the logarithmic of the values rather than the actual values.

Tables

EMS Monitor tables contain the same data that is shown in the heatmap in the same View. Tables provide you a text and numeric view of the data shown in that heatmap, and additional data not included the heatmap. For example, the **All Servers Table** display (shown below) shows the same data as the **All Servers Heatmap** display (shown above).

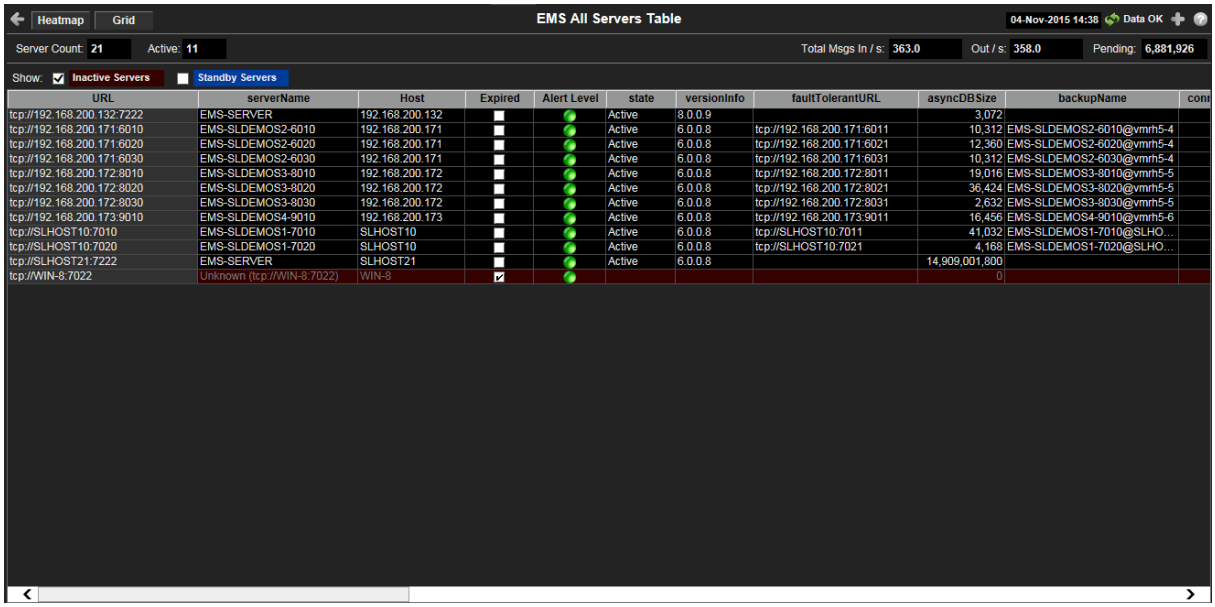


Table rows also sometimes use color to indicate the current most critical alert state for all resources associated with a given row. For example, the color coding is typically as follows:

-- One or more alerts exceeded their critical threshold for one or more associated resources.

--One or more alerts exceeded their warning threshold for one or more associated resources.

Tables support advanced HTML, interactive features: sorting on multiple columns, filtering on multiple columns, column resizing, column reordering, and hiding columns. Many of these features are accessed from the column menu, shown in the screen shot above, which you open by clicking on the menu icon in a column's header.

Additional features are:

- “Multiple Column Sorting,” next
- “Column Visibility” on page 62
- “Column Filtering” on page 62
- “Column Locking” on page 64

Multiple Column Sorting

Click on a column header to sort the table by that column. On the first click, the column is sorted in ascending order (smallest value at the top), on the second click the sort is in descending order, and on the third click, the column is returned to its original unsorted state. A sort on a string column is case-insensitive.

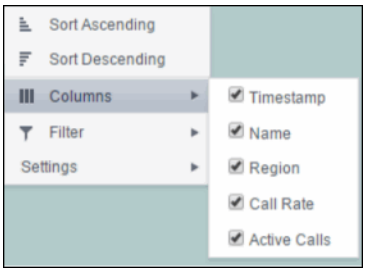
To sort multiple columns, click on the column header for each column you want to sort. The sorting is performed in the order that the column headers were clicked. Multiple column sorting is a very useful feature, but can also cause confusion if you intend to sort on a single column, but forget to "unsort" any previously selected sort columns first. You should check for the up/down sort icon in other column headers if a sort gives unexpected results.

The grid's row selection is cleared if the sort is changed or if columns are resized or reordered.

Column sorting is reflected in an export to HTML and Excel.

Column Visibility

You can hide or show columns in the table by clicking on any column's menu icon, and choosing **Columns** from the menu. This opens a submenu with a check box for each column that toggles the visibility of the column. All columns in the data table appear in the Columns menu, even those that are initially hidden.



The leftmost column (the row header column) cannot be hidden.

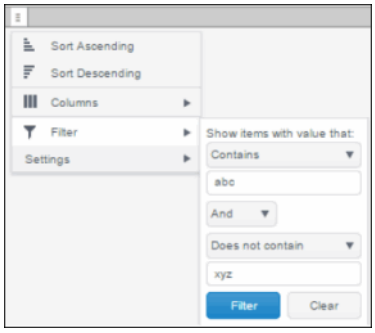
Column visibility changes are NOT reflected in an export to HTML and Excel.

Column Filtering

You can create a filter on any column. If filters are created on multiple columns, then only the rows that pass all of the filters are displayed. That is, if there are multiple filters they are logically "ANDed" together to produce the final result.

The background of a column's menu icon changes to white to indicate that a filter is defined on that column. This is intended to remind you which columns are filtered.

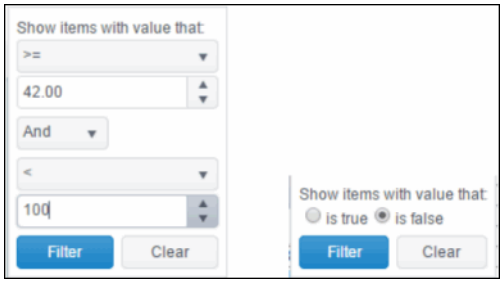
You can configure a filter on any column by clicking on the column's menu icon and choosing **Filter** from the menu. This opens the **Column Filter** dialog:



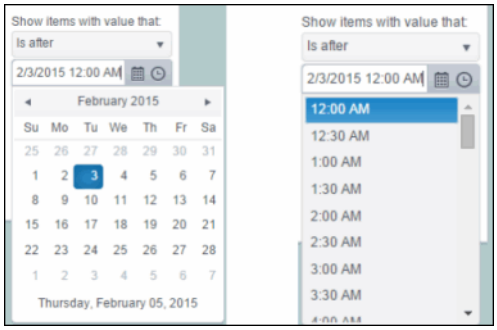
Options in the **Column Filter** dialog vary according to the data type of the selected column:

- **String columns**: You can enter a filter string such as "abc" and, from the dropdown list, select the operator (equal to, not equal to, starts with, contains, etc) to be used when comparing the filter string to each string in the column. All of the filter comparisons on strings are case-insensitive. You can optionally enter a second filter string (e.g. "xyz") and specify if an AND or OR combination should be used to combine the first and second filter results on the column.
- **Numeric columns**: You can enter numeric filter values and select arithmetic comparison operators, (=, !=, >, >=, <, <=). You can optionally enter a second filter value and comparison operator, and specify if an AND or OR combination should be used to combine the first and second filter results.
- **Boolean columns**: You simply select whether matching items should be true or false.

The numeric and boolean filter dialogs are shown below.



- **Date columns**: You can select a date and time and choose whether matching items should have a timestamp that is the same as, before, or after the filter time. The date is selected by clicking on the calendar icon and picking a date from a calendar dialog. The time is selected by clicking on the time icon and picking a time from a dropdown list:



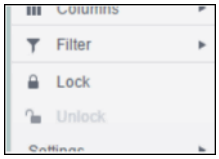
  Alternatively, a date and time can be typed into the edit box. The strings shown in a date column are formatted by the Display Server using its time zone. But if a filter is specified on a date column, the date and time for the filter are computed using the client system's time zone. This can be confusing if the Display Server and client are in different time zones.

Data updates to the grid are suspended while the filter menu is opened. The updates are applied when the menu is closed.

Column filtering is reflected in an export to HTML and Excel.

Column Locking

The leftmost column is "locked" in position, meaning that it does not scroll horizontally with the other columns in the table. If the row header is enabled, then two items labeled **Lock** and **Unlock** appear in the column menu. These can be used to add or remove additional columns from the non-scrolling row header area.



If the row header is enabled, at least one column must remain locked.

Column locking is NOT reflected in an export to HTML and Excel.

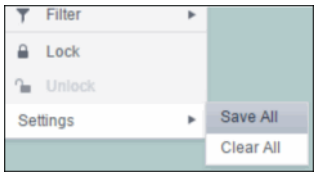
Column Reordering

You can reorder the grid columns by dragging and dropping a column's header into another position. Dragging a column into or out of the row header area (the leftmost columns) is equivalent to locking or unlocking the column.

Column reordering is NOT reflected in an export to HTML and Excel.

Saving Settings

You can permanently save all of the custom settings made to the grid, including filtering, sorting, column size (width), column order, column visibility, and column locking. This is done by opening any column menu, clicking **Settings**, and then clicking **Save All**:



The grid's settings are written as an item in the browser's local storage. The item's value is a string containing the grid's settings. The item uses a unique key comprised of the URL path name, the display name, and the table's RTView object name. If the Thin Client's login feature is enabled, the key will also include the username and role, so different settings can be saved for each user and role for a grid on any given display, in the same browser and host.

If you save the grid settings and navigate away from the display or close the browser, then the next time you return to the display in the same browser the settings are retrieved from the browser's local storage and applied to the grid. The browser's local storage items are persistent, so the grid settings are preserved if the browser is closed and reopened or if the host system is restarted.

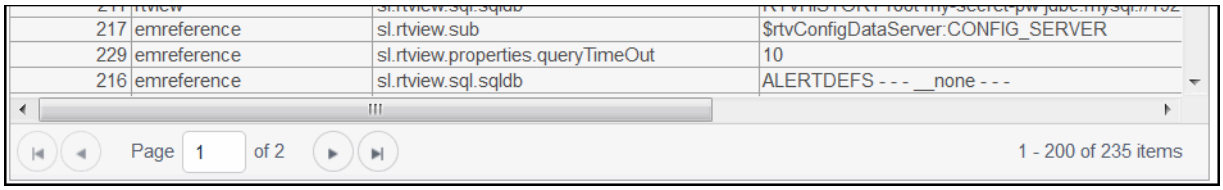
Note that each browser has its own local storage on each host. The local storage items are not shared between browsers on the same host or on different hosts. So, if a user logs in as Joe with **role = admin**, in Internet Explorer on host H1, and saves grid settings for display X, then those grid settings are restored each time a user logs in as Joe, role admin, on host H1 and opens display X in Internet Explorer. But if all the same is true except that the browser is Chrome, then the settings saved in Internet Explorer are not applied. Or if the user is Joe and role is admin and the browser is IE and the display is X, but the host system is H2 not H1, then the grid settings saved on H1 are not applied.

Revert Table Settings

You can delete the grid's item from local storage by clicking **Settings> Clear All** in any column menu. This permanently deletes the saved settings for the grid and returns the grid to the state defined in the display file.

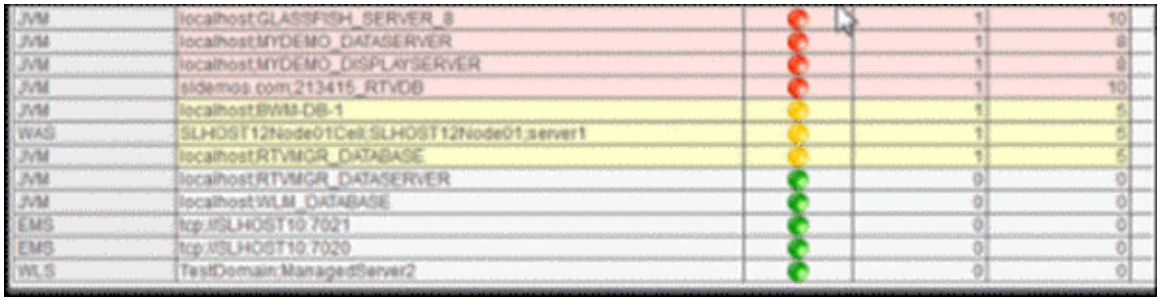
Row Paging

If the data table contains more than one 200 rows, page controls appear at the bottom of the grid.



Row Color Code

Table rows sometimes use color to indicate the current most critical alert state for all CIs associated with the row. In this example, the **Severity Level** column is sorted in descending order (from high to low values).



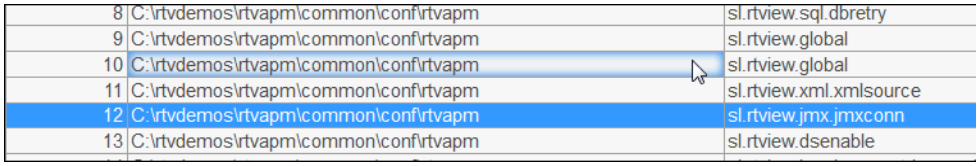
The yellow row color indicates that one or more alerts exceeded their warning threshold for one or more CIs associated with the Service. The red row color indicates that one or more alerts exceeded their critical threshold for the CI associated with the Service (in this case there is a single CI). To summarize:

Row Color Code:
Tables with colored rows indicate the following:

- Red indicates that one or more alerts exceeded their ALARM LEVEL threshold in the table row.
- Yellow indicates that one or more alerts exceeded their WARNING LEVEL threshold in the table row.
- Green indicates that no alerts exceeded their WARNING or ALARM LEVEL threshold in the table row.

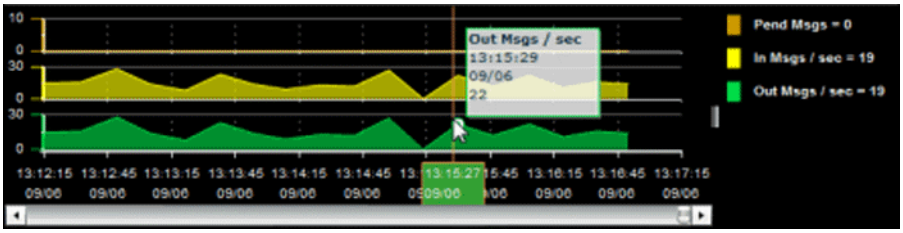
Row Keyboard Selection

You can use the mouse to select a row and use the arrow keys to change the focus (highlighted) row, but to select the focus row, you must then press the space bar.



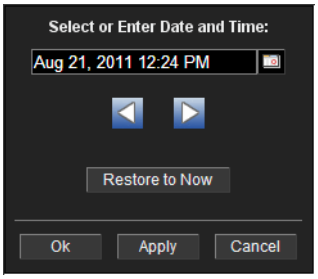
Trend Graphs

EMS Monitor trend graphs enable you to view and compare various important metrics over time, such as server memory and virtual memory utilization.



Time Range

Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. By default, the time range end point is the current time.



To change the time range click Open Calendar , choose the date and time, then click **OK**. Or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM:ss**. For example, Aug 21, 2011 12:24 PM. Click **Apply**. Use the Navigation Arrows to move forward or backward one time period (the time period selected from the Time Range drop-down menu). Click **Restore to Now** to reset the time range end point to the current time.

Mouse-over

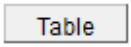
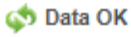
The mouse-over functionality provides additional detailed data in a tooltip when you mouse-over trend graphs. The above figure illustrates mouse-over functionality. In the example above, when you mouse-over a single dot, or data point, in the Out Msgs / sec trend graph, a pop-up window shows data for that data point. In this case, the X-axis value is 13:15:29 hours on September 6th, and the Y-axis value is 22 Outbound messages per second.

Title Bar Functionality

Displays share the same top layer in the title bar, as shown and described below.

The following table describes the functionality in the display title bar.

	Opens the previous display.
	Opens the display that is up one level.

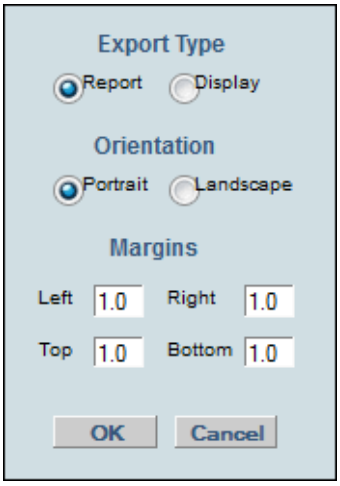
	Navigates to a display that is most commonly accessed from the current display. The target display differs among displays.
	Navigates to displays that are most commonly accessed from the current display. The drop-down menu options differ among displays.
	Opens the Alerts Table display in a new window.
	The current date and time. If the time is incorrect, this might indicate that RTView stopped running. When the date and time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.
	The data connection state. Red indicates the data source is disconnected (for example, if the Data Server is not receiving data, or if the Display Server does not receive data from the Data Server, this will be red). Green indicates the data source is connected. When the date and time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.
	The number of items currently in the display.
	Opens an instance of the same display in a new window. Each window operates independently, allowing you to switch views, navigate to other displays in RTView EM, and compare server performance data.
	Opens the online help page for the current display.

Export Report

You can quickly export reports for displays, or for tables and grid objects in a display, to a PDF file.

To generate a report for a display:

Right-click on the display and select **Export PDF**. The **Export to PDF** dialog opens.

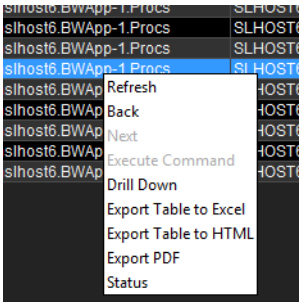


Set the margins and choose the **Export Type**:

- **Report**: Generates an image of the display on the first page, followed by at least one page for each table or object grid in the display. As many pages as are necessary to show all the data in each table or object grid are included in the report. This enables you to view all data in a table or object grid that you otherwise must use a scrollbar to see. If there are no tables or object grids in your display, you only get a image of the display.
- **Display**: Generates an image of the display in PDF format.Choose the page orientation (**Portrait** or **Landscape**), set the page margins and click **OK**. The report opens in a new window.

To generate a report for a table or grid object in a display:

Right-click on the table or grid object and choose **Export PDF**, **Export Table to Excel** or **Export Table to HTML**.



EMS Monitor Views/Displays

This section includes descriptions of the EMS Monitor Views and their associated displays.

- "All EMS Servers"
- "Single EMS Server"
- "EMS Topics"
- "EMS Queues"
- "EMS Clients"
- "Alert Views"
- "Administration"
- "RTView Servers View"

All EMS Servers

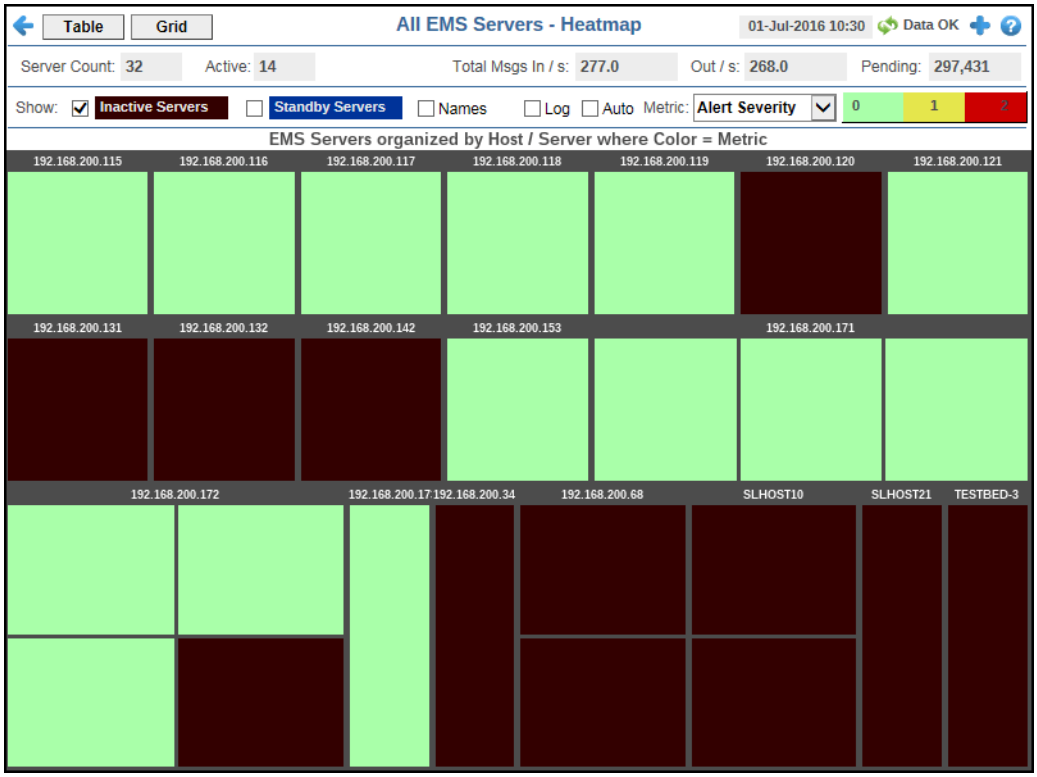
These displays present performance metrics and alert status for all EMS servers. The first three displays show different views of the same data:

- "All Servers Heatmap": Heatmap shows server and alert status for all EMS servers.
- "All Servers Table": Table shows all available utilization metrics for all EMS servers.
- "All Servers Grid": Grid enables you to see general performance of EMS servers in parallel. If you have few servers, this display is useful for verifying servers are active and generally performing as expected.
- "All Servers Topology": Topology of server routes and connections, as well as the status of active servers and standby servers that form a fault-tolerant pair.

All Servers Heatmap

View status and alerts of all EMS servers. Use the **Metric** drop-down menu to view the **Alert Severity**, **Alert Count**, **Connections**, **Pending Messages**, **Inbound Message Rate**, **Outbound Message Rate**, or **Message Memory Percent (%)**.

The heatmap is organized by host, each rectangle representing a server. The rectangle color indicates the most critical alert state. Click on a node to drill-down to the Single Server Summary display and view metrics for a particular server. Toggle between the commonly accessed **Table**, **Grid**, and **Heatmap** displays. Mouse-over rectangles to view more details about host performance and status.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

Server Count		The total number of active, inactive, and standby EMS servers.
Active		The total number of currently active EMS servers.
Total Msgs In / s	**In / s**	The total number of inbound messages, per second, from all producers and consumers on all EMS servers.
	Out / s	The total number of outbound messages, per second, from all producers and consumers on all EMS servers.
	Pending	The total number of pending messages waiting to be processed on all EMS servers. Click to open the "All Servers Table" display.
Show		Select the type of servers for which to display data. By default, all active servers are displayed.

Inactive Servers Select to include servers that are not currently running. **Inactive Servers** are represented in dark red.

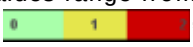
Standby Servers Select to include servers that are currently in Standby mode. Standby Servers are represented in blue.

Names Select to display the names of servers on the hosts.

Log This option enables visualization on a logarithmic scale, and should be used when the range in your data is very broad. For example, if you have data that ranges from the tens to the thousands, then data in the range of tens will be neglected visually if you do not check this option. This option makes data on both extreme ranges visible by using the logarithmic of the values rather than the actual values.

Auto When checked, the values of the selected metric are auto-scaled to its highest defined value. When unchecked, the values of the selected metric display based on the threshold defined for the alert associated with the selected metric. Selecting Auto helps to visualize the range of the values currently present for the selected metric instead of the threshold of the alert that has been associated with the metric. All metrics that have not been associated in the heatmap defaults with alerts use a monochromatic color gradient bar (whites and greens). All metrics that have been associated in the heatmap defaults with alerts use a multi-chromatic color gradient bar (reds, yellows, white, and greens).

Metric Select the metric driving the heatmap display. The default is Alert Severity. Each **Metric** has a color gradient bar that maps values to colors. The heatmap organizes the servers by host, where each rectangle represents a server. Mouse-over any rectangle to display the current values of the metrics for the Server. Click on a rectangle to drill-down to the associated "Single Server Summary" display for a detailed view of metrics for that particular server.

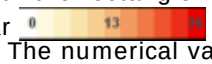
Alert Severity The maximum alert level in the item (index) associated with the rectangle. Values range from **0** to **2**, as indicated in the color gradient bar  , where **2** is the greatest **Alert Severity**.

2 -- Metrics that have exceeded their specified **ALARMLEVEL** threshold and have an Alert Severity value of **2** are shown in red. For a given rectangle, this indicates that one or more metrics have exceeded their alarm threshold.

1 -- Metrics that have exceeded their specified **WARNINGLEVEL** threshold and have an Alert Severity value of **1** are shown in yellow. For a given rectangle, this indicates that one or more metrics have exceeded their warning threshold.

0 -- Metrics that have not exceeded either specified threshold have an Alert Severity value of **0** and are shown in green. For a given rectangle, this indicates that no metrics have exceeded a specified alert threshold.

Alert Count The total number of alarm and warning alerts in a given item (index) associated with the rectangle.

The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Connections The total number of connections in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of connections in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

Pend Messages The total number of pending messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsServerPendingMsgsHigh**, which is **3500**. The middle value in the gradient bar indicates the middle value of the range (the default is **1750**).

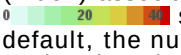
When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

In Msg Rate The total number of inbound messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsServerInMsgRateHigh**, which is **40**. The middle value in the gradient bar indicates the middle value of the range (the default is **20**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Out Msg Rate The total number of outbound messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsServerOutMsgRateHigh**, which is **40**. The middle value in the gradient bar indicates the middle value of the range (the default is **20**).

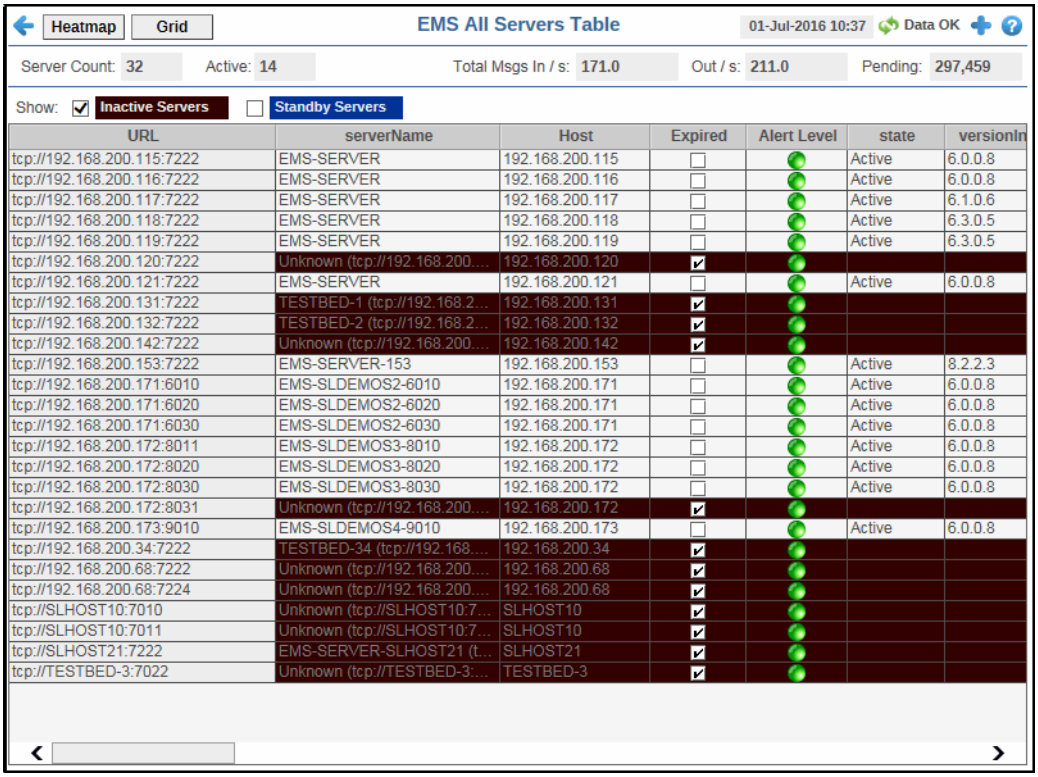
When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Mem Msg % The percent (%) memory used by messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsServerMemUsedHigh**, which is **40**. The middle value in the gradient bar indicates the middle value of the range (the default is **20**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

All Servers Table

Investigate detailed utilization metrics for all EMS servers. The **All Servers Table** contains all metrics available for servers, including the number of current client connections. Each row in the table contains data for a particular server. Click a column header to sort column data in numerical or alphabetical order. Click on a table row to drill-down to the "Single Server Summary" display and view metrics for that particular server. Toggle between the commonly accessed **Table**, **Grid**, and **Heatmap** displays.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

Server Count The total number of active, inactive and standby EMS servers. **Inactive Servers** are represented in dark red. **Standby Servers** are represented in blue.

Active The total number of currently active EMS servers.

Total Msgs

In/s The total number of inbound messages, per second, from all producers and consumers on all EMS servers.

Out/s The total number of outbound messages, per second, from all producers and consumers on all EMS servers.

Pending The total number of inbound and outbound messages waiting to be processed on all EMS servers.

Show Select the type of servers to display data for. By default, all active servers are displayed.

Inactive Servers	Select to include servers that are not processing requests in the table. **Inactive Servers** are represented in dark red.
Standby Servers	Select to include servers that are not currently running. **Standby Servers** are represented in blue.

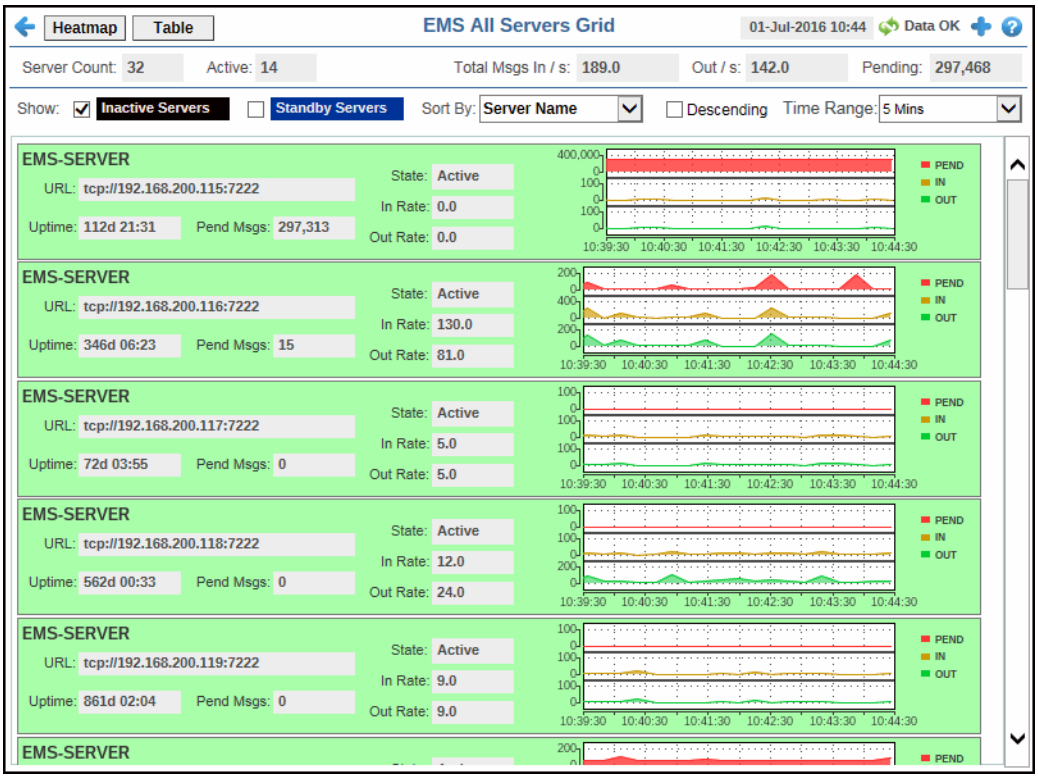
Table This table shows information for all EMS servers. Click on a table row to drill-down to the "Single Server Summary" display and view metrics for that particular server.

URL	Select to include servers that are currently in Standby mode. **Standby Servers** are represented in blue.
serverName	The name of the server.
Host	The name or IP address for the host server.
Expired	Data has not been received from this server in the specified amount of time. The server will be removed from the EMS Monitor per the specified amount of time. The default setting is **35** seconds.
Alert Level	The maximum alert level in the item (index) associated with the rectangle. Values range from 0 to 2, as indicated in the color gradient bar, where **2** is the greatest Alert Severity. -- One or more alerts have exceeded their specified **ALARMLEVEL** threshold, have an Alert Severity value of **2**, and are shown in red. -- One or more alerts have exceeded their specified **WARNINGLEVEL** threshold, have an Alert Severity value of **1**, and are shown in yellow. -- No alerts have exceeded an alert threshold, which have an Alert Severity value of **0**, and are shown in green.
state	The server status: **Active** -- The server is currently processing requests. **Inactive** -- The server is not currently processing requests. **Inactive Servers** are represented in dark red. **Standby** -- The server is functioning as a backup for a primary server. **Standby Servers** are represented in blue.
versionInfo	The TIBCO EMS software version currently running.
faultTolerantURL	The IP address and port number for the source (application, server, and so forth) associated with the alert.
asyncDBsize	The amount of database space, in bytes, occupied by asynchronous data on the server.
backupName	The name of the backup server assigned as the backup to this server.
connectionCount	The number of clients currently connected to the server.
diskReadRate	The speed at which the server reads disk data.
diskWriteRate	The speed at which the server writes data to disk.

durableCount	The number of durables on the server.
inboundBytesRate	The rate of inbound messages in bytes per second.
inboundMessageCount	The number of inbound messages received by the server since the server was started.
inboundMessageRate	The rate of inbound messages in number of messages per second.
MaxMessageMemory	The maximum amount of memory, in bytes, allocated for use by messages on the server.
messageMemory	The amount of memory, in bytes, currently used by messages on the server.
messageMemoryPct	The amount of memory, in percent, used by messages on the server.
messageMemoryPooled	The currently allocated pool size, in bytes, for messages.
outboundBytesRate	The rate of outbound messages in bytes per second.
outboundMessageCount	The number of outbound messages sent by the server since the server was started.
outboundMessageRate	The rate of outbound messages in number of messages per second.
pendingMessageCount	The number of currently pending messages on the server.
pendingMessageSize	The amount of space, in bytes, pending messages use on the server.
processId	The process ID of the EMS server.
queueCount	The number of message queues.
startTime	The date and time that the server was started.
syncDBSize	The amount of database space, in bytes, occupied by synchronous data on the server.
topicCount	The number of currently active topics on the server.
upTime	The amount of time, in milliseconds, since the server was started.
time_stamp	The date and time this row of data was last updated.

All Servers Grid

Track and view in parallel the general performance of all EMS servers. Click on a node to drill-down to the "Single Server Summary" display and view detailed metrics for that particular server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

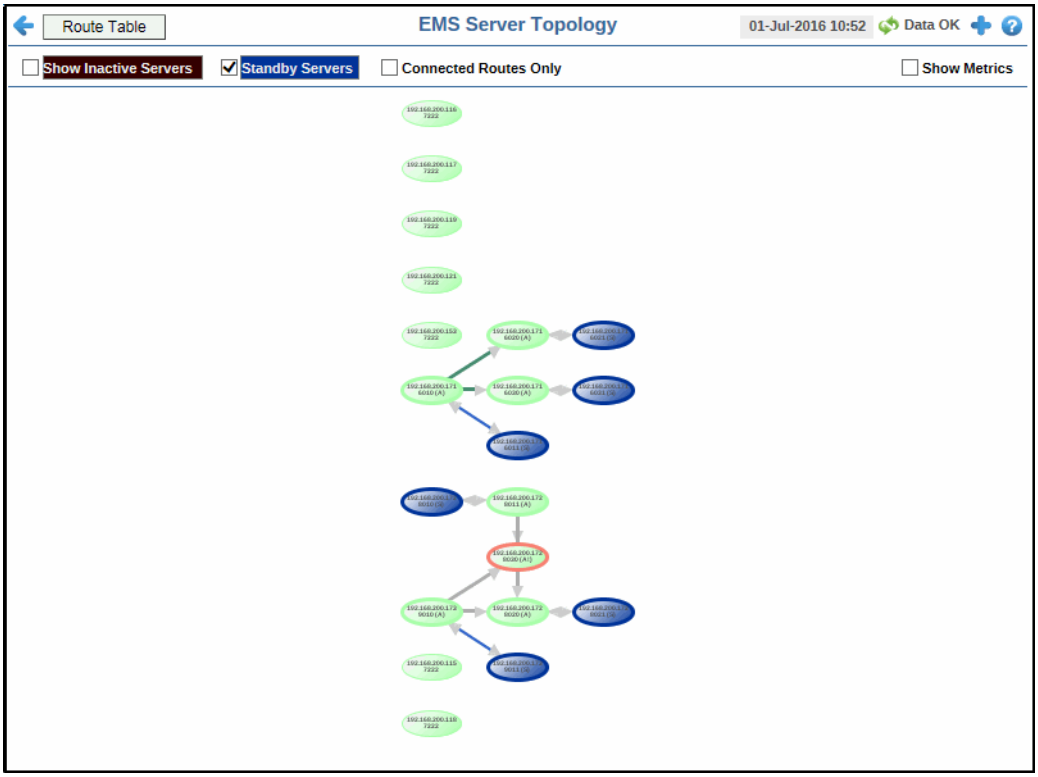
This display includes:

Server Count	The total number of active, inactive and standby EMS servers. Inactive Servers are represented in dark red. Standby Servers are represented in blue.
Active	The total number of currently active EMS servers.

Total Msgs	**In/s**	The total number of inbound messages, per second, from all producers and consumers on all EMS servers.
	Out/s	The total number of outbound messages, per second, from all producers and consumers on all EMS servers.
	Pending	The total number of inbound and outbound messages waiting to be processed on all EMS servers. Click to open the "All Servers Table" display.
Show	Select the type of servers to display data for. By default, all active servers are displayed.	
	Inactive Servers	Select to include servers that are not processing requests in the table. **Inactive Servers** are represented in dark red.
	Standby Servers	Select to include servers that are not currently running. **Standby Servers** are represented in blue.
Sort By	**Server Name**	Select to organize the servers in the grid by server name.
	Server URL	Select to organize the servers in the grid by server URL.
Descending	When checked, lists servers in the grid in descending order.	
Time Range	Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**.	
Grid	**Server Name**	The name of the server.
	URL	The URL for the server.
	Uptime	The amount of time, in milliseconds, since the server was started.
	Pend Msgs	The number of currently pending messages on the server.
	State	The server status: **Active** -- The server is currently processing requests. **Inactive** -- The server is not currently processing requests. Inactive Servers are represented in dark red. **Standby** -- The server is functioning as a backup for a primary server. Standby Servers are represented in blue.
	In Rate	The rate of inbound messages in messages per second.
	Out Rate	The rate of outbound messages in messages per second.
	Trend Graphs	Shows message data for the server. **Pend** -- Traces the total number of pending messages on the server. **In** -- Traces the rate of inbound messages in messages per second. **Out** -- Traces the rate of outbound messages in messages per second.

All Servers Topology

View a server topology map for all EMS servers. Click on a node to drill-down to the "Single Server Summary" display and view metrics for that particular server.



Title Bar (possible features are):

- Open the previous and upper display.
- Menu and Table open commonly accessed displays.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
- Open the **Alert Views - RTView Alerts Table** display.
- Open an instance of this display in a new window.
- Open the online help page for this display.

Note: Clicking the **Route Table** button displays the **EMS Server Route Table** window. See "EMS Server Route Table" for more information.

Fields and Data

This display includes:

Show

The total number of active, inactive and standby EMS servers. Inactive Servers are represented in dark red. Standby Servers are represented in blue.

Inactive Servers Select to show servers that are not processing requests in the topology. Inactive Servers are represented in dark red.

Standby Servers Select to show servers that are not processing requests in the topology. Standby Servers are represented in blue.

Connected Routes Only Select to show only routes that have an active connection.

Show Metrics

Available on desktop application deployments only. Shows the total input message rates, per second, on the top of each server icon and the total output message rate on the bottom of each server icon.

Topology

Routes are shown between the active server and the standby server, which form a fault-tolerant pair. Either of the servers in a fault-tolerant pair can become the active server or the standby server. **Show Standby Servers** and **Show Inactive Servers** enable you to include or exclude standby and inactive servers. **Inactive Servers** are represented in dark red. **Standby Servers** are represented in blue. By default, standby servers are included in the topology and inactive servers are not.

Typically, it takes about 30 seconds for a server to appear in the display after startup.

The active server in a fault-tolerant pair appears in green with the suffix (**A**) appended to its URL. The standby server appears in blue, with the suffix (**S**) appended to its URL. Their link is blue and labeled **FT**.

If the active server fails:

- the failed server becomes inactive, its suffix changes to (**X!**), and the node turns red with a red outline.
- the standby server becomes active, its suffix changes to (**A!**), and the node turns green with a red outline.
- the link between the two servers turns red.

If the standby server fails:

- the failed server becomes inactive, its suffix changes to (**X!**), and the node turns red with a red outline.
- the active servers' suffix changes to (**A!**) and it is outlined in red.
- the link between the two servers turns red.

If a failed server recovers:

- the recovered server becomes the standby server, its suffix changes to (**S**), and the node turns blue with a grey outline.
- the active servers' suffix (**A!**) changes to (**A**), and the red node outline changes back to grey.
- the link between the two servers changes back to blue.

Suffix Definition

A -- This is the active server and it is running.

A! -- This is the active server and it is running but its standby has failed.

S -- This is the standby server and it is running.

X! -- The server is inactive.

Node Color Definition

Green -- This is the active server and it is running.

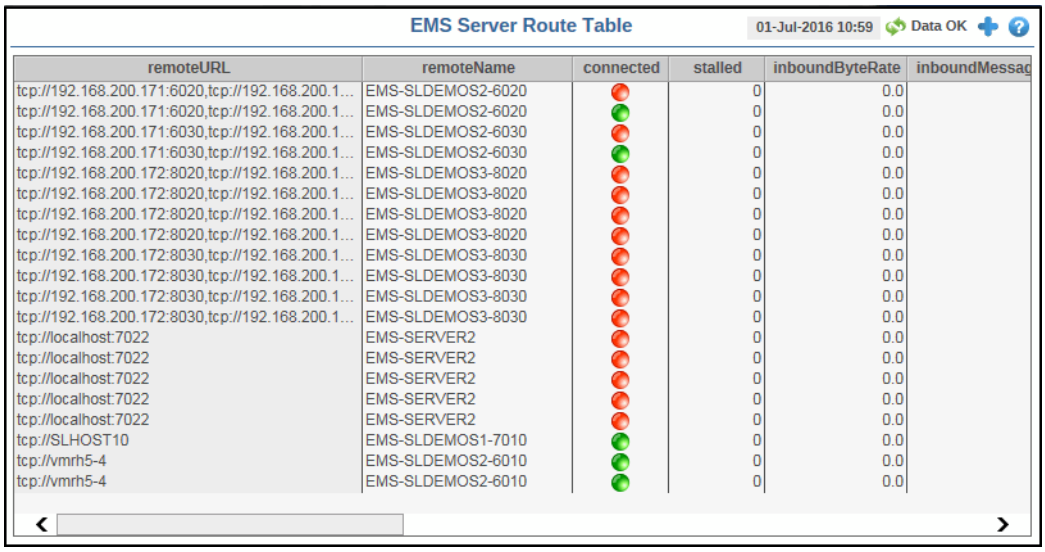
Blue -- This is the standby server and it is in standby mode.

Red -- The server is inactive.

Link Color Definition	Blue -- The two servers in the pair are running. Red -- One of the servers in the pair is inactive.
Outline Color Definition	Grey -- The two servers in the pair are running. Red -- One of the servers in the pair is inactive. If the node color indicates this server is running, its pair is inactive.

EMS Server Route Table

Displays metrics for server routes on all servers. Inbound metrics, such as **inboundByteRate**, indicate an in route to the server. Outbound metrics, such as **outboundByteRate**, indicate an out route to the server.



remoteURL	remoteName	connected	stalled	inboundByteRate	inboundMessag
tcp://192.168.200.171:6020,tcp://192.168.200.1...	EMS-SLDEMOS2-6020		0	0.0	
tcp://192.168.200.171:6020,tcp://192.168.200.1...	EMS-SLDEMOS2-6020		0	0.0	
tcp://192.168.200.171:6030,tcp://192.168.200.1...	EMS-SLDEMOS2-6030		0	0.0	
tcp://192.168.200.171:6030,tcp://192.168.200.1...	EMS-SLDEMOS2-6030		0	0.0	
tcp://192.168.200.172:8020,tcp://192.168.200.1...	EMS-SLDEMOS3-8020		0	0.0	
tcp://192.168.200.172:8020,tcp://192.168.200.1...	EMS-SLDEMOS3-8020		0	0.0	
tcp://192.168.200.172:8020,tcp://192.168.200.1...	EMS-SLDEMOS3-8020		0	0.0	
tcp://192.168.200.172:8020,tcp://192.168.200.1...	EMS-SLDEMOS3-8020		0	0.0	
tcp://192.168.200.172:8030,tcp://192.168.200.1...	EMS-SLDEMOS3-8030		0	0.0	
tcp://192.168.200.172:8030,tcp://192.168.200.1...	EMS-SLDEMOS3-8030		0	0.0	
tcp://192.168.200.172:8030,tcp://192.168.200.1...	EMS-SLDEMOS3-8030		0	0.0	
tcp://192.168.200.172:8030,tcp://192.168.200.1...	EMS-SLDEMOS3-8030		0	0.0	
tcp://localhost:7022	EMS-SERVER2		0	0.0	
tcp://localhost:7022	EMS-SERVER2		0	0.0	
tcp://localhost:7022	EMS-SERVER2		0	0.0	
tcp://localhost:7022	EMS-SERVER2		0	0.0	
tcp://localhost:7022	EMS-SERVER2		0	0.0	
tcp://SLHOST10	EMS-SLDEMOS1-7010		0	0.0	
tcp://vmrh5-4	EMS-SLDEMOS2-6010		0	0.0	
tcp://vmrh5-4	EMS-SLDEMOS2-6010		0	0.0	

Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

remoteURL	The remote URL of the server.
remoteName	The name of the server.
connected	The connection state of the server route.

	-- One or more routes for this server are disconnected.
	-- All routes for this server are connected.
	-- There are no routes for this server.
stalled	Indicates whether the IO flow stalled on the route.
	A value of **0** (zero) = not stalled.
	A value of **1** = stalled.
inboundByteRate	The rate of inbound data in bytes, per second.
inboundMessageRate	The rate of inbound messages in number of messages per second.
inboundTotalBytes	The total number of inbound bytes.
inboundTotalMessages	The total number of inbound messages.
outboundByteRate	The rate of inbound data in bytes, per second.
outboundMessageRate	The rate of outbound messages in number of messages per second.
outboundTotalBytes	The total number of outbound bytes.
outboundTotalMessages	The total number of outbound messages.
zoneName	The name of the zone for the route.
zoneType	Indicates a multi-hop or one-hop route.
active	Indicates whether the server route is currently transferring data:
	1 = true (is transferring data)
	0 = false
inactive	Indicates whether the server route is not currently transferring data:
	1 = true (is **not** transferring data)
	0 = false
suspended	Indicates whether outbound messages to the route have been suspended:
	1 = true
	0 = false
remoteURLName	The IP address and name for the remote connection.

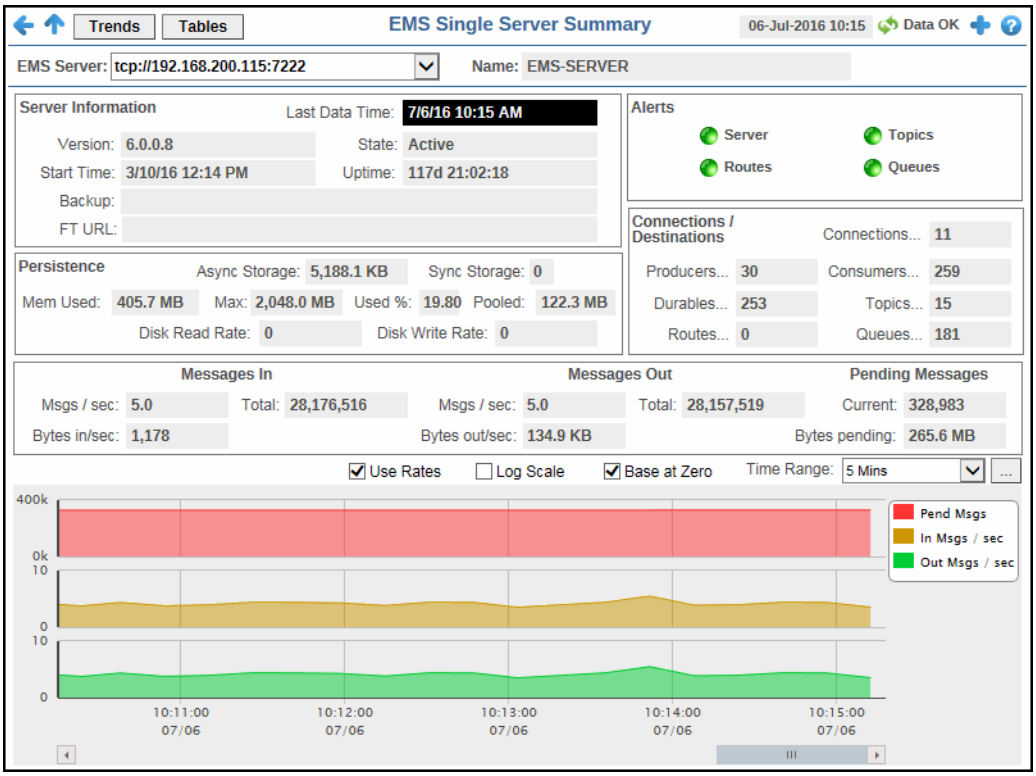
Single EMS Server

These displays present detailed performance metrics, alert status and connection information for a single EMS server.

- "Single Server Summary": Shows information for a single EMS server such as server connection details, the number of client connections, memory utilization, message performance metrics and alert status.
- "Single Server Trends": Trend graphs show utilization metrics for a single EMS server, such as the number of client connections, number of pending messages and in/out rate, and memory and disk utilization.
- "Single Server Tables": Tables show information about how the Monitor is connected to the EMS server, metrics queried from the server and alert details.

Single Server Summary

Track utilization and performance metrics for specific servers.



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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server		Select the EMS Server for which you want to view data. The selection made here populates this display.
Name		The name of the EMS Server selected from the EMS Server drop-down menu.
Server Information	**Version**	The TIBCO EMS software version currently running.
	Start Time	The data and time that the server was started.
	Backup	The name of the backup server for the server.
	FT URL	The IP address and port number, or the hostname and port number, of the fault tolerant standby server assigned to this server.
	Last Data Time	The time that a data update was last made.
	State	The server status: **Active** -- The server is currently processing requests. **Inactive** -- The server is not currently processing requests. **Standby** -- The server is functioning as a backup for a primary server.
	Uptime	The amount of time since the server was started. Format: **dd HH:MM:SS** **<days> <hours>:<minutes>:<seconds>** For example: **10d 08:41:38**
Persistence	**Async Storage**	The amount of database space, in bytes, used by asynchronous message persistence data on the server
	Sync Storage	The amount of database space, in bytes, used by synchronous message persistence data on the server.
	Mem Used	The amount of memory, in kilobytes, used by message persistence on the server.
	Max	The maximum amount of memory, in kilobytes, used by message persistence on the server.
	Used %	The amount of memory, in percent, used by message persistence.
	Pooled	The amount of message memory that has been pooled.
	Disk Read Rate	The speed at which the server reads message persistence disk data.
	Disk Write Rate	The speed at which the server writes message persistence disk data.

Alerts	**Server**	Status indicator for server-related alerts. Click to open the EMS "Single Server Tables" display and view the **Server Alert Table** for more detail. -- No alerts have exceeded a specified threshold. -- One or more alerts have exceeded their specified **WARNINGLEVEL** threshold. -- One or more alerts have exceeded their specified **ALARMLEVEL** threshold.
	Routes	Status indicator for route-related alerts. Click to open the EMS "Single Server Tables" display and view the **Server Alert Table** for more detail. -- No alerts have exceeded a specified threshold. -- One or more alerts have exceeded their specified **WARNINGLEVEL** threshold. -- One or more alerts have exceeded their specified **ALARMLEVEL** threshold.
	Topics	Status indicator for topic-related alerts. Click to open the EMS "Single Server Tables" display and view the **Server Alert Table** for more detail. -- No alerts have exceeded a specified threshold. -- One or more alerts have exceeded their specified **WARNINGLEVEL** threshold. -- One or more alerts have exceeded their specified **ALARMLEVEL** threshold.
	Queues	Status indicator for queue-related alerts. Click to open the EMS "Single Server Tables" display and view the **Server Alert Table** for more detail. -- No alerts have exceeded a specified threshold. -- One or more alerts have exceeded their specified **WARNINGLEVEL** threshold. -- One or more alerts have exceeded their specified **ALARMLEVEL** threshold.
Connections / Destinations	Shows connection information for the server. The counts shown here are also visible in the "EMS Topics" and "EMS Clients" displays.	
	Producers	The number of producers currently active on the server. Click to open the "EMS Clients"/ "Producers" for Server display for details.
	Durables	The number of durables currently active on the server. Click to open the "EMS Clients" / "Consumer Summary" for Server display for details.
	Routes	The number of routes defined on the server.
	Connections	The number of clients currently connected to the server. Click to open the "EMS Clients" / "Connections" for Server display for details.
	Consumers	The number of consumers currently connected to the server. Click to open the "EMS Clients" / "Producer Summary" for Server display for details.
	Topics	The number of topics currently active on the server. Click to open the "EMS Topics" / "All Topics Table" display for details.
	Queues	The number of queues currently active on the server. Click to open the "EMS Topics" / "All Queues Heatmap" display for details.

Messages In	**Msgs/sec**	The number of inbound messages, per second, from all producers and consumers
	Bytes in/sec	The total size of inbound messages, in bytes per second, from all producers and consumers.
	Total	The total number of inbound messages, in bytes, from all producers and consumers since the server was started.
Messages Out	**Msgs/sec**	The number of outbound messages, per second, from all producers and consumers.
	Bytes out/ sec	The total size of outbound messages, in bytes per second, from all producers and consumers.
	Total	The total of outbound messages, in bytes, from all producers and consumers since the server was started.
Pending Messages	**Current**	The total number of inbound and outbound messages currently waiting to be processed.
	Bytes pending	The total size of inbound and outbound messages, in bytes, currently waiting to be processed.

Trend Graphs Shows message metrics for the selected server.

Pend Message -- Traces the total number of inbound and outbound messages currently waiting to be processed.

In Msgs / sec -- Traces the number of inbound messages, per second, from all producers and consumers. This trend graph only displays when **Use Rates** is selected.

Out Msgs / sec -- Traces the number of outbound messages, per second, from all producers and consumers. This trend graph only displays when **Use Rates** is selected.

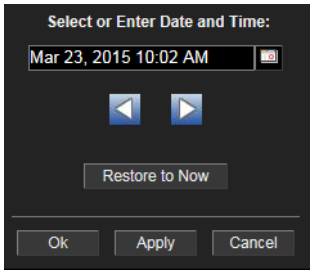
Delta In Msgs -- Traces the change in total inbound messages since the last update. This trend graph only displays when **Use Rates** is not selected.

Delta Out Msgs -- Traces the change in total outbound messages since the last update. This trend graph only displays when **Use Rates** is not selected.

Use Rates	When this check box is selected, the inbound and outbound message rates (**In Msgs/sec** and **Out Msgs/sec**) display in the trend graph. When this check box is not selected, the delta inbound and outbound messages (**Delta In Msgs** and **Delta Out Msgs**) display in the trend graph.
Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



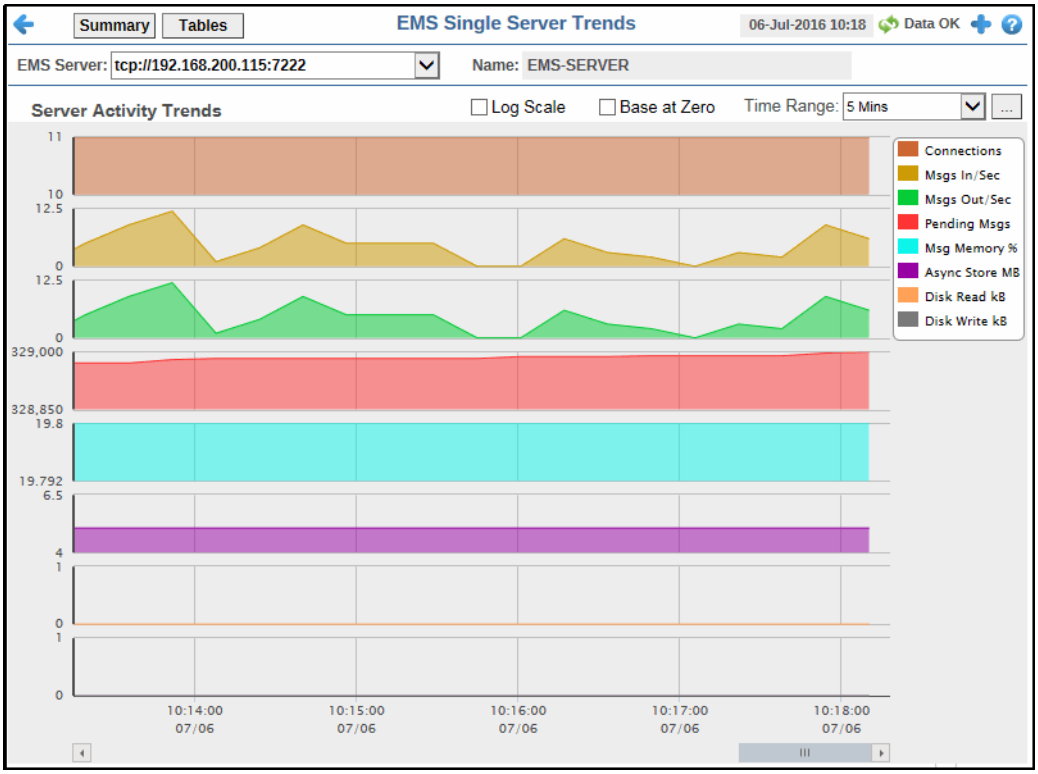
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single Server Trends

View trend graphs in parallel to investigate performance issues for a specific server.



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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server Select the EMS server for which you want to view data from this drop-down menu. The selection made here populates this display.

Name The name of the EMS Server selected from the EMS Server drop-down menu.

Server Activity Trends Specifies settings for the trend graphs.

Trend Graphs

Shows metrics for the selected server.

Connections -- Traces the total number of client connections.

Msgs In/Sec -- Traces the number of inbound messages, per second, from all producers and consumers.

Msgs Out/Sec -- Traces the number of outbound messages, per second, from all producers and consumers.

Pending Msgs -- Traces the total number of messages currently waiting to be processed.

Msg Memory % -- Traces the amount of memory, in percent, used by messages.

Async Store MB -- Traces the amount of database space, in megabytes, used by asynchronous data on the server.

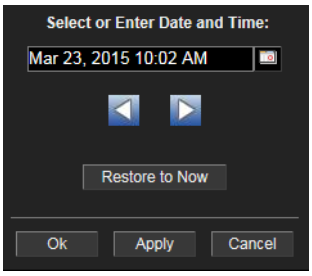
Disk Read KB -- Traces the amount of disk data, in kilobytes, read by the server since the server was started.

Disk Write KB -- Traces the amount of data, in kilobytes, written to disk by the server since the server was started.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



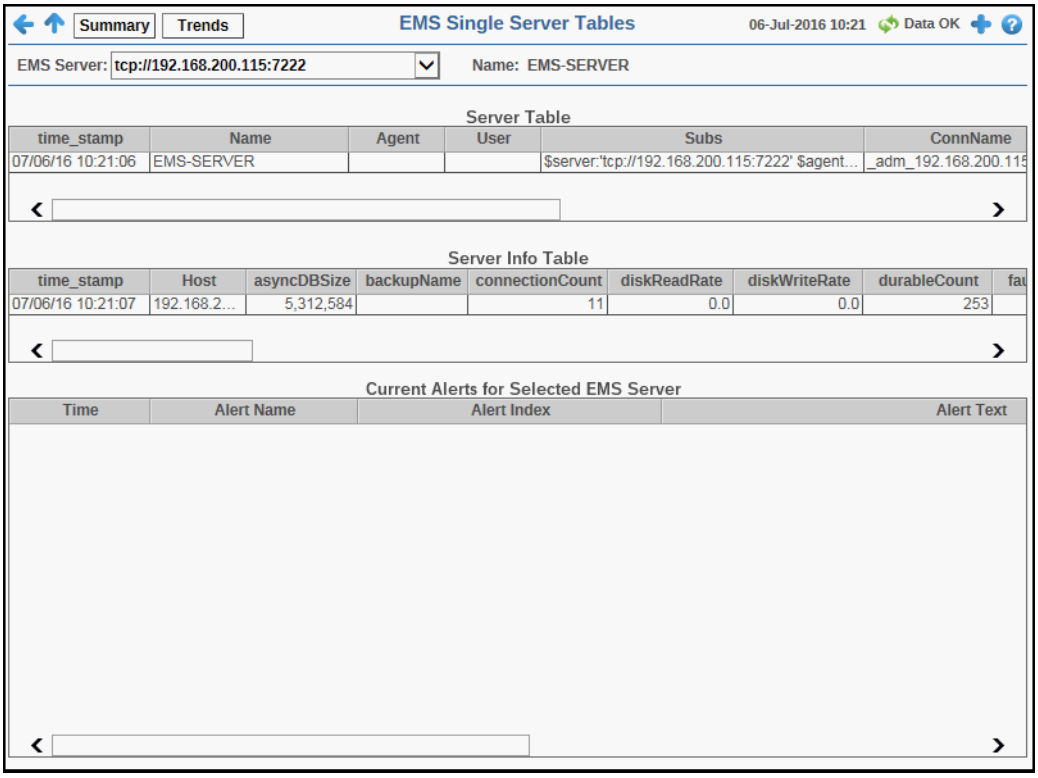
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single Server Tables

View all available utilization and performance data for specific servers.



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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server Select the EMS server for which you want to view data from this drop-down menu. The selection made here populates this display

Name The name of the EMS Server selected from the EMS Server drop-down menu.

Server Table This table shows information about how the monitor is connected to the server.

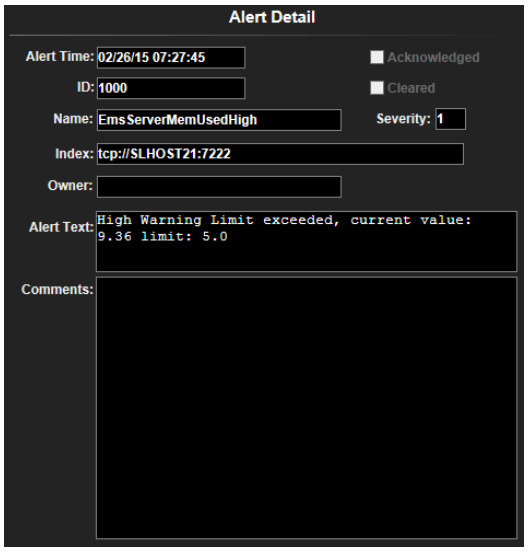
- **time_stamp** The date and time this row of data was last updated.
- **Name** The name of the server.

	Agent	If used, the name of the RTView agent connecting to the EMS server.
	User	The user name for gaining access to the server.
	Password	The password associated with user name for gaining access to the server.
	Subs	RTView substitutions used when connecting to this server.
	ConnName	The name of the RTView connection to this server.
	Active	When checked, indicates that the server is currently running.
	FaultTolerantStandbyMode	When checked, indicates that the server is running as a backup server.
	FaultTolerantURL	The IP address and port number for the backup server assigned to this server.
	BackupName	The name of the backup server assigned as backup to this server.
	Expired	Data has not been received from this server in the specified amount of time. The server will be removed from the Server Table in the specified amount of time. The default setting is 35 seconds.
Server Info Table	Select an EMS Server from the EMS Server drop-down menu. This table shows server metrics queried from the server.	
	time_stamp	The date and time this row of data was last updated.
	Host	The name or IP address for the host server.
	asyncDBSize	The amount of database space, in bytes, used by asynchronous data on the server.
	backupName	The name of the backup server assigned as backup to this server.
	connectionCount	The number of currently connected clients.
	diskReadRate	The speed at which the server reads disk data.
	diskWriteRate	The speed at which the server writes data to disk.
	durableCount	The number of currently active durables.
	FaultTolerantURL	The IP address and port number, or the hostname and port number, of the fault tolerant standby server assigned to this server.
	inboundBytesRate	The rate of inbound messages in bytes per second.
	inboundMessageCount	The number of inbound messages received by the server since the server was started.
	inboundMessageRate	The rate of inbound messages in number of messages per second.
	maxMessageMemory	The maximum amount of memory, in bytes, allocated for use by messages on the server.
	messageMemory	The amount of memory, in bytes, currently used by messages on the server.

	messageMemoryPct	The amount of memory, in percent, used by messages on the server.
	messageMemoryPooled	The currently allocated pool size for messages in bytes.
	outboundBytesRate	The rate of outbound messages in bytes per second.
	outboundMessageCount	The number of outbound messages sent by the server since the server was started.
	outboundMessageRate	The rate of outbound messages in number of messages per second
	pendingMessageCount	The number of currently pending messages on the server.
	pendingMessageSize	The amount of space, in bytes, pending messages use on the server.
	processId	The process ID of the EMS server.
	queueCount	The number of message queues.
	serverName	The name of the server.
	startTime	The date and time that the server was started.
	state	The server status: **Active** -- The server is currently processing requests. **Inactive** --The server is not currently processing requests. **Standby** -- The server is functioning as a backup for a primary server.
	syncDBSize	The amount of database space, in bytes, used by synchronous data on the server.
	topicCount	The number of currently active topics.
	upTime	The amount of time, in milliseconds, since the server was started.
	versionInfo	The TIBCO EMS software version currently running.
	Expired	Data has not been received from this server in the specified amount of time. The server will be removed from the Server Info table in the specified amount of time. The default setting is 35 seconds.
Current Alerts Table for Selected EMS Server	Select an EMS Server from the EMS Server drop-down menu. This table lists all available data for currently active alerts. Click an alert to view details in the Alert Detail Window.	
	Time	The time the alert was first activated.
	Alert Name	The name of the alert.
	Alert Index	The EMS server that activated the alert.
	Alert Text	The text that is displayed for the alert.
	Package	The RTView package reporting the alert.
	Category	The alert category: Server, Queue or Topic.

ID	The unique identifier for this alert instance.
Clr'd	When checked, the alert thresholds are no longer out of bounds and the alert has cleared.
Ack'd	When checked, a user has indicated that they have acknowledged the alert.
Owner	The user who has accepted ownership of this alert.
Source	The source of the alert.

Alert Detail Window



Alert Time	The time the alert was first activated.
ID	The unique identifier for this alert instance.
Name	The name of the alert.
Index	The EMS server which activated the alert.
Owner	The user who has accepted ownership of this alert.
Alert Text	The text that is displayed for the alert.
Comments	User-supplied comments about this alert.
Acknowledged	When checked, a user has indicated that they have acknowledged the alert.
Cleared	When checked, the alert thresholds are no longer out of bounds and the alert has cleared.
Severity	Severity of the alert.

EMS Topics

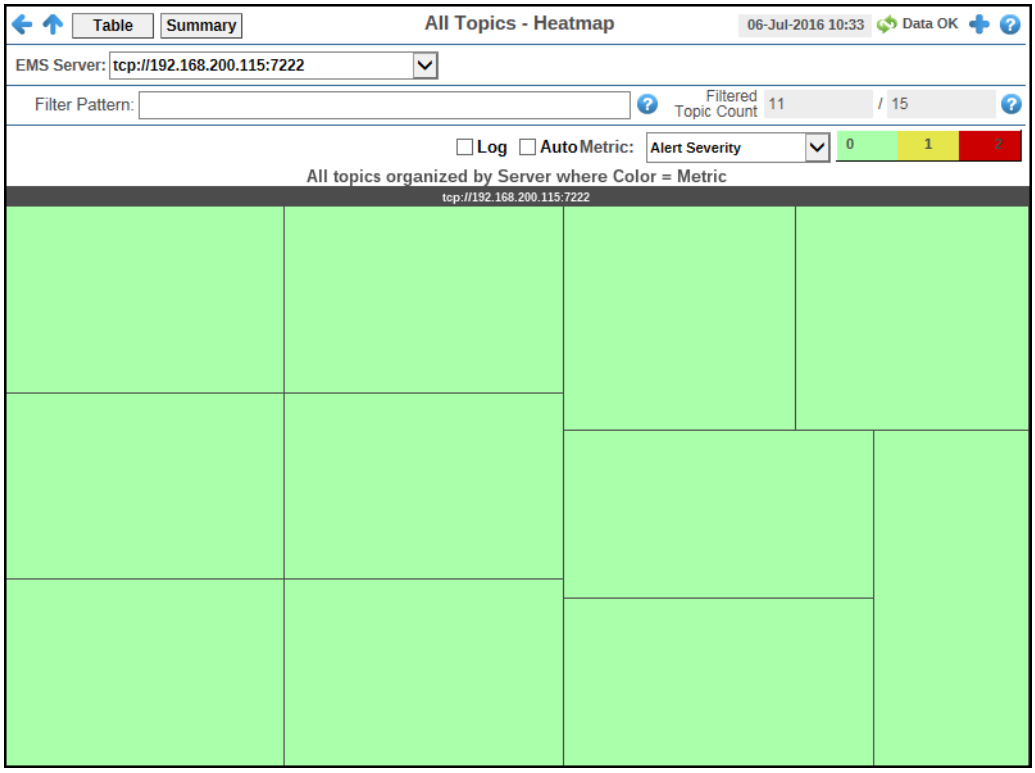
These displays present several views of performance metrics for topics. You can view all topics that are defined on a specific server in the "All Topics Table" display, or you can view all servers that have a specific topic defined in the "Single Topic Summary" display. The "Single Topic By Server" display provides a list of all the servers on which those topics are defined.

- "All Topics Heatmap": A heatmap representation of a selected set of metrics from Topics organized by Server that allows you to track performance and utilization metrics and trends for all topics on a single server.
- "All Topics Table": Shows performance and utilization metrics and trends for all topics defined on a specified server, including consumer and subscriber count, memory utilization, and message performance metrics.
- "All Topics Summary": Shows performance and utilization metrics and trends for all topics defined on a specified server, including consumer and subscriber count, memory utilization, and message performance metrics.
- "Single Topic Summary": Shows detailed performance and utilization metrics and trends for a specified topic on a single server, including producer and consumer counts, and message performance metrics.
- "Single EMS Topic-Clients": View data for all consumers and producers associated with the selected topic.
- "Single Topic By Server": Table shows performance and utilization metrics for all servers that have a specified topic defined, including consumer and subscriber count, and message performance metrics.

All Topics Heatmap

A heatmap representation of a selected set of metrics from Topics organized by Server that allows you to track performance and utilization metrics and trends for all topics on a single server. View status and alerts of all topics for a server. Use the **Metric** drop-down menu to view to **Alert Severity**, **Alert Count**, **Consumers**, **Receivers**, **Pending Messages**, **Inbound Message Rate**, **Inbound Total Messages**, **Outbound Message Rate**, or **Outbound Total Messages**.

The heatmap is organized so that each rectangle represents a Topic on the selected Server. The rectangle color indicates the value of the selected metric in the **Metric** drop down list. You can mouse-over rectangles to view more details about the performance and status of each topic or click on a rectangle to drill-down to the "Single Topic Summary" display and view metrics for that particular Topic. You can click **Table** on this display to navigate to the "All Topics Table" display.



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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Table** in the Title Bar takes you to the "All Topics Table" display. Clicking **Summary** in the Title Bar takes you to the "All Topics Summary" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Topic data in this display.

Filter Pattern Enter a string to show only topics with names that contain the string. For example, if you enter the string Madrid, all topics with Madrid in the topic name are shown in the table. If no entry is made, all topic names are shown. For most use cases, you can enter a portion of the topic name.

Filtered Topic Count

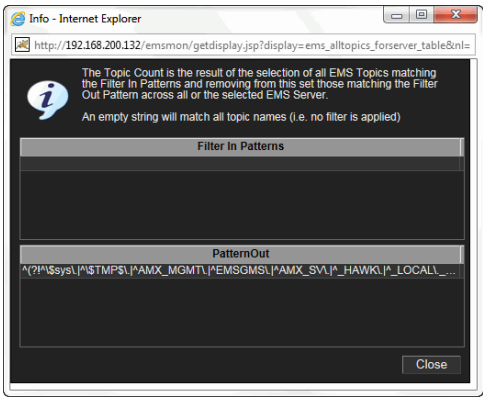
This field is broken into two different values. The first value is the total number of currently active topics on the selected server, which is filtered by the **Filter Pattern** field and by the default value specified in the **$emsTopicFilterOutPattern** property in the **emsmon/conf/rtvapm.properties** file. The second value is the total number of topics on the selected server. In other words, the filtered number of topics/the total number of topics on the server.

The default value for the **$emsTopicFilterOutPattern** property is:

```
collector.sl.rtview.sub=$emsTopicFilterOutPattern:'^(?!^\\$sys\\.|^\\$TMP\$\\.|^AMX_MGMT\\.|^EMSGMS\\.|^AMX_SV\\.|^_HAWK\\.|^_LOCAL\\._HAWK\\.|^TMP\\.EMS)'
```

You can modify the filter value by editing the **$emsTopicFilterOutPattern** property in the "sample.properties File", which will override the default value.

Clicking the associated Help button displays the **Info** dialog, which displays the defined filter in and filter out properties used by the **Filtered Topic Count**.



Log

This option enables visualization on a logarithmic scale, and should be used when the range in your data is very broad. For example, if you have data that ranges from the tens to the thousands, then data in the range of tens will be neglected visually if you do not check this option. This option makes data on both extreme ranges visible by using the logarithmic of the values rather than the actual values.

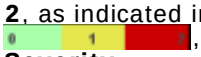
Auto

When checked, the values of the selected metric are auto-scaled to its highest defined value. When unchecked, the values of the selected metric display based on the threshold defined for the alert associated with the selected metric. Selecting Auto helps to visualize the range of the values currently present for the selected metric instead of the threshold of the alert that has been associated with the metric. All metrics that have not been associated in the heatmap defaults with alerts use a monochromatic color gradient bar (whites and greens). All metrics that have been associated in the heatmap defaults with alerts use a multi-chromatic color gradient bar (reds, yellows, white, and greens).

Metric

Select the metric driving the heatmap display. The default is Alert Severity. Each **Metric** has a color gradient bar that maps values to colors. The heatmap organizes the topics by server, where each rectangle represents a Topic. Mouse-over any rectangle to display the current values of the metrics for the Topic. Click on a rectangle to drill-down to the associated "Single Topic Summary" display for a detailed view of metrics for that particular topic.

Alert Severity

The maximum alert level in the item (index) associated with the rectangle. Values range from **0** to **2**, as indicated in the color gradient bar  , where **2** is the greatest **Alert Severity**.

2 -- Metrics that have exceeded their specified **ALARMLEVEL** threshold and have an Alert Severity value of **2** are shown in red. For a given rectangle, this indicates that one or more metrics have exceeded their alarm threshold.

1 -- Metrics that have exceeded their specified **WARNINGLEVEL** threshold and have an Alert Severity value of **1** are shown in yellow. For a given rectangle, this indicates that one or more metrics have exceeded their warning threshold.

0 -- Metrics that have not exceeded either specified threshold have an Alert Severity value of **0** and are shown in green. For a given rectangle, this indicates that no metrics have exceeded a specified alert threshold.

Alert Count

The total number of alarm and warning alerts in a given item (index) associated with the rectangle.

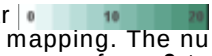
The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Consumers

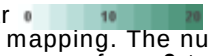
The total number of consumers in a given item (index) associated with the rectangle. The color gradient bar  shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of consumers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

Durables

The total number of active durables in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of durables in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Subscribers

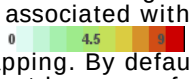
The total number of subscribers in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of subscribers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Pending Msgs

The total number of pending messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsTopicssPendingMsgsHigh**, which is **3000**. The middle value in the gradient bar indicates the middle value of the range (the default is **1500**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

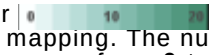
In Msg /sec

The number of inbound messages per second in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsTopicsInMsgRateHigh**, which is **9**. The middle value in the gradient bar indicates the middle value of the range (the default is **4.5**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

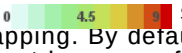
Note: This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.

In Total Msg

The total number of inbound messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

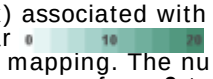
Out Msg/sec

The number of outbound messages per second in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsTopicsOutMsgRateHigh**, which is **9**. The middle value in the gradient bar indicates the middle value of the range (the default is **4.5**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Note: This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.

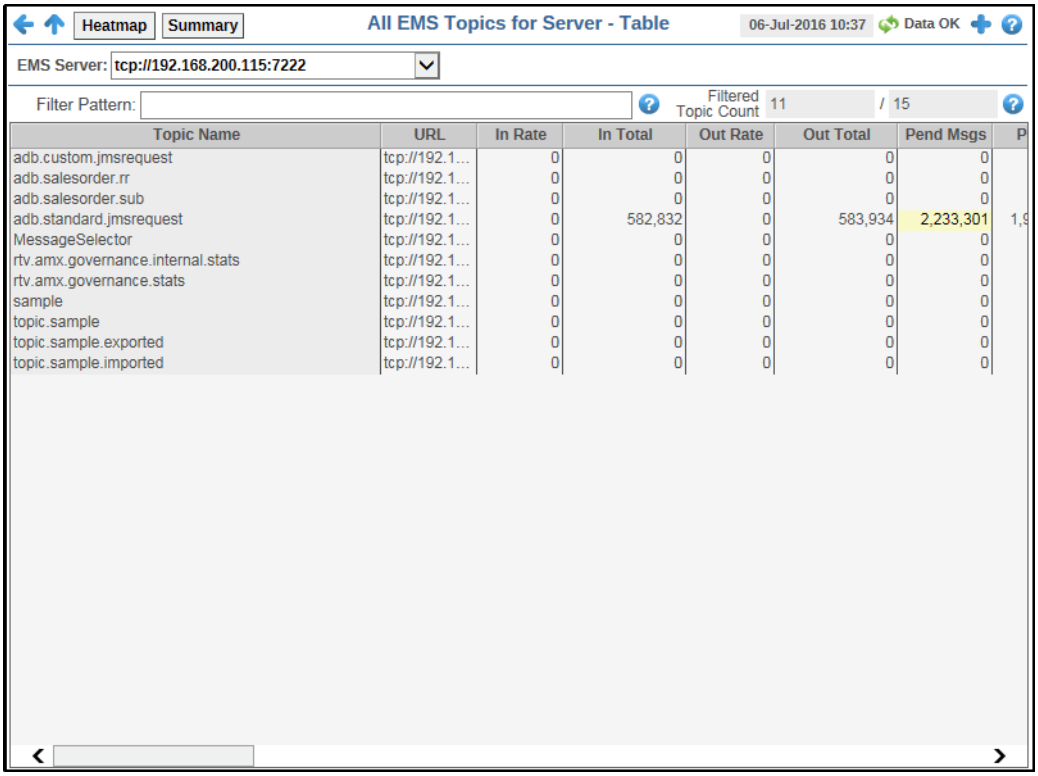
Out Total Msgs

The total number of outbound messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

All Topics Table

Track performance and utilization metrics for all topics on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Heatmap** in the Title Bar takes you to the "All Topics Heatmap" display. Clicking **Summary** in the Title Bar takes you to the "All Topics Summary" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Topic data in this display.

Filter Pattern Enter a string to show only topics with names that contain the string. For example, if you enter the string Madrid, all topics with Madrid in the topic name are shown in the table. If no entry is made, all topic names are shown. For most use cases, you can enter a portion of the topic name.

Filtered Topic Count This field is broken into two different values. The first value is the total number of currently active topics on the selected server, which is filtered by the **Filter Pattern** field and by the default value specified in the **$emsTopicFilterOutPattern** property in the **emsmon/conf/rtvapm.properties** file. The second value is the total number of topics on the selected server. In other words, the filtered number of topics/the total number of topics on the server.

The default value for the **$emsTopicFilterOutPattern** property is:

```
collector.sl.rtview.sub=$emsTopicFilterOutPattern:'^(?!^\\$sys\\.|^\\$TMP\$\\.|^AMX_MGMT\\.|^EMSGMS\\.|^AMX_SV\\.|^_HAWK\\.|^_LOCAL\\._HAWK\\.|^TMP\\.EMS)'
```

You can modify the filter value by editing the **$emsTopicFilterOutPattern** property in the "sample.properties File", which will override the default value.

Clicking the associated Help button displays the **Info** dialog, which displays the defined filter in and filter out properties used by the **Filtered Topic Count**.

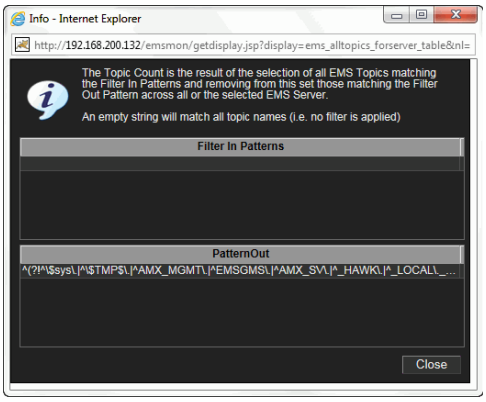


Table This table describes all topics on the selected server. Click a row to view metrics for a single topic in the "Single Topic Summary" display.

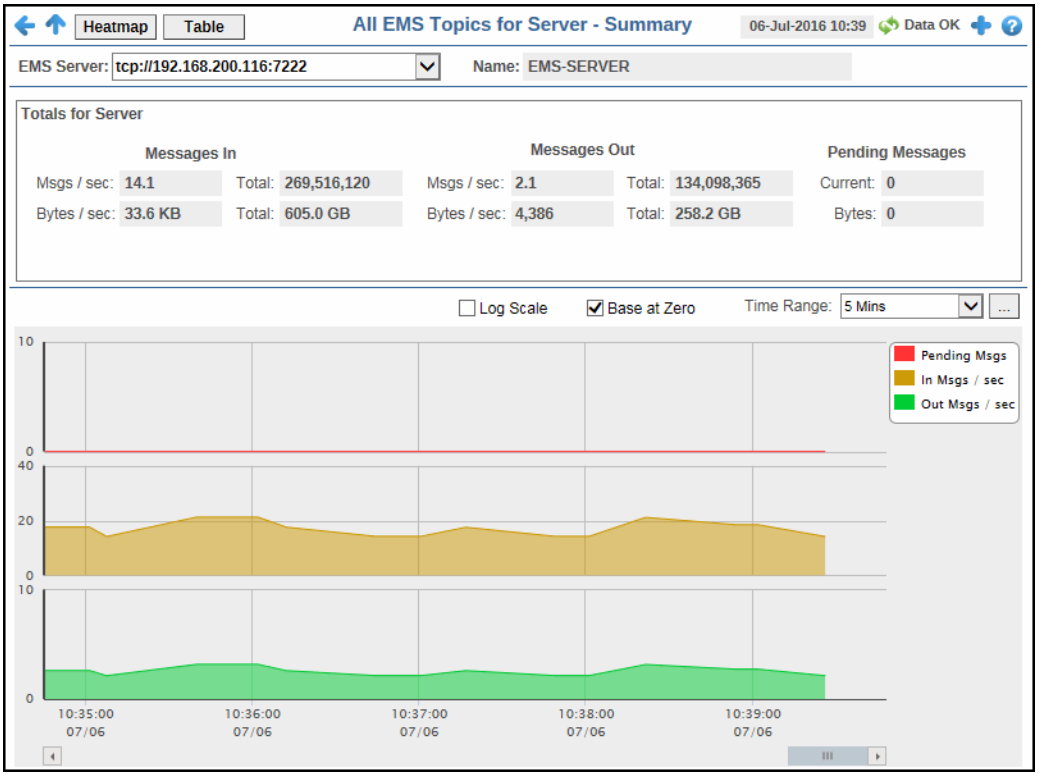
Topic Name	The name of the topic.
URL	The IP address and port number for the server.
In Rate	The number of inbound messages for the topic, per second. **Note:** This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.
In Total	The total number of inbound messages for the topic.
Out Rate	The number of outbound messages for the topic, per second. **Note:** This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.
Out Total	The total number of outbound messages for the topic.
Pend Msgs	The number of currently pending messages for the topic.
Pend Size	The amount of space, in bytes, used by pending messages for the topic.

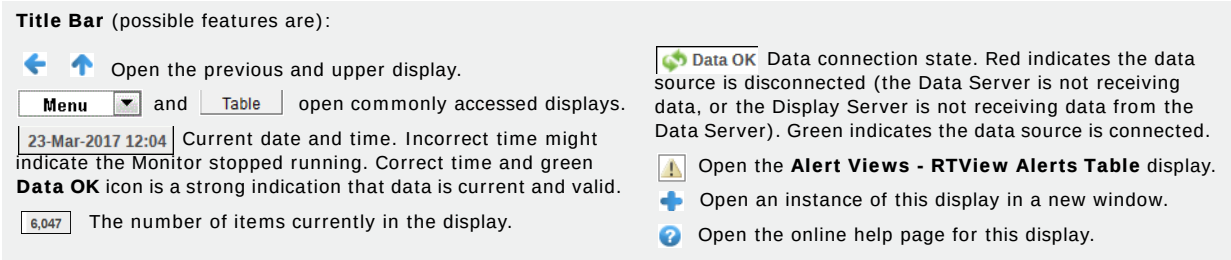
activeDurableCount	The number of currently active durables or the topic.
consumerCount	The number of consumers for the topic.
durableCount	The number of durables for the topic.
failSafe	When checked, the message is marked as failsafe delivery.
fcMaxBytes	The maximum number of bytes allocated for use by flow control.
global	When checked, the message is global and is routed to other servers.
inboundByteRate	The amount of inbound messages for the topic, in bytes per second.
inboundTotalBytes	The total amount of inbound messages for the topic, in bytes, since the server started.
maxBytes	The maximum size, in bytes, that the topic can store for delivery to each durable or non-durable online subscriber on that topic.
maxMsgs	The maximum number of messages before the server indicates an error and overflow policies are activated.
outboundByteRate	The amount of outbound messages for the topic, in bytes per second.
outboundTotalBytes	The total amount of outbound messages for the topic, in bytes.
overflowPolicy	Indicates whether an overflow policy is set for the topic: **0** = No policy is set. **1** = A policy is set.
secure	When checked, the topic is designated as secure and enforces permission policies.
static	When checked, the topic has a static destination.
subscriberCount	The number of subscribers for the topic.
description	Descriptive text to help the administrator identify this resource.
Expired	This check box becomes automatically checked when the data displayed in the row has exceeded the specified cache expiration time (set by default at 45 seconds) and is no longer current. Once the cache has been refreshed and is displaying current data, the check box will return to being unchecked. This check box will remain unchecked as long as the cache has been refreshed within the specified cache expiration time and the data is current.
time_stamp	The date and time this row of data was last updated.
DeltainboundTotalMessages	Displays the change (delta) in inboundTotalMessages from the previous cache refresh to the current cache refresh.
DeltainboundTotalBytes	Displays the change (delta) in inboundTotalBytes from the previous cache refresh to the current cache refresh.

DeltaoutboundTotalMessages	Displays the change (delta) in outboundTotalMessages from the previous cache refresh to the current cache refresh.
DeltaoutboundTotalBytes	Displays the change (delta) in outboundTotalBytes from the previous cache refresh to the current cache refresh.
prefetch	Lists the maximum number of messages consumers can fetch.
expiryOverride	If set to a non-zero value for a destination and the server delivers a message to the destination, the server replaces the producer's expiration value with this value.
store	Provides the store for this destination where persistent messages are stored.
URLTopic	The topic's URL.

All Topics Summary

Track performance and utilization metrics and trends for all topics on a single server.





Note: Clicking **Heatmap** in the Title Bar takes you to the "All Topics Heatmap" display. Clicking **Table** in the Title Bar takes you to the "All Topics Table" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Topic data in this display.

Name The name of the server selected in the **EMS Server** drop down list.

Totals for Server Shows metrics for all topics on the selected server.

- **Messages In**
  - **Msgs/sec** -- The number of inbound messages for all topics on the server, per second.
  - **Total** -- The total number of inbound messages for all topics on the server since the server was started.
  - **Bytes/sec** -- The size of inbound messages, in bytes per second, for all topics on the server.
  - **Total** -- The total size of inbound messages, in kilobytes, for all topics on the server since the server was started.
- **Messages Out**
  - **Msgs/sec** -- The number of outbound messages for all topics on the server, per second.
  - **Total** -- The total number of outbound messages for all topics on the server since the server was started.
  - **Bytes/sec** -- The size of outbound messages, in bytes per second, for all topics on the server.
  - **Total** -- The total size of outbound messages for all topics on the server, in kilobytes, since the server was started.
- **Pending Messages**
  - **Current** -- The total number of messages for all topics on the server currently waiting to be processed.
  - **Bytes** -- The total size of messages, in bytes, for all topics on the server currently waiting to be processed.

Trend Graphs Shows metrics for all topics on the selected server.

- **Pend Msgs** -- Traces the total number of messages for all topics on the server currently waiting to be processed.
- **In Msgs / sec** -- Traces the number of inbound messages for all topics, per second.
- **Out Msgs / sec** -- Traces the number of outbound messages for all topics, per second.

Log Scale

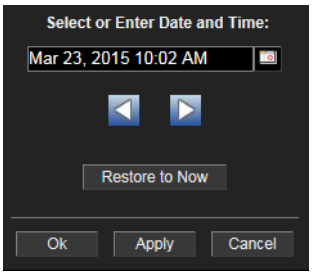
This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero

When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range

Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



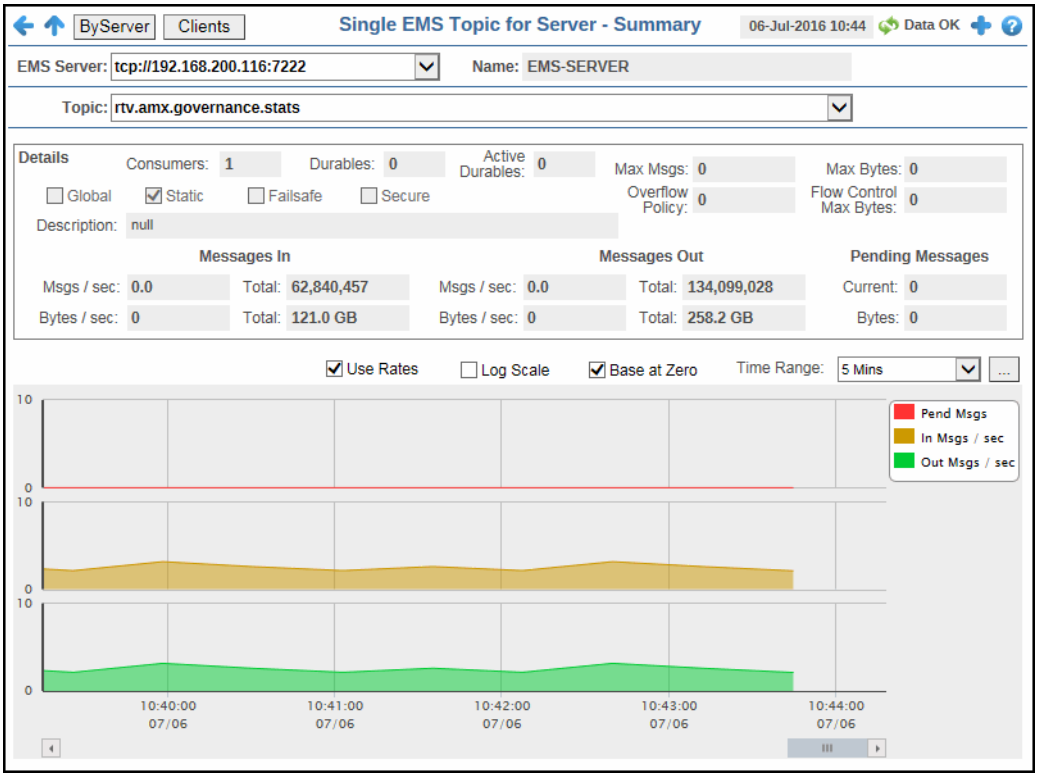
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single Topic Summary

Track performance and utilization metrics for a single topic on a single server.



Title Bar (possible features are):

- Open the previous and upper display.
- Menu and Table open commonly accessed displays.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
- Open the **Alert Views - RTView Alerts Table** display.
- Open an instance of this display in a new window.
- Open the online help page for this display.

Note: Clicking **Clients** in the Title Bar takes you to the "Single EMS Topic-Clients" display for the selected topic.

Fields and Data

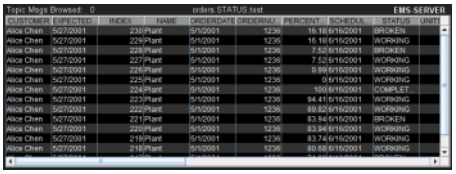
This display includes:

EMS Server The EMS Server selected from this drop-down menu populates the Topics drop-down menu with the Topics belonging to this EMS Server.

Name The name of the EMS server selected from the EMS Server drop-down menu.

Topic Select a Topic from the drop-down menu to view details for the selected Topic.

Browse Click to browse the contents of the selected topic in a separate window. The topic browser table displays up to 100,000 rows of messages.



By default, this button is disabled due to the fact that use of this option could significantly impact performance. To enable it, add the following substitution to the properties file with which you execute the Display Server and/or Viewer:

sl.rtview.sub=$emsDestBrowseButtonVisFlag:1

Details Shows metrics for the topic selected from the Topic drop-down menu.

- **Consumers** The current number of consumers for the topic.
- **Durables** The number of durable subscribers (active and inactive) to the topic.
- **Active Durables** The number of active durable subscribers to the topic.
- **Max Msgs** The maximum number of messages allocated for the topic.
- **Max Bytes** The maximum of memory, in bytes, allocated for use by the topic.
- **Global** When checked, the message is global and is routed to other servers.
- **Static** When checked, the topic has a static destination.
- **Failsafe** When checked, the message is marked as failsafe delivery.
- **Secure** When checked, the topic is designated as secure and enforces permission policies.
- **Overflow Policy** Indicates whether an overflow policy is set for the topic:
  0 = No policy is set.
  1 = A policy is set.
- **Flow Control Max Bytes** The maximum amount of memory, in bytes, allocated for flow control use by the topic.
- **Description** Description of the Topic.

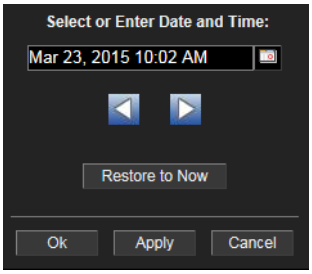
Messages In

- **Msgs/sec** The number of inbound messages, per second, for the selected topic.
- **Total** The total number of inbound messages for the selected topic since the server was started.
- **Bytes/sec** The size of inbound messages, in bytes per second, for the selected topic.
- **Total** The total size of inbound messages, in bytes, for the selected topic since the server was started.

Messages Out	**Msgs/sec**	The number of outbound messages, per second, for the selected topic.
	Total	The total number of outbound messages for the selected topic since the server was started.
	Bytes/sec	The size of outbound messages, in bytes per second, for the selected topic.
	Total	The total size of outbound messages, in bytes, for the selected topic since the server was started.
Pending Messages	**Current**	The number of messages for the selected topic currently waiting to be processed.
	Bytes	The size of the messages for the selected topic, in bytes, currently waiting to be processed.
Trend Graphs	Shows message data for the selected topic. **Pend Msgs** -- Traces the number of messages currently waiting to be processed. **In Msgs / sec** -- Traces the number of inbound messages, per second. This trend graph only displays when **Use Rates** is selected. **Out Msgs / sec** -- Traces the number of outbound messages, per second. This trend graph only displays when **Use Rates** is selected. **Delta In Msgs** -- Traces the change in total inbound messages since the last update. This trend graph only displays when **Use Rates** is not selected. **Delta Out Msgs** -- Traces the change in total inbound messages since the last update. This trend graph only displays when **Use Rates** is not selected.	
	Use Rates	When this check box is selected, the inbound and outbound message rates (**In Msgs/sec** and **Out Msgs/sec**) display in the trend graph. When this check box is not selected, the delta inbound and outbound messages (**Delta In Msgs** and **Delta Out Msgs**) display in the trend graph.
	Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



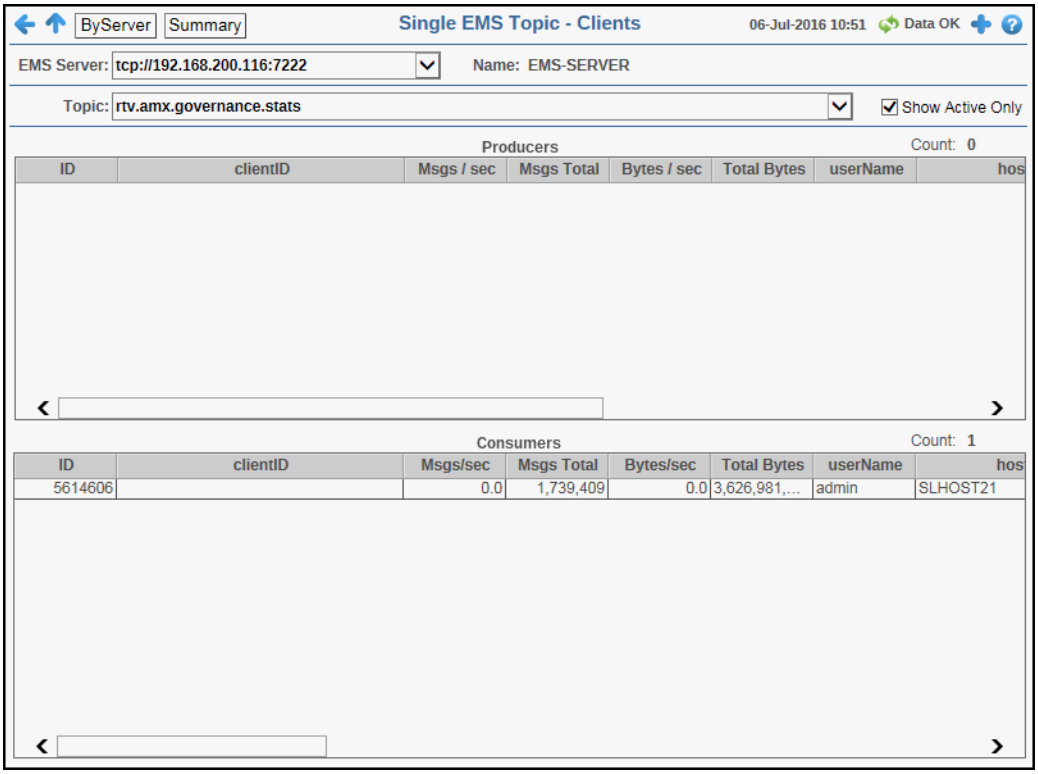
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single EMS Topic-Clients

View data for all consumers and producers associated with the selected topic.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Summary** in the Title Bar takes you to the "Single Topic Summary" display. Clicking ByServer in the Title Bar takes you to the "Single Topic By Server" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates the Topics drop-down menu with the Topics belonging to this EMS Server.

Name The name of the EMS Server selected from the EMS Server drop-down menu.

Topic Select a Topic from the drop-down menu to view details for the selected Topic.

Show Active Only Select this check box to view only the active producers and consumers for the selected Server/ Topic combination.

Producers Shows data for all producers for the selected topic.

ID	A unique string identifier assigned to each producer.
clientID	A unique string identifier assigned to each client.
Msgs / sec	The number of messages, per second, emitted by the producer.
Msgs Total	The total number of messages emitted by the producer since the server was started.
Bytes / sec	The size of messages, in bytes per second, emitted by the producer.
Total Bytes	The total size of messages, in bytes, emitted by the producer since the server was started.
userName	The user name.
host	The name of the host.
sessionID	A unique string identifier assigned to each session.
connection ID	A unique string identifier assigned to each connection.
createTime	The amount of time, in milliseconds, since the producer was created.
time_stamp	The date and time this row of data was last updated.
Expired	When checked, performance data for that producer has not been received in the last 45 seconds. After 3600 seconds, the producer is deleted from the table.

Consumers Shows data for all consumers of messages for the selected topic.

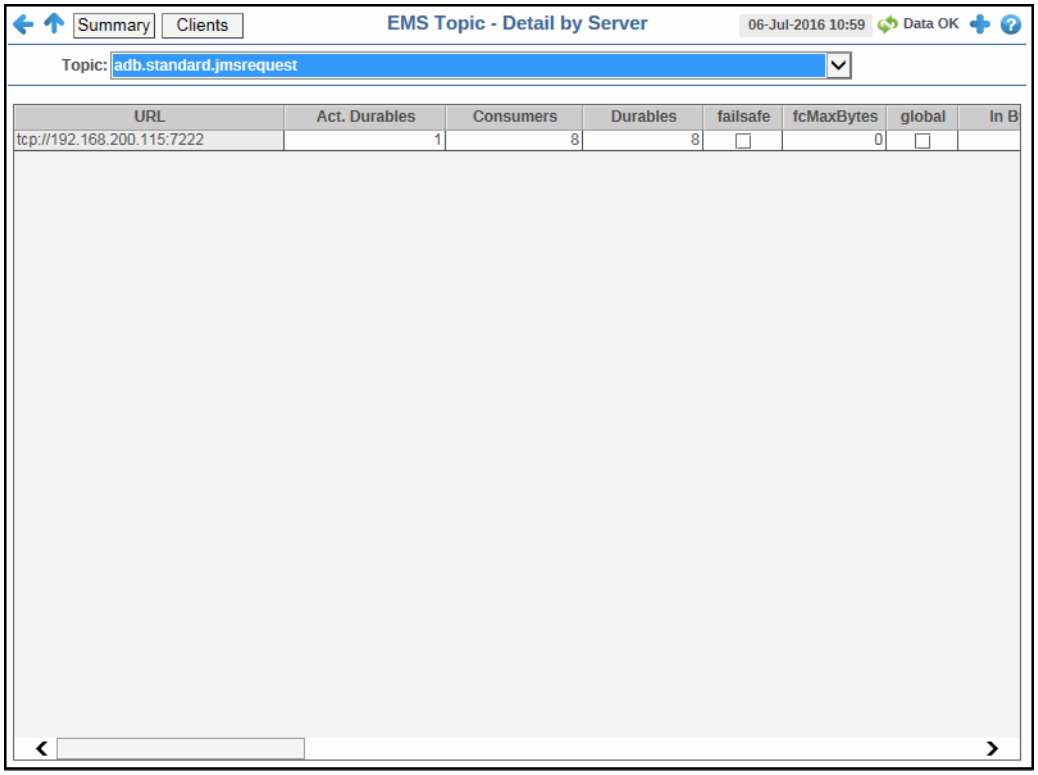
ID	A unique string identifier assigned to each consumer.
clientID	A unique string identifier assigned to each client.
Msgs / sec	The number of messages, per second, processed by the consumer.
Msgs Total	The total number of messages processed by the consumer.
Bytes / sec	The size of messages, in bytes per second, processed by the consumer.
Total Bytes	The total size of messages, in bytes, processed by the consumer since the server was started.
userName	The user name.
host	The name of the host machine.
Msgs Sent	The number of messages sent to the consumer that were not yet acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.

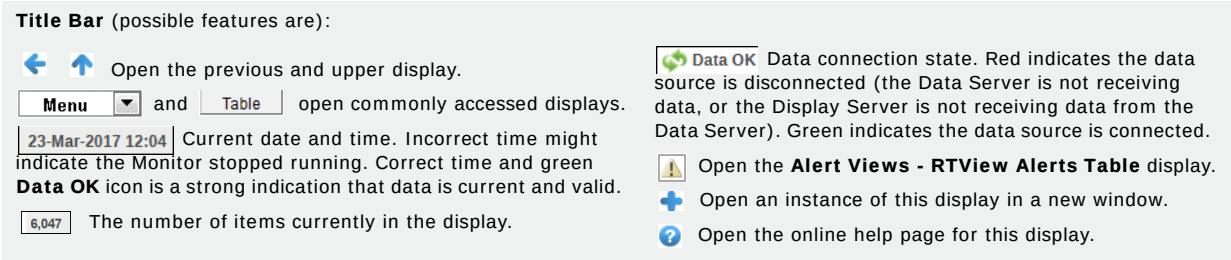
Size Msg Sent	The combined size of messages sent to the consumer that were not yet acknowledged by the consumer's session. **The sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Ack Msgs	The total number of messages that have been sent to the consumer and have been acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Sent Msgs	The total number of messages sent to the consumer since the consumer was created. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elap. Since Last Ack	The amount of time (in milliseconds) that has elapsed since the last time a message sent to the consumer was acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elap. Since Last Sent	The amount of time (in milliseconds) that has elapsed since the last time the server sent a message to the consumer. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
destination Prefetch	The actual destination prefetch value used by the server at runtime. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
prefetch Delivered Count	The number of prefetch messages delivered to the consumer by the server. For consumers receiving messages on any destination with positive prefetch value, this value is never more than the prefetch value of the destination. This value cannot be used to identify the status of the consumer, but it can be used in conjunction with other consumer information values to identify consumers who stopped receiving messages due to application-specific problems. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
durable Name	The name of the durable.
routeName	The queue owner server name if the consumer's destination is a routed queue. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
isActive	When checked, the consumer is active and can receive messages from the server. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
isSystem	This check box is checked if the consumer was automatically created by the system. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
sessionAck Mode	Lists the consumer's session acknowledge mode as a constant defined in **TibjmsAdmin**. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.

session ID	A unique string identifier assigned to each session.
connection ID	A unique string identifier assigned to each connection.
createTime	The amount of time, in milliseconds, since the consumer was created.
time_stamp	The date and time this row of data was last updated.
Expired	When checked, performance data about a consumer has not been received for **45** seconds. After **3600** seconds it is deleted from the table.

Single Topic By Server

Track performance and utilization metrics of a single topic across all servers that have the topic defined on it. Compare topic activity among servers.





Note: Clicking **Clients** in the Title Bar takes you to the "Single EMS Topic-Clients" display for the selected topic. Clicking **Summary** in the Title Bar takes you to the "Single Topic Summary" display.

Fields and Data

This display includes:

Topic The Topic selected from this drop-down menu populates this display.

Table Shows details about the selected Topic for each server that has the Topic defined. Select a server from the list to view details in the "Single Topic Summary" display.

URL	The IP address and port number for the server.
Act. Durables	The number of currently active durables.
Consumers	The current number of consumers.
Durables	The number of active and inactive durables.
failsafe	When checked, the message is marked as failsafe delivery.
fcMaxBytes	The maximum number of bytes allocated for use by flow control.
global	When checked, the message is global and is routed to other servers.
In Byte Rate	The amount of inbound messages for the topic, in bytes per second.
In Msgs Rate	The amount of inbound messages for the topic, in number of messages per second.
In Total Bytes	The total number of inbound bytes for the topic.
In Total Msgs	The total number of inbound messages for the topic.
maxBytes	The maximum size, in bytes, that the topic can store for delivery to each durable or non-durable online subscriber on the topic.
maxMsgs	The maximum number of messages allocated for use by the topic.
Out Byte Rate	The amount of outbound messages (in bytes) per second.

Out Msg Rate	The number of outbound messages per second.
Out Total Bytes	The total amount of outbound messages for the topic, in bytes, since the server was started.
Out Total Msgs	The total number of outbound messages for the topic since the server was started.
overflowPolicy	Policy Indicates whether an overflow policy is set for the topic: **0** = No policy is set. **1** = A policy is set.
Pending Msgs	The number of currently pending messages for the topic.
Pending Msgs Size	The amount of space, in bytes, pending messages use for the topic.
secure	When checked, the topic is designated as secure and enforces permission policies.
static	When checked, the topic has a static destination.
Subscribers	The number of subscribers for the topic.
time_stamp	The date and time this row of data was last updated.
description	Descriptive text to help the administrator identify this resource.

EMS Queues

These displays present several views of performance metrics for queues. You can view all queues that are defined on a specific server in the "All Queues Heatmap" display, or you can view all servers that have a specific queue defined in the "Single Queue Summary" display. The "Single EMS Queue-Clients" display provides a list of all the servers on which those queues are defined.

- "All Queues Heatmap": A heatmap representation of a selected set of metrics that shows performance and utilization metrics and trends for all queues defined on a specified server, including message performance metrics.
- "All Queues Table": Shows performance and utilization metrics for all queues defined on a specified server.
- "All Queues Summary": Shows performance and utilization metrics and trends for all queues defined on a specified server, including message performance metrics.
- "Single Queue Summary": Shows detailed performance and utilization metrics and trends for a specified queue on a single server, including producer and consumer counts, and message performance metrics.
- "Single EMS Queue-Clients": View data for all consumers and producers associated with the selected queue.
- "Single Queue By Server": Table shows performance and utilization metrics for all servers that have a specified queue defined, including consumer and receiver count, and message performance metrics.

All Queues Heatmap

A heatmap representation of the "All Queues Table" display that allows you to track performance and utilization metrics and trends for all queues on a single server. View status and alerts of all queues for a server. Use the **Metric** drop-down menu to view to **Alert Severity**, **Alert Count**, **Consumers**, **Receivers**, **Pending Messages**, **Inbound Message Rate**, **Inbound Total Messages**, **Outbound Message Rate**, or **Outbound Total Messages**.

The heatmap is organized so that each rectangle represents a queue on the selected server. The rectangle color indicates the most critical alert state. Click on a node to drill-down to the "Single Queue Summary" display and view metrics for a particular queue. Toggle between the commonly accessed **Table** (link to the "All Queues Table" display) and **Heatmap** displays. Mouse-over rectangles to view more details about the performance and status of each queue.

Title Bar (possible features are):

- Open the previous and upper display.
- Menu and Table open commonly accessed displays.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
- Open the **Alert Views - RTView Alerts Table** display.
- Open an instance of this display in a new window.
- Open the online help page for this display.

Note: Clicking **Table** in the Title Bar takes you to the "All Queues Table" display. Clicking **Summary** in the Title Bar takes you to the "All Queues Summary" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all the associated Queue data in this display.

Filter Pattern Enter a string to show only queues with names that contain the string. For example, if you enter the string Madrid, all queues with Madrid in the queue name are shown in the table. If no entry is made, all queue names are shown. For most use cases, you can enter a portion of the queue name.

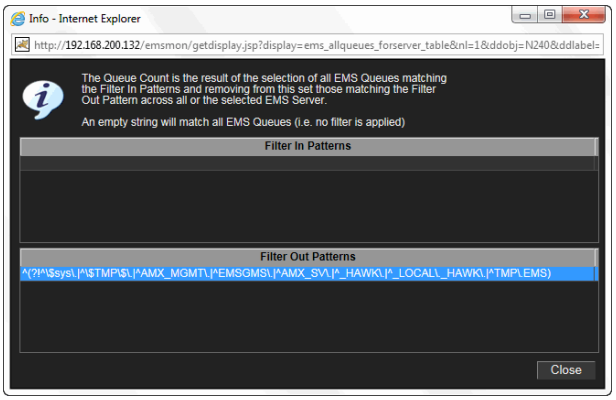
Filtered Queue Count This field is broken into two different values. The first value is the total number of currently active queues on the selected server, which is filtered by the **Filter Pattern** field and by the default value specified in the **$emsQueueFilterOutPattern** property in the **emsmon/conf/rtvapm.properties** file. The second value is the total number of queues on the selected server. In other words, the filtered number of queues/the total number of queues on the server.

The default value for the **$emsQueueFilterOutPattern** property is:

```
collector.sl.rtview.sub=$emsQueueFilterOutPattern:'^(?!^\\$sys\\.|^\\$TMP\\$\\.|^AMX_MGMT\\.|^EMSGMS\\.|^AMX_SV\\.|^_HAWK\\.|^_LOCAL\\._HAWK\\.|^TMP\\.EMS)'
```

You can modify the filter value by editing the **$emsQueueFilterOutPattern** property in the "sample.properties File", which will override the default value.

Clicking the associated Help button displays the **Info** dialog, which displays the defined filter in and filter out properties used by the **Filtered Queue Count**.

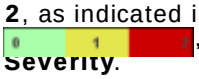


Log This option enables visualization on a logarithmic scale, and should be used when the range in your data is very broad. For example, if you have data that ranges from the tens to the thousands, then data in the range of tens will be neglected visually if you do not check this option. This option makes data on both extreme ranges visible by using the logarithmic of the values rather than the actual values.

Auto When checked, the values of the selected metric are auto-scaled to its highest defined value. When unchecked, the values of the selected metric display based on the threshold defined for the alert associated with the selected metric. Selecting Auto helps to visualize the range of the values currently present for the selected metric instead of the threshold of the alert that has been associated with the metric. All metrics that have not been associated in the heatmap defaults with alerts use a monochromatic color gradient bar (whites and greens). All metrics that have been associated in the heatmap defaults with alerts use a multi-chromatic color gradient bar (reds, yellows, white, and greens).

Metric Select the metric driving the heatmap display. The default is **Alert Severity**. Each Metric has a color gradient bar that maps values to colors. The heatmap organizes the topics by server, where each rectangle represents a Queue. Mouse-over any rectangle to display the current values of the metrics for the Queue. Click on a rectangle to drill-down to the associated "Single Queue Summary" display for a detailed view of metrics for that particular queue.

Alert Severity

The maximum alert level in the item (index) associated with the rectangle. Values range from **0** to **2**, as indicated in the color gradient bar  , where **2** is the greatest **Alert Severity**.

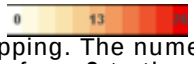
2 -- Metrics that have exceeded their specified **ALARMLEVEL** threshold and have an Alert Severity value of **2** are shown in red. For a given rectangle, this indicates that one or more metrics have exceeded their alarm threshold.

1 -- Metrics that have exceeded their specified **WARNINGLEVEL** threshold and have an Alert Severity value of **1** are shown in yellow. For a given rectangle, this indicates that one or more metrics have exceeded their warning threshold.

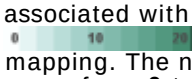
0 -- Metrics that have not exceeded either specified threshold have an Alert Severity value of **0** and are shown in green. For a given rectangle, this indicates that no metrics have exceeded a specified alert threshold.

Alert Count

The total number of alarm and warning alerts in a given item (index) associated with the rectangle.

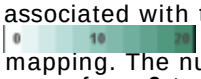
The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Consumers

The total number of consumers in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

Receivers

The total number of receivers in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

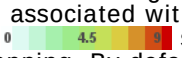
The **Auto** option does not impact this metric.

Pending Msgs

The total number of pending messages in a given item (index) associated with the rectangle. The color gradient bar  shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsQueuesPendingMsgsHigh**, which is **3000**. The middle value in the gradient bar indicates the middle value of the range (the default is **1500**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

In Msgs /sec

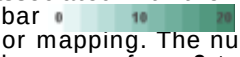
The number of inbound messages per second in a given item (index) associated with the rectangle. The color gradient bar 

shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsQueuesInMsgRateHigh**, which is **9**. The middle value in the gradient bar indicates the middle value of the range (the default is **4.5**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Note: This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.

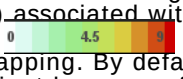
In Total Msg

The total number of inbound messages in a given item (index) associated with the rectangle. The color gradient bar 

shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

Out Msgs/sec

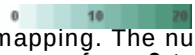
The number of outbound messages per second in a given item (index) associated with the rectangle. The color gradient bar 

shows the range of the value/color mapping. By default, the numerical values in the gradient bar range from **0** to the alert threshold of **EmsQueuesOutMsgRateHigh**, which is **9**. The middle value in the gradient bar indicates the middle value of the range (the default is **4.5**).

When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Note: This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.

Out Total Msgs

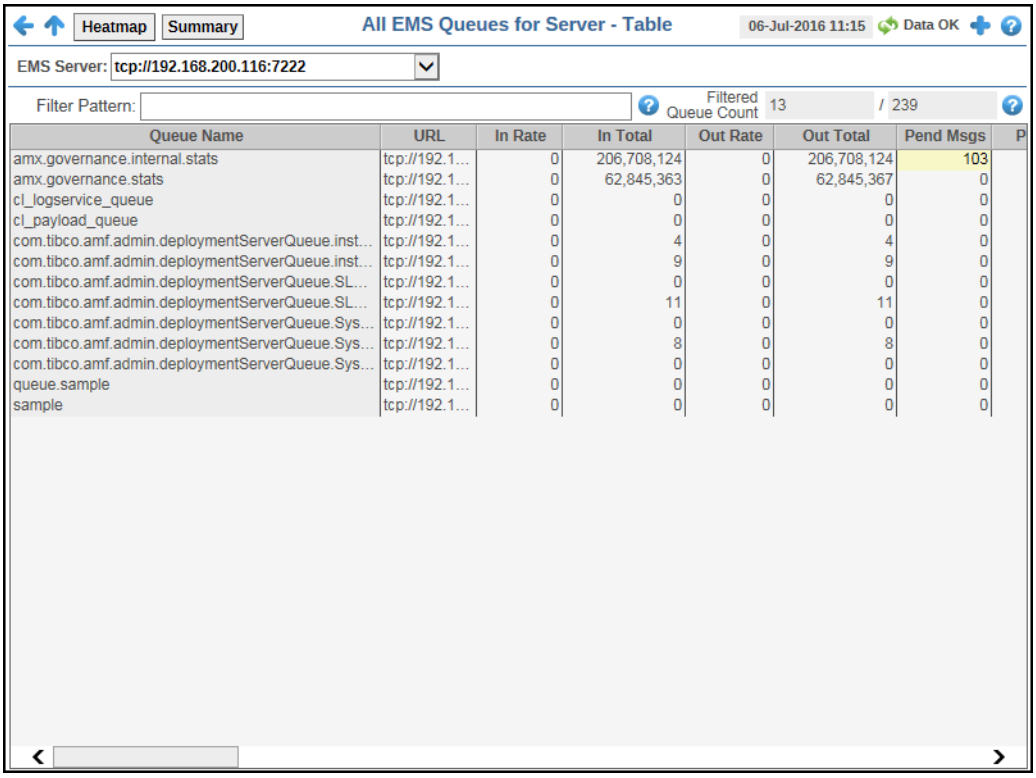
The total number of outbound messages in a given item (index) associated with the rectangle. The color gradient bar 

shows the range of the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of receivers in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

The **Auto** option does not impact this metric.

All Queues Table

Track performance and utilization metrics for all queues on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Heatmap** in the Title Bar takes you to the "All Queues Heatmap" display. Clicking **Summary** in the Title Bar takes you to the "All Queues Summary" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Queue data in this display.

Filter Pattern Enter a string to show only queues with names that contain the string. For example, if you enter the string Madrid, all queues with Madrid in the queue name are shown in the table. If no entry is made, all queue names are shown. For most use cases, you can enter a portion of the queue name.

Filtered Queue Count This field is broken into two different values. The first value is the total number of currently active queues on the selected server, which is filtered by the **Filter Pattern** field and by the default value specified in the **$emsQueueFilterOutPattern** property in the **emsmon/conf/rtvapm.properties** file. The second value is the total number of queues on the selected server. In other words, the filtered number of queues/the total number of queues on the server.

The default value for the **$emsQueueFilterOutPattern** property is:

```
collector.sl.rtview.sub=$emsQueueFilterOutPattern:'^(?!^\\$sys\\.|^\\$TMP\\$\\.|^AMX_MGMT\\.|^EMSGMS\\.|^AMX_SV\\.|^_HAWK\\.|^_LOCAL\\._HAWK\\.|^TMP\\.EMS)'
```

You can modify the filter value by editing the **$emsQueueFilterOutPattern** property in the "sample.properties File", which will override the default value.

Clicking the associated Help button displays the **Info** dialog, which displays the defined filter in and filter out properties used by the **Filtered Queue Count**.

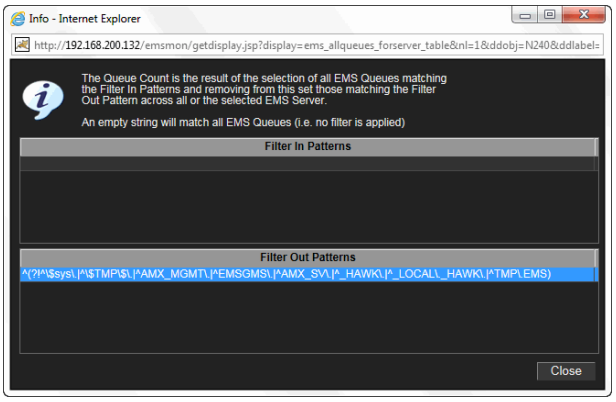


Table This table describes all queues on the selected server. Click a row to view metrics for a single queue in the "Single Queue Summary" display.

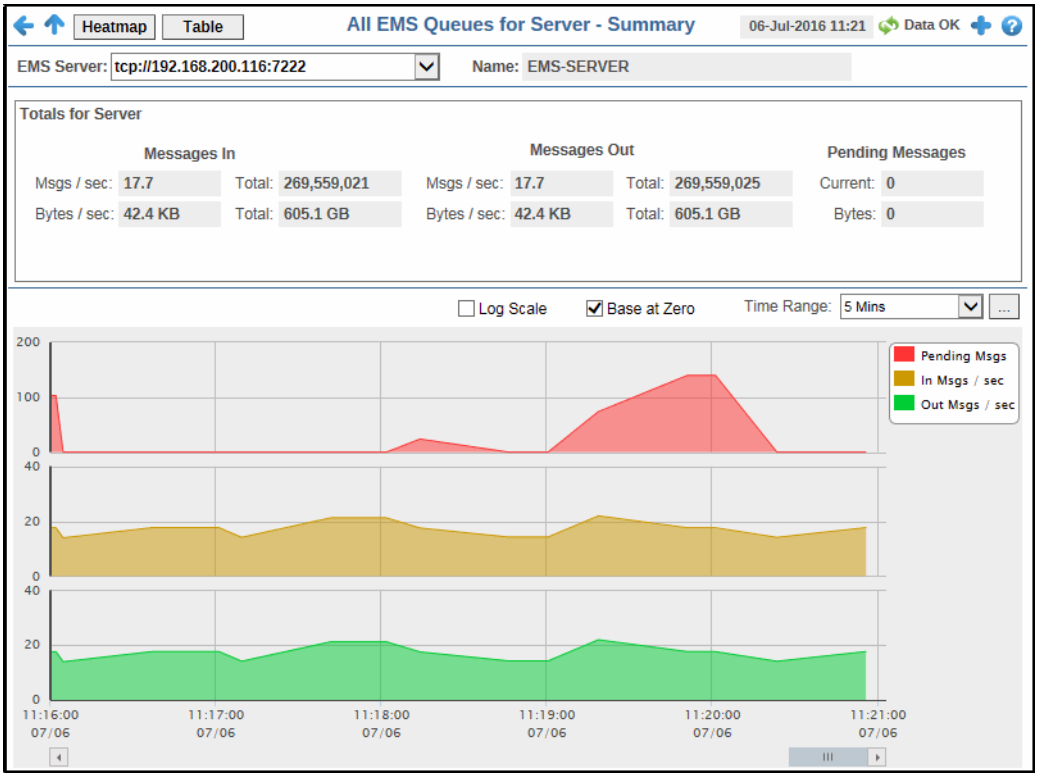
Queue Name	The name of the queue.
URL	The IP address and port number for the server.
In Rate	The number of inbound messages for the queue, per second. **Note:** This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.
In Total	The total number of inbound messages for the queue.
Out Rate	The number of outbound messages for the queue, per second. **Note:** This metric comes directly from the **tibjms.admin.DestinationInfo** class from TIBCO.
Out Total	The total number of outbound messages for the queue.
Pend Msgs	The number of currently pending messages for the queue.

Pend Size	The amount of space, in bytes, used by pending messages for the queue.
activeDurableCount	The current number of active durables.
consumerCount	The number of active and inactive consumers.
durableCount	The number of active and inactive durables.
failSafe	When checked, the message is marked as failsafe delivery.
fcMaxBytes	The maximum number of bytes allocated for use by flow control.
global	When checked, the message is global and is routed to other servers.
inboundByteRate	The amount of inbound messages for the queue, in bytes per second.
inboundTotalBytes	The total amount of inbound messages for the queue, in bytes.
maxBytes	The maximum amount of bytes allocated for use by the queue.
maxMsgs	The maximum number of messages allocated for use by the queue.
outboundByteRate	The amount of outbound messages for the queue, in bytes per second.
outboundTotalBytes	The total amount of outbound messages for the queue, in bytes.
overflowPolicy	Indicates whether an overflow policy is set for the queue: **0** = No policy is set. **1** = A policy is set.
secure	When checked, the queue is designated as secure and enforces permission policies.
static	When checked, the queue has a static destination.
subscriberCount	The number of subscribers that receive queue message.
description	Descriptive text to help the administrator identify this resource.
Expired	This check box becomes automatically checked when the data displayed in the row has exceeded the specified cache expiration time (set by default at 45 seconds) and is no longer current. Once the cache has been refreshed and is displaying current data, the check box will return to being unchecked. This check box will remain unchecked as long as the cache has been refreshed within the specified cache expiration time and the data is current.

time_stamp	The date and time this row of data was last updated.
DeltainboundTotalMessages	The change in total inbound messages since the last update.
DeltainboundTotalBytes	The change in total inbound message bytes since the last update.
DeltaoutboundTotalMessages	The change in total outbound messages since the last update.
DeltaoutboundTotalBytes	The change in total outbound message bytes since the last update.
prefetch	Lists the maximum number of messages consumers can fetch.
expiryOverride	If set to a non-zero value for a destination and the server delivers a message to the destination, the server replaces the producer's expiration value with this value.
store	Provides the store for this destination where persistent messages are stored.
deliveredMessageCount	Indicates the total number of messages that have been delivered and acknowledged.
URLQueue	The IP address and port for the queue.
exclusive	When checked, the server sends all messages on this queue to one consumer.
maxRedelivery	The maximum number of attempts for attempting redelivery of a message.
receiverCount	The number of receivers that receive queue message.

All Queues Summary

Track performance and utilization metrics and trends for all queues on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Heatmap** in the Title Bar takes you to the "All Queues Heatmap" display. Clicking **Table** in the Title Bar takes you to the "All Queues Table" display.

Fields and Data

This display includes:

EMS Server	The EMS Server selected from this drop-down menu populates all associated queue data in this display.
Name	The name of the server selected in the **EMS Server** drop down list.
Totals For Server	Shows metrics for all queues on the selected server.

Messages In

Msgs/sec -- The total number of inbound messages for all queues on the server, per second.

Total -- The total number of inbound messages for all queues on the server since the server was started.

Bytes/sec -- The amount of inbound messages, in bytes per second, for all queues on the server.

Total -- The amount of inbound messages, in kilobytes, for all queues on the server since the server was started.

Messages Out

Msgs/sec -- The total number of outbound messages for all queues on the server, per second.

Total -- The total number of outbound messages for all queues on the server since the server was started.

Bytes/sec -- The amount of outbound messages, in bytes per second, for all queues on the server.

Total -- The amount of outbound messages for all queues on the server, in kilobytes, since the server was started.

Pending Messages

Current -- The total number of messages currently waiting to be processed.

Bytes -- The amount of messages, in bytes, currently waiting to be processed.

Trend Graphs

Shows metrics for all queues on the selected server.

Pending Msgs -- Traces the number of messages currently waiting to be processed.

In Msgs / sec -- Traces the number of inbound messages for all queues, per second.

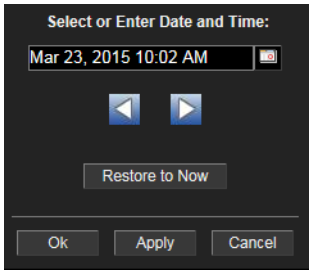
Out Msgs / sec -- Traces the number of outbound messages for all queues, per second.

Log Scale

This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



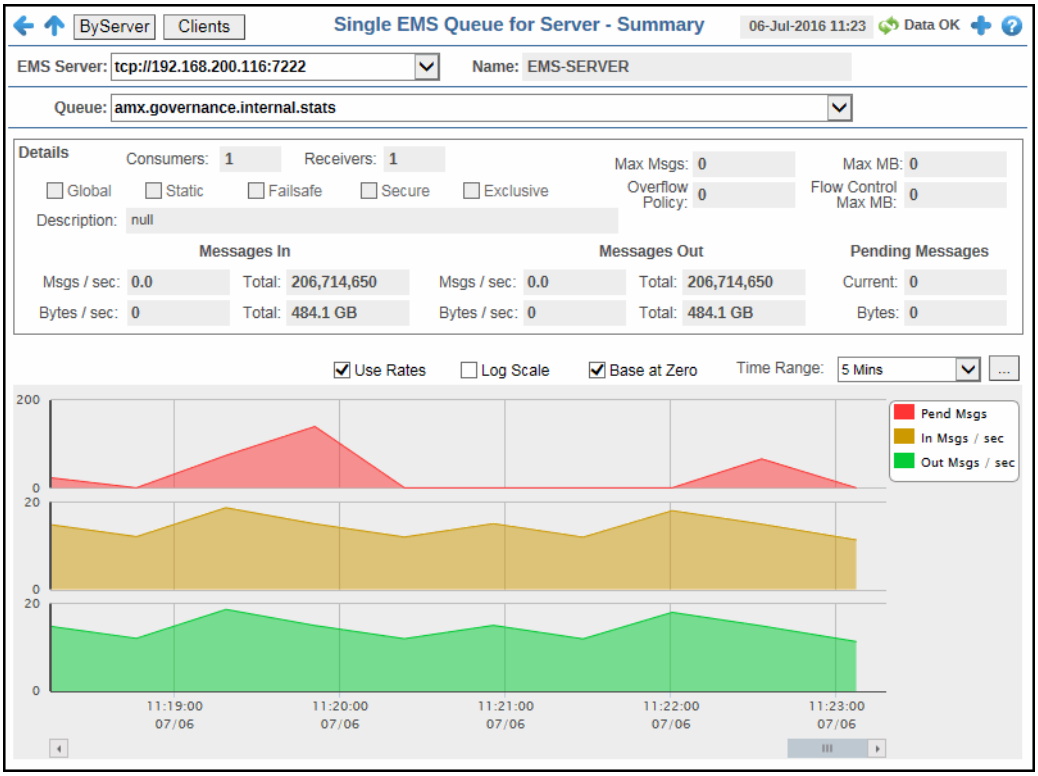
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single Queue Summary

Track performance and utilization metrics for a single queue on a single server.



Title Bar (possible features are):

- Open the previous and upper display.
- Menu and Table open commonly accessed displays.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
- Open the **Alert Views - RTView Alerts Table** display.
- Open an instance of this display in a new window.
- Open the online help page for this display.

Note: Clicking **Clients** in the Title Bar takes you to the "Single EMS Queue-Clients" display. Clicking **By Server** in the Title Bar takes you to the "Single Queue By Server".

Fields and Data

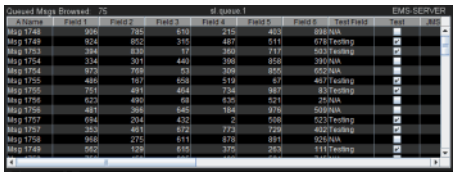
This display includes:

EMS Server The EMS Server selected from this drop-down menu populates the **Queues** drop-down menu with the queues belonging to this EMS Server.

Name The name of the EMS Server selected from the **EMS Server** drop-down menu.

Queue Select a queue from the drop-down menu. The selection made here populates this display.

Browse Click to browse the contents of the selected queue in a separate window. The queue browser table displays up to 100,000 rows of messages.



By default, this button is disabled due to the fact that use of this option could significantly impact performance. To enable it, add the following substitution to the properties file with which you execute the Display Server and/or Viewer:

sl.rtview.sub=$emsDestBrowseButtonVisFlag:1

Details Shows metrics for the queue selected from the **Queue** drop-down menu.

	Consumers	The number of consumers currently interacting with the queue.
	Receivers	The number of consumers currently receiving messages from the queue.
	Max Msgs	The maximum number of messages allocated for the queue.
	Max MB	The maximum amount of memory, in megabytes, allocated for use by the queue.
	Global	When checked, the message is global and is routed to other servers.
	Static	When checked, the queue has a static destination.
	Failsafe	When checked, the message is marked as failsafe delivery.
	Secure	When checked, the queue is designated as secure and enforces permission policies.
	Exclusive	When checked, the server sends all messages on this queue to one consumer.
	Overflow Policy	Indicates whether an overflow policy is set for the queue: **0** = No policy is set. **1** = A policy is set.
	Flow Control Max MB	The maximum amount of memory, in megabytes, allocated for flow control use by the queue.
	Description	Description of the Queue.
Messages In	**Msgs/sec**	The number of inbound messages, per second, for the selected queue.
	Total	The total number of inbound messages for the selected queue since the server was started.
	Bytes/sec	The size of the inbound messages, in bytes per second, for the selected queue.
	Total	The total size of inbound messages, in bytes, for the selected queue since the server was started.

Messages Out	**Msgs/sec**	The number of outbound messages, per second, for the selected queue.
	Total	The total number of outbound messages for the selected queue since the server was started.
	Bytes/sec	The size of outbound messages, in bytes per second, for the selected queue.
	Total	The total size of outbound messages, in bytes, for the selected queue since the server was started.
Pending Messages	**Current**	The total number of messages for the selected queue currently waiting to be processed.
	Bytes	The size, in bytes, of messages for the selected queue currently waiting to be processed.

Trend Graphs

Shows metrics for the selected queue on the specified server.

Pending Msgs -- Traces the number of messages currently waiting to be processed.

In Msgs / sec -- Traces the number of inbound messages, per second. This trend graph only displays when **Use Rates** is selected.

Out Msgs / sec -- Traces the number of outbound messages, per second. This trend graph only displays when **Use Rates** is selected.

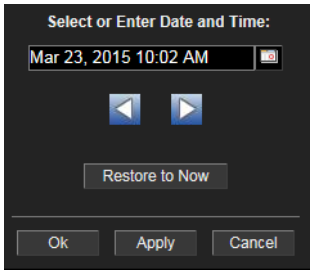
Delta In Msgs -- Traces the change in total inbound messages since the last update. This trend graph only displays when **Use Rates** is not selected.

Delta Out Msgs -- Traces the change in total inbound messages since the last update. This trend graph only displays when **Use Rates** is selected.

Use Rates	When this check box is selected, the inbound and outbound message rates (**In Msgs/sec** and **Out Msgs/sec**) display in the trend graph. When this check box is not selected, the delta inbound and outbound messages (**Delta In Msgs** and **Delta Out Msgs**) display in the trend graph.
Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



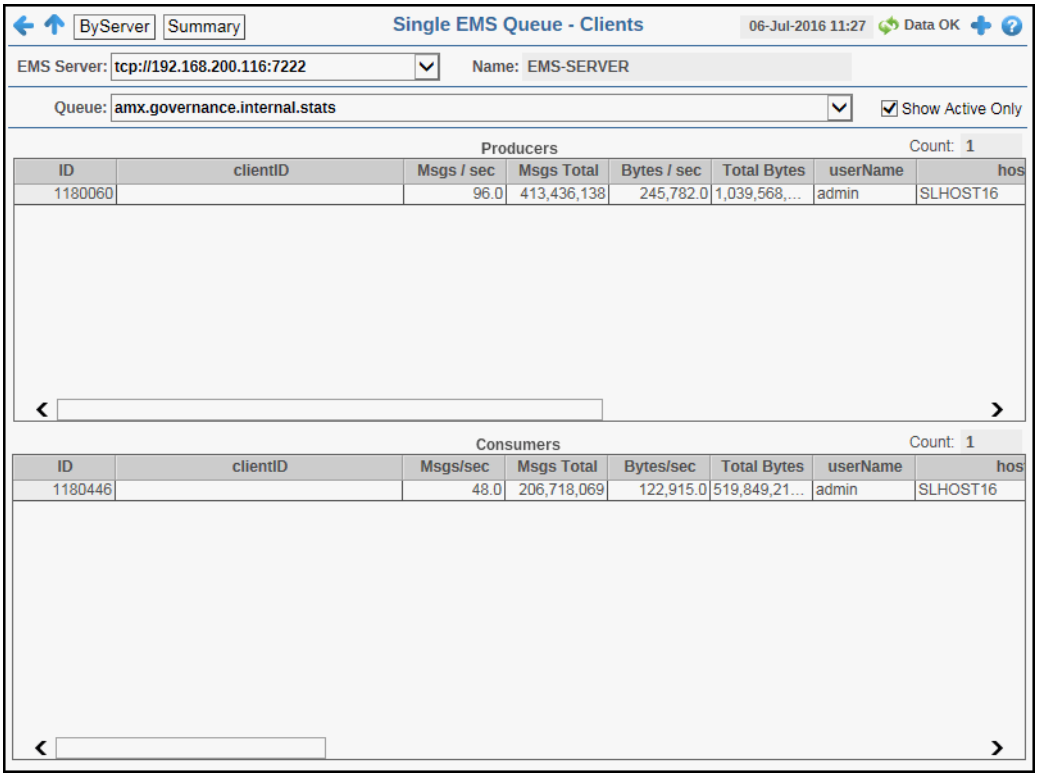
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Single EMS Queue-Clients

View data for all consumers and producers associated with the selected queue.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **By Server** in the Title Bar takes you to the "Single Queue By Server". Clicking **Summary** in the Title Bar takes you to the "Single Queue Summary" display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates the Queue drop-down menu with the Queues belonging to this EMS Server.

Name The name of the EMS Server selected from the EMS Server drop-down menu.

Queue Select a Queue from the drop-down menu to view details for the selected Queue.

Show Active Only Select this check box to view only the active producers and consumers for the selected EMS Queue.

Producers Shows data for all producers for the selected queue.

- **ID** A unique string identifier assigned to each producer.
- **clientID** A unique string identifier assigned to each client.
- **Msgs / sec** The number of messages, per second, that are emitted by the producer.
- **Msgs Total** The total number of messages emitted by the producer since the server was started.
- **Bytes / sec** The size of messages, in bytes per second, that are emitted by the producer.
- **Total Bytes** The total size of messages, in bytes, emitted by the producer since the server was started.
- **userName** The user name.
- **host** The name of the host.
- **sessionID** A unique string identifier assigned to each session.
- **connection ID** A unique string identifier assigned to each connection.
- **createTime** The amount of time, in milliseconds, since the producer was created.
- **time_stamp** The date and time this row of data was last updated.
- **Expired** When checked, performance data about this producer has not been received for 45 seconds. After 3600 seconds, the producer is deleted from the table.

Consumers Shows data for all consumers associated with the selected queue.

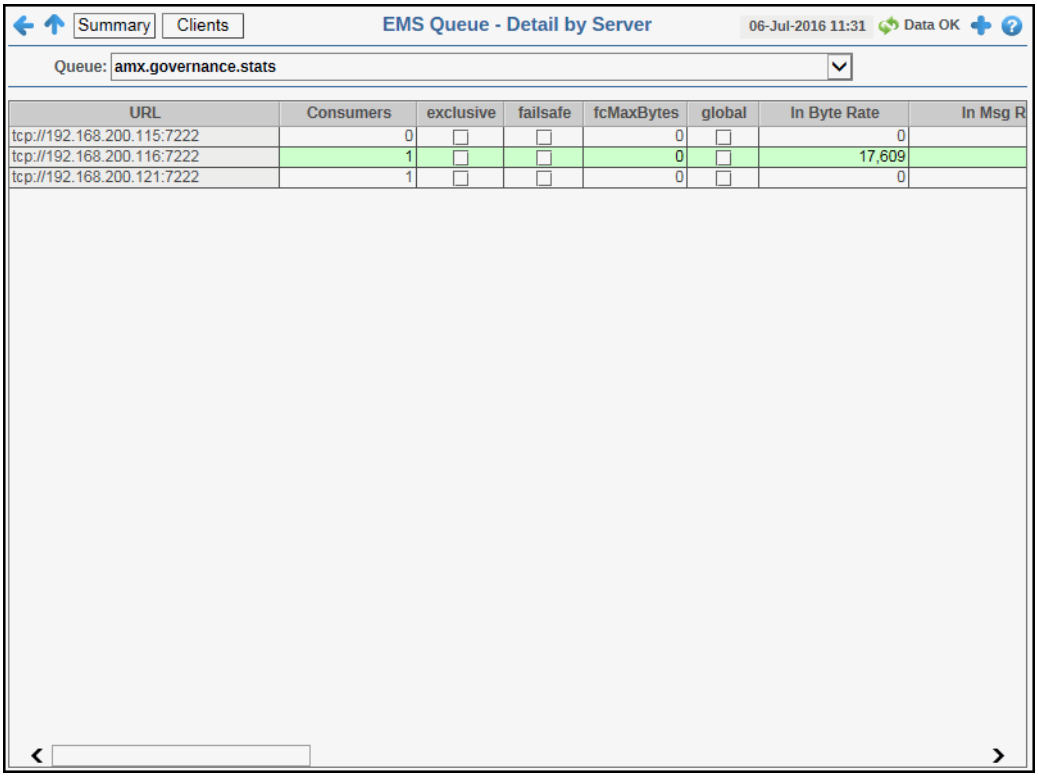
- **ID** A unique string identifier assigned to each consumer.
- **clientID** A unique string identifier assigned to each client.
- **Msgs / sec** The number of messages, per second, that are processed by the consumer.
- **Msgs Total** The total number of messages that have been processed by the consumer.
- **Bytes / sec** The size of messages, in bytes per second, that are processed by the consumer.
- **Total Bytes** The total size of messages, in bytes, processed by the consumer since the server was started.
- **userName** The user name.
- **host** The name of the host machine.

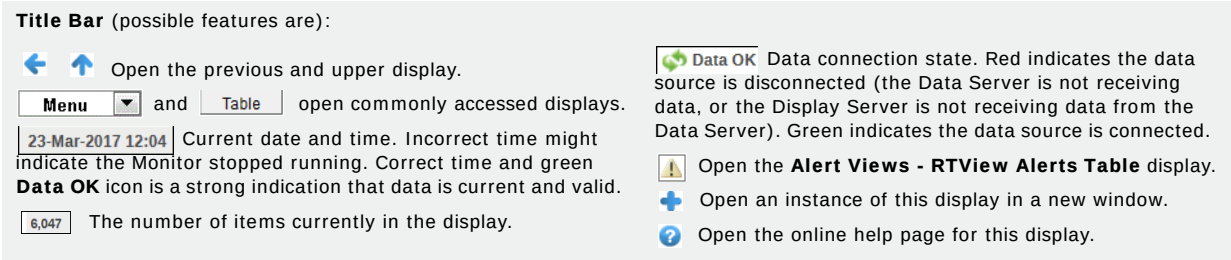
Msgs Sentt	The number of messages sent to the consumer that were not yet acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
Size Msg Sent	The combined size of messages sent to the consumer that were not yet acknowledged by the consumer's session. **The sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
Ack Msgs	The total number of messages that have been sent to the consumer and have been acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
Sent Msgs	The total number of messages sent to the consumer since the consumer was created. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elap. Since Last Ack	The amount of time (in milliseconds) that has elapsed since the last time a message sent to the consumer was acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elap. Since Last Sent	The amount of time (in milliseconds) that has elapsed since the last time the server sent a message to the consumer. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
destination Prefetch	The actual destination prefetch value used by the server at runtime. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
prefetch Delivered Count	The number of prefetch messages delivered to the consumer by the server. For consumers receiving messages on any destination with positive prefetch value, this value is never more than the prefetch value of the destination. This value cannot be used to identify the status of the consumer, but it can be used in conjunction with other consumer information values to identify consumers who stopped receiving messages due to application-specific problems. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
durable Name	The name of the durable.
routeName	The queue owner server name if the consumer's destination is a routed queue. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
isActive	When checked, the consumer is active and can receive messages from the server. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.
isSystem	This check box is checked if the consumer was automatically created by the system. The **sl.rtview.jmsadm.queryClDetails** property must be set to **true** in your **sample.properties** file to see this column.

sessionAck Mode	Lists the consumer's session acknowledge mode as a constant defined in **TibjmsAdmin**. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
session ID	A unique string identifier assigned to each session.
connection ID	A unique string identifier assigned to each connection.
createTime	The amount of time, in milliseconds, since the consumer was created.
time_stamp	The date and time this row of data was last updated.
Expired	When checked, performance data about this consumer has not been received for **45** seconds. After **3600** seconds, the consumer is deleted from the table.

Single Queue By Server

Track performance and utilization metrics of a single queue across all servers. Compare queue activity among servers.





Note: Clicking **Summary** in the Title Bar takes you to the "Single Queue Summary". Clicking **Clients** in the Title Bar takes you to the "Single EMS Queue-Clients" display.

Fields and Data

This display includes:

Queue The Queue selected from this drop-down menu populates this display.

Table Shows details about the selected Queue for each server that has the queue defined. Select a server to view details in the "Single Queue Summary" display.

URL	The URL of the server.
Consumers	The number of active and inactive consumers.
exclusive	When checked, the server sends all messages on this queue to one consumer.
failSafe	When checked, the message is marked as failsafe delivery.
fcMaxBytes	The maximum number of bytes allocated for use by flow control.
global	When checked, the message is global and is routed to other servers.
In Byte Rate	The amount of inbound messages for the queue, in bytes per second.
In Msg Rate	The amount of inbound messages for the queue, in number of messages per second.
In Total Bytes	The total number of inbound bytes for the queue.
In Total Msgs	The total number of inbound messages for the queue.
maxBytes	The maximum amount of bytes allocated for use by the queue.
maxMsgs	The maximum number of messages allocated for use by the queue.
maxRedelivery	The maximum number of attempts for attempting redelivery of a message.

Out Byte Rate	The amount of outbound messages (in bytes) per second.
Out Msg Rate	The number of outbound messages per second.
Out Total Bytes	The total amount of outbound messages, in bytes, since the server was started.
Out Total Msgs	The total number of outbound messages since the server was started.
overflowPolicy	Indicates whether an overflow policy is set for the queue: **0** = No policy is set. **1** = A policy is set.
Pending Msgs	The number of currently pending messages.
Pending Msgs Size	The amount of space, in bytes, pending messages use for the queue.
Receivers	The number of receivers of queue messages.
secure	When checked, the topic is designated as secure and enforces permission policies.
static	When checked, the topic has a static destination.
time_stamp	The date and time this row of data was last updated.
description	Descriptive text to help the administrator identify this resource.

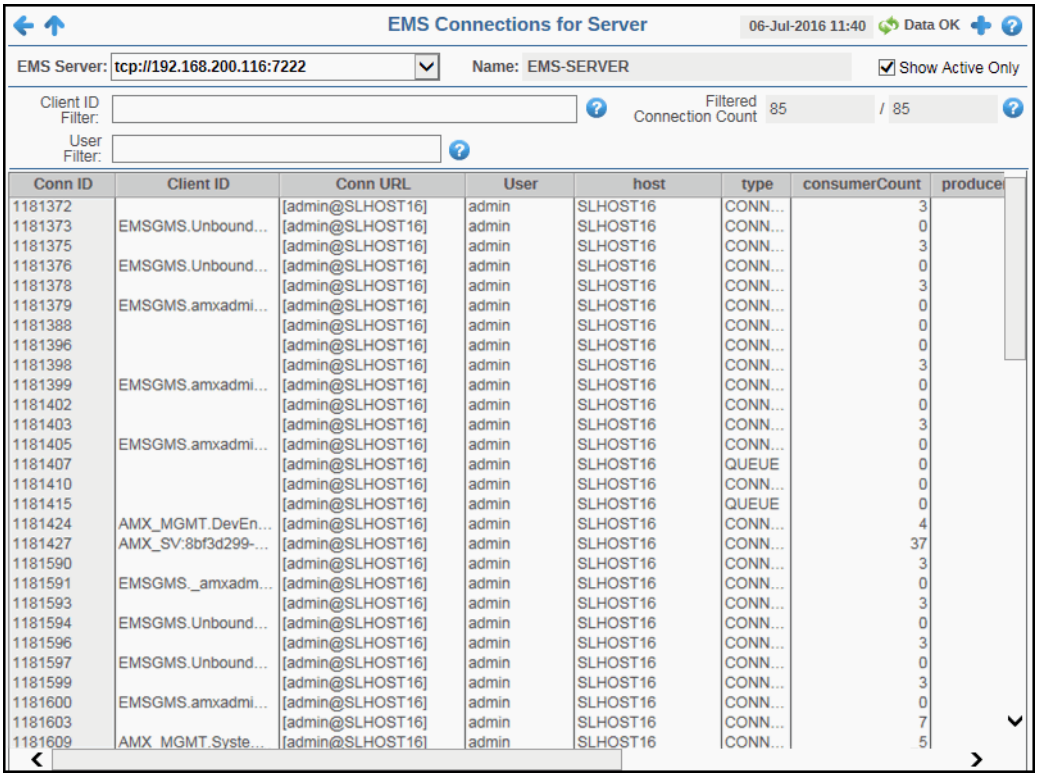
EMS Clients

These displays present performance metrics for all server connections, including users, routes between servers, producers, consumers and durables connected to a specific EMS server.

- "Connections": Shows connection information on a single server.
- "Bridges, Users, Ports": Shows utilization metrics for bridges, users and ports on a single server.
- "Routes": Shows bridges for server routes on a single server.
- "Producers": Shows utilization metrics for producers on a single server.
- "Producer Summary": Shows utilization metrics for producers on a single server.
- "Consumers": Shows utilization metrics for consumers on a single server.
- "Consumer Summary": Shows utilization metrics for consumers on a single server.
- "Durables": Shows utilization metrics for durables on a single server.

Connections

View connections on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server	The EMS Server selected from this drop-down menu populates all associated Connections data in this display.
Name	The name of the EMS Server selected from the EMS Server drop-down menu.
Show Active Only	Select this check box to display only active connections.
Client ID Filter	Filter field that allows you to filter the list of connections by client ID.

Filtered Connection Count

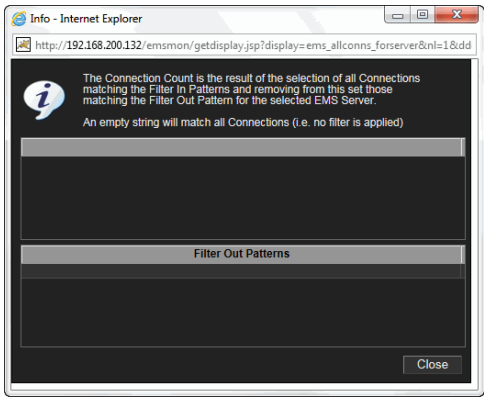
This field is broken into two different values. The first value is the total number of currently active connections on the selected server, which is filtered by the **Filter Pattern** field and by the default value specified in the **$emsConnectionFilterOutPattern** property in the **emsmon/conf/rtvapm.properties** file. The second value is the total number of connections on the selected server. In other words, the filtered number of connections/the total number of connections on the server.

The default value for the **$emsConnectionFilterOutPattern** property is:

```
collector.sl.rtview.sub=$emsConnectionFilterOutPattern:'^(?!^\\[admin\\@)'
```

You can modify the filter value by editing the **$emsConnectionFilterOutPattern** property in the "sample.properties File", which will override the default value.

Clicking the associated Help button displays the **Info** dialog, which displays the defined filter in and filter out properties used by the **Filtered Connection Count**.



User Filter Filter field that allows you to filter the list of connections by user name.

Connections This table describes the current connections on the selected server.

Conn ID	The unique numeric ID assigned to this connection that can be used for deletion.
Client ID	The unique string identifier assigned to the client.
Conn URL	The connection URL.
User	The user name.
host	The name of the host to which the server is connected.
type	The type of connection: Queue, Topic or System.
consumerCount	The total number of consumers currently connected.
producerCount	The total number of producers currently connected.
sessionCount	The total number of sessions currently connected.
startTime	The date and time the server was started
upTime	The amount of time, in milliseconds, since the server was started.

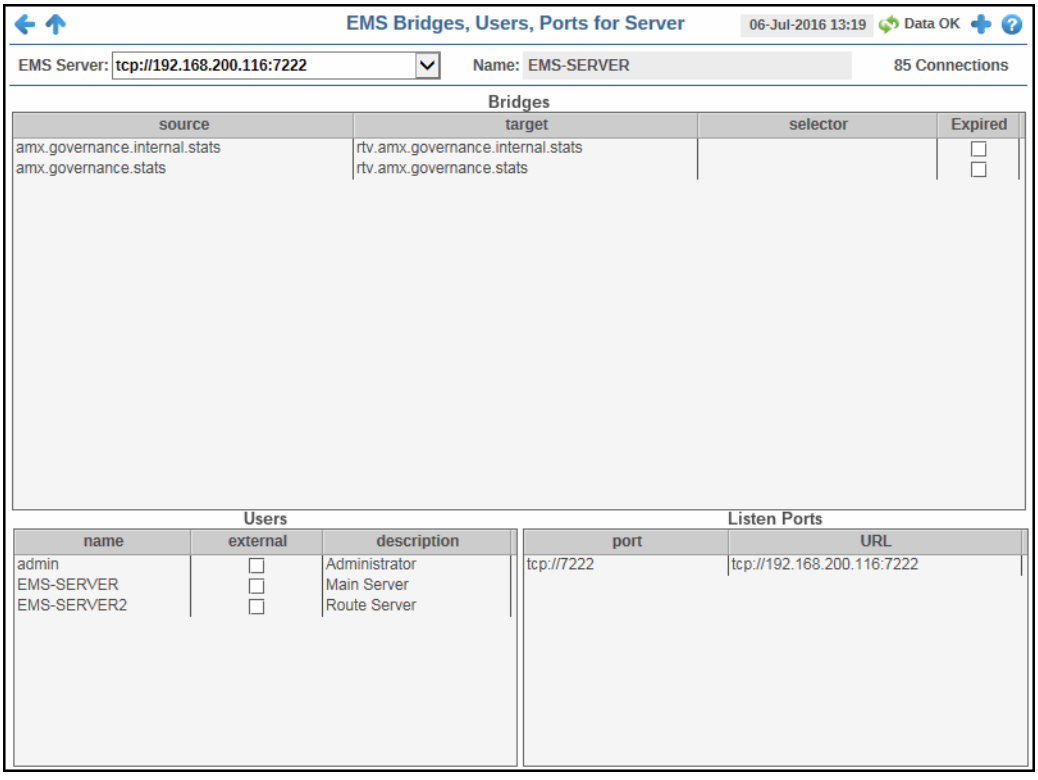
Expired	When checked, this check box signifies that the connection has been inactive for 45 seconds. After 3600 seconds it is deleted from the table.
time_stamp	The date and time this row of data was last updated.

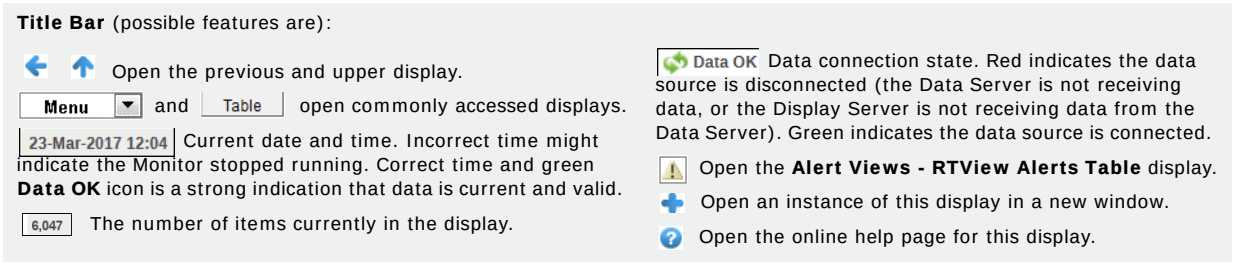
Bridges, Users, Ports

View bridges configured on an EMS Server, as well as their associated users and ports. You can right-click in the **Bridges** table and select **Go To Source** to view bridged source information in the "Single Queue Summary" if the source is a queue, or "Single Topic Summary" if the source is a topic. You can right-click in the **Bridges** table and select **Go To Target** to view bridged target information in the "Single Queue Summary" if the target is a queue, or "Single Topic Summary" if the target is a topic.

Note: The **Go To Source** option will not enabled if the source side of the bridge is wildcarded.

Note: .The functionality of the **Drop Down** option in the drop down list that displays when you right-click in the **Bridges** table is replaced by the **Go To Source** and **Go To Target** options, and no additional functionality exists for the **Drop Down** option.





Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Bridges, Users, and Ports data in this display.

Name The name of the EMS Server selected from the **EMS Server** drop-down menu.

Bridges This table describes the bridges for the selected server.

- **source** The topic or queue which is the source of the bridge.
- **target** The topic or queue which is the target of the bridge.
- **selector** The message selector string or blank if none has been set.
- **Expired** When checked, data about the bridge has not been received for 45 seconds. After 3600 seconds it is deleted from the table.

Users This table describes the users on the selected server.

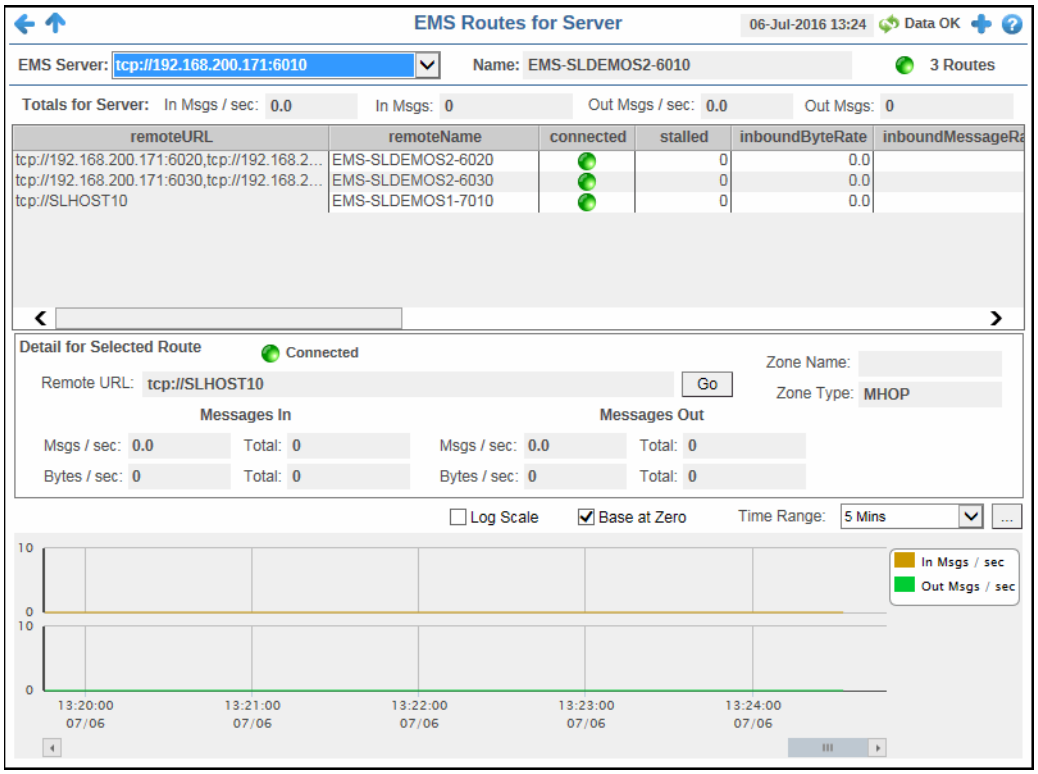
- **name** The name of the connected user.
- **external** When checked, the user is defined in an external system.
- **description** Textual description of the user.

Listen Ports This table describes the connections the selected server is to listen for.

- **port** The IP address and port number on which the server is to listen for connections.
- **URL** The URL on which the server is to listen for connections.

Routes

Track utilization metrics for server routes on a single server. Inbound metrics, such as **inboundByteRate**, indicate an in route to the server. Outbound metrics, such as **outboundByteRate**, indicate an out route to the server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down menu populates all associated Routes data in this display.

Name The name of the EMS server selected from the **EMS Server** drop-down menu.

Routes The number of server routes and the connection state.

-- One or more routes for this server are disconnected.

-- All routes for this server are connected.

-- There are no routes for this server.

Totals For Server Shows metrics for all server routes on the selected server.

In Msgs / sec	The number of inbound messages, per second.
In Msgs	The total number of inbound messages.
Out Msgs / sec	The number of outbound messages, per second.
Out Msgs	The total number of outbound messages.

Table This table shows metrics for each server route on the selected server. Select a route to view details.

remoteURL	The URL of the remote server.
remoteName	The name of the remote server.
connected	When checked, the server route is connected.
stalled	Indicates whether the IO flow stalled on the route. A value of **0** (zero) = not stalled. A value of **1** = stalled.
inboundByteRate	The rate of inbound data in bytes, per second.
inboundMessageRate	The rate of inbound messages in number of messages per second.
inboundTotalBytes	The total number of inbound bytes.
inboundTotalMessages	The total number of inbound messages.
outboundByteRate	The rate of outbound data in bytes per second.
outboundMessageRate	The rate of outbound messages in number of messages per second.
outboundTotalBytes	The total number of outbound bytes.
outboundTotalMessages	The total number of outbound messages.
zoneName	The name of the zone for the route.
zoneType	Indicates a multi-hop or one-hop zone.
active	Indicates whether the server route is currently transferring data: **1** = true **0** = false

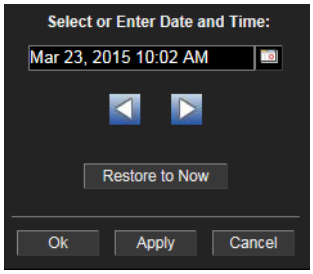
	inactive	Indicates whether the server route is currently transferring data: **1** = true **0** = false
	suspended	Indicates whether outbound messages to the route have been suspended: **1** = true **0** = false
	remoteURLName	The IP address and name for the remote connection.
Detail for Selected Route	Shows metrics for the server route selected from the table.	
	Connected	The server route connection state. -- The server route is disconnected -- The server route is connected.
	Zone Name	The name of the zone for the route.
	Remote URL	The IP address and port number for the server route connection. Click the Go button to open the selected server in the EMS Single Server Summary display.
	Zone Type	Indicates a multi-hop or one-hop zone.
	Messages In	**Msgs/sec** -- The number of inbound messages, per second. **Total** -- The total number of inbound messages since the connection was established. **Bytes/sec** -- The amount of inbound messages, in bytes per second, for this server route. **Total** -- The amount of inbound messages, in kilobytes, for this server route since the connection was established.
	Messages Out	**Msgs/sec** -- The number of outbound messages, per second. **Total** -- The total number of outbound messages since the connection was established. **Bytes/sec** -- The amount of outbound messages, in bytes per second. **Total** -- The amount of outbound messages, in kilobytes, since the connection was established.
Trend Graphs	Shows message data for the selected route. **In Msgs / sec** -- Traces the number of inbound messages, per second. **Out Msgs / sec** -- Traces the number of outbound messages, per second.	
	Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero

When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range

Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



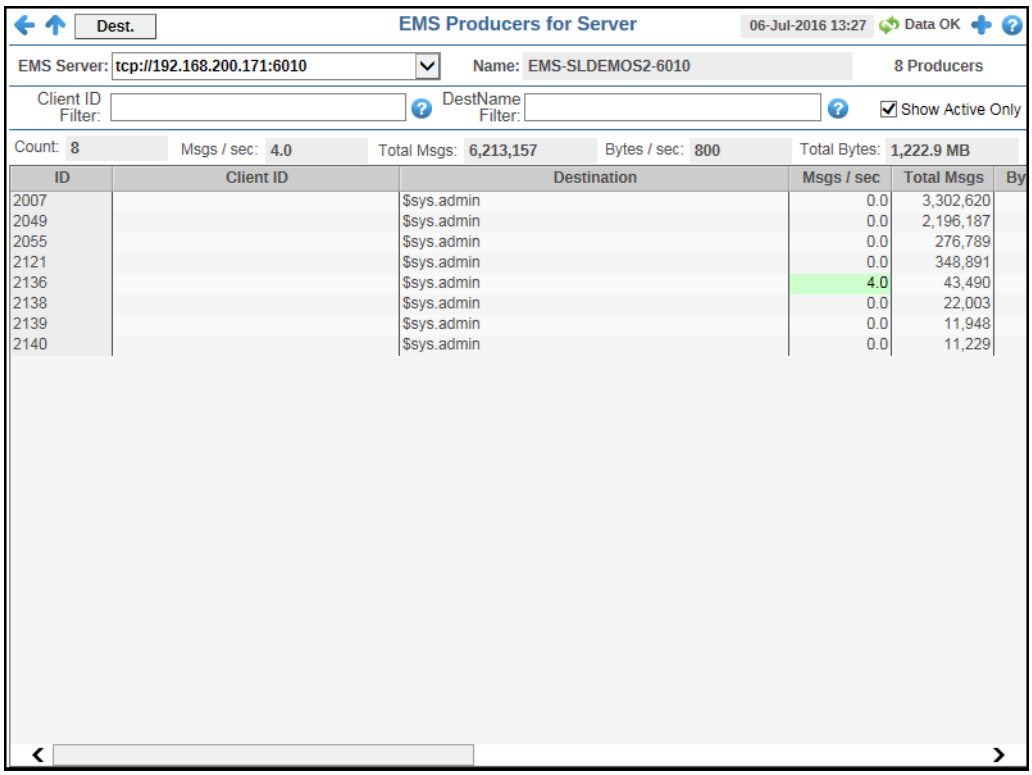
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Producers

Track utilization metrics for producers on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking on a row in the Producers table and then clicking the Dest. button in the Title Bar takes you to the "Single Queue Summary" display for the selected producer.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down list displays a list of the currently connected Producers.

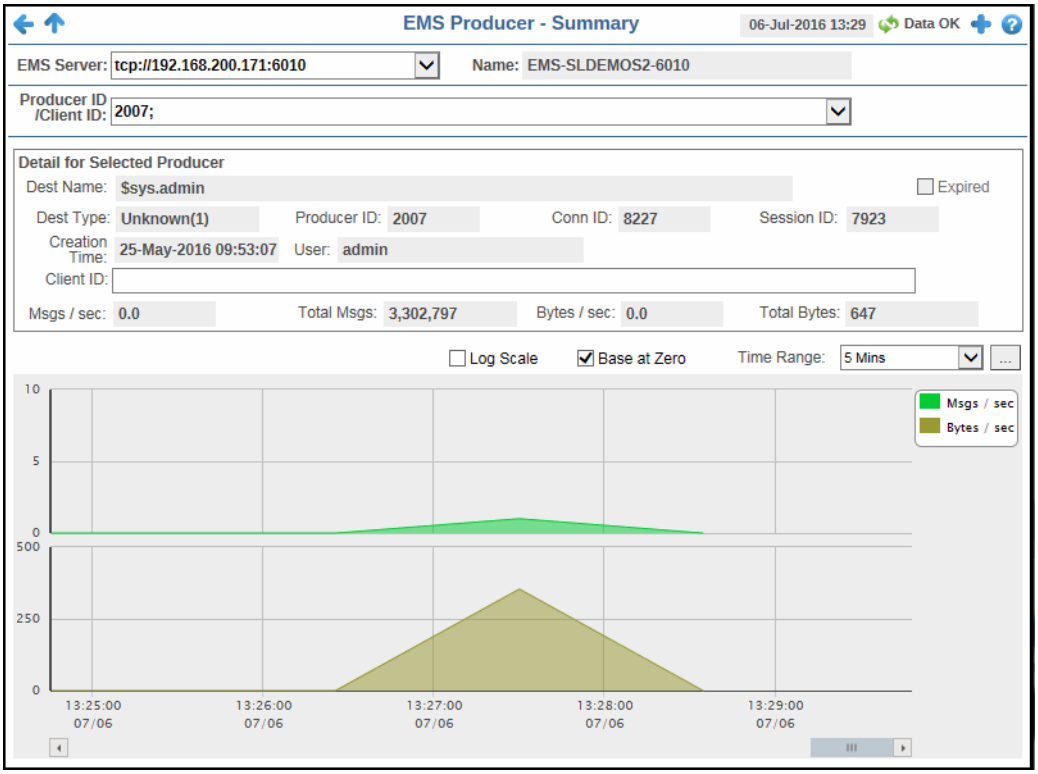
Name The name of the EMS server selected from the **EMS Server** drop-down menu.

Producers	The number of currently connected producers on the server.
Client ID Filter	Filter field that allows you to filter the list of producers by client ID.
DestName Filter	Filter field that allows you to filter the list of producers by destination name.
Show Active Only	Select this check box to display only active producers.
Count	The number of currently connected producers on the server.
Msgs / sec	The number of messages, per second, for the producer.
Total Msgs	The total number of messages for the producer.
Bytes / sec	The amount of messages, in bytes per second, for the producer.
Total Bytes	The total size of messages, in bytes, for the producer.
Table	This table shows metrics for each producer on the selected server. Double-clicking on a row in the Producers table displays details for the producer in the "Producer Summary" drill-down display.

ID	A unique string identifier assigned to each producer.
Client ID	A unique string identifier assigned to each client.
Destination	The name of the destination.
Msgs / sec	The number of messages, per second, for the producer.
Total Msgs	The total number of messages for the producer.
Bytes / sec	The size of messages, in bytes per second, for the producer.
Total Bytes	The total size of messages, in bytes, for the producer.
User	The user name.
Host	The name of the host.
sessionID	A unique string identifier assigned to each session.
ConnID	A unique string identifier assigned to each connection.
createTime	The amount of time, in milliseconds, since the producer was created.
time_stamp	The date and time this row of data was last updated.
Expired	When checked, performance data about a producer has not been received for 45 seconds. After 3600 seconds it is deleted from the table.
destinationType	The configured destination type.

Producer Summary

Displays details for an individual producer. You can access this display by double-clicking on a producer in the "Producers" display.



Title Bar (possible features are):

- Open the previous and upper display.
- Menu and Table open commonly accessed displays.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
- Open the **Alert Views - RTView Alerts Table** display.
- Open an instance of this display in a new window.
- Open the online help page for this display.

Fields and Data

This display includes:

EMS Server	The selected EMS Server populates the Producer ID/ Client ID drop-down menu with associated Producer IDs/Client IDs. This drop down list defaults to the EMS Server that was selected on the previous display.
Name	The name of the EMS server selected from the **EMS Server** drop-down menu.
Producer ID / Client ID	Drop-down menu containing the Producer IDs/Client IDs. This drop down list defaults to the Producer ID/Client ID that was selected on the previous display.

Detail for Selected Producer Shows metrics for the producer selected from the table.

Dest Name	The name of the destination.
Expired	When checked, performance data about a producer has not been received for 45 seconds. After 3600 seconds, the data is deleted from the table.
Dest Type	The configured destination type.
Producer ID	A unique string identifier assigned to each producer.
Conn ID	A unique string identifier assigned to each connection.
Session ID	A unique string identifier assigned to each session.
Creation Time	The amount of time, in milliseconds, since the producer was created.
User	The user name.
Client ID	A unique string identifier assigned to each client.
Msgs/sec	The number of messages, per second, for the producer.
Total Msgs	The total number of messages for the producer.
Bytes/sec	The size of messages, in bytes per second, for the producer.
Total Bytes	The total size of messages, in bytes, for the producer.

Trend Graphs Shows message data for the selected producer.

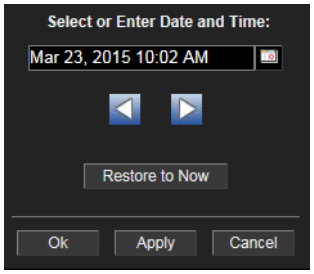
Msgs / sec -- Traces the number of messages for the producer, per second.

Bytes / sec -- Traces the size of messages for the producer, in bytes.

Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



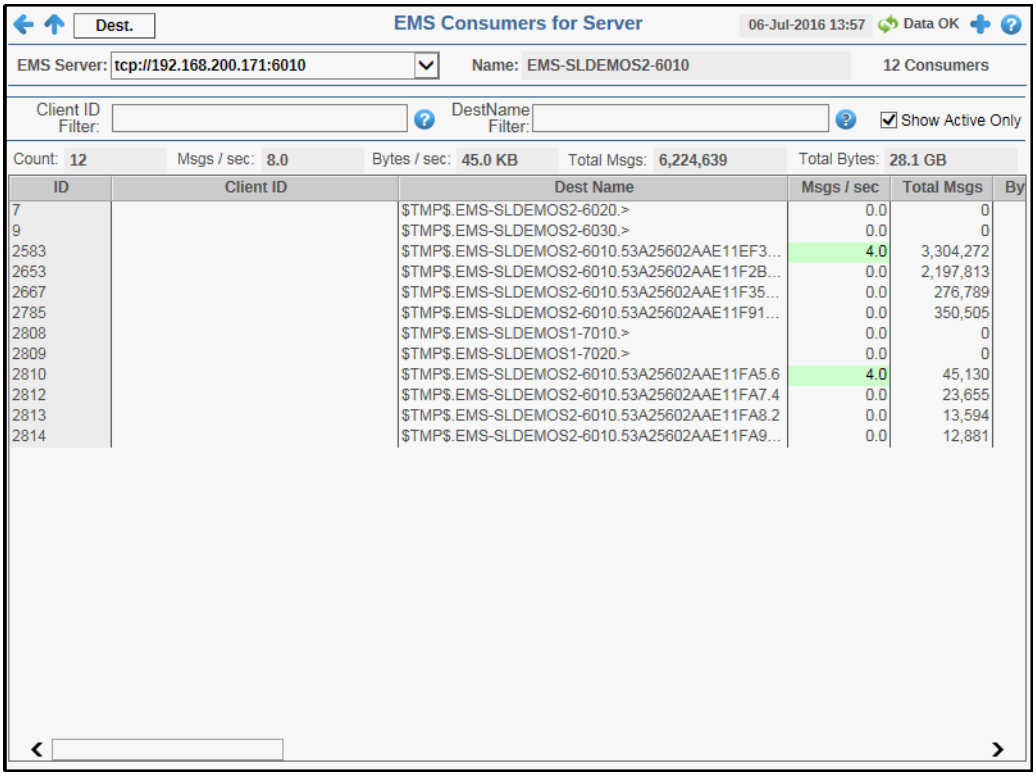
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Consumers

Track utilization metrics for consumers on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking on a row in the Consumers table and then clicking the **Dest.** button in the Title Bar takes you to the "Single Topic Summary" display for the selected consumer.

Fields and Data

This display includes:

EMS Server The EMS Server selected from this drop-down list displays a list of the currently connected Consumers.

Name The name of the EMS Server selected from the EMS Server drop-down menu.

Consumers The number of currently connected consumers on the server.

Client ID Filter Filter field that allows you to filter the list of consumers by client ID. This filter works in conjunction with the **DestName Filter** to display the list of consumers.

DestName Filter Filter field that allows you to filter the list of consumers by destination name. This filter works in conjunction with the **Client ID Filter** to display the list of consumers.

Show Active Only Select this check box to display only active consumers.

Count The number of currently connected consumers on the server.

Msgs / sec The number of messages, per second, for the consumer.

Bytes / sec The amount of messages, in bytes per second, for the consumer.

Total Msgs The total number of messages for the consumer.

Total Bytes The total size of messages, in bytes, for the consumer.

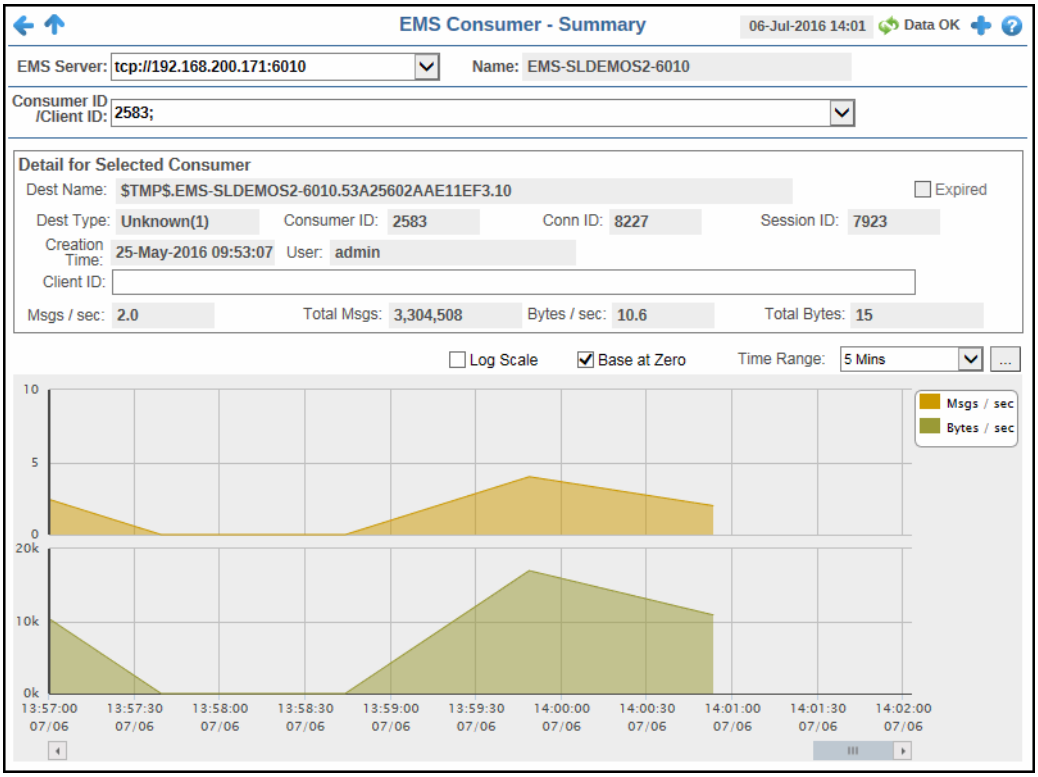
Table This table shows metrics for each consumer on the selected server. Double-clicking on a row in the Consumers table displays details for the consumer in the "Consumer Summary" drill-down display.

ID	A unique string identifier assigned to each consumer.
Client ID	A unique string identifier assigned to each client.
Dest Name	The name of the destination.
Msgs / sec	The number of messages, per second, for the consumer.
Total Msgs	The total number of messages for the consumer.
Bytes / sec	The size of messages, in bytes per second, for the consumer.
Total Bytes	The total size of messages, in bytes, for the consumer.
User	The user name.
Host	The name of the host machine.
Session ID	A unique string identifier assigned to each session.
Conn ID	A unique string identifier assigned to each connection.
Curr Msg Sent Count	The number of messages sent to the consumer that were not yet acknowledged by the consumer's session. The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Curr Msg Sent Size	The combined size of messages sent to the consumer that were not yet acknowledged by the consumer's session. **Note: The sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Total Msg Ack Count	The total number of messages that have been sent to the consumer and have been acknowledged by the consumer's session. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.

Total Msg Sent Count	The total number of messages sent to the consumer since the consumer was created. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elapsed Since Last Ack	The amount of time (in milliseconds) that has elapsed since the last time a message sent to the consumer was acknowledged by the consumer's session. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Elapsed Since Last Sent	The amount of time (in milliseconds) that has elapsed since the last time the server sent a message to the consumer. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Destination Prefetch	The actual destination prefetch value used by the server at runtime. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Prefetch Deliv Count	The number of prefetch messages delivered to the consumer by the server. For consumers receiving messages on any destination with positive prefetch value, this value is never more than the prefetch value of the destination. This value cannot be used to identify the status of the consumer, but it can be used in conjunction with other consumer information values to identify consumers who stopped receiving messages due to application-specific problems. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Durable Name	The name of the durable.
Route Name	The queue owner server name if the consumer if the consumer's destination is a routed queue. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Is Active	When checked, the consumer is active and can receive messages from the server. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Is System	This check box is checked if the consumer was automatically created by the system. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Session Ack Mode	Lists the consumer's session acknowledge mode as a constant defined in **TibjmsAdmin**. **Note:** The **sl.rtview.jmsadm.queryCIDetails** property must be set to **true** in your **sample.properties** file to see this column.
Create Time	The amount of time, in milliseconds, since the consumer was created.
time_stamp	The date and time this row of data was last updated.
Expired	When checked, performance data about a consumer has not been received for **45** seconds. After **3600** seconds it is deleted from the table.
Dest Type	The configured destination type.

Consumer Summary

Displays details for an individual consumer. You can access this display by double-clicking on a producer in the "Consumers" display.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server	The selected EMS Server populates the Consumer ID/ Client ID drop-down menu with Consumer IDs/Client IDs belonging to this EMS Server. This drop down list defaults to the EMS Server that was selected on the previous display.
Name	The name of the EMS Server selected from the **EMS Server** drop-down menu.
Consumer ID/Client ID	Drop-down menu containing the Consumer IDs/Client IDs. This drop down list defaults to the Consumer ID/Client ID that was selected on the previous display.

Detail for Selected Consumer Shows metrics for the consumer selected from the table.

Dest Name	The name of the destination.
Expired	When checked, performance data about a consumer has not been received for 45 seconds. After 3600 seconds, the data is deleted from the table.
Dest Type	The configured destination type.
Consumer ID	A unique string identifier assigned to each consumer.
Conn ID	A unique string identifier assigned to each connection.
Session ID	A unique string identifier assigned to each session.
Creation Time	The amount of time, in milliseconds, since the consumer was created.
User	The user name.
Client ID	A unique string identifier assigned to each client.
Msgs/sec	The number of messages, per second, for the consumer.
Total Msgs	The total number of messages for the consumer.
Bytes/sec	The size of messages, in bytes per second, for the consumer.
Total Bytes	The total size of messages, in bytes, for the consumer.

Trend Graphs Shows message data for the selected producer.

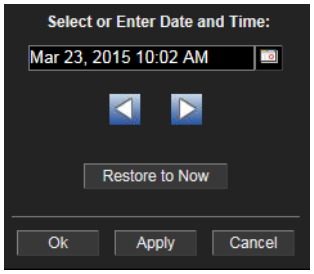
Msgs / sec -- Traces the number of messages for the consumer, per second.

Bytes / sec -- Traces the size of messages for the consumer, in bytes.

Log Scale	This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



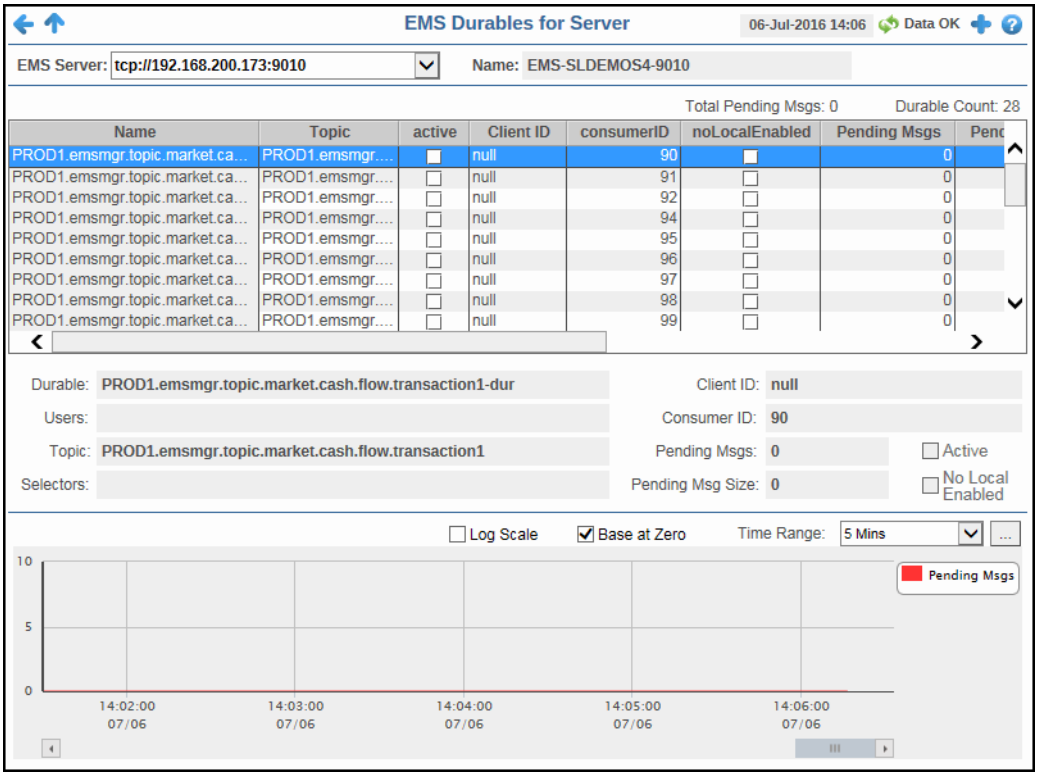
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Durables

Track utilization metrics for durables on a single server.



Title Bar (possible features are):

Open the previous and upper display.

Menu and Table open commonly accessed displays.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the data source is disconnected (the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

EMS Server	The EMS Server selected from this drop-down menu populates all associated Durables data in this display.
Name	The name of the EMS Server selected from the **EMS Server** drop-down menu.
Total Pending Msgs	The total number of pending messages for the durable.
Durable Count	The number of currently connected durables on the server.

Table This table shows metrics for each durable on the selected server.

Name	The name of the durable.
Topic	The name of the topic.
Active	Indicates whether the durable is active.
Client ID	A unique string identifier assigned to each client.
consumerID	A unique string identifier assigned to each consumer.
NoLocalEnabled	Indicates whether the subscriber receives messages from all connections its local connection. **Enabled** -- The subscriber does not receive messages sent from its local connection. **Disabled** -- The subscriber receives messages from all connections.
Pending Msgs	The total number of pending messages for the selected durable.
Pending Size	The total amount of pending messages, in bytes, for the selected durable.
Selector	Indicates that the subscriber only receives messages that match this selector.
userName	The name of the user of this durable subscriber.
time_stamp	The date and time this row of data was last updated.

Durable The name of the durable selected from the table.

Users The names of the users of this durable subscriber.

Topic The name of the topic.

Selectors Indicates that the subscriber only receives messages that match this selector.

Client ID A unique string identifier assigned to each client.

Consumer ID A unique string identifier assigned to each consumer.

Pending Msgs The total number of pending messages for the selected durable.

Pending Msg Size The total size of pending messages, in bytes, for the selected durable.

Active Indicates whether the durable is active.

No Local Indicates whether the subscriber receives messages from all connections its local connection.

Enabled	The subscriber does not receive messages sent from its local connection.
Disabled	The subscriber receives messages from all connections.

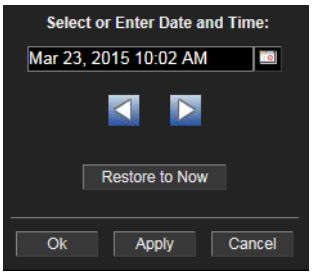
Trend Graphs Shows message data for the selected consumer.

Pending Msgs -- Traces the number of pending messages for the durable.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Alert Views

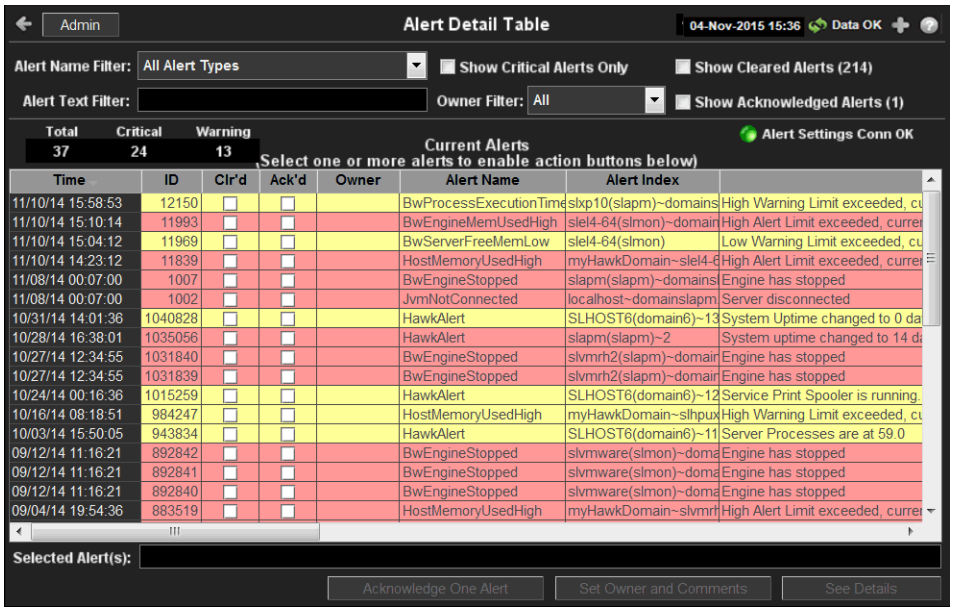
These displays present detailed information about all alerts that have occurred in your system. These displays present performance data for your system. Displays in this View are:

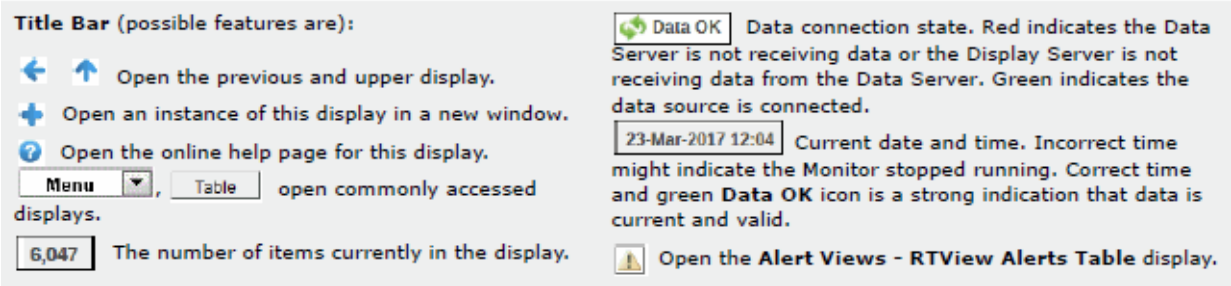
- "Alert Detail Table" on page 157

Alert Detail Table

Use this display to track and manage all alerts that have occurred in the system, add comments, acknowledge or assign Owners to alerts.

Each row in the table is a different active alert. Select one or more rows, right-click and choose **Alert** to see all actions that you can perform on the selected alert(s). Choose **Alert / Set Filter Field** to apply the selected cell data to the **Field Filter** and **Search Text** fields. Or enter filter criteria directly in the **Field Filter** and **Search Text** fields. Click **Clear** to clear the **Field Filter** and **Search Text** fields. Click Sort to order column data.





Row Color Code:
Tables with colored rows indicate the following:

- Red indicates that one or more alerts exceeded their ALARM LEVEL threshold in the table row.
- Yellow indicates that one or more alerts exceeded their WARNING LEVEL threshold in the table row.
- Green indicates that no alerts exceeded their WARNING or ALARM LEVEL threshold in the table row.

Fields and Data
This display includes:

Alert Name Filter Select from a list of alert types or select All Alert Types. Filters limit display content and drop down menu selections to only those items that pass through the selected filter's criteria. Therefore if no items match the filter, you may see nothing in a given display and may not have any options available in the drop-down menu(s).

NOTE: Filter selection is disabled on drill down summary displays.

Show Critical Alerts Only If selected, only currently critical alerts are shown in the table. Otherwise, all active alerts are shown in the table.

Show Cleared Alerts If selected, cleared alerts are shown in the table.

Alert Text Filter Enter all or part of the Alert Text to view specific alerts. For example, High selects and displays all alerts that include High in the Alert Text. **NOTE:** Wild card characters are supported.

Owner Filter Select the alert **Owner** to show alerts for in the table.

- **All** Shows alerts for all Owners in the table: **Not Owned** and **Owned By Me** alerts.
- **Not Owned** Shows only alerts without Owners in the table.
- **Owned By Me** Shows only alerts for the current user in the table.

Show Acknowledged Alerts If selected, acknowledged alerts are shown in the table.

Total Total number of alerts.

Critical Number of critical alerts.

Warning Total number of alerts that are currently in a warning state.

Alert Settings Conn OK The Alert Server connection state:
Disconnected.
Connected.

Alerts Table
This table lists all active alerts for the current filters.

Time	The time (Java format) that the alert was activated.
ID	A unique string identifier assigned to each activated alert.
Clr'd	When checked, this typically indicates that the alert has been resolved. An alert is automatically cleared when the value being monitored no longer in the alert threshold.
Ack'd	When checked, this typically indicates that the alert is being addressed.
Owner	The named owner assigned by the administrator.
Alert Name	The name of the alert. For a list of all alerts, see Alert Administration.
Alert Index	The IP address and port number for the source (application, server, and so forth) associated with the alert.
Alert Text	Descriptive text about the alert.
Severity	The severity of the alert: **0 = Normal** **1** = Warning / Yellow **2 = Alarm / Red** The color for the alert severity is shown by the row in the alert table.
Source	Name of RTView Data Server sending this data (or localhost).

Selected Alerts Lists the alerts selected in the table.

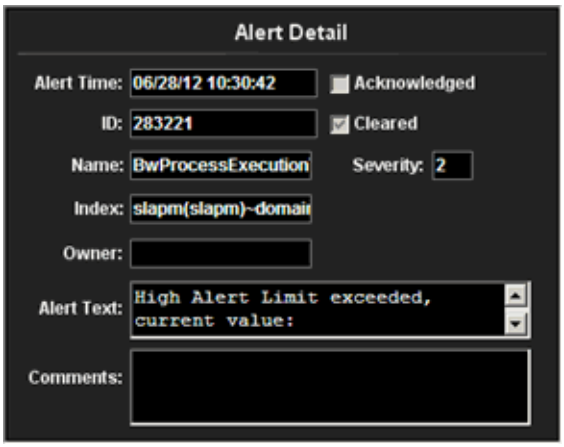
Acknowledge One Alert	Select one alert from the Current Alerts table and click to acknowledge.
Acknowledge Multiple Alerts	Select one or more alerts from the Current Alerts table and click to acknowledge.

Set Owner and Comments

Select one or more alerts from the Current Alerts table and click to open the Set Owner and Comments dialog.

See Details

Select an alert from the Current Alerts table and click to open the Set Owner and Comments dialog.



Administration

These displays enable you to set alert thresholds and observe how alerts are managed, and modify your Service Data Model. Displays in this View are:

- "Alert Administration"
- "Alert Administration Audit"
- "Metrics Administration"
- "RTView Cache Tables"
- "RTView Agent Admin"

Alert Administration

Set global or override alert thresholds. Alert settings are global by default.

The table describes the global settings for all alerts on the system. To filter the alerts listed in the table, enter a string in the **Alert Filter** field and press **<enter>** or click elsewhere in the display. Filters are case sensitive and no wildcard characters are needed for partial strings. For example, if you enter Server in the **Alert Filter** field, it filters the table to show only alerts with **Server** in the name. Choose **Clear** to clear the filter.

Global Thresholds

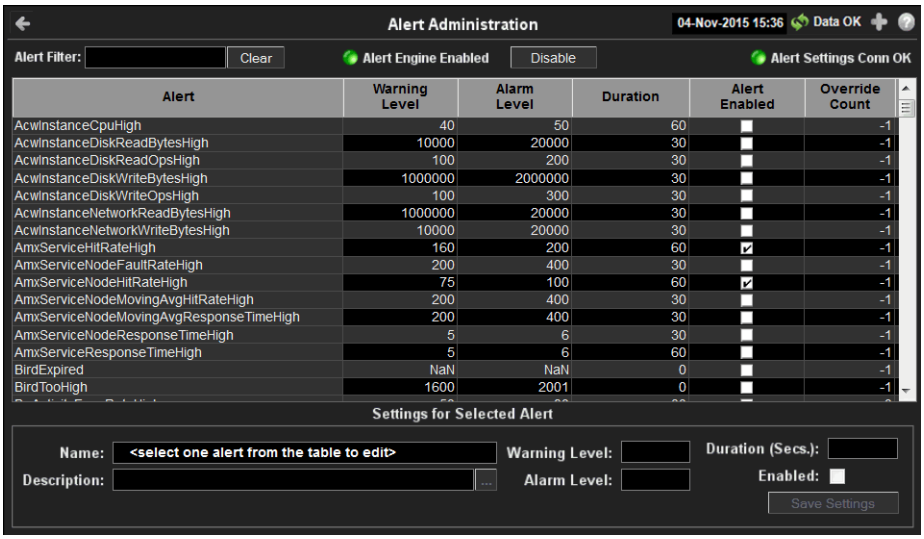
To set a global alert, select an alert from the **Active Alert Table**. The name of the selected alert populates the **Settings for Selected Alert Name** field. Edit the **Settings for Selected Alert** and click **Save Settings** when finished.

The manner in which global alerts are applied depends on the Solution Package. For example, the EMS Monitor Solution Package has queue alerts, topic alerts and server alerts. When a queue alert is applied globally, it is applied to all queues on all servers. Likewise, a server alert applies to all servers, and a topic alert applies to all topics on all servers.

Override Thresholds

Setting override alerts allows you to set thresholds for a single resource (for example, a single server). Override alerts are useful if the majority of your alerts require the same threshold setting, but there are other alerts that require a different threshold setting. For example, you might not usually be concerned with execution time at a process level, but perhaps certain processes are critical. In this case, you can apply alert thresholds to each process individually.

To apply an individual alert you Index the Monitored Instance or resource. The Index Types available are determined by the Solution Package installed. For example, the EMS Monitor package lets you set an alert for a specific *topic* on a specific *server* (such as the PerServerTopic Index option), rather than for all topics on all servers.



Title Bar (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

Open the **Alert Views - RTView Alerts Table** display.

Fields and Data
This display includes:

Alert Filter Enter the (case-sensitive) string to filter the table by the **Alert** table column value. **NOTE:** Partial strings can be used without wildcard characters. Press **<enter>** or click elsewhere in the display to apply the filter.

Clear Clears the **Alert Filter** entry.

Alert Engine Enabled
- Alerting is disabled.
- Alerting is enabled (by default).

Disable Suspends all alerting.

Alert Settings Conn OK The Alert Server connection state:
- Disconnected.
- Connected.

Active Alert Table
This table describes the global settings for all alerts on the system. Select an alert. The name of the selected alert populates the **Settings for Selected Alert Name** field (in the lower panel). Edit **Settings for Selected Alert** fields and click **Save Settings**.

NOTE: To filter the alerts shown in the table by Solution Package, use the **$rtvAlertPackageMask** substitution.

Alert The name of the alert.

Warning Level The global warning threshold for the selected alert. When the specified value is exceeded a warning is executed.

Alarm Level The global alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed.

Duration (Secs) The amount of time (in seconds) that the value must be above the specified Warning Level or Alarm Level threshold before an alert is executed. **0** is for immediate execution.

Alert Enabled When checked, the alert is enabled globally.

Override Count The number of times thresholds for this alert have been defined individually in the **Tabular Alert Administration** display.

Settings for Selected Alert
To view or edit global settings, select an alert from the **Active Alert Table**. Edit the **Settings for Selected Alert** fields and click **Save Settings** when finished.

To set override alerts, click on **Override Settings** to open the **Tabular Alert Administration** display.

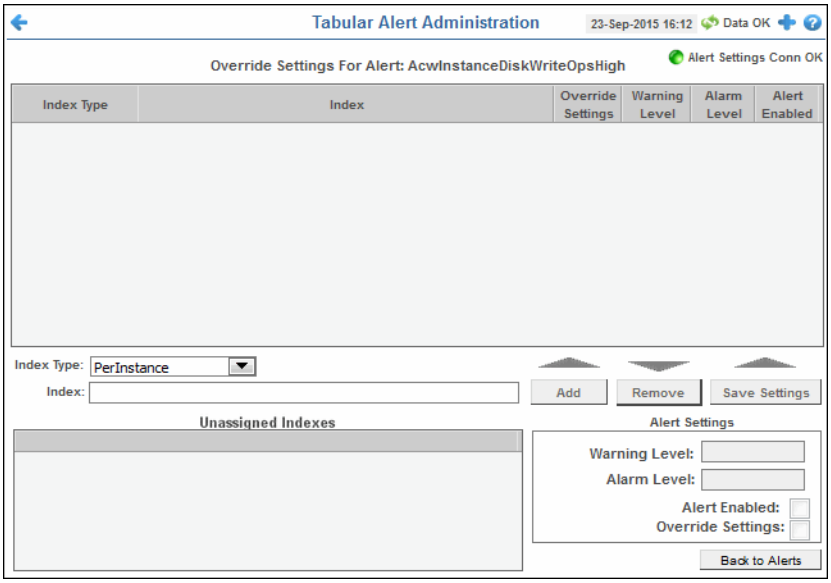
Name	The name of the alert selected in the **Active Alert Table**.
Description	Description of the selected alert. Click Calendar ... for more detail.
Warning Level	Set the Global warning threshold for the selected alert. When the specified value is exceeded a warning is executed. To set the warning to occur sooner, reduce the Warning Level value. To set the warning to occur later, increase the Warning Level value. **NOTE:** For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the warning to occur sooner, increase the Warning Level value. To set the warning to occur later, reduce the Warning Level value.
Alarm Level	Set the Global alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed. To set the alarm to occur sooner, reduce the Alarm Level value. To set the warning to occur later, increase the Alarm Level value. **NOTE:** For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the alarm to occur sooner, increase the Alarm Level value. To set the alarm to occur later, reduce the Alarm Level value.
Duration	Set the amount of time (in seconds) that the value must be above the specified Warning Level or Alarm Level threshold before an alert is executed. **0** is for immediate execution. This setting is global.
Enabled	Check to enable alert globally.
Save Settings	Click to apply alert settings.
Override Settings	Click to open the **Tabular Alert Administration** display to set override alerts on the selected alert.

Note: For more information on EMS Monitor alerts, see Appendix D, “Alert Definitions.”

Tabular Alert Administration

Set override alerts (override global alert settings). This display opens when you select an alert in the **Alert Administration** display and then select **Override Settings**.

For step-by-step instructions setting thresholds for individual alerts, see **Setting Override Alerts**..



Fields and Data
This display includes:

Alert Settings Conn OK
The connection state.
- No servers are found.
- One or more servers are delivering data.

Override Settings For Alert:(name)
This table lists and describes alerts that have override settings for the selected alert. Select a row to edit alert thresholds. The selected item appears in the Index field. Edit settings in the Alert Settings fields, then click Save Settings.

Index Type
Select the type of alert index to show in the Values table. Options in this drop-down menu are populated by the type of alert selected, which are determined by the Package installed. For example, with the EMS Monitor package the following Index Types are available:
- PerServer: Alert settings are applied to a specific server.
- PerQueue: Alert settings are applied to the queue on each server that has the queue defined.
- PerServerQueue: Alert settings are applied to a single queue on a specific server.
- PerTopic: Alert settings are applied to the topic on each server that has the topic defined.
- PerServerTopic: Alert settings are applied to a single topic on a specific server.

Index
The value of the index column.

Override Settings
When checked, the override settings are applied.

Alert Enabled
When checked, the alert is enabled.

Index Type Select the index type. The index type specifies how to apply alert settings. For example, to a queue (topic or JVM, and so forth) across all servers, or to a queue on a single server. NOTE: Options in this drop-down menu are populated by the type of alert selected from the Alert Administration display. Index Types available depend on the Package installed.

Index The selected index column to be edited. This field is populated by the selection made in the **Unassigned Indexes** table.

Unassigned Indexes This table lists all possible indexes corresponding to the Index Type chosen in the drop-down list. Select a row to apply individual alert thresholds. The selected item appears in the **Index** field. Edit settings in the **Alert Settings** fields, then click **Add**.

Add Click to add changes made in **Alert Settings**, then click **OK** to confirm.

Remove Click to remove an alert selected in the **Index Alert Settings** table, then click **OK** to confirm.

Save Settings Click to save changes made to alert settings.

Alert Settings
Select a topic, server or queue from the **Unassigned Indexes** table and edit the following settings.

Warning Level Set the warning threshold for the selected alert. When the specified value is exceeded a warning is executed. To set the warning to occur sooner, reduce the Warning Level value. To set the warning to occur later, increase the Warning Level value.

NOTE: For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the warning to occur sooner, increase the Warning Level value. To set the warning to occur later, reduce the Warning Level value.

Click Save Settings to save settings.

Alarm Level Set the alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed. To set the alarm to occur sooner, reduce the Alarm Level value. To set the warning to occur later, increase the Alarm Level value.
NOTE: For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the alarm to occur sooner, increase the Alarm Level value. To set the alarm to occur later, reduce the Alarm Level value. Click **Save Settings** to save settings.

Alert Enabled Check to enable the alert, then click **Save Settings**.

Override Settings Check to enable override global setting, then click **Save Settings**.

Back to Alerts Returns to the **Administration** - **Alert Administration** display.

Setting Override Alerts

Perform the following steps to set an override alert. Index Types available depend on the Solution Package installed. In this example, we use the EMS Monitor Package to illustrate.

Note: To turn on an alert, both **Alert Enabled** and **Levels Enabled** must be selected.

To turn on/off, change threshold settings, enable/disable or remove an alert on a single resource:

1. In the **Alert Administration** display, select a tabular alert in the **Active Alert Table** and click **Override Settings**. The **Tabular Alert Administration** display opens.

Note: Alerts that do not support overrides have a value of **-1** for the **Override Count** column and the **Override Settings** option is not present when you select such an alert.

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2. In the **Tabular Alert Administration** display, select the Index type from the **Index Type** drop-down menu (options are populated by the type of alert you previously selected). For example, with the EMS Monitor package, select PerServerQueue, PerServerTopic or PerServer. NOTE: If you select PerServerQueue or PerServerTopic, the alert settings are applied to the queue or topic on a single server.

3. In the **Unassigned Indexes** table, select the item you want to apply an override alert setting to, click **Add** and **OK** in the confirmation dialog. After a few moments the override setting appears in the **AlertLevels** table.

4. Select the item in the **AlertLevels** table.

5. In the Alert Settings panel (lower right), if needed, modify the Warning Level and Alarm Level settings.

6. In the **Alert Settings** panel, set the following as appropriate.

- To turn on the alert for this index with the given thresholds:

  Alert Enabled Select this option.

  Override Settings Select this option.

  NOTE: To turn on an alert, both **Alert Enabled** and **Override Settings** must be selected.

- To turn off the alert for only this index (global alert thresholds will no longer apply to this index):

  Alert Enabled Deselect this option.

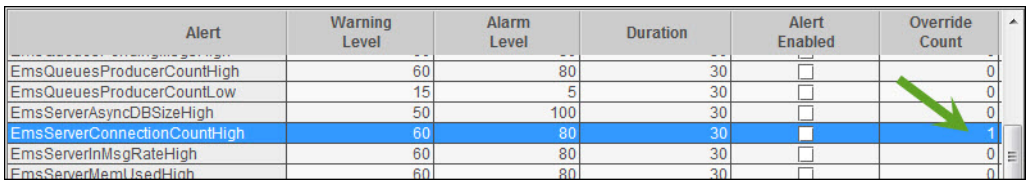
  Override Settings Select this option.

- To no longer evaluate this indexed alert and revert to global settings (or, optionally, Remove it if it is never to be used again):

  Alert Enabled Not used.

  Override Settings Deselect this option.

7. Click **Save Settings**. In a few moments the modifications are updated and a new record appears in the **AlertLevels** table. For example, in the following figure, the EmsServerConnectionCountHigh alert has a new override applied. New overrides increment the alert **Override Count** in the **ALERTLEVELS** table.

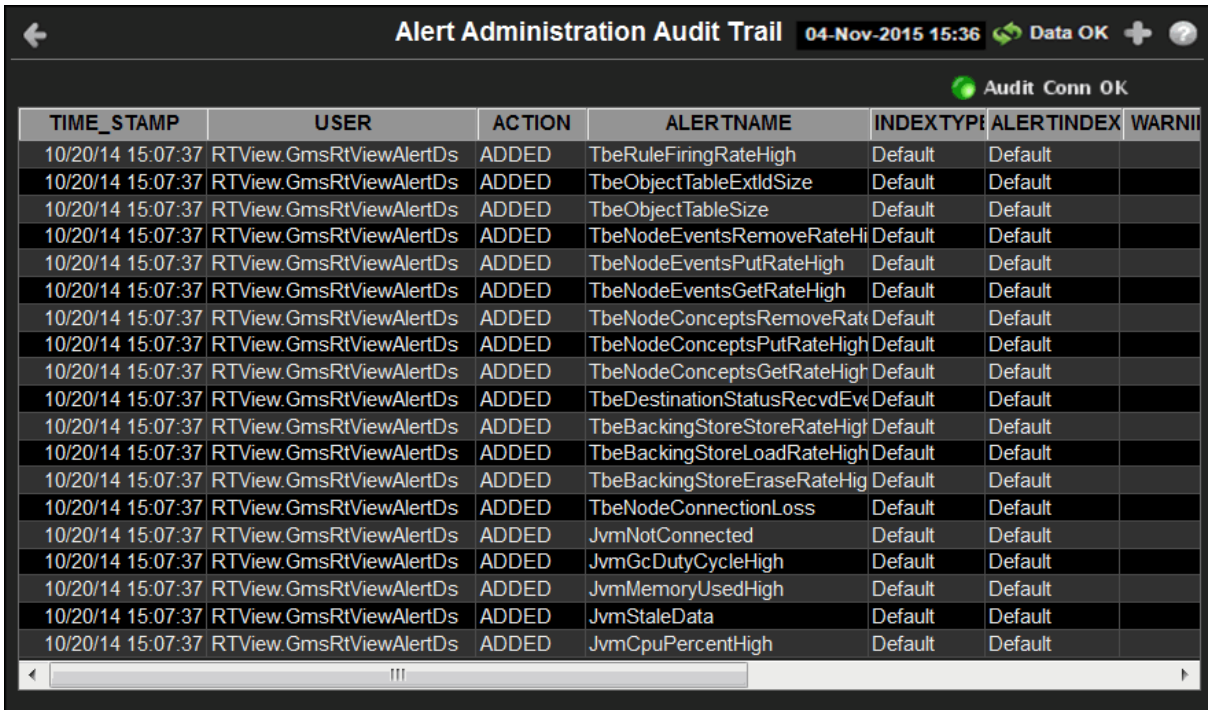


Alert	Warning Level	Alarm Level	Duration	Alert Enabled	Override Count
EmsQueuesProducerCountHigh	60	80	30	☐	0
EmsQueuesProducerCountLow	15	5	30	☐	0
EmsServerAsyncDBSizeHigh	50	100	30	☐	0
EmsServerConnectionCountHigh	60	80	30	☐	1
EmsServerInMsgRateHigh	60	80	30	☐	0
EmsServerMemUsedHigh	60	80	30	☐	0

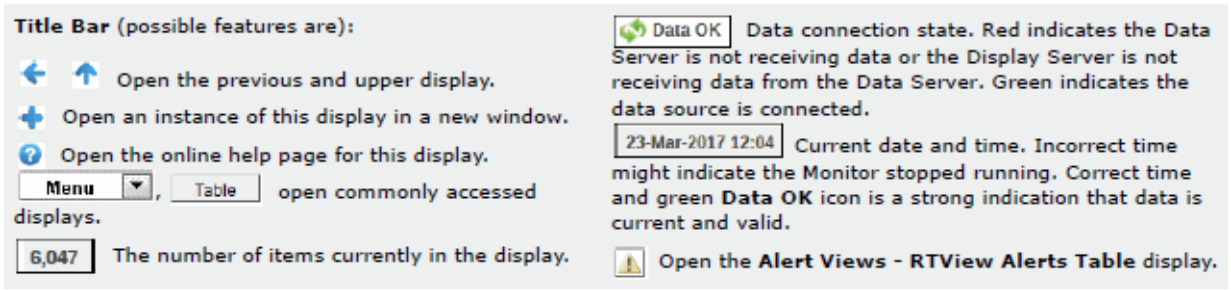
Alert Administration Audit

View alert management details such as alert threshold modifications.

Each table row is a single modification made to an alert. To view modifications for a single alert in a group, sort the **ALERTNAME** column using the button.



TIME_STAMP	USER	ACTION	ALERTNAME	INDEXTYPE	ALERTINDEX	WARNII
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeRuleFiringRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeObjectTableExtIdSize	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeObjectTableSize	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeEventsRemoveRateHi	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeEventsPutRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeEventsGetRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeConceptsRemoveRat	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeConceptsPutRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeConceptsGetRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeDestinationStatusRecvdEve	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeBackingStoreStoreRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeBackingStoreLoadRateHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeBackingStoreEraseRateHig	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	TbeNodeConnectionLoss	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	JvmNotConnected	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	JvmGcDutyCycleHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	JvmMemoryUsedHigh	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	JvmStaleData	Default	Default	
10/20/14 15:07:37	RTView.GmsRtViewAlertDs	ADDED	JvmCpuPercentHigh	Default	Default	



Audit Conn OK	The Alert Server connection state: Disconnected. Connected.
TIME_STAMP	The date and time of the modification.
USER	The user name of the administrator who made the modification.
ACTION	The type of modification made to the alert, such as UPDATED.
ALERTNAME	The name of the alert modified.
INDEXTYPE	The type of alert Index.

ALERTINDEX	The IP address and port number for the source (application, server, and so forth) associated with the alert.
WARNINGLEVEL	The warning threshold value for the alert at the time this modification was made, as indicated in the **TIME_STAMP** column. The warning level is a threshold that, when exceeded, a warning is executed.
ALARMLEVEL	The alarm threshold value for the alert at the time this modification was made, as indicated in the **TIME_STAMP** column. The alarm level is a threshold that, when exceeded, an alarm is executed.
DURATION	The duration value for the alert at the time this modification was made, as indicated in the **TIME_STAMP** column. The alert duration is the amount of time (in seconds) that a value must exceed the specified Warning Level or Alarm Level threshold before an alert is executed. 0 is for immediate execution.
ENABLED	When checked, indicates the alert was Enabled at the time this modification was made, as indicated in the **TIME_STAMP** column.
USEINDEX	When checked, this action was performed on an override alert (the alert does not use the global settings).

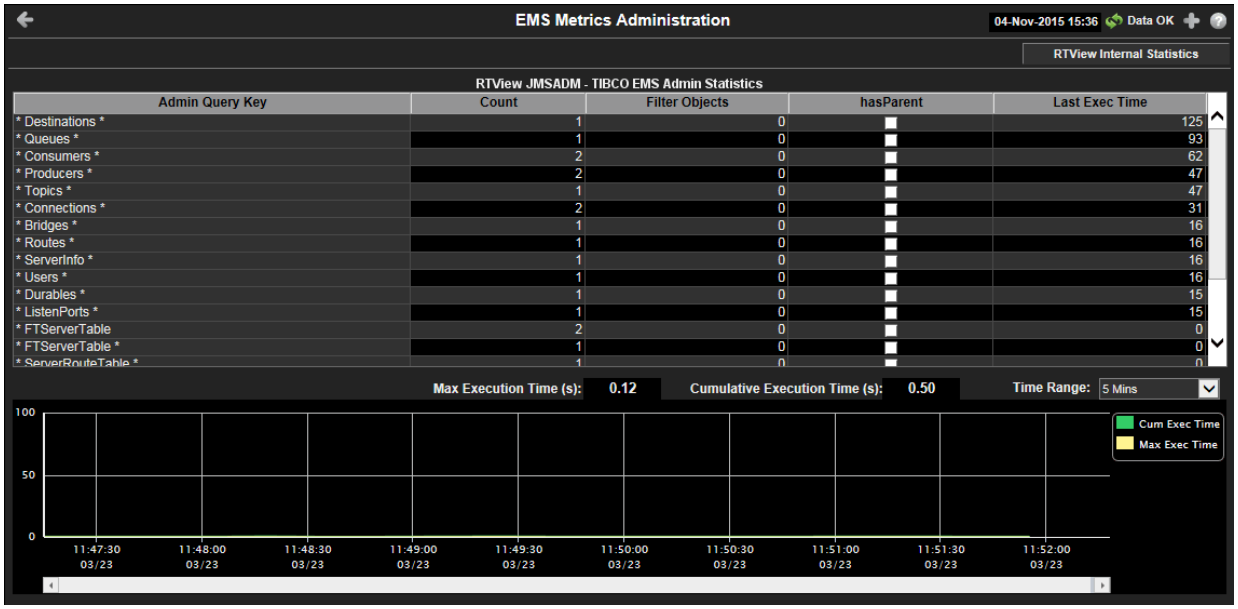
Metrics Administration

Verify when TIBCO metrics were last queried by the Monitor. The data in this display is predominantly used for debugging by SL Technical Support.

Debugging Notes

The **Filter Objects** and **hasParent** columns were added for debugging problems related to adding and removing filtered listeners. These two columns are very specific to internal RTView structures. For example, if you make a data attachment to **Topics**, where **Name**=**"My Topic"**, an unfiltered data object would be created internally for the Topic metric, and a filtered data object would be created internally for the **Name**=**"My Topic"** row filter. The filtered data object would be setup as a child of the **Topic** metric data object. Subsequently, the **Topic** metric would have one filtered data object, and the filtered data object would have **hasParent=true**.

Also, the following JMSADM data objects (listed in the **Admin Query Key Column** and where **Last Exec Time** is **0**) are for internally created and maintained RTView tables that reside in the data source: **FTServerTable**, **ServerRouteTable**, **ServerTable** and **__admin***. These are not TIBCO metrics that are queried. Therefore, their **Last Exec Time** remains **0**, even though they are updated.



Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data
This display includes:

RTView Internal Statistics This button opens the **RTView MBeans for Status and Timing Info** display (in a separate window), which is used primarily by SL Corporation's Technical Support team.

RTView JMSADM - TIBCO EMS Admin Statistics This table lists all JMSADM data objects. Each row in the table is a JMSADM data object. Use this data to determine the last time a TIBCO metric was queried.

- **Admin Query Key** The dsString used for the data attachment to this data object.
- **Count** The number of listeners for this data object. For example, graphical objects and function arguments.
- **Filter Objects** The number of filtered data objects in this data object.
- **hasParent** True if the data object is a filtered data object.

Last Exec Time The last time a query was executed for the metric associated with this data object.

Trend Graph Traces the cumulative and maximum execution times, in seconds, for all Admin Query Keys in the table.

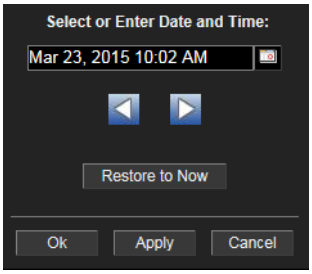
Cum Exec Time -- Traces the Cumulative Execution Time for all Admin Query Keys for the specified time range.

Max Exec Time -- Traces the Maximum Execution Time for all Admin Query Keys for the specified time range.

Max Execution Time The maximum execution time, in seconds, for all Admin Query Keys in the table.

Cumulative Execution Time The cumulative execution time, in seconds, for all Admin Query Keys in the table.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

RTView Cache Tables

View data that RTView is capturing and maintaining. Drill down and view details of RTView Cache Tables. Use this data for debugging. This display is typically used for troubleshooting with Technical Support.

Click a cache table from the upper table to view cached data.

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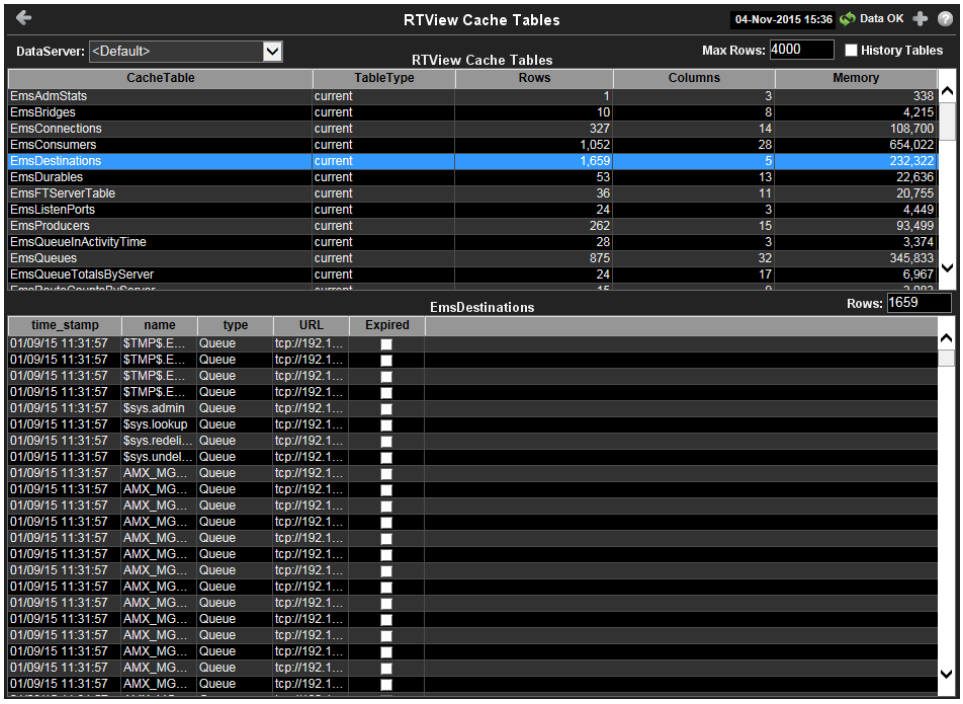


Title Bar (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

Open the **Alert Views - RTView Alerts Table** display.

DataServer Select a data server from the drop down menu.

Max Rows Enter the maximum number of rows to display in RTView Cache Tables.

History Tables Select to include all defined history tables in RTView Cache Tables.

RTView Cache Tables
This table lists and describes all defined RTView Cache Tables for your system. Cache tables gather Monitor data and are the source that populate the Monitor displays.

NOTE: When you click on a row in RTView Cache Tables a supplemental table will appear that gives more detail on the selected Cache Table.

CacheTable The name of the cache table.

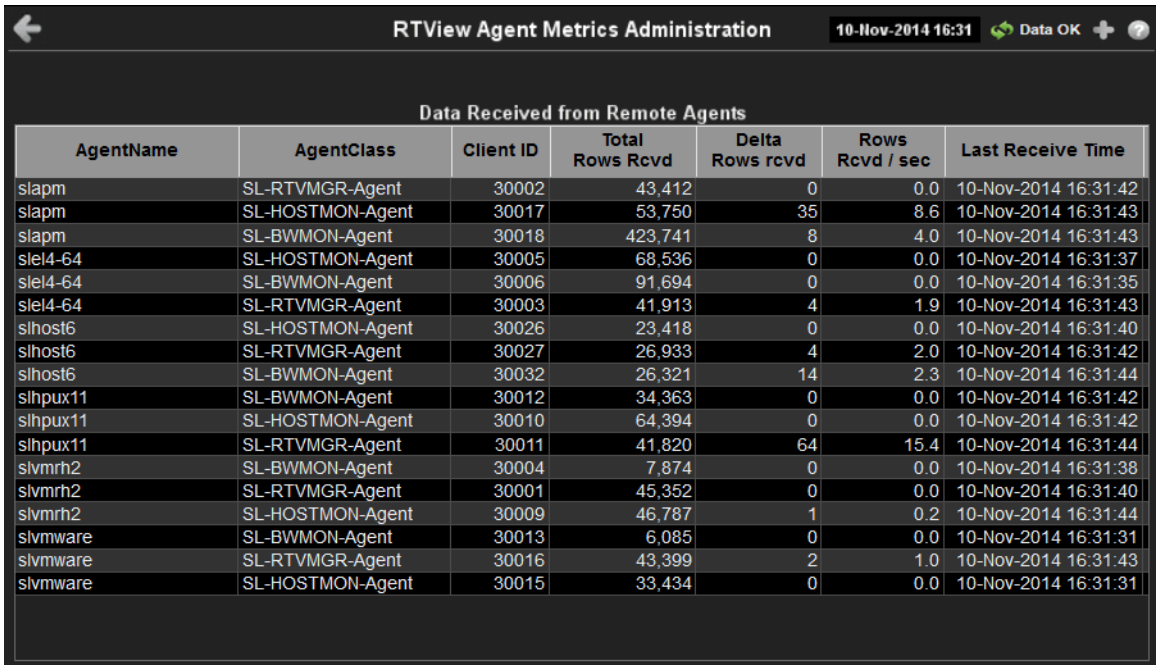
TableType The type of cache table:

current Current table which shows the current values for each index.

	current_condensed	Current table with primary compaction configured.
	history	History table.
	history_condensed	History table with primary compaction configured.
Rows	Number of rows currently in the table.	
Columns	Number of columns currently in the table.	
Memory	Amount of space, in bytes, used by the table.	

RTView Agent Admin

Verify when agent metrics were last queried by the Monitor. The data in this display is predominantly used for debugging by Technical Support.



AgentName	AgentClass	Client ID	Total Rows Rcvd	Delta Rows rcvd	Rows Rcvd / sec	Last Receive Time
slapm	SL-RTVMGR-Agent	30002	43,412	0	0.0	10-Nov-2014 16:31:42
slapm	SL-HOSTMON-Agent	30017	53,750	35	8.6	10-Nov-2014 16:31:43
slapm	SL-BWMON-Agent	30018	423,741	8	4.0	10-Nov-2014 16:31:43
slel4-64	SL-HOSTMON-Agent	30005	68,536	0	0.0	10-Nov-2014 16:31:37
slel4-64	SL-BWMON-Agent	30006	91,694	0	0.0	10-Nov-2014 16:31:35
slel4-64	SL-RTVMGR-Agent	30003	41,913	4	1.9	10-Nov-2014 16:31:43
slhost6	SL-HOSTMON-Agent	30026	23,418	0	0.0	10-Nov-2014 16:31:40
slhost6	SL-RTVMGR-Agent	30027	26,933	4	2.0	10-Nov-2014 16:31:42
slhost6	SL-BWMON-Agent	30032	26,321	14	2.3	10-Nov-2014 16:31:44
slhpux11	SL-BWMON-Agent	30012	34,363	0	0.0	10-Nov-2014 16:31:42
slhpux11	SL-HOSTMON-Agent	30010	64,394	0	0.0	10-Nov-2014 16:31:42
slhpux11	SL-RTVMGR-Agent	30011	41,820	64	15.4	10-Nov-2014 16:31:44
slvmrh2	SL-BWMON-Agent	30004	7,874	0	0.0	10-Nov-2014 16:31:38
slvmrh2	SL-RTVMGR-Agent	30001	45,352	0	0.0	10-Nov-2014 16:31:40
slvmrh2	SL-HOSTMON-Agent	30009	46,787	1	0.2	10-Nov-2014 16:31:44
slvmware	SL-BWMON-Agent	30013	6,085	0	0.0	10-Nov-2014 16:31:31
slvmware	SL-RTVMGR-Agent	30016	43,399	2	1.0	10-Nov-2014 16:31:43
slvmware	SL-HOSTMON-Agent	30015	33,434	0	0.0	10-Nov-2014 16:31:31

Title Bar (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

6,047 The number of items currently in the display.

Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.

23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.

Open the **Alert Views - RTView Alerts Table** display.

Data Received from Remote Agents Table	
AgentName	Name of the agent.
AgentClass	Class of the agent.
Client ID	Unique client identifier.
Total Rows Rcvd	Total number of rows of data received.
Rows Rcvd/sec	Number of rows of data received per second.
Last Receive Time	Last time data was received from the agent.

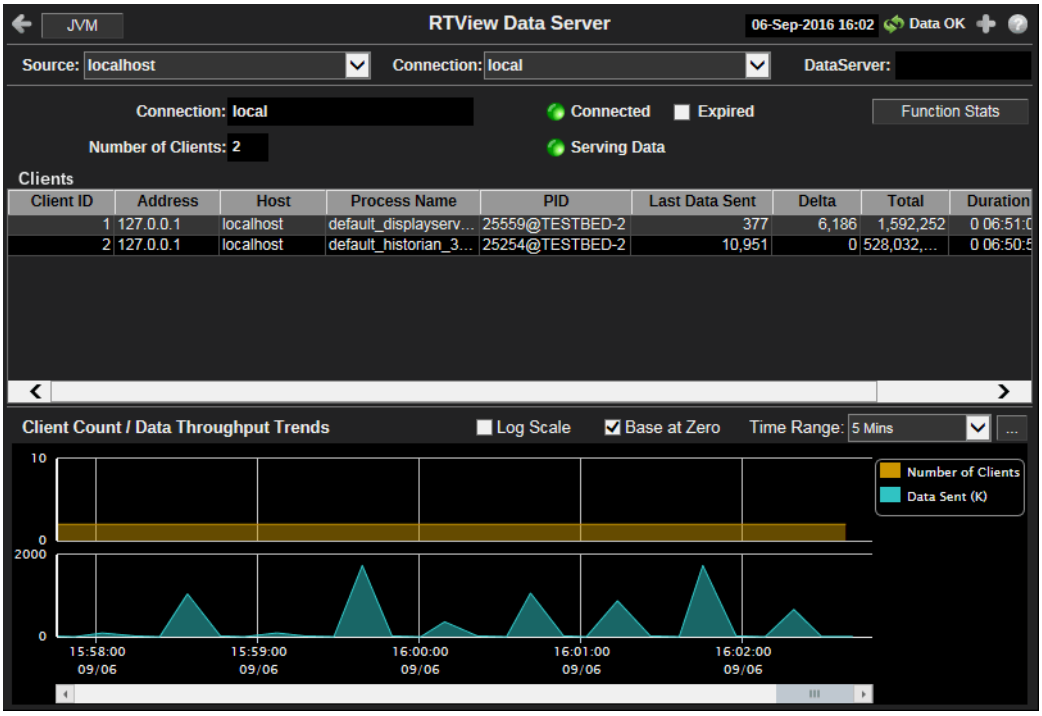
RTView Servers View

These displays enable you to monitor performance of all RTView Servers.

- "Data Server Metrics": Shows metrics for RTView Data Servers.
- "Display Server Metrics": Shows metrics for RTView Display Servers.
- "Historian Servers": Shows metrics for RTView Historian Servers.
- "Tomcat Server Summary": Shows metrics for Tomcat application sessions, including Tomcat hosting and connection details.
- "Tomcat Modules Summary": Shows metrics for Tomcat application modules and utilization details.
- "JVM CPU/Mem Summary": Shows Java Virtual Machine memory and CPU usage, JVM system information, application performance metrics, and input arguments for a single connection.
- "JVM Mem Pool Trends": Shows Java Virtual Machine heap and non-heap memory usage for a single connection.
- "JVM Mem GC Trends": Shows Java Virtual Machine garbage collection memory usage for a single connection.
- "JVM System Properties": Shows Java Virtual Machine input arguments and system properties for a single connection.
- "Version Info": Provides detailed version information for all of the connected RTView applications.

Data Server Metrics

Track data transfer metrics for RTView Data Servers, client count, and throughput trends. Also stop and start serving data from the Data Server.



Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **JVM** in the Title Bar takes you to the "JVM CPU/Mem Summary" display.

Fields and Data
This display includes:

Source Select the type of connection to the RTView Server.

Connection Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.

DataServer The name of the data server.

Connection The Connection selected from the **Connection** drop-down menu.

Number of Clients The number of clients currently server on this Data Server.

Connected The Connection state.
-- The Data Server is disconnected.
-- The Data Server is connected.

Expired This server has been marked as expired after no activity.

Serving Data The Data Server state.
-- The Data Server is not currently serving data.
-- The Data Server is currently serving data.

Function Stats Click to view performance metrics for internal RTView functions (for example, average execution times and the number of times a function is called) in the RTView Function Statistics table.

Clients This table describes all clients on the selected server.

- **Client ID** The unique client identifier.
- **Address** The client IP address.
- **Host** The client host name.
- **Process Name** The name of the process.
- **PID** The process id.
- **Last Data Sent** The amount of data, in bytes, last sent to the client.
- **Delta** The amount of data, in bytes, sent since the last update
- **Total** The total amount of data, in bytes, sent to the client.
- **Duration** The amount of time for this client session. Format:
  dd HH:MM:SS
  <days> <hours>:<minutes>:<seconds>
  For example:
  10d 08:41:38
- **time_stamp** The date and time this row of data was last updated.

Client Count / Data Throughput Trends Shows throughput metrics for all clients on the selected server.

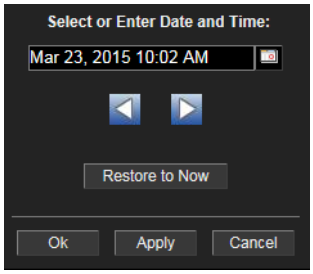
Number of Clients -- Traces the number of clients being served by the Data Server.

Data Sent -- Traces the total amount of data, in Kilobytes, sent to all clients.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



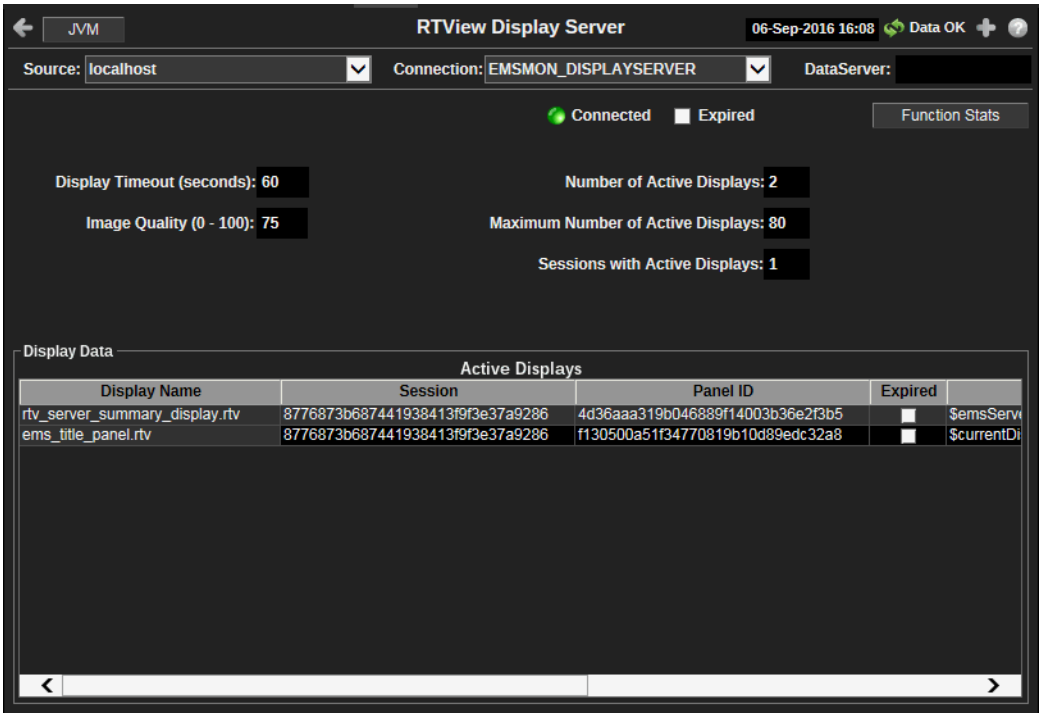
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Display Server Metrics

Track display utilization metrics for RTView Display Servers.



Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **JVM** in the Title Bar takes you to the "JVM CPU/Mem Summary" display.

Fields and Data
This display includes:

Source	Select the type of connection to the RTView Server.
Connection	Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.
DataServer	Displays the associated data server.

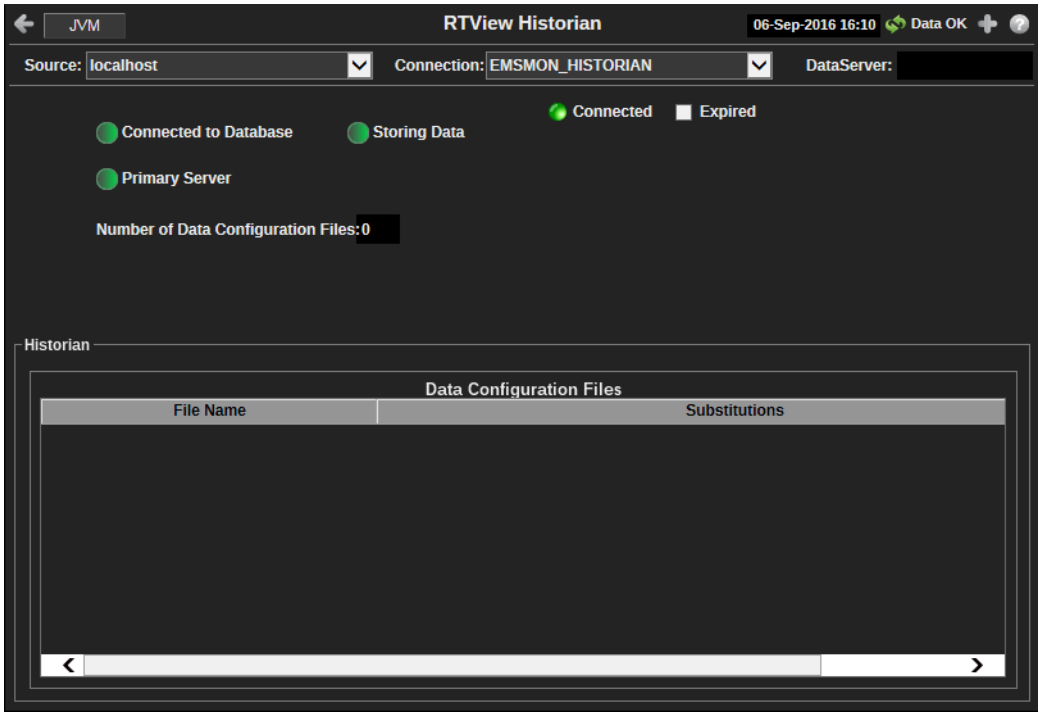
Connected	The Display Server connection state: Disconnected. Connected.
Expired	This server has been marked as expired after no activity.
Function Stats	Click to view performance metrics for internal RTView functions (for example, average execution times and the number of times a function is called) in the RTView Function Statistics table.
Display Timeout (seconds)	The amount of time, in seconds, that a display can be kept in memory after the Display Servlet has stopped requesting it. The default is **60** seconds (to allow faster load time when switching between displays).
Image Quality (0-100)	A value between **0** and **100**, which controls the quality of the generated images. If the value is **100**, the Display Server outputs the highest quality image with the lowest compression. If the value is **0**, the Display Server outputs the lowest quality image using the highest compression. The default is **75**.
Number of Active Displays	The total number of displays currently being viewed by a user.
Maximum Number of Active Displays	The maximum number of displays kept in memory. The default is **20** (to optimize memory used by the Display Server).
Sessions with Active Displays	Number of clients accessing the Display Server.

Display Data / Active Displays

Display Name	The name of the currently open display.
Session	A unique string identifier assigned to each session.
Panel ID	A unique string identifier assigned to each panel. The Display Server loads each display requested by each client into a panel. This ID can be useful in troubleshooting.
Expired	When checked, this display has been marked as expired after no recent activity.
Substitutions	Lists the substitutions used for the display.
Last Ref	The amount of time that has elapsed since the display was last requested by a client.
ID	The client ID.
Preloaded	When checked, indicates that the display (**.rtv**) file is configured in the **DISPLAYSERVER.ini** file to be preloaded. The **history_config** option is used to configure display preloading. Preloading a display makes data immediately available. Preloaded displays are not unloaded unless the Display Server is restarted or the display cache is cleared via JMX. This option can be used multiple times to specify multiple displays to preload.
time_stamp	The date and time this row of data was last updated.

Historian Servers

Track the status of RTView Historian Servers and data configuration file usage. View the caches that are archived by the Historian application, substitution variables associated with the history cache configuration file, as well as the history cache status.



Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **JVM** in the Title Bar takes you to the "JVM CPU/Mem Summary" display.

Fields and Data

This display includes:

Source Select the type of connection to the RTView Server.

Connection	Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.	
DataServer	The name of the associated data server.	
Connected	The Historian Server connection state. -- The Historian Server is disconnected. -- The Historian Server is connected.	
Expired	This server has been marked as expired after no activity.	
Connected to Database	The database connection state. -- The Historian Server is disconnected from the database. -- The Historian Server is connected to the database.	
Storing Data	The Historian Server status: -- The Historian Server is currently not archiving data. -- The Historian Server is currently archiving data.	
Primary Server	When green, indicates that this Historian, when used within a group of Historians, is the primary group member. If the primary member fails or shuts down, the standby member with the highest priority becomes the primary group member. When red, indicates that this Historian is a secondary server. The Historian Server member state: -- The Historian Server is a primary group member. -- The Historian Server is a secondary group member.	
Number of Data Configuration Files	The number of configuration files that are used by the history cache.	
Historian / Data Configuration Files	**File Name**	The name of the history cache configuration file.
	Substitutions	Lists the substitutions specified in the history cache configuration file.
	Connection	Lists the data server to which the history cache configuration file is connected.

Tomcat Server Summary

Track the performance of Tomcat application sessions and get Tomcat hosting and connection details. Use this data to verify response times of your Web applications.

Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **All Tomcats** in the Title Bar takes you to the "All Tomcat Servers Table" display. Clicking **All Apps** in the Title Bar takes you to the "Tomcat Applications Activity Heatmap" display. Clicking **JVM** takes you to the "JVM CPU/Mem Summary" display.

Fields and Data

This display includes:

Source Select the host where the Tomcat Server is running.

Connection Select a Tomcat server from this dropdown.

Connected	The Connection state. -- The Tomcat Server is disconnected. -- The Tomcat Server is connected.	
Expired	When checked, this server is expired due to inactivity.	
Host Name	The name of the host where the application resides.	
App Base	The directory in which Tomcat is installed.	
Auto Deploy	When checked, indicates that Tomcat option, automatic application deployment, is enabled. **Note:** This Tomcat option is set using the **autoDeploy** property in the server.xml file, located in the Tomcat **conf** directory. **autoDeploy=true** enables the option.	
Deploy On Startup	When checked, indicates that the option to deploy the application on Tomcat startup is enabled. **Note:** This Tomcat option is set using the **deployOnStartup** property in the **server.xml** file, located in the Tomcat **conf** directory. When enabled (**deployOnStartup=true**), applications from the host are automatically deployed.	
Connectors	This table shows Tomcat application connection information.	
	Protocol	The protocol used by the Tomcat application on the host.
	Port	The port number used by the Tomcat application on the host.
	RedirectPort	The redirect port number used by the Tomcat application on the host.
	Secure	When checked, specifies that the Tomcat application uses a secure connection on the host.
Current Statistics	**Active Sessions**	The number of clients currently in session with the servlet.
	Page Access / sec	The number of times pages are accessed, per second.
	Cache Hits / sec	The number of times the cache is accessed, per second.
	Requests / sec	The number of requests received, per second.
	Bytes Rcvd / sec	The number of bytes received, per second.
	Bytes Sent / sec	The number of bytes sent, per second.
	Process Time	The amount of time, in milliseconds, for the servlet to process client requests.
Totals	**Sessions**	The total number of client sessions since the server was started.
	Accesses	The total number of page accesses since the server was started.
	Requests	The total number of requests since the server was started.
	Bytes Rcvd (KB)	The number of Kilobytes received per second, since the server was started.

Bytes Sent (KB) The total number of bytes sent, in Kilobytes, since the server was started.

Session / Data / Latency Trends Shows metrics for the selected server.

Active Sessions -- Traces the number of currently active client sessions.

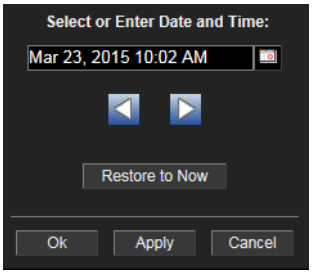
Requests /sec -- Traces then umber of requests received, per second.

Process Time -- Traces the average amount of time, in milliseconds, to process requests.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

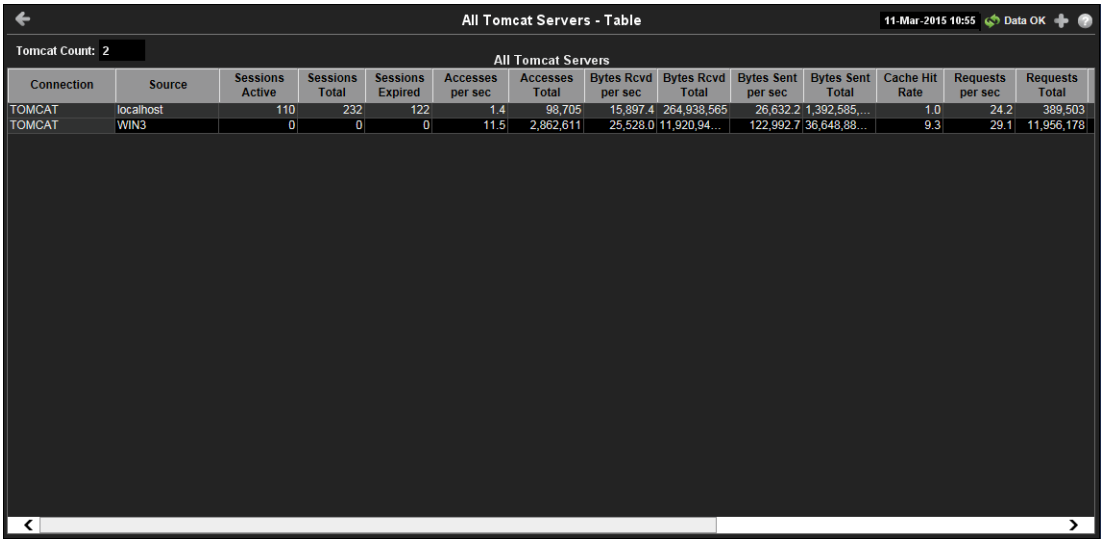
Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

All Tomcat Servers Table

View Tomcat Server details per connection such as the total number of sessions, bytes sent/ received, and processing time. Each row in the table is a different Tomcat Server. The row color for inactive connections is dark red.

Use this display to see summary information for your Tomcat servers, including session counts, access and request rates, cache hit rates, and data transmission metrics.



Title Bar: Indicators and functionality might include the following:

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23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data
This display includes:

Tomcat Count	The number of Tomcat connections in the table.
Connection	The name of the Tomcat connection.
Source	The host where the Tomcat Server is running.
Sessions Active	The number of currently active client sessions.
Sessions Total	The total number of client sessions since the server was started.
Sessions Expired	The total number of client sessions that expired since the server was started.
Accesses per sec	The number of times pages are accessed, per second.
Accesses Total	The total number of times pages have been accessed since the server was started.
Bytes Rcvd per sec	The number of bytes received per second.

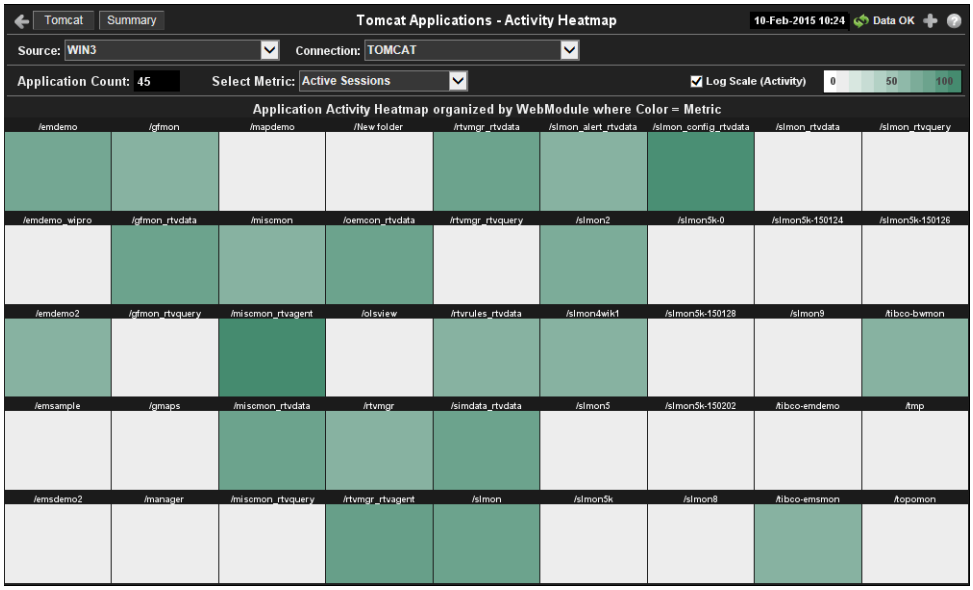
Bytes Rcvd Total	The total number of bytes received since the server was started.
Bytes Sent per sec	The number of bytes sent per second.
Bytes Sent Total	The total number of bytes sent since the server was started.
Cache Hit Rate	The number of times the cache is accessed, per second.
Requests per sec	The number of requests received, per second.
Requests Total	The total number of requests received since the server was started.
Process Time	The average amount of time, in milliseconds, to process requests.
Error Count	The number of errors that have occurred since the server was started.
appBase	The directory in which Tomcat is installed.
name	The host name.
Display Name	The name of the currently open display.
Expired	When checked, this connection is expired due to inactivity.
time_stamp	The date and time this row of data was last updated. Format: **MM/DD/YY HH:MM:SS** **<month>/ <day>/<year> <hours>:<minutes>:<seconds>**

Tomcat Applications Activity Heatmap

View performance metrics for all monitored Tomcat Web modules for one Tomcat Server. The heatmap organizes Tomcat Web modules by server, and uses color to show the most critical Metric value for each Tomcat connection associated with the selected source. Each rectangle in the heatmap represents a Web module. In this heatmap, the rectangle size is the same for all Web modules. Each Metric (selected from the drop-down menu) has a color gradient bar that maps relative values to colors.

Use this display to see the health of all your web applications at-a-glance. You can select the heatmap color metric from a list including active sessions, access rate, and total access count.

Use the available drop-down menus to filter data shown in the display. Use the check-boxes to include or exclude labels in the heatmap. Move your mouse over a rectangle to see additional information. Drill-down and investigate by clicking a rectangle in the heatmap to view details for the selected Web module in the Tomcat Modules Summary display.



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Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

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Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

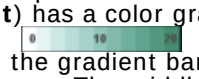
Open an instance of this display in a new window.

Open the online help page for this display.

Note: Clicking **Tomcat** in the Title Bar takes you to the "Tomcat Server Summary" display. Clicking **Summary** in the Title Bar takes you to the "Tomcat Modules Summary" display.

Fields and Data
This display includes:

Source	Select the host where the Tomcat Server is running.
Connection	Select a Tomcat Server from the drop-down menu.
Application Count	The number of Tomcat applications in the heatmap.

Select Metric Select the metric to display in the heatmap. Each metric (**Active Sessions**, **Current Access Rate**, and **Total Access Count**) has a color gradient bar that maps relative values to colors. The color gradient bar  shows the range of the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of the selected metric in the heatmap. The middle value in the gradient bar indicates the middle value of the range.

Log Scale (Activity) This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Tomcat Modules Summary

Track the performance of Tomcat application modules and get utilization details. Use this data to verify response times of your Web application modules.

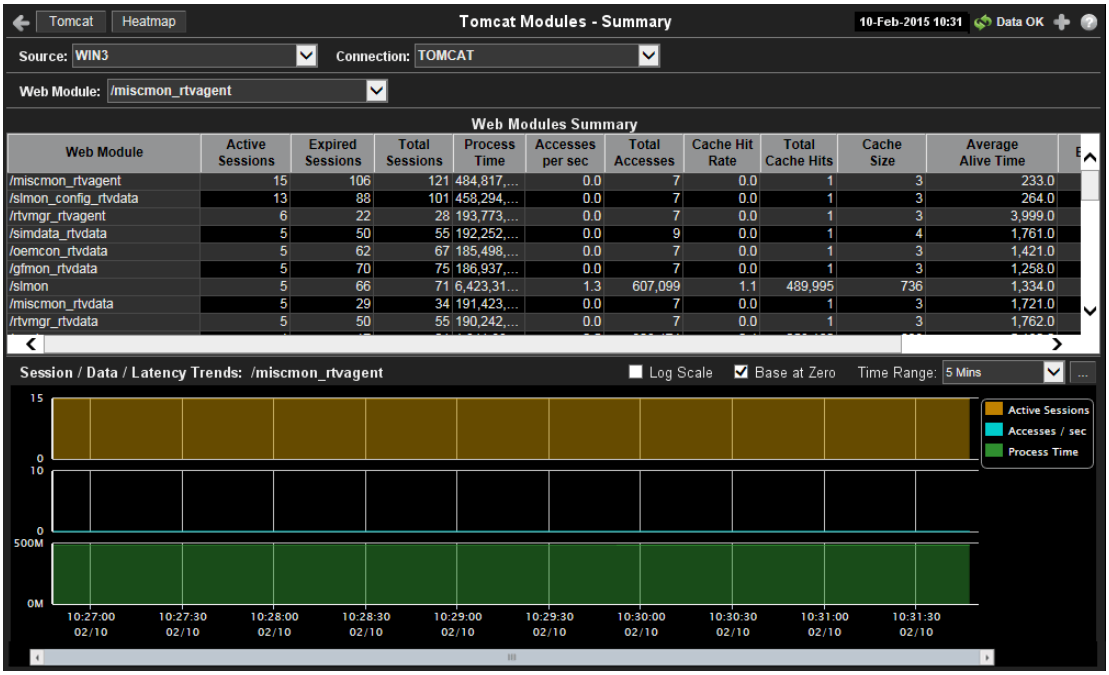


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Table Navigate to displays commonly accessed from this display.
23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.
Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.
Open the **Alert Views - RTView Alerts Table** display.
Open an instance of this display in a new window.
Open the online help page for this display.

Note: Clicking **Tomcat** in the Title Bar takes you to the "Tomcat Server Summary" display. Clicking **Heatmap** in the Title Bar takes you to the "Tomcat Modules Summary" display.

Fields and Data
This display includes:

Source	Select the host where the Tomcat Server is running.
Connection	Select a Tomcat Server from the drop-down menu. This menu is populated by the selected Source.
Web Module	Select a Web module from the drop-down menu.
Web Modules Summary	This table describes the selected Web module.

Web Module	The name of the Web module.
Active Sessions	The number of currently active client sessions.
Expired Sessions	The total number of client sessions that expired since the application was started.
Total Sessions	The total number of client sessions since the application was started.
Process Time	The average amount of time, in milliseconds, to process requests.
Accesses per sec	The number of times pages are accessed, per second.
Total Accesses	The total number of times pages have been accessed since the application was started.
Cache Hit Rate	The number of times the cache is accessed, per second.
Total Cache Hits	The total number of times the cache has been accessed since the application was started.
Cache Size	The size of the cache.
Average Alive Time	The average time the web module is up.

Expired When checked, this connection is expired due to inactivity.

time_stamp The date and time this row of data was last updated.

Format:

MM/DD/YY HH:MM:SS

<month>/ <day>/<year>
<hours>:<minutes>:<seconds>

Session / Data / Latency Trends: /emsmgr Shows metrics for the selected server.

Active Sessions -- Traces the number of currently active client sessions.

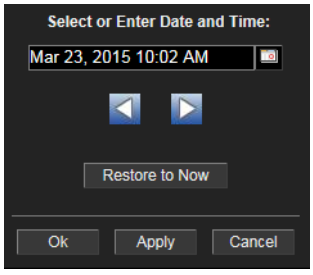
Accesses /sec -- Traces the number of times pages are accessed, per second.

Process Time -- Traces the average amount of time, in milliseconds, to process requests.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

JVM CPU / Mem Summary

Track Java Virtual Machine memory and CPU usage, get JVM system information, application performance metrics, and input arguments for a single connection. Verify whether the memory usage has reached a plateau. Or, if usage is getting close to the limit, determine whether to allocate more memory.

Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

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Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data
This display includes:

Source	Select the type of connection to the RTView Server.
Connection	Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.
Operating System	Displays data pertaining to the operating system running on the host on which the JVM resides.

	Connected	The connection state. -- Disconnected. -- Connected.
	Expired	When checked, this server is expired due to inactivity.
	Operating System	The name of the operating system running on the host on which the JVM resides.
	OS Version	The operating system version.
	Architecture	The ISA used by the processor.
	Available Processors	The total number of processors available to the JVM.
Runtime	**Process Name**	The name of the process.
	Start Time	The date and time that the application started running.
	Up Time	The amount of time the application has been running, in the following format: **0d 00:00** **<days>d <hours>:<minutes>:<seconds>** For example: **10d 08:41:38**
	JVM CPU %	The amount of CPU usage by the JVM, in percent.
	Live Threads	The total number of live threads.
	Daemon Threads	The total number of live daemon threads.
	Peak Threads	The total number of peak live threads since the Java virtual machine started or the peak was reset.
	Max Heap Mb	The maximum amount of memory used for memory management by the application in the time range specified. This value may change or be undefined. A memory allocation can fail if the JVM attempts to set the **Used** memory allocation to a value greater than the **Committed** memory allocation, even if the amount for **Used** memory is less than or equal to the **Maximum** memory allocation (for example, when the system is low on virtual memory).
	Committed Mb	The amount of memory, in megabytes, guaranteed to be available for use by the JVM. The amount of committed memory can be a fixed or variable size. If set to be a variable size, the amount of committed memory can change over time, as the JVM may release memory to the system. This means that the amount allocated for **Committed** memory could be less than the amount initially allocated. **Committed** memory will always be greater than or equal to the amount allocated for **Used** memory.
	Used Mb	The amount of memory currently used by the application. Memory used includes the memory occupied by all objects including both reachable and unreachable objects.
Class Name	Class name used for JVM.	

Arguments The arguments used to start the application.

More Arguments Additional arguments used to start the application.

JVM CPU, Memory, Thread Trends Shows JVM metrics for the selected server.

JVM CPU % -- Traces the amount of memory, in percent, used by the JVM in the time range specified.

Max Heap Mb -- Traces the maximum amount of memory used for memory management by the application in the time range specified. This value may change or be undefined.

Note: A memory allocation can fail if the JVM attempts to set the Used memory allocation to a value greater than the Committed memory allocation, even if the amount for Used memory is less than or equal to the Maximum memory allocation (for example, when the system is low on virtual memory).

Cur Heap Mb -- Traces the current amount of memory, in megabytes, used for memory management by the application in the time range specified.

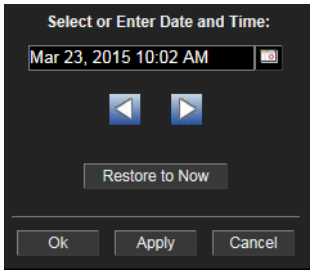
Used Heap Mb -- Traces the memory currently used by the application.

Live Threads -- Traces the total number of currently active threads in the time range specified.

Log Scale This option should be used when the range of your data is very broad. When checked, the values are displayed using a logarithmic scale rather than using the actual values so that data on the extreme ends of the scale can be viewed more effectively. For example, if you have data that ranges from the tens to the thousands, the data in the range of the tens will be neglected visually if you do not check this option.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



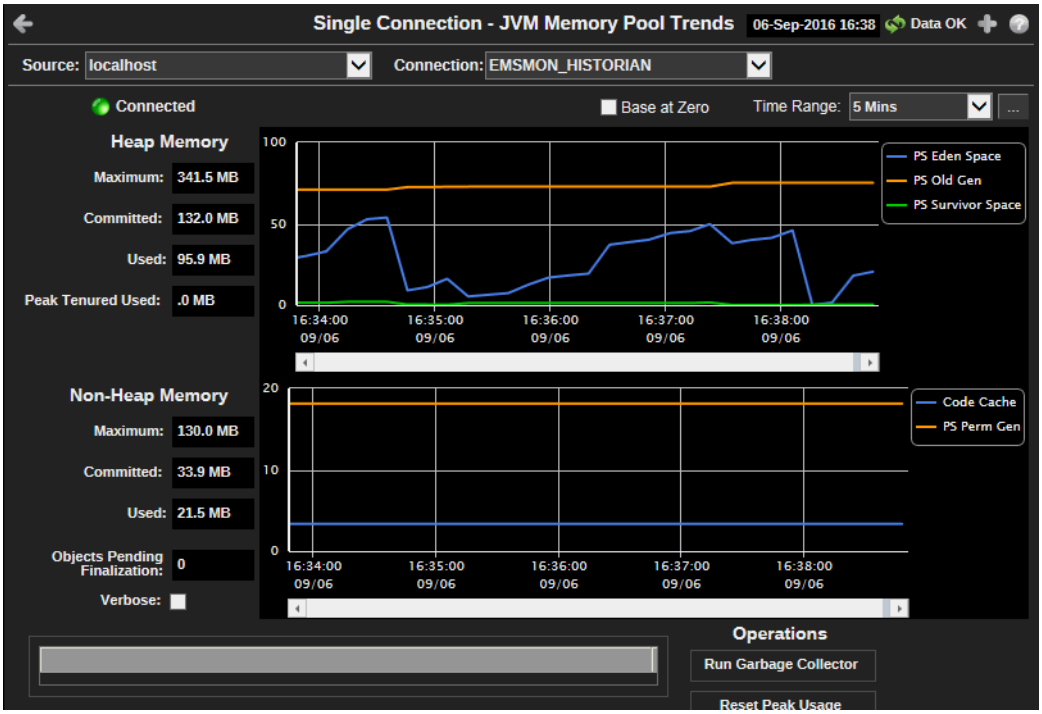
By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

JVM Mem Pool Trends

Track Java Virtual Machine heap and non-heap memory usage for a single connection.



Title Bar: Indicators and functionality might include the following:

Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data
This display includes:

Source Select the type of connection to the RTView Server.

Connection Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.

Connected The data connection state.

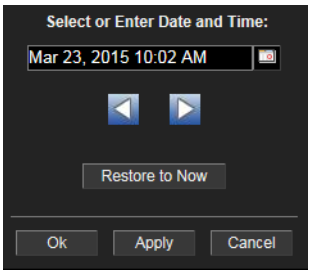
-- Disconnected.

-- Connected.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range

Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Heap Memory

Maximum

The maximum amount of memory used, in megabytes, for memory management by the application in the time range specified. This value may change or be undefined.

A memory allocation can fail if the JVM attempts to set the Used memory allocation to a value greater than the Committed memory allocation, even if the amount for Used memory is less than or equal to the Maximum memory allocation (for example, when the system is low on virtual memory).

Committed

The amount of memory, in megabytes, guaranteed to be available for use by the JVM. The amount of committed memory can be a fixed or variable size. If set to be a variable size, the amount of committed memory can change over time, as the JVM may release memory to the system. This means that the amount allocated for Committed memory could be less than the amount initially allocated. Committed memory will always be greater than or equal to the amount allocated for Used memory.

Used

The amount of memory, in megabytes, currently used by the application. Memory used includes the memory occupied by all objects including both reachable and unreachable objects.

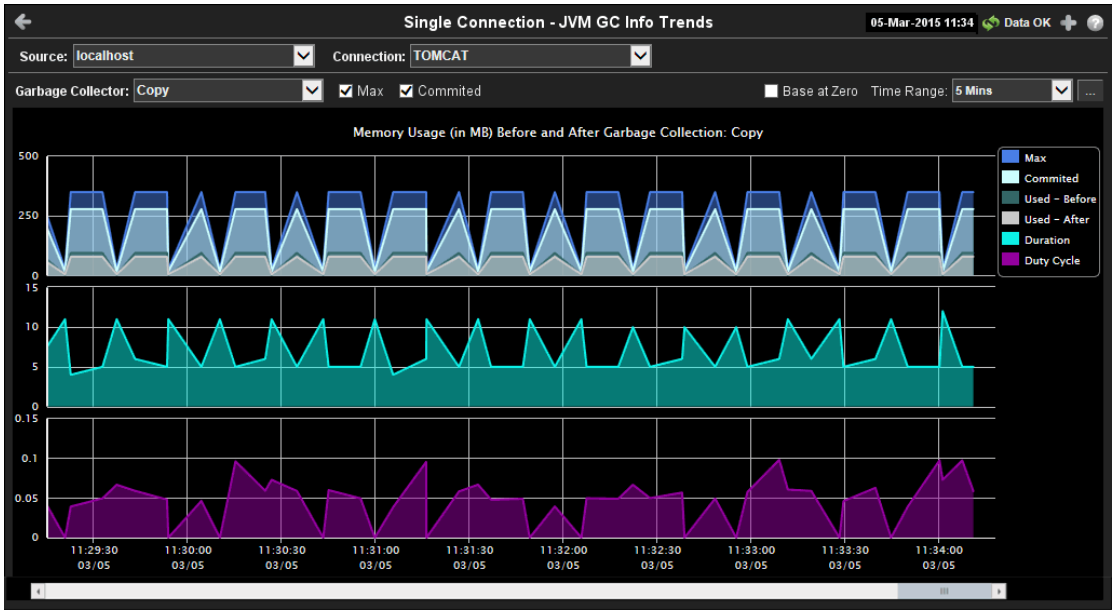
Peak Tenured Used

The amount of memory, in megabytes, used by tenured JVM objects in the time range specified. Tenured refers to JVM objects contained in a pool that holds objects that have avoided garbage collection and reside in the survivor space. Peak tenured refers to the maximum value of the tenured memory over a specified period of time.

	Trend Graph	**Survivor Space** -- Traces the amount of memory used by the JVM survivor pool in the time range specified. The JVM survivor pool holds objects that survive the eden space garbage collection. **Tenured Gen** -- Traces the amount of memory used by tenured JVM objects in the time range specified. Tenured refers to JVM objects contained in a pool that holds objects that have avoided garbage collection and reside in the survivor space. Peak tenured refers to the maximum value of the tenured memory over a specified period of time. **Eden Space** -- Traces the amount of memory used by the JVM eden pool in the time range specified. Eden refers to the JVM eden pool, which is used to initially allocate memory for most objects.
Non-Heap Memory	**Maximum**	The maximum amount of memory, in megabytes, used for JVM non-heap memory management by the application in the time range specified.
	Committed	The amount of memory, in megabytes, guaranteed to be available for use by JVM non-heap memory management. The amount of committed memory can be a fixed or variable size. If set to be a variable size, it can change over time, as the JVM may release memory to the system. This means that the amount allocated for **Committed** memory could be less than the amount initially allocated. **Committed** memory will always be greater than or equal to the amount allocated for **Used** memory.
	Used	The amount of memory, in megabytes, currently used by the application. Memory used includes the memory occupied by all objects including both reachable and unreachable objects.
	Objects Pending Finalization	The value of the MemoryMXBean **ObjectPendingFinalizationCount** attribute.
	Verbose	The value of the MemoryMXBean **Verbose** attribute.
	Trend Graph	**Code Cache** -- Traces the amount of non-heap memory used in the JVM for compilation and storage of native code. **Perm Gen** -- Traces the amount of memory used by the pool containing reflective data of the virtual machine, such as class and method objects. With Java virtual machines that use class data sharing, this generation is divided into read-only and read-write areas.
Operations	**Run Garbage Collector**	Performs garbage collection on the selected server.
	Reset Peak Usage	Clears peak usage on the selected server.

JVM Mem GC Trends

Track Java Virtual Machine garbage collection memory usage for a single connection.



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Open the previous and upper display.

Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

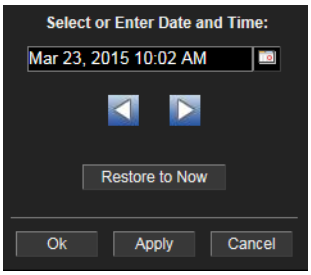
Fields and Data
This display includes:

Source	Select the type of connection to the RTView Server.
Connection	Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.
Garbage Collector	Select a garbage collection method: **Copy** or **MarkSweepCompact**.
Max	Shows the maximum amount of memory used for JVM garbage collection in the time range specified.

Committed Shows the amount of memory guaranteed to be available for use by JVM non-heap memory management. The amount of committed memory can be a fixed or variable size. If set to be a variable size, it can change over time, as the JVM may release memory to the system. This means that the amount allocated for **Committed** memory could be less than the amount initially allocated. **Committed** memory will always be greater than or equal to the amount allocated for **Used** memory.

Base at Zero When this option is checked, zero is set as the Y axis minimum for all graph traces.

Time Range Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. To specify a time range, click the ... button.



By default, the time range end point is the current time. To change the time range end point, click the button and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

Use the navigation arrows to move forward or backward one time period. **Note:** The time period is determined by your selection from the **Time Range** drop-down menu.

Click **Restore to Now** to reset the time range end point to the current time.

Memory Usage (in MB) Before and After Garbage Collection

Max Traces the maximum amount of memory used by garbage collection in the time range specified. This value may change or be undefined.

Note: A memory allocation can fail if the JVM attempts to set the **Used** memory allocation to a value greater than the **Committed** memory allocation, even if the amount for **Used** memory is less than or equal to the **Maximum** memory allocation (for example, when the system is low on virtual memory).

Committed Traces the amount of memory guaranteed to be available for use by the JVM. The amount of committed memory can be a fixed or variable size. If set to be a variable size, the amount of committed memory can change over time, as the JVM may release memory to the system. This means that the amount allocated for **Committed** memory could be less than the amount initially allocated. **Committed** memory will always be greater than or equal to the amount allocated for **Used** memory.

Used - Before Traces the amount of memory used before the last garbage collection.

Used - After Traces the amount of memory used after the last garbage collection.

Duration The duration, in seconds, of garbage collection.

Duty Cycle The percentage of time that the application spends in garbage collection.

JVM System Properties

Track Java Virtual Machine input arguments and system properties for a single connection.

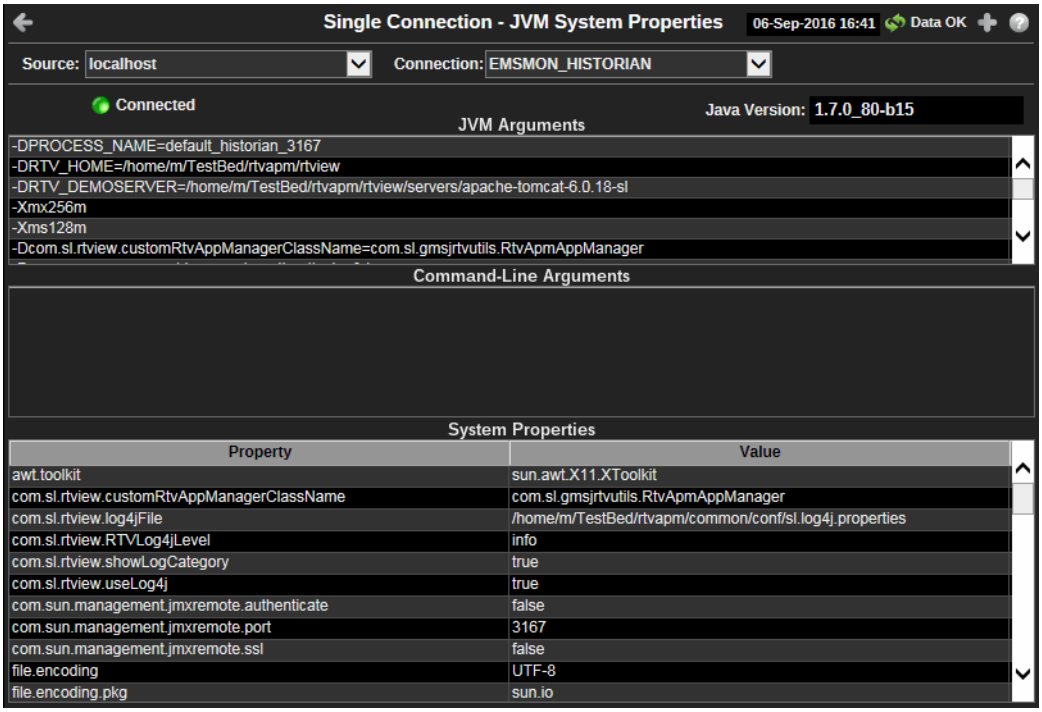


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Table Navigate to displays commonly accessed from this display.

23-Mar-2017 12:04 The current date and time. When the time is incorrect, this might indicate that RTView stopped running. When the time is correct and the **Data OK** indicator is green, this is a strong indication that the platform is receiving current and valid data.

Data O The data connection state. Red indicates the data source is disconnected (for example, the Data Server is not receiving data, or the Display Server is not receiving data from the Data Server). Green indicates the data source is connected.

Open the **Alert Views - RTView Alerts Table** display.

Open an instance of this display in a new window.

Open the online help page for this display.

Fields and Data

This display includes:

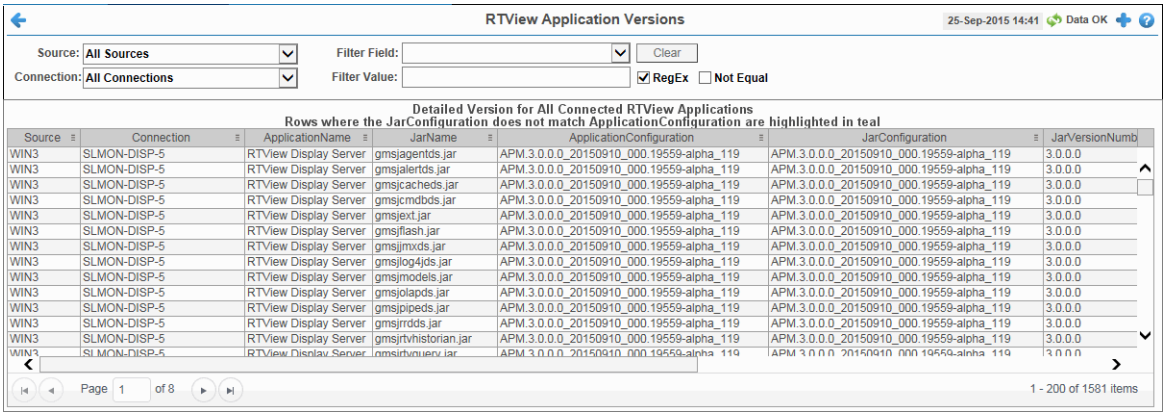
Source	Select the type of connection to the RTView Server.
Connection	Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.
Connected	The data connection state: Disconnected. Connected.
Java Version	The Java version running on the selected server.

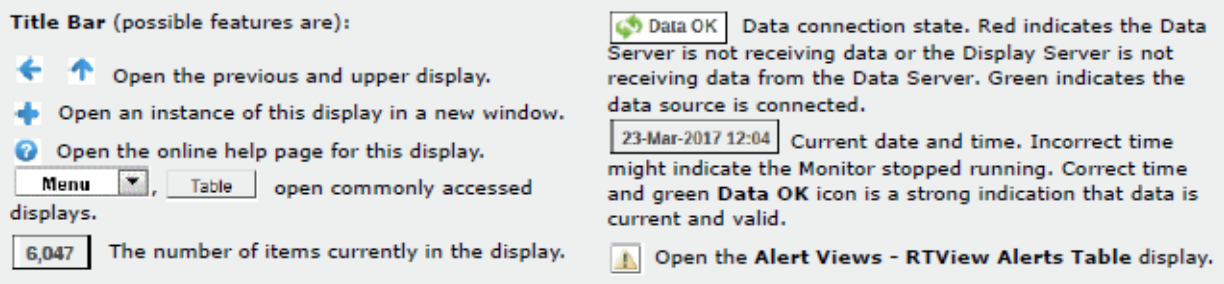
JVM Arguments	The JVM arguments in the **RuntimeMXBean InputArguments** attribute.
Command Line Arguments	Arguments used to start the application.
System Properties	This table lists and describes system property settings.
Property	Name of the property.
Value	Current value of the property.

Version Info

This display provides detailed version information for all of the connected RTView applications. You can view specific applications by filtering data using the **Source**, **Connection**, **Filter Field**, and **Filter Value** fields at the top of the display. This display provides valuable information about the version of each jar that is used in each connected RTView application that can be used to help Technical Support when issues arise. Rows in the table where the **JarConfiguration** does not match the **ApplicationConfiguration** are highlighted in teal.

Note: RTView applications running versions previous to this enhancement will only have one row in the table and will display "version info not supported in this version" in the **ApplicationConfiguration** column.





Fields and Data
This display includes:

Source	Select a filter value for the **Source** column.
Connection	Select a filter value for the **Connection** column.
Filter Field	Select a table column from the drop-down menu to perform a search in: **ApplicationName, JarName, ApplicationConfiguration, JarConfiguration, JarVersionNumber,JarVersionDate, JarReleaseDate,** and **JarMicroVersion**. Filters limit display content and drop-down menu selections to only those items that pass through the selected filter's criteria. If no items match the filter, you might have zero search results (an empty table). Double-clicking on a specific field in the table will populate this field with the selected field's content. For example, double-clicking on the **DataServerName** field in one of the rows displays the entire field's content into this field.
Clear	Clears entries in the **Filter Field** display list, **Filter Value** field, and **Not Equal** check box.
Filter Value	Enter the (case-sensitive) string to search for in the selected **Filter Field**.
RegEx	Select this check box to use the **Filter Value** as a regular expression when filtering. When selected, the **Not Equal** check box displays.
Not Equal	Works in conjunction with the **RegEx** field. Selecting this check box searches for values in the specified **Filter Field** that are NOT equal to the value defined in the **Filter Value** field. For example, if the **Filter Field** specified is **JarMicroVersion**, the **Filter Value** is specified as **317,** and this check box is selected, then only those rows containing **JarMicroVersion** fields NOT EQUAL to **317** will display. This field is only enabled when the **RegEx** check box is checked.
Source	The name of the source of the RTVMGR.
Connection	Lists the name of the jmx connection to the RTView application.
Application Name	Lists the name of the application.
JarName	Lists the name of the jar used in the connected application.
Application Configuration	Lists the configuration string of the application. This string contains the main application version that corresponds to the version information printed to the console at startup.
JarConfiguration	Lists the configuration string for the jar.
JarVersionNumber	Lists the version number for the jar.
JarVersionDate	Lists the version date for the jar.

JarReleaseType	Lists the release type for the jar.
JarMicroVersion	Lists the micro version for the jar.
Expired	When checked, this connection is expired due to inactivity.
time_stamp	The time at which the information in the current row was last received.
DataServerName	The name of the RTVMGR data server connection.

CHAPTER 6 # Third-Party Reports

TIBCO Spotfire Reports

There are two TIBCO Spotfire reports that are provided with EMS Monitor, the **EMS Queue Message Metrics Report** and the **EMS Server Message Metrics Report**. Each of the reports can be configured using Oracle or MySQL. This section includes:

System Requirements

This section describes the minimum system requirements necessary to use these reports.

TIBCO Spotfire

Version 7.0 for Oracle and MySQL reports

Clients

Microsoft Windows 64-bit

Databases Supported

Oracle (version 11G) and MySQL (version 5.6)

Configuring Spotfire Reports

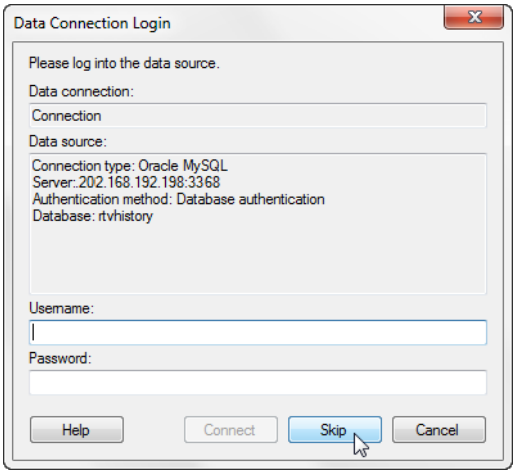
Though similar, there are two slightly different flows for configuring the TIBCO Spotfire reports:

MySQL Report Configuration

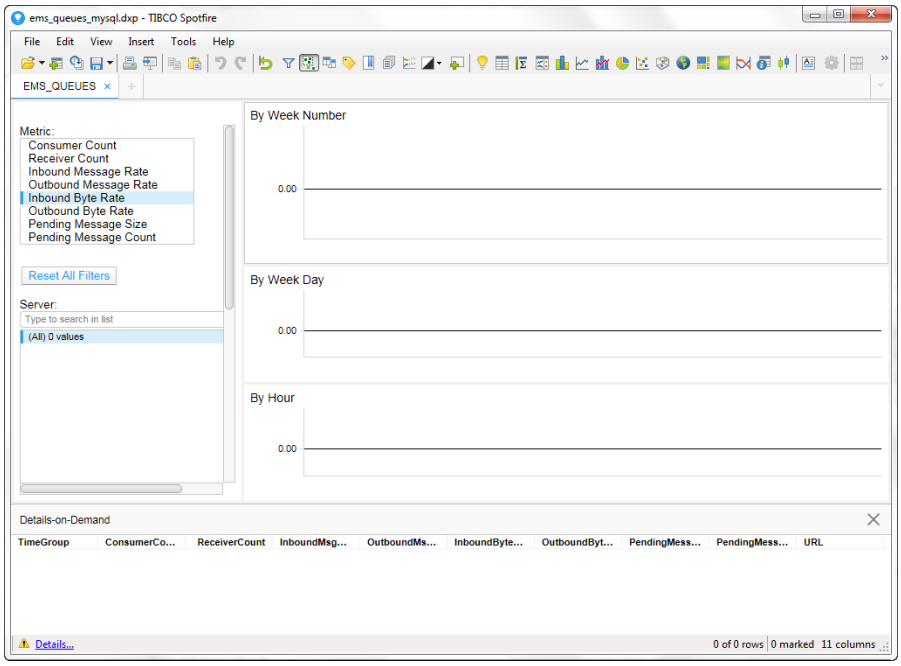
You can generate the following reports using Oracle MySQL: **EMS Server Message Metrics Report** (using **ems_serverinfo_mysql.dxp** and **ems_serverinfo_mysql.txt**) and **EMS Queue Message Metrics Report** (using **ems_queues_mysql.dxp** and **ems_queues_mysql.txt**).

1. Open the **ems_queues_mysql.dxp** Spotfire Analysis file in the **rtvapm/emsmon/projects/reports/Spotfire** directory that was created during the EMS Monitor installation.

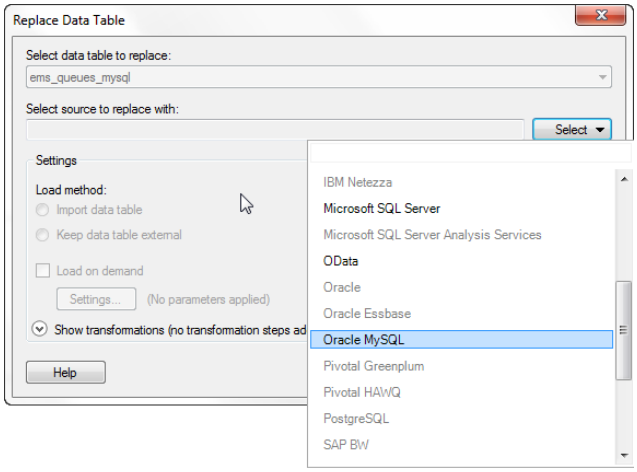
   The **Data Connection Login** window displays.



2. Click the **Skip** button (there is no need to log in at this point).
The **TIBCO Spotfire** dashboard displays.



3. Click **File> Replace Data Table**.
The **Replace Data Table** window displays.



Note: When connecting the **ems_queues_mysql** dashboard to your MySQL data, Spotfire's **Replace Data Table** functionality may run very slowly, or even time-out, if the dataset is too large.

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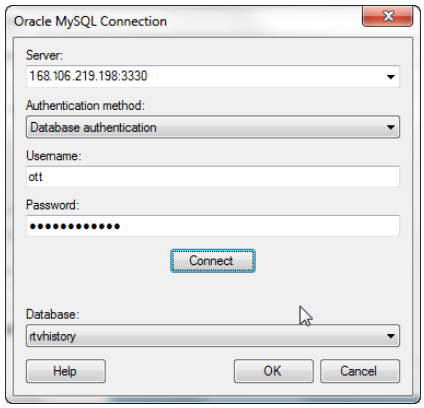
4. Click the **Select** button (associated with the **Select source to replace with** field) and select **Oracle MySQL**.

The **Oracle MySQL Connection** window displays.

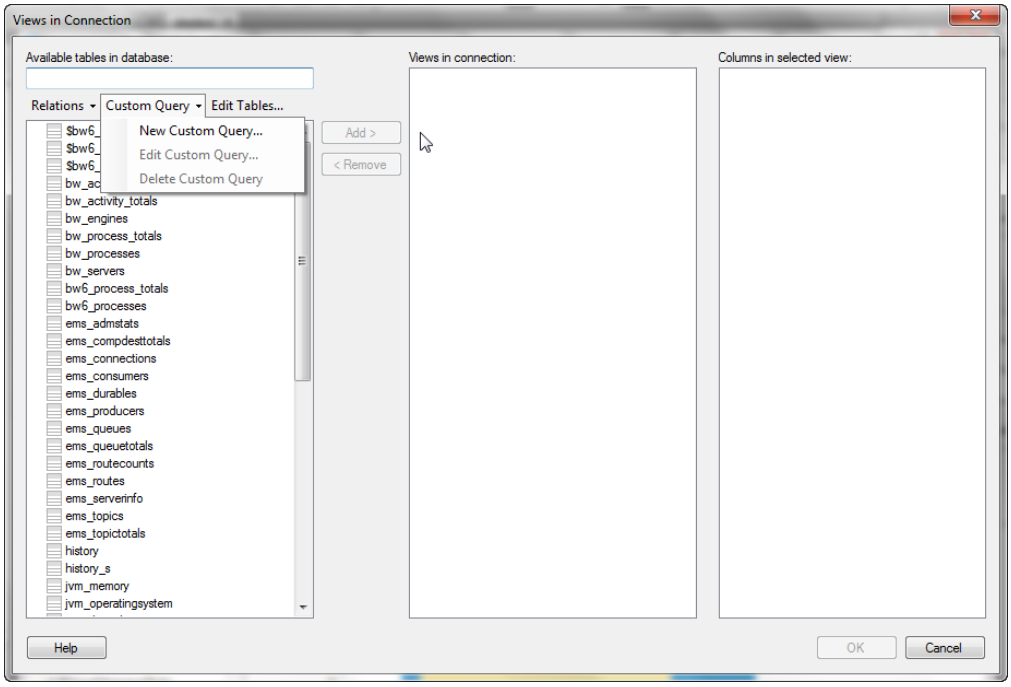


5. Enter the **Server**, **Username**, **Password**, select **Database authentication** as the **Authentication Method**, and click the **Connect** button.

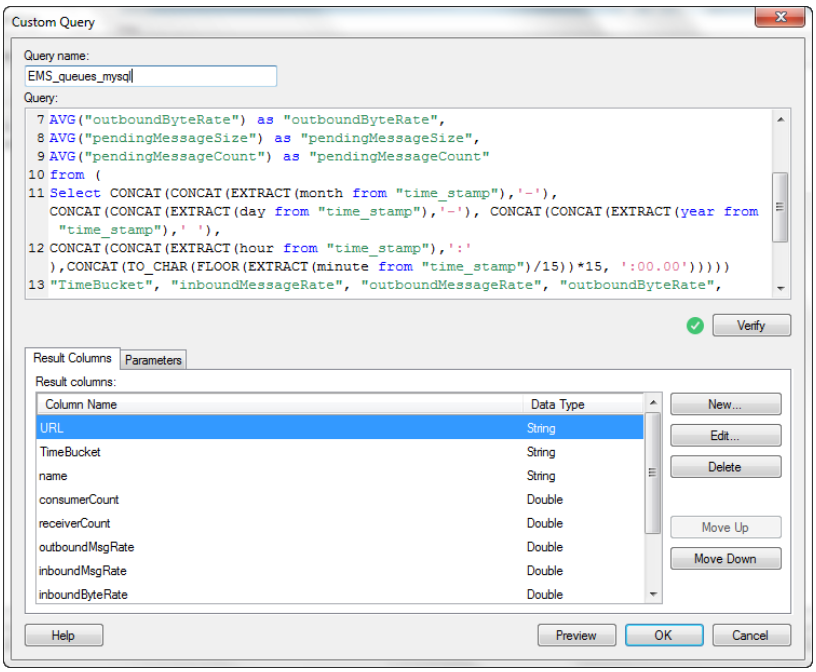
The **Database** drop down should be populated.

6. Select **rtvhistory** from the **Database** drop down and click the **OK** button.

The **Views in Connection** window displays.



7. Select the **Custom Query** drop down list and select **New Custom Query**. The **Custom Query** window displays.



8. Enter the desired name (whatever name is meaningful for you) into the **Query_name** field, open the text file in your installation directory associated with your table (for example, if you are selected **ems_queues_mysql.dxp** initially, then open

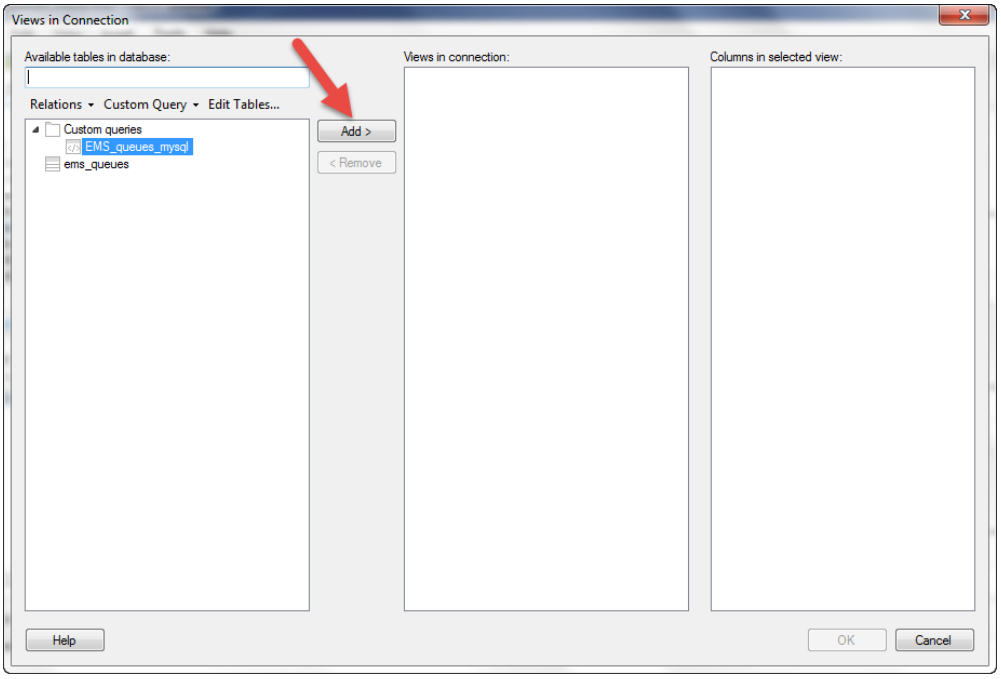
ems_queues_mysql.txt), copy and paste the SQL code in the file into the **Query** field on the **Custom Query** window, and click the **Verify** button.

Note: This step is required because the database contains data that has been compacted as well as data that has not yet been compacted. The SQL code compacts the data that has not been compacted and adds the newly compacted data to the already compacted data so that all the "bucket" values are the same. For example, let's say the compacted data is compacted so that the oldest data is contained in 15 minute buckets, but the more recent data is contained in 5 or 10 minute buckets. The SQL code takes the data contained in the 5 and 10 minute buckets and compacts it into 15 minute buckets so that all the data is consistently bucketed.

Once the SQL has been verified, the column names display in the **Result Columns** tab.

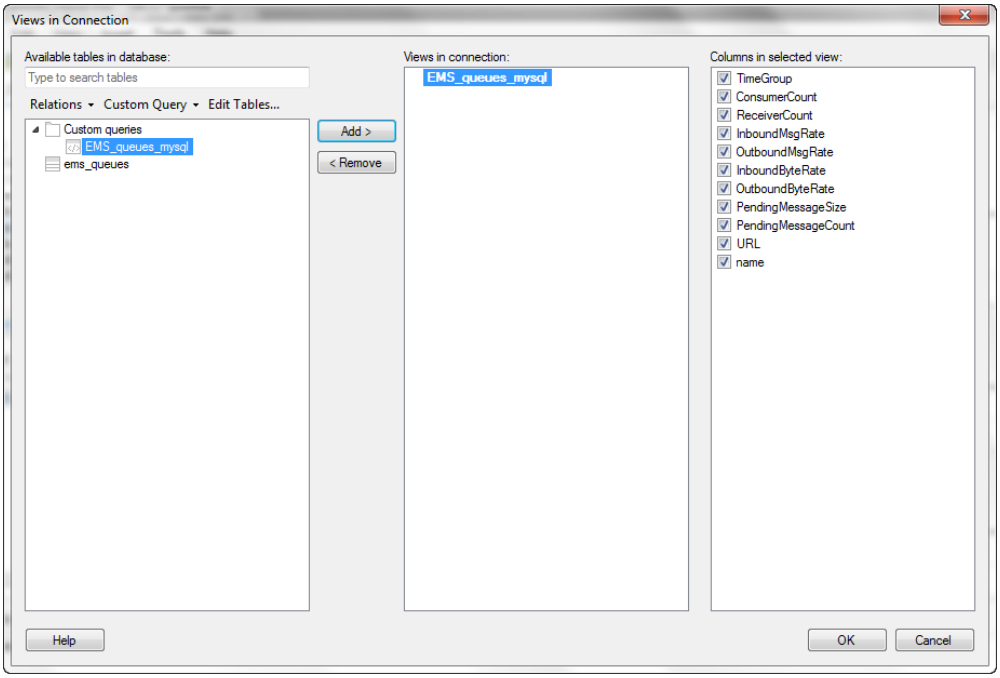
9. Click the **OK** button on the **Custom Query** window.

The new query (for example, **EMS_queues_mysql)** should display in the list of **Custom queries** on the **Views in Connection** window.



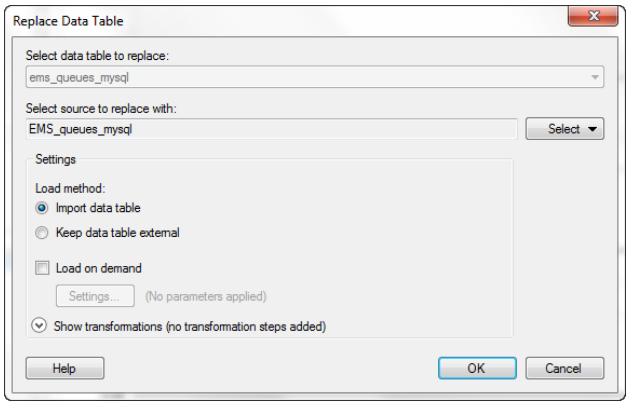
10. Select your new custom query and click the **Add** button.

Your new custom query should display in the **Views in connection** region and the query's associated columns should display in the **Columns in selected view** region.



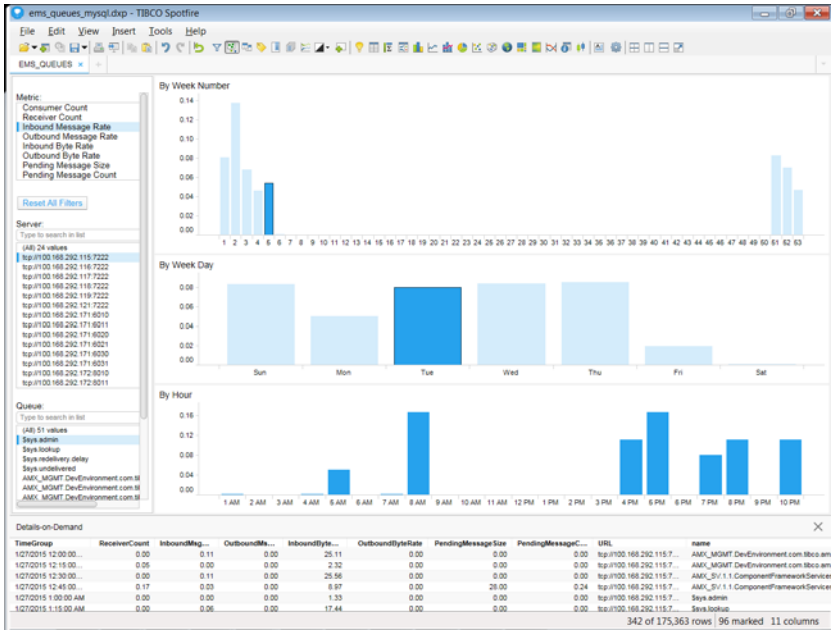
11. Click the **OK** button on the **Views in Connection** window.

The **Replace Data Table** window displays.



12. Select the **Import data table** radio button and click the **OK** button.

Your data should display in TIBCO Spotfire.



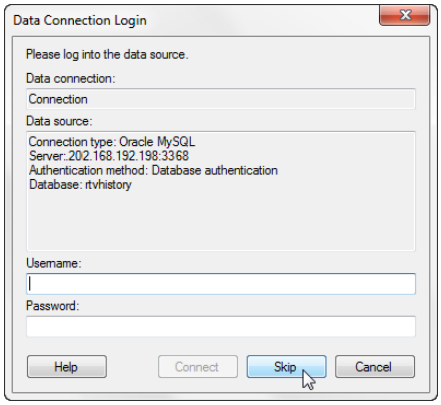
13. Repeat the same steps above for the **ems_serverinfo_mysql.dxp** Spotfire Analysis file and the **ems_serverinfo_mysql.txt** file to create the **EMS Server Message Metrics Report**.

Oracle Report Configuration

There are two different Oracle reports that can be generated: **EMS Server Message Metrics Report** (using **ems_serverinfo_sql.dxp** and **ems_serverinfo_sql.txt**) and **EMS Queue Message Metrics Report** (using **ems_queues_sql.dxp** and **ems_queues_sql.txt**).

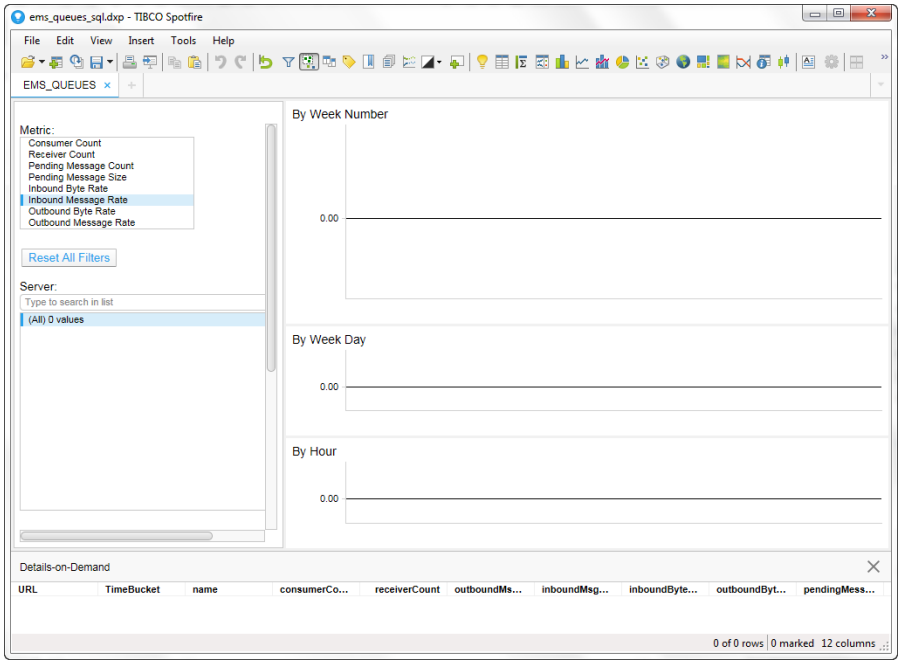
1. Open the **ems_queues_sql.dxp** Spotfire Analysis file in the **rtvapm/emsmon/projects/reports/Spotfire** directory that was created during the EMS Monitor installation.

The **Data Connection Login** window displays.



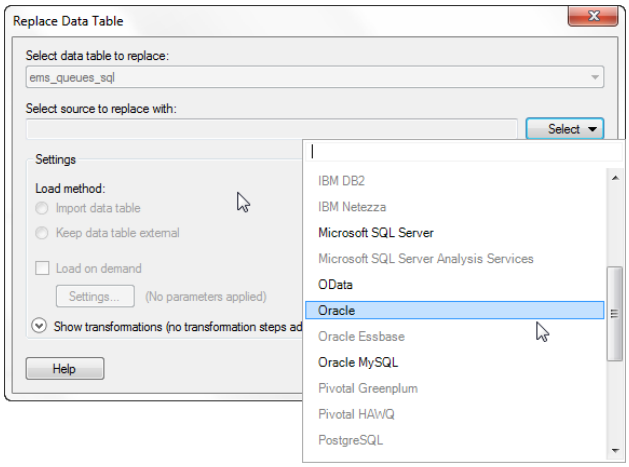
2. Click the **Skip** button (there is no need to log in at this point).

The **TIBCO Spotfire** dashboard displays.



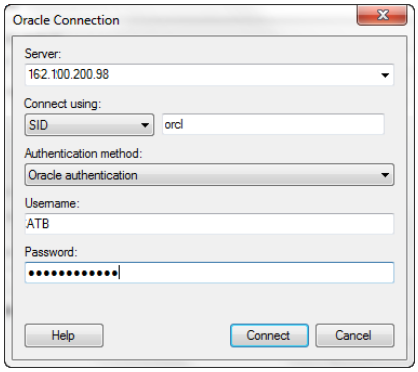
3. Click **File> Replace Data Table**.

The **Replace Data Table** window displays.



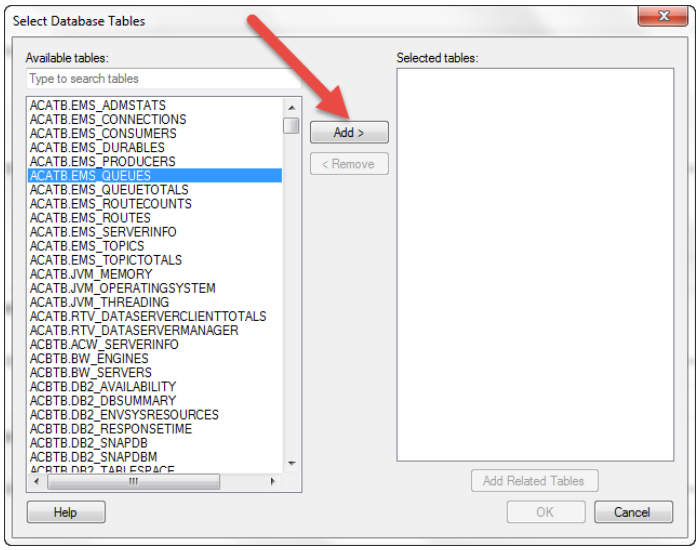
4. Click the **Select** button (associated with the **Select source to replace with** field) and select **Oracle**.

The **Oracle Connection** window displays.



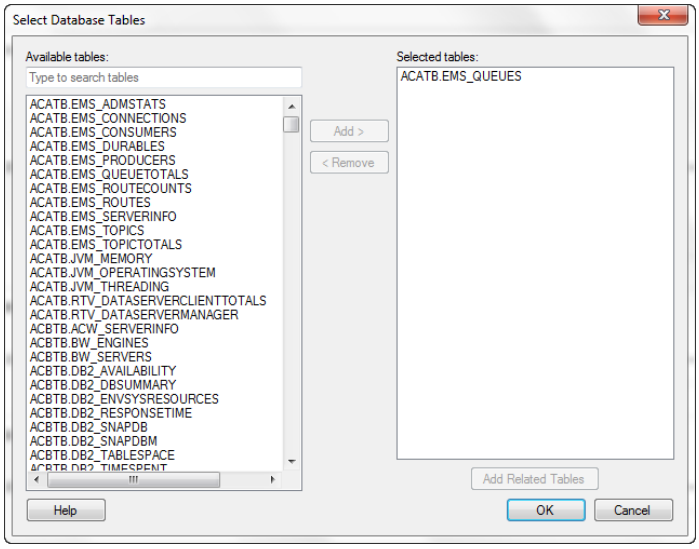
5. Enter the **Server**, select **SID** in the **Connect using** drop down (and enter **orcl** in the associated field if not defaulted), select **Oracle authentication** as the **Authentication Method**, enter the **Username** and **Password**, and click the **Connect** button.

The **Select Database Tables** window displays.



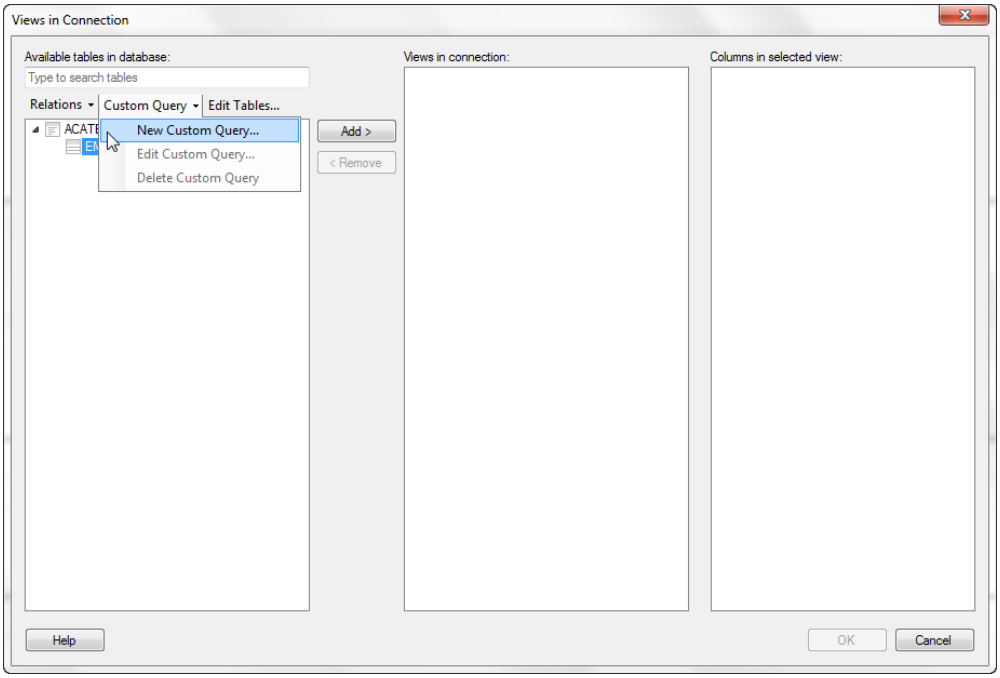
6. Select **ACATB.EMS_QUEUES** from the **Available Tables** select list and click the **Add** button.

The table displays in the **Selected tables** region.



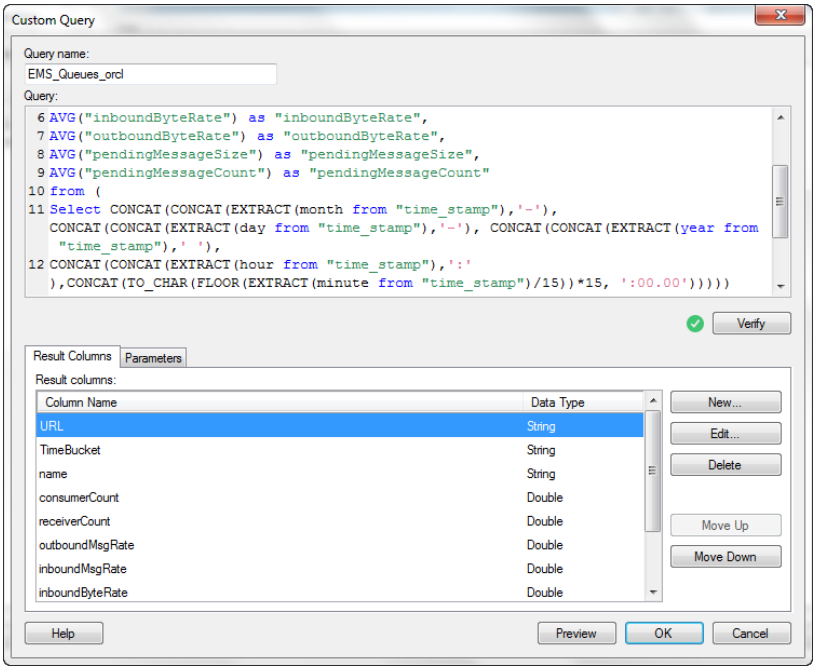
7. Click the **OK** button.

The **Views in Connection** window displays with the selected table listed in the **Available tables in the database** region.



8. Select the **EMS_QUEUES** table from the list and click **Custom Query > New Query**.

The **Custom Query** window displays.



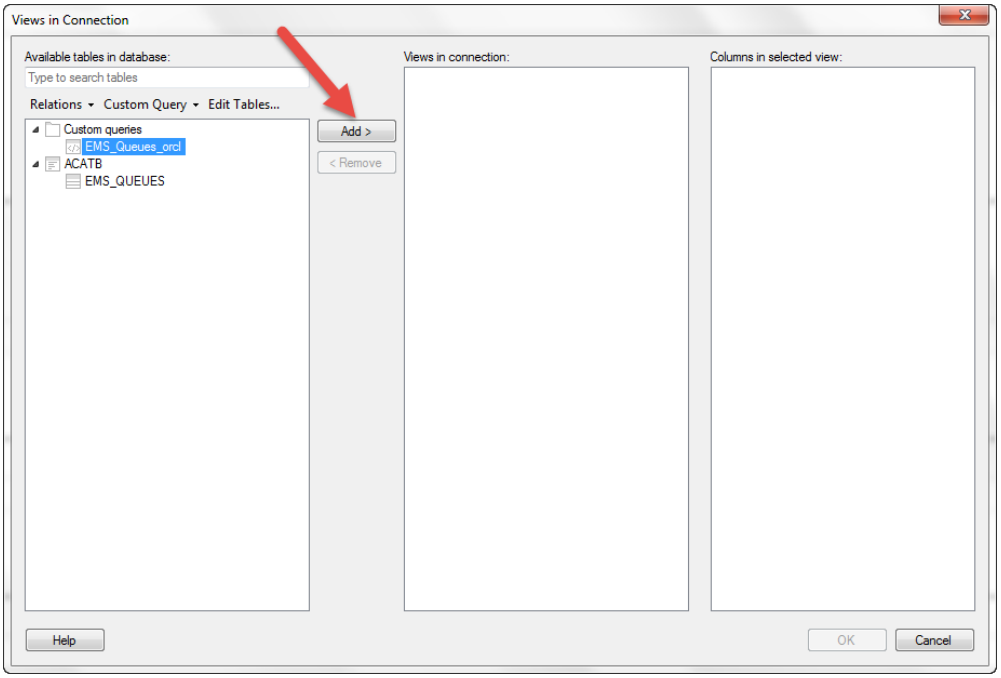
9. Enter the desired name (whatever name is meaningful for you) into the **Query_name** field, open the text file in your installation directory associated with your table (for example, if you selected **ems_queues_sql.dxp** initially, then open **ems_queues_sql.txt**), copy and paste the SQL code in the file into the **Query** field on the **Custom Query** window, and click the **Verify** button.

Note: This step is required because the database contains data that has been compacted as well as data that has not yet been compacted. The SQL code compacts the data that has not been compacted and adds the newly compacted data to the already compacted data so that all the "bucket" values are the same. For example, let's say the compacted data is compacted so that the oldest data is contained in 15 minute buckets, but the more recent data is contained in 5 or 10 minute buckets. The SQL code takes the data contained in the 5 and 10 minute buckets and compacts it into 15 minute buckets so that all the data is consistently bucketed.

Once the SQL script has been verified, the column names display in the **Result Columns** tab.

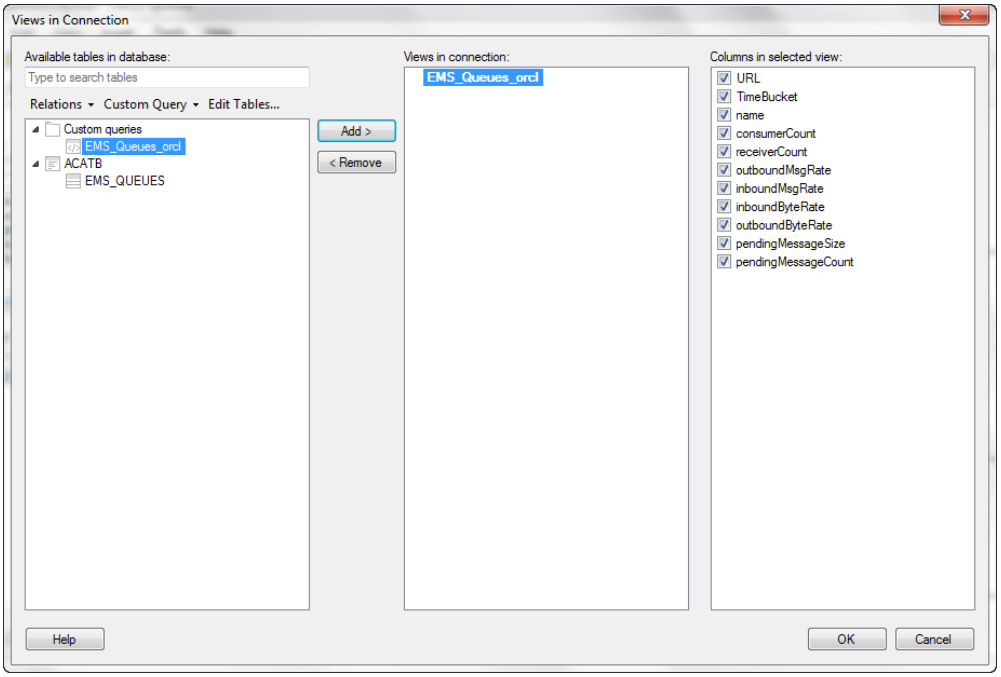
10. Click the **OK** button.

The new query displays under **Custom queries** in the **Available tables in database** list on the **Views in Connection** window.



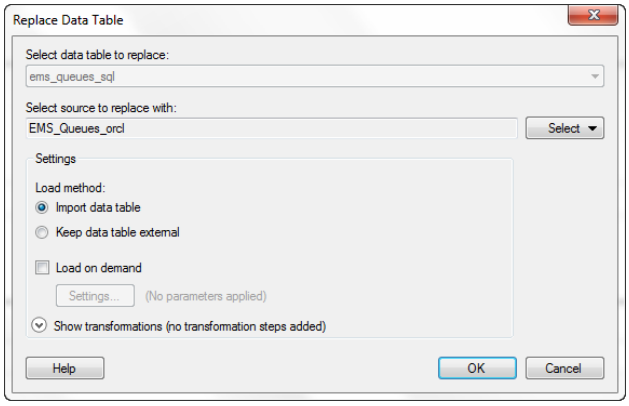
11. Select your newly added query/view and click the **Add** button.

The new query displays in the **Views in connection** list and the associated columns display in the **Columns in selected view** region.



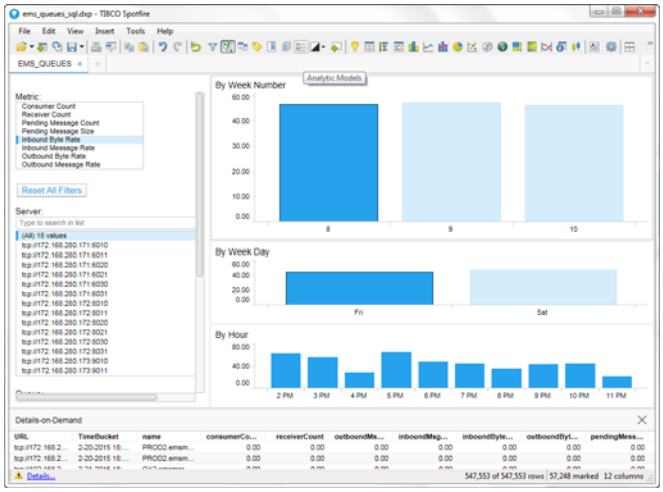
12. Click the **OK** button.

The **Replace Data Table** window displays.



13. Select **Import data table** as the **Load Method** and click **OK**.

Your report should display in the TIBCO Spotfire dashboard.



14. Repeat the above steps using the **ems_serverinfo_sql.dxp** Spotfire Analysis file and the **ems_serverinfo_sql.txt** files to create the **EMS Server Message Metrics** Report.

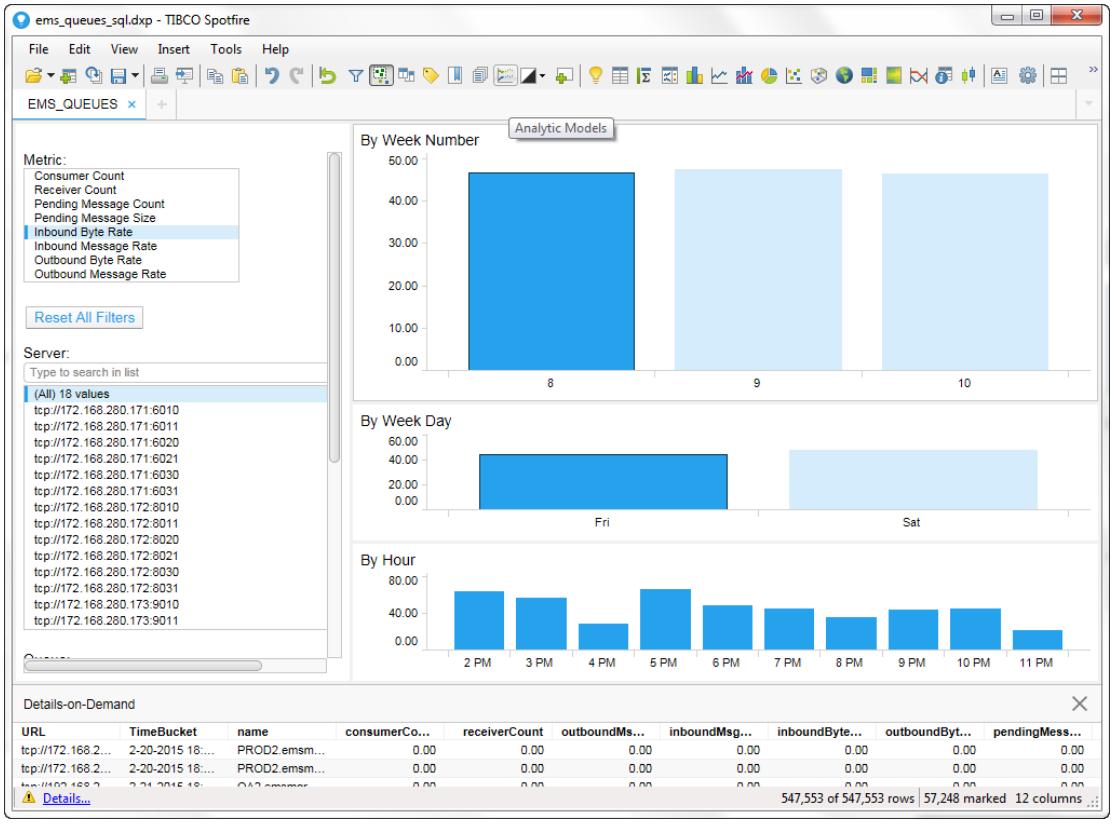
Reports

The following reports are available:

- "EMS Queue Message Metrics Report" on page 218
- "EMS Server Message Metrics Report" on page 220

EMS Queue Message Metrics Report

The **EMS Queue Message Metrics Report** allows you to details for various metrics for one or more selected servers.



Metrics and Data
This report includes:

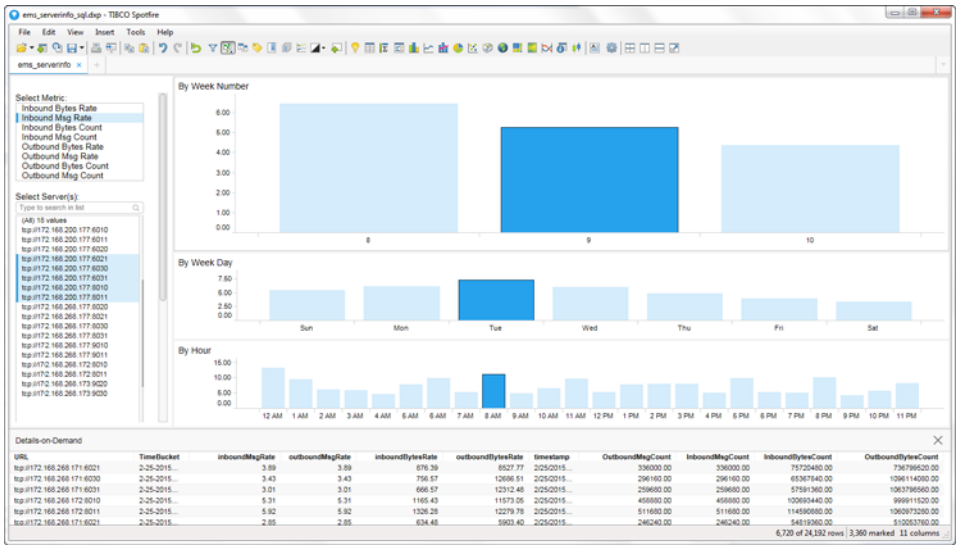
Metric Lists the metrics available for the report.

Consumer Count	The total number of consumers.
Receiver Count	The number of active receivers on the queue
Pending Message Count	Number of currently pending messages on the server.
Pending Message Size	Amount of space, in bytes, that the pending messages use on the server.
Inbound Byte Rate	The rate of inbound bytes per second.
Inbound Msg Rate	The rate of inbound messages per second.

Outbound Byte Rate	The rate of outbound bytes per second.
Outbound Msg Rate	The rate of outbound messages per second.
Reset All Filters	Resets any defined filters from the report.
Server	Select the server or servers for which you want to view data in the report. You can use the **Search** field to find a particular server. Selecting a server or servers from this list automatically updates the list of available queues in the **Queues** select list.
Queue	Select the queue or queues for which you want to view data in the report.You can use the **Search** field to find a particular queue.
By Week Number	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for the selected server(s) for each week. You can hover over each week to view the exact counts or rates for that week. Clicking on a particular week displays data for each day for that particular week in the **By Week Day** region.
By Week Day	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each day in the selected week. Hovering over a particular day displays the exact sum or average for that day. Clicking on a particular day populates data for each hour in the **By Hour** region.
By Hour	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each hour in the selected day. Hovering over a particular hour displays the exact sum or average for that hour. Clicking on a particular hour updates the **TimeBucket** information in the **Details-on-Demand** region.
Details-on-Demand	Shows all metrics (**Consumer Count**, **Receiver Count**, **Pending Message Count**, **Pending Size Count**, **Inbound Byte Rate**, **Inbound Msg Rate**, **Outbound Byte Rate**, and **Outbound Msg Rate**) for each selected server at a specific time (**TimeBucket** (24 hour clock) and **timestamp**) based on the object selected in the dashboard (**By Week Number, By Week Day,** and **By Hour**).

EMS Server Message Metrics Report

This report displays the sum or average of the selected metric for a server or servers by week number, by week day, and by hour of a particular day. You can hover over the various objects in the report to view more detailed information, or look in the **Details-on-Demand** region to view data details for a specific time bucket.



Metrics and Data
This report includes:

Select Metric Lists the metrics available for the report.

- **Inbound Bytes Rate** The rate of inbound bytes per second.
- **Inbound Msg Rate** The rate of inbound messages per second.
- **Inbound Bytes Count** The number of inbound bytes received by the server since the server was started.
- **Inbound Msg Count** The number of inbound messages received by the server since the server was started.
- **Outbound Bytes Rate** The rate of outbound bytes per second.
- **Outbound Msg Rate** The rate of outbound messages per second.
- **Outbound Bytes Count** The number of outbound bytes sent by the server since the server was started.
- **Outbound Msg Count** The number of outbound messages sent by the server since the server was started.

Select Server Select the server or servers for which you want to view data in the report.

By Week Number	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for the selected server(s) for each week. You can hover over each week to view the exact counts or rates for that week. Clicking on a particular week displays data for each day for that particular week in the **By Week Day** region.
By Week Day	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each day in the selected week. Hovering over a particular day displays the exact sum or average for that day. Clicking on a particular day populates data for each hour in the **By Hour** region.
By Hour	Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each hour in the selected day. Hovering over a particular hour displays the exact sum or average for that hour. Clicking on a particular hour updates the **TimeBucket** information in the **Details-on-Demand** region.
Details-on-Demand	Shows all metrics (**Inbound Bytes Rate**, **Inbound Msg Rate**, **Inbound Bytes Count**, **Inbound Msg Count**, **Outbound Bytes Rate**, **Outbound Msg Rate**, **Outbound Bytes Count**, **Outbound Msg Count**) for each selected server at a specific time (**TimeBucket** (24 hour clock) and **timestamp**) based on the object selected in the dashboard (**By Week Number, By Week Day,** and **By Hour**).

APPENDIX A Monitor Scripts

This section describes Monitor scripts and the **rtvservers.dat** configuration file. This section includes:

Scripts

The following scripts are available when used from an initialized command window. The scripts can be executed from a Windows command prompt or UNIX terminal window. On Windows, you can type the commands as described in the following section without the **.bat** suffix; on UNIX systems you must replace the **.bat** suffix with **.sh** for each command. For example, **rundata.sh**.

Name	Description
dos2unix.sh	Replaces Windows line termination to Unix format. This script is not available as a **.bat** script. **Location:** **rtvapm/common/bin**
my_alert_actions.bat	Sample script to define actions for alerts. **Location:** **rtvapm/common/bin**
rtvapm_init.bat	Initializes a command window. **Format:** **rtvapm_init.bat** **Location:** **rtvapm** (execute from the Monitor installation root directory) **Note:** In UNIX, the script used to initialize a terminal window depends on whether you are in csh or rsh (e.g. Linux, Mac OS X). With a Bourne shell, open a terminal window, go to your Monitor installation directory and type: **./rtvapm_init.sh**
runa.bat	Executes RTView Analyzer to extract the function chain of the chosen **.rtv** file. It returns a **.pdf** file with a graph of all the function chains in the file. **Format:** **runa.bat [rtvFileName].rtv** **rtvFileName** - Any RTView file with function chains of relative complexity. **Location:** **rtvapm/common/bin**

Name	Description
runb.bat	Starts the Display Builder. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv builder** **start_rtv builder_ds** **Format:** **runb.bat [-ds] [-bg]** **-ds** - To use the currently running Data Server. **-bg** - Runs the Display Builder as a background process. **Location:** **rtvapm/common/bin**
rundata.bat	Starts the Data Server. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv default dataserver-properties:sample** **Format:** **rundata [-properties:Property File Name] [-propfilter:Property Filter]** **-properties -** flag used to apply a specific property file. **Property File Name** - the name of the properties file to apply. **-propfilter** - flag used to apply a property filter. **Property** - the name of the property to apply. **Location:** **rtvapm/common/bin** **Example:** **rundata -properties:mycustom.properties**
rundb.bat	Starts the HSQLDB database. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv default database** **Location:** **rtvapm/common/bin**
rundisp.bat	Starts the Display Server. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv default displayserver-properties:sample** **Location:** **rtvapm/common/bin**
runhist.bat	Starts the Historian. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv default historian-properties:sample** **Location:** **rtvapm/common/bin**
runv.bat	Starts the Display Viewer. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example: **start_rtv default viewer** **Location:** **rtvapm/common/bin**

Name	Description

start_rtv.bat	Starts processes of a named configuration as specified in the **rtvservers.dat** configuration file. A named configuration should include a Data Server, a Display Server or Viewer, an Historian and a Database. The **start_rtv** script only attempts to start processes if it detects they are not running. The action of starting processes can be applied to all named configurations, a single named configuration or a single process in a named configuration.
	Note: The Display Viewer can be started using the **start_rtv** script, but cannot be stopped using the **stop_rtv** script. Stop the Viewer by closing its window.
	To use additional arguments you should either specify a named configuration (to apply the argument to all processes in that configuration) or specify **all** (to apply the argument to all configurations).
	–console (or **–c**) - Start the processes with a command window (which is useful for debugging and testing).
	When used without arguments, this script returns usage information and a list of available configurations. For example, **start_rtv** returns:
	`Usage: start_rtv config or 'all' [server or 'all'] [args...]`
	`Available configs:`
	`default`
	`database`
	`dataserver`
	`historian`
	`displayserver`
	Location:
	rtvapm/common/bin

	all Starts all named configurations specified in the **rtvservers.dat** file. The **all** argument applies the action to named configurations specified in the **rtvservers.dat** file. **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next). **Example:** **start_rtv.bat all**
	[Configuration Name] To start a single Monitor configuration specified in the **rtvservers.dat** file: **start_rtv.bat [Configuration Name]** **Configuration Name** is the named configuration specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration. **Example:** **start_rtv.bat web_deployment**

Name	Description
	[Process Name] To start a single process in a Monitor configuration specified in the **rtvservers.dat** file: **start_rtv.bat [Configuration Name] [Process Name]** **Process Name** is the name of a process defined in the **rtvservers.dat** configuration file. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that specific process in the configuration. **Example:** **start_rtv.bat default dataserver**

status_rtv.bat	Returns the status all Monitor configurations specified in the **rtvservers.dat** configuration file. This action uses defined JMX ports for monitoring the status of the process. A named configuration should include a Data Server, a Display Server or Viewer, an Historian and a Database. The action can be applied to all named configurations, a single named configuration or a single process in a named configuration.
	To use additional arguments you must either specify a configuration (to apply the argument to all servers in a configuration) or **all** (to apply the argument to each of the configurations).
	This command returns status information upon execution. For example:
	status_rtv default returns:
	`dataserver: Running PID 4696 Uptime 000:00:01:47 CPU 00:00:02 Heap 0.7% Clients 2`
	`displayserver: Running PID 6340 Uptime 000:00:01:45 CPU 00:00:01 Heap 1.0% Displays 0`
	`historian: Running PID 6108 Uptime 000:00:01:42 CPU 00:00:01 Heap 1.3% Connected true`
	`database: Running PID 6848 Uptime 000:00:01:39 CPU 00:00:00 Heap 0.4%`
	In the above example, note that the Data Server reports two clients, the Display Server and the Historian. Both the Display Server and the Historian were started with the **–ds** argument, which connects them to the Data Server. Note also that the Historian reports that it is connected to the database.
	In the following example, **status_rtv default** reports that a configured port is in use but the process using the port does not appear to belong to named configuration:
	`dataserver: Data port xxx in use by PID yyy`
	`displayserver: JMX port xxx in use by PID yyy`
	When **status_rtv** is used without arguments, it returns usage information and a list of available configurations:
	`Usage: status_rtv config [server] or 'all'`
	`Available configs:`
	`default`
	Location:
	rtvapm/common/bin

Name	Description
	all Returns the status of all named configurations specified in the **rtvservers.dat** configuration file. The **all** argument applies the action to all named configurations specified in the **rtvservers.dat** configuration file. **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next). **Example:** **status_rtv.bat all**
	[Configuration Name] Returns the status of a single named configuration specified in the **rtvservers.dat** configuration file: **status_rtv.bat [Configuration Name]** **Configuration Name** is the named configuration specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration. Example: **status_rtv.bat web_deployment**
	[Process Name] Returns the status of a single process in a named configuration specified in the **rtvservers.dat** configuration file: **status_rtv.bat [Configuration Name] [Process Name]** **Process Name** is the name of a process defined in the **rtvservers.dat** configuration file. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that specific process in the configuration. **Example:** **status_rtv.bat default dataserver**

Name	Description

stop_rtv.bat	Stops processes in a named configuration as specified in the **rtvservers.dat** configuration file. This action uses defined JMX ports for monitoring. A named configuration might include a Data Server, a Display Server or Viewer, an Historian and a Database. The action can be applied to all named configurations, a single named configuration or a single process in a named configuration.
	To use additional arguments you must either specify a named configuration (to apply the argument to all processes in that configuration) or **all** (to apply the argument to all named configurations). If the Display Viewer is started using the **start_rtv** script, the Viewer cannot be stopped using the **stop_rtv** script. Stop the Viewer by closing its window.
	Note: The HSQLDB server (if used) runs with a command window on Windows and cannot be stopped using the **stop_rtv** command. Stop the HSQLDB server by typing **Ctrl-C** in its command window.
	This command returns status information upon execution. For example, stop_rtv.bat default returns:
	`dataserver: Stopped PID 4696 via JMX port 3368`
	If no JMX port is configured the **stop_rtv** command reports the following:
	`dataserver: No JMX port configured; must kill PID xxx by system command.`
	If the port is in use but the PID is not available (this might happen on HP-UX and some Linux systems) then the **stop_rtv** and **status_rtv** command will report the PID as "???", for example:
	`dataserver: Running PID ??? Uptime 000:00:00:37 CPU 00:00:01 Heap 1.3% Clients 1`
	`dataserver: Stopped PID ??? via JMX port 3368`
	When used without arguments, returns usage information and a list of available configurations. For example, **stop_rtv** returns:
	`Usage: stop_rtv [ConfigurationName] [ProcessName] or 'all'`
	Location:
	rtvapm/common/bin

	all Stops all named configurations specified in the **rtvservers.dat** configuration file. The **all** argument applies the action to all named configurations specified in the **rtvservers.dat** configuration file. **Note:** When multiple configurations are specified in the **rtvservers.dat** configuration file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next). **Example:** **stop_rtv.bat all**
	[Configuration Name] Stops a single named configuration specified in the **rtvservers.dat** configuration file: **stop_rtv.bat [Configuration Name]** **Configuration Name** is the named configuration specified in the **rtvservers.dat** configuration file. The action applies to all processes specified in the configuration. Example: **stop_rtv.bat default**

Name	Description
	[Process Name] Stops a single process in a named configuration specified in the **rtvservers.dat** configuration file: **stop_rtv.bat [Configuration Name] [Process Name]** Process Name is the name of a process in the named configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to the process chosen from the named configuration. **Example:** **stop_rtv.bat default dataserver**
update_wars.bat	Script to regenerate war files when the configuration of the Solution Package has changed. **Location:** **rtvapm/*mon/projects/sample**

rtvservers.dat

The **rtvservers.dat** text file, located in the ***mon/projects/mysample** directory, is used to manage your Monitor deployment and processes.

The **rtvservers.dat** configuration file contains one or more named configurations. A named configuration should include any of the following: Data Server, Historian, HSQLDB database, and either a Display Server (for a Web Deployment) or a Display Viewer (for a Desktop Deployment). The **rtvservers.dat** configuration file is used when the following scripts are executed:

- **start_rtv** Starts Monitor processes specified in the **rtvservers.dat** configuration file.
- **stop_rtv** Stops the Monitor processes specified in the **rtvservers.dat** configuration file.
- **status_rtv** Returns status information for processes specified in the **rtvservers.dat** configuration file.

NOTE: You can write the paths in the **rtvservers.dat** configuration file by exclusively using the forward-slash (**/**) notation for both Windows and UNIX systems. For example, if your project settings directory is located in a subdirectory below the location of your **rtvservers.dat** file, you write the path as **./**subdirectory on both Windows and UNIX.

Single Configuration File

The following **rtvservers.dat** configuration file contains a single named configuration, which is called *default*, for a Web deployment:

default . database rundb

default . dataserver rundata

default . historian runhist -ds

default . displayserver rundisp -ds

NOTE: The **rtvservers.dat** configuration file must end with a new line.

In this example, to start the default configuration type: **start_rtv defaultor start_rtv all**. To start a single process from the configuration, type **start_rtv[ConfigurationName] [ProcessName]**. For example: **start_rtv default displayserver**. Each line has the following format consisting of four fields:

<Configuration Name> <Project Directory Location> <Process Filter> <Command>

<Configuration Name>	The name of the configuration ("default" in this example).
<Project Directory Location>	The project directory location, relative to the location of the **rtvservers.dat** configuration file (".", the current directory, in this example).
<Process Filter>	The filter that identifies the process, which is the property filter under which the JMX port for monitoring is defined. By default, this is the server name, such as **dataserver**, **displayserver** and **historian**.
<Command>	The script used to start the process. Valid values are: **rundata**: Starts the Data Server. **runhist**: Starts the Historian. **rundisp**: Starts the Display Server. **rundb**: Starts the HSQLDB Database. **runv**: Starts the Display Viewer. **runb**: Starts the Builder.

Multiple Configuration File

When multiple configurations are specified in the rtvservers.dat configuration file and they have different project directory locations, the **all** argument processes each of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. Alternative configurations allow you to alternate among several configurations for the same Monitor deployment.

For example, the following rtvservers.dat configuration file contains two configurations, *system1* and *system2*. Note that the project directory locations differ (**../system1** and **../system2**, respectively).

```
system1 ../system1 dataserver rundata
system1 ../system1 historian runhist -ds
system1 ../system1 displayserver rundisp -ds

system2 ../system2 dataserver rundata
system2 ../system2 historian runhist -ds
system2 ../system2 displayserver rundisp –ds
```

Because the project directory locations differ, you can type **start_rtv all** to start both configurations. To start only the system1 configuration, type: **start_rtv system1**. To start a single process of the system1 configuration, type **start_rtv <Configuration Name> <Process Name>**. For example: **start_rtv system1 displayserver**.

The following illustrates an **rtvservers.dat** configuration file with two configurations: *desktop*, which is for a Desktop Deployment and *browser*, which is for a Browser Deployment. Note that the project settings directory locations are the same (**../system1** for both). The following **rtvservers.dat** configuration file allows you to switch between a Web Browser and a Desktop Deployment:

```
desktop ../system1 dataserver rundata–properties:desktop
desktop ../system1 historian runhist -ds–properties:desktop
desktop ../system1 viewer runv -ds–properties:desktop


browser ../system1 dataserver rundata–properties:browser
browser ../system1 historian runhist -ds–properties:browser
browser ../system1 displayserver rundisp -ds–properties:browser
```

where **desktop.properties** and **browser.properties** files reside in the system1 project directory containing all necessary settings for each deployment.

When the **rtvservers.dat** file contains several alternate configurations as this example does, the **all** argument processes only the first defined configuration, in this case, the desktop configuration. To execute the second configuration you type: **start_rtv browser**.

APPENDIX B Monitor Properties

This section describes properties available for the Monitor. The Monitor configuration is specified using a series of properties, which can be specified in the command line, in properties files, or in a properties database. However, the most convenient way from a maintenance perspective is to create your own properties files. You can override certain default settings by editing those properties. There are several property files that you might edit to configure or optimize your Monitor deployment.

To set properties as command line options use an initialized command window (see "Initializing a Command Prompt or Terminal Window" for more information). Options specified on the command line are applied last, therefore command line arguments override values saved in configuration files (such as **.properties** files). Also, in many cases the command-line option cannot be used as a property, or vice versa. For these reasons, we recommend that you use properties rather than command line options. To specify a property in the command line:

- Add a dash (-) at the beginning.
- Remove the prefix (**sl.rtview**.).
- Remove the propfilter prefix if present (for example, **displayserver**.).
- Replace the colon (:) with an equals sign (=).

For example, the property **myprefix.sl.rtview.someflag=true** is **-someflag:true** as a command line option. If a command line argument contains a space or a semicolon, the entire argument must be enclosed in quotes (e.g.: **"-sub:$data:my Data"**).

This section includes:

Property Format

This section describes the format for the Monitor properties, which have the prefix **sl.rtview** followed by a property name = value pair: **sl.rtview.<property_name>=<value>**. For example, to specify the Data Server port number globally:

```
sl.rtview.dataserver.port=3278
```

Property Filters

Filters limit the scope to which a property is applied. Filters precede the **sl.rtview** property prefix followed by a period (.):

<property_filter>.sl.rtview.<property_name>=:<value>

For example, to specify the Data Server port number to only proxy clients, we use the **proxyclient** filter:

proxyclient.sl.rtview.dataserver.port=3278

The following property filters are predefined and apply automatically depending on what tool is being executed:

Filter	Description
builder	Applies the property to the Display Builder. For example: **builder.sl.rtview.stylesheet**
collector	Applies the property to any process which collects data. This is usually the Data Server but can also apply to the Viewer or Builder (if run without **-ds**). **collector.sl.rtvapm.emson.jmxsampleperiod=10000**
dataserver	Applies the property to the Data Server. For example: **dataserver.sl.rtview.dataserver.socket=true**
displayserver	Applies the property to the Display Server. For example: **displayserver.sl.rtview.displayserver.port=3079**
historian	Applies the property to the Historian. For example: **historian.sl.rtview.historian.driver=org.hsqldb.jdbcDriver**
maincollector	This property filter applies to Monitor installations. Applies the property to the main Data Collection Server. For example: **maincollector.sl.rtview.alert.persistAlerts=true**
mainreceiver	This property filter applies to Monitor installations. Applies the property to the Agent main receiver Data Server. For example: **mainreceiver.sl.rtview.jmxport=8911**
proxyclient	Applies the property to the proxy client. For example: **proxyclient.sl.rtview.dataserver.port=2078**
receiver	Applies the property to any process which receives data. **receiver.sl.rtvapm.emson.jmxsampleperiod=10000**
rtvanalyzer	Applies the property to the RTView Analyzer. For example: **rtvanalyzer.sl.rtview.stylesheet=rtv_default,rtv_flat**
sender	Applies the property to the sender Data Server. For example: **sender.sl.rtview.dataserver.port=3351**
viewer	Applies the property to the Display Viewer. For example: **viewer.sl.rtview.panelconfig=custom_panels.xml**

You can define your own property filters and use them as prefixes in your properties files. To select a property filter on the command line use the **-propfilter** argument. For example, to apply the historian filter:

-propfilter:historian

Properties

The following properties are available for the Monitor.

Name	Description
collector.sl.rtview.jms.maxQueueMsgCount	Specifies the maximum number of rows to include in the queue browser table. The default is 100. Example: **collector.sl.rtview.jms.maxQueueMsgCount=200**
sl.rtview.sub	Specifies to use a substitution. Example: **sl.rtview.sub=$rtvAlertMaxNumberOfHistoryRows:50000**

sample.properties File

The example below is the **sample.properties** file in the Monitor:

```
##################################################################################
# Commonly used properties for configuring this Solution Package
#
# For more information about other properties that can be set go to:
# emsmon\conf\rtvapm.emsmon.properties file


############################
# DATA COLLECTOR PROPERTIES
#
# These jars used to connect to TIBCO EMS Admin API ...
#
collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms.jar
collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/jms-2.0.jar
collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjms.jar
collector.sl.rtview.cp=%TIBJMS_ROOT%/lib/tibjmsadmin.jar

#
# Servers: Define the location where the EMS servers are defined
#
```

```
sl.rtview.cmd_line=-servers:servers.xml

#
# Metrics Acquisition Period
#
collector.sl.rtview.jmsadm.metrics_period=15000

#
# Discover Servers by following routes
#
collector.sl.rtview.jmsadm.discoverServersByRoute=false



##################################
# TOPIC / QUEUE FILTER PROPERTIES

# The EMSMON application is configured by default to gather metrics
# about all topics and queues.
#
# Each line below configures a set of topics / queues to monitor.
# A blank filter means to collect metrics for all topics or queues.
# The user may modify this by specifying multiple lines below each identifying
# a specific topic or queue filter pattern to be monitored.

#
# Default Patterns used to monitor ALL EMS topics and queues
#
collector.sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:''
collector.sl.rtview.cache.config=ems_queues_cache_source.rtv $queuePattern:''

#
# Sample patterns used to monitor specific subsets of EMS topics or queues
#
#collector.sl.rtview.cache.config=ems_topics_cache_source.rtv $topicPattern:*.tibems.>
#collector.sl.rtview.cache.config=ems_queues_cache_source.rtv
$queuePattern:*.messageserver.>

# By default, the maximum number of rows being collected per EMS Server for each
```

```
# type of data is 2000 rows.
# This limit is particularly important for Queues and Topics, which can accumulate
# quickly and can cause performance problems if not held in check.
# Increase this limit with caution as performance issues may arise.
# To do so, use the following property:
#
collector.sl.rtview.jmsadm.maxMetricsRowCount=2000



##############################################################
##
# ENABLING COLLECTION OF CONSUMERS, PRODUCERS, CONNECTIONS

# The EMSMON application can be configured to enable the collection of metrics
# about consumers, producers, and connections independently.
#
#collector.sl.rtview.cache.config=ems_consumers_cache_source.rtv
#collector.sl.rtview.cache.config=ems_producers_cache_source.rtv
#collector.sl.rtview.cache.config=ems_connections_cache_source.rtv

# If you would like to filter out some consumers, producers and/or connections,
# use the filtering out regex pattern in the properties below:
#
#collector.sl.rtview.cache.config=ems_consumers_cache_source.rtv
$emsConsumerFilterOutPattern:'YourFilterOutRegex'
#collector.sl.rtview.cache.config=ems_producers_cache_source.rtv
$emsProducerFilterOutPattern:'YourFilterOutRegex'
#collector.sl.rtview.cache.config=ems_connections_cache_source.rtv
$emsConnectionFilterOutPattern:'YourFilterOutRegex'
```

APPENDIX C Third Party Notice Requirements

Third Party Notice Requirements

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Version 2.0, January 2004

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**JQuery

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APPENDIX D Alert Definitions

This section describes alerts for EMS Monitor and their default settings.

Alert Name	WARN. LEVEL	ALARM LEVEL	DURATION	ENABLED
EmsConsumerStalled Indicates consumers are stalled or are no longer consuming messages (have not received a message within a defined threshold). The server must be running for a minimum time (5 minutes by default) before this alert is triggered. Thresholds are in seconds. **Note:** This alert does not allow overrides. **Index Type(s)**: PerConsumer:ID/ PerServerConsumer:URL;ID **Metric**: elapsedSinceLasAckInSec	85	95	30	FALSE
EmsConsumerStuck Indicates a consumer is stuck because there are existing messages that can be consumed (currentMsSentCount > 0), but none of the messages have been consumed within the defined warning and alert thresholds (elapsedSinceLasAckInSec > threshold). Alert and warning thresholds are in seconds. **Index Type(s)**: PerConsumer:ID/ PerServerConsumer:URL;ID **Metric**: currentMsgSentCount, elapsedSinceLasAckInSec	85	95	30	FALSE
EmsQueueConsumerIdleTimeHigh The idle time of the queue consumer has reached its maximum. This alert is triggered when there is no change in the number of incoming messages for a queue within a specified period of time (in seconds). **Index Type(s)**: PerQueue;PerServerQueue **Metric**: ConsumerIdleTime	60	80	30	FALSE
EmsQueueInboundDeltaHigh The number of new incoming messages for the EMS Queue has reached its maximum. **Index Type(s)**: PerQueue;PerServerQueue **Metric**: DeltainboundTotalMessages	60	80	30	FALSE

EmsQueueMsgLatencyHigh The time, in seconds, needed to process all pending messages based on the current outbound message rate exceeded its threshold. This alert does not take into account queues with outbound message rate equals to zero. **Index Type(s)**: PerServerQueue:URL;name **Metric**: messageLatency	60	80	30	FALSE
EmsQueueProviderIdleTimeHigh The queue idle time exceeded the specified threshold. A queue is idle when the number of inbound messages remains unchanged. **Index Type(s)**: PerServerQueue:URL;name **Metric**: ProviderIdleTime	60	80	30	FALSE
EmsQueuesConsumerCountHigh The number of consumers of a queue exceeded the specified high threshold. **Index Type(s)**: PerServerQueue:URL;name/ PerQueue:name **Metric**: consumerCount	60	80	30	FALSE
EmsQueuesConsumerCountLow The number of consumers of a queue is below the specified threshold. **Index Type(s)**: PerServerQueue:URL;name/ PerQueue:name **Metric**: consumerCount	15	5	30	FALSE
EmsQueuesInMsgRateHigh The rate of inbound messages on the queue exceeded the specified threshold. **Index Type(s)**: PerServerQueue:URL:name/ PerQueue:name **Metric**: inboundMessageRate	60	80	30	FALSE
EmsQueuesOutMsgRateHigh The number of outbound messages on the queue exceeded the specified threshold. **Index Type(s)**: PerServerQueue:URL;name **Metric**: outboundMessageRate	60	80	30	FALSE
EmsQueuesPendingMsgsHigh The number of pending messages on the queue exceeded the specified threshold. **Index Type(s)**: PerServerQueue:name;PerServerQueue:URL;name **Metric**: pendingMessageCount	60	80	30	FALSE
EmsQueuesProducerCountHigh The number of producers to a queue exceeded the specified high threshold. **Index Type(s)**: PerQueue:name/ PerServerQueue:URL;name **Metric**: producerCount	60	80	30	TRUE

EmsQueuesProducerCountLow The number of producers to a queue is below the specified threshold. **Index Type(s)**: PerQueue:name/ PerServerQueue:URL;name **Metric**: producerCount	15	5	30	TRUE
EmsServerAsyncDBSizeHigh The size of the Async database, in bytes, for the EMS Server reached its maximum. **Index Type(s)**: PerServer:URL **Metric**: asyncDBSize	50	100	30	FALSE
EmsServerInboundDeltaHigh The number of new incoming messages for the EMS Server has reached its maximum **Index Type(s)**: PerServer **Metric**: DeltainboundMessageCount	60	80	30	FALSE
EmsServerSyncDBSizeHigh The size of the Sync database, in bytes, for the EMS Server reached its maximum. **Index Type(s)**: PerServer:URL **Metric**: syncDBSize	50	100	30	FALSE
EmsServerConnectionCountHigh Alert is triggered when the number of connections to the server reaches the specified threshold. **Index Type(s)**: PerServer:URL **Metric**: connectionCount	60	80	30	FALSE
EmsServerInMsgRateHigh The number of inbound messages on the server exceeded the specified threshold. **Index Type(s)**: PerServer:URL **Metric**: inboundMessageRate	2	80	30	FALSE
EmsServerMemUsedHigh The percent memory used on the server exceeded the specified threshold. **Index Type(s)**: PerServer:URL **Metric**: messageMemoryPct	60	80	30	FALSE
EmsServerNotStarted The server state is empty. The server is not started. **Index Type(s)**: PerServer:URL **Metric**: NotStarted	NaN	NaN	30	FALSE
EmsServerOutMsgRateHigh The number of outbound messages on the server exceeded the specified threshold. **Index Type(s)**: PerServer:URL **Metric**: outboundMessageRate	60	80	30	FALSE

EmsServerPendingMsgsHigh The number of pending messages in the server queue exceeded the specified threshold. **Index Type(s)**: PerServer:URL **Metric**: pendingMessageCount	60	80	30	FALSE
EmsServerPendingMsgSizeHigh The size, in KB, of the pending messages stored on this EMS Server reached its maximum. **Index Type(s)**: PerServer:URL **Metric**: pendingMessageCount	60	80	30	FALSE
EmsServerRouteState One or more routes on the server are not active. **Index Type(s)**: PerServer:URL **Metric**: Alert State	NaN	NaN	30	FALSE
EmsServerStaleData The server stopped receiving data. **Index Type(s)**: PerServer:URL **Metric**: Expired	NaN	NaN	30	FALSE
EmsTopicConsumerIdleTimeHigh The idle time of the topic consumer has reached its maximum. This alert is triggered when there is no change in the number of incoming messages for a topic within a specified period of time (in seconds). **Index Type(s)**: PerTopic;PerServerTopic **Metric**: ConsumerIdleTime	60	80	30	FALSE
EmsTopicInboundDeltaHigh The number of new incoming messages for the EMS Topic has reached its maximum. **Index Type(s)**: PerTopic;PerServerTopic **Metric**: DeltainboundTotalMessages	60	80	30	FALSE
EmsTopicMsgLatencyHigh The time, in seconds, needed to process all pending messages based on the current outbound message rate exceeded its threshold. This alert does not take into account topics with outbound messages rates equal to zero. **Index Type(s)**: PerServerTopic **Metric**: messageLatency	60	80	30	FALSE
EmsTopicProviderIdleTimeHigh The topic idle time exceeded the specified threshold. A topic is idle when the number of inbound messages remains unchanged. **Index Type(s)**: PerServerTopic:URL;name **Metric**: ProviderIdleTime	60	80	30	FALSE
EmsTopicsConsumerCountHigh The number of consumers for the topic exceeded the specified threshold. **Index Type(s)**: PerServerTopic:URL;name **Metric**: consumerCount	60	80	30	FALSE

EmsTopicsConsumerCountLow The number of consumers for the topic is below the specified threshold. **Index Type(s)**: PerServerTopic **Metric**: consumerCount	60	80	30	FALSE
EmsTopicsInMsgRateHigh The number of inbound messages for the topic exceeded the specified threshold. **Index Type(s)**: PerServerTopic **Metric**: inboundMessageRate	60	80	30	FALSE
EmsTopicsOutMsgRateHigh The rate of outbound messages for the topic exceeded the specified threshold. **Index Type(s)**: PerServerTopic **Metric**: outboundMessageRate	60	80	30	TRUE
EmsTopicsPendingMsgsHigh The number of pending messages on the queue for the topic exceeded the specified threshold. **Index Type(s)**: PerTopic **Metric**: pendingMessageCount	50	75	30	FALSE
EmsTopicsProducerCountHigh The number of active producers for this topic exceeded the specified high threshold. **Index Type(s)**: PerTopic/PerServerTopic **Metric**: producerCount	60	80	30	TRUE
EmsTopicsProducerCountLow The number of producers for the topic is below the specified threshold. **Index Type(s)**: PerTopic/PerServerTopic **Metric**: producerCount	60	80	30	TRUE
EmsTopicsSubscriberCountHigh The number of subscribers for the topic exceeded the specified threshold. **Index Type(s)**: PerServerTopic **Metric**: subscriberCount	50	75	30	FALSE
JvmCpuPercentHigh The percent JVM CPU usage exceeded the specified threshold. **Index Type(s)**: PerJVM **Metric**: CpuPercent	30	40	30	FALSE
JvmGcDutyCycleHigh The JVM Garbage Collection contains an item that exceeded the specified duty cycle threshold (the percent of time spent in Garbage Collection). **Index Type(s)**: PerGC **Metric**: TimeUsedPercent	50	75	30	FALSE

JvmMemoryUsedHigh The percent JVM memory used exceeded the specified threshold. **Index Type(s)**: PerJVM **Metric**: MemoryUsedPercent	50	75	30	FALSE
JvmNotConnected The JVM is not connected. **Index Type(s)**: PerJVM **Metric**: Connected	NaN	NaN	30	FALSE
JvmStaleData The JVM stopped receiving data. **Index Type(s)**: PerJVM **Metric**: Expired	NaN	NaN	30	FALSE