

Solace PubSub+ Monitor User's Guide

Version 5.1



RTView Enterprise®

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RTView®

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Preface

Welcome to the *Solace PubSub+ 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"](#)
- ["Additional Resources"](#)
- ["Contacting SL"](#)

About This Guide

The *Solace PubSub+ 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
<i>italics</i>	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"](#)
- ["Documentation and Support Knowledge Base"](#)

Release Notes

The Release Notes document, which is available on the SL Technical Support site at <http://www.sl.com/support/>, supplements the information in this user guide.

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

These instructions are for those customers who wish to evaluate the Solace PubSub+ Monitor for purchase. These are the minimum steps required to gather monitoring data and get the Monitor up and running. Default settings are used and Apache Tomcat which is delivered with the Monitor.

After you complete your evaluation, if you wish to setup and use all monitoring features in your organization, see ["Configuration"](#).

Prerequisites

- Obtain login credentials for each Solace broker you wish to monitor.
- Java JDK 1.8 64 bit
- Set the **JAVA_HOME** environment variable to point to your Java installation. For example:

UNIX

export JAVA_HOME=/opt/Java/jdk1.8.0

Windows

set JAVA_HOME=C:\Java\jdk1.8.0

- Linux Users:
 - These instructions require a Bourne-compatible shell.
 - JAVA_HOME is required to be in the PATH for Tomcat to start correctly.

To evaluate Solace PubSub+ Monitor:

1. Download **RTViewSolaceMonitor_<version>.zip** to your local server and extract the files: **unzip -a RTViewSolaceMonitor_<version>.zip**

Important: On UNIX systems it is a requirement that the installation directory path not contain spaces.

2. Navigate to the **RTViewSolaceMonitor/bin** directory and run **./start_servers.sh -eval** (**start_servers.bat -eval** in Windows).

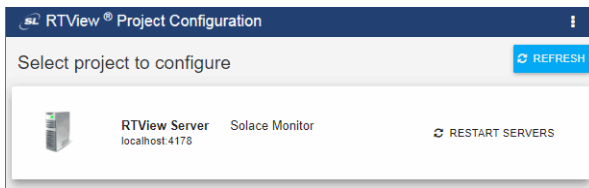
Important: UNIX/Linux - To make the script in the **bin** directory executable, use the **sh** command (as shown), or execute **chmod a+x start_servers.sh**, then execute **./start_servers.sh**.


3. Browse to the following URL and login (**rtvadmin/rtvadmin**) to open the RTView Configuration Application **HOME** page:
 - **http://IPAddress:8068/rtview-solmon-rtvadmin** if you are executing your browser on a different host than where the monitor is running.

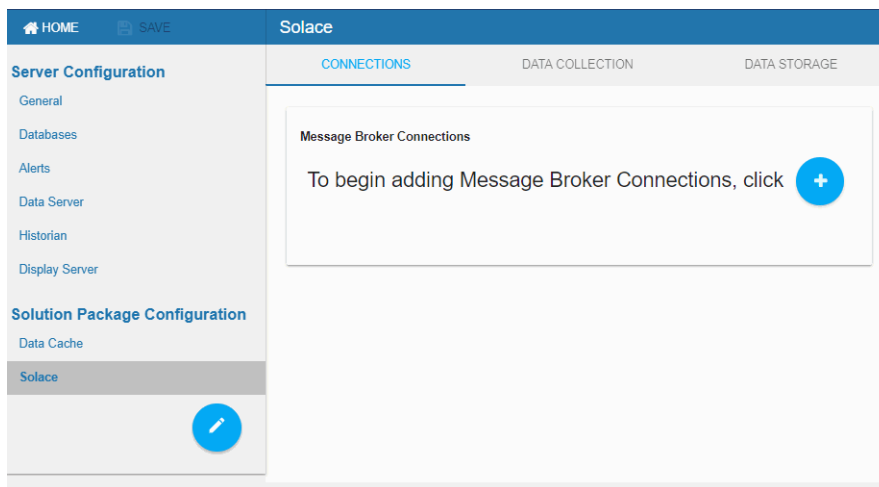
Quick Start

- **http://localhost:8068/rtview-solmon-rtvadmin** if you are executing your browser in the same host where the monitor is running.

4. Select the **Solace Monitor** project to open the **Solace** configuration page.



5. Select **Solace** in the navigation tree (left panel), then click  to add a broker connection.



6. In the **Add Connection** dialog, select **Standalone Broker** for the **Connection Type**, enter the **Connection Name**, **URL**, **Username** and **Password**, and toggle on **Edition** if this is a Solace PubSub+ Cloud service instance (and optionally, enter the **SEMP Version** and the **VPN Name**).

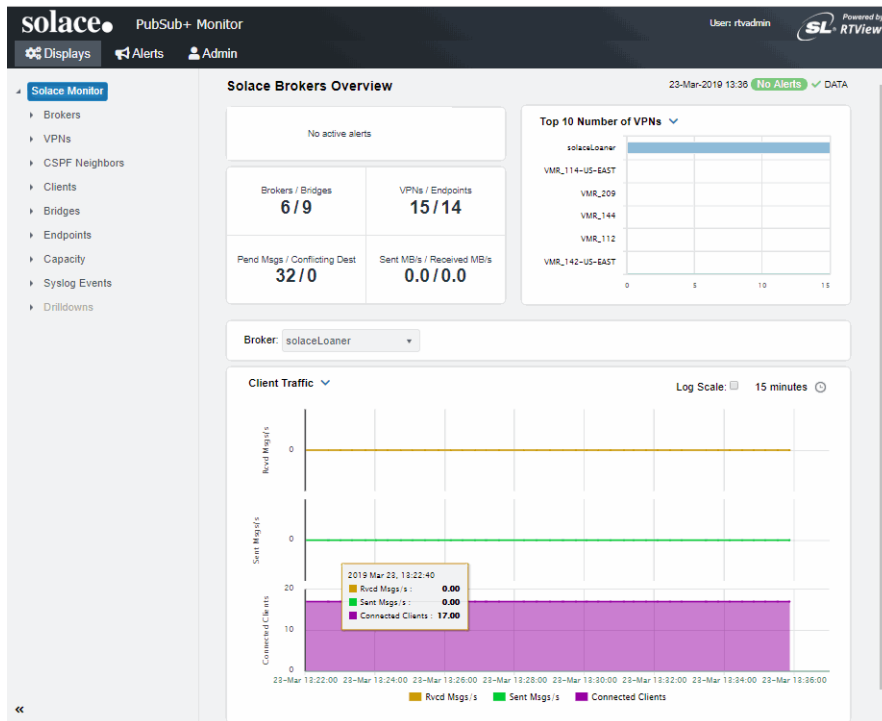
Notes:

- If you want to collect additional metrics for a specific VPN, enter the **VPN Name**. Use this option carefully as this can increase the amount of data collected and impact monitor performance.
- If your broker is a Solace PubSub+ Cloud service instance, toggle on the **Edition** option.
- For versions prior to Solace 7.2, enter the SEMP Version. Otherwise, leave the default value.
- Monitoring data is collected through SEMP (Solace Element Management Protocol), which is a RESTful API for managing Solace brokers. If your Solace PubSub+ Cloud service instances are a version prior to 8.7 or your Solace Appliance is version prior to 8.3, see ["Obtain SEMP Version"](#) for instructions on getting the SEMP version installed in your message brokers.

7. Click  to close the dialog and  (in title bar) to save your settings.

The connections you create are listed in the **Connections** tab.

8. Repeat these steps to add more brokers and when finished.
9. Click **RESTART SERVERS** to apply changes. The data server will be available again in 10-15 seconds.
10. Browse to the Solace PubSub+ Monitor and login (**rtvadmin/rtvadmin**, if login is enabled):
http://IPAddress:8068/rtview-solmon if you are running the monitor remotely
http://localhost:8068/rtview-solmon if you are running the monitor locally



You should now see monitoring data. If you encounter issues, check the log files in the **RTViewSolaceMonitor/projects/rtview-server/log** directory for errors.

You have completed the Quick Start!

If you wish to setup and use all monitoring features in your organization, proceed to ["Configuration"](#).

CHAPTER 2 Introduction to the Monitor

This section contains the following:

- [“Overview,”](#) next
- [“System Requirements”](#)
- [“Installation”](#)
- [“Upgrade Notes”](#)

Overview

The Solace PubSub+ Monitor is an easy to configure and use monitoring system that gives you extensive visibility into the health and performance of your Solace brokers and the infrastructure that relies on them.

The Solace PubSub+ Monitor enables Solace users to continually assess and analyze the health and performance of their infrastructure, gain early warning of issues with historical context, and effectively plan for capacity of their messaging system. It does so by aggregating and analyzing key performance metrics across all broker versions, bridges, endpoints and clients, and presents the results, in real time, through meaningful dashboards as data is collected.

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

The Solace PubSub+ 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.

Solace PubSub+ Monitor is comprised of the following which you access with a browser:

- Solace PubSub+ Monitor, which monitors Solace performance metrics and used by teams to monitor the health of Solace components (brokers, bridges, clients, endpoints and VPNs).
- [“RTView Manager”](#), which administrators use to monitor the health of Solace PubSub+ Monitor components. That is, to monitor components of the monitoring system itself (RTView servers, JVMs, Tomcat servers, hosts and alert settings for these components).
- RTView Configuration Application, which administrators use to configure the majority of the monitoring system. For details, see [“Configuration”](#).

You can monitor PubSub+ message broker Syslog events using the Solace Event Module application. See [“Solace Event Module”](#) for details.

You can also install the monitor as a Solution Package (rather than a standalone product). See [“Solution Package Version”](#) for details.

Solace PubSub+ Monitor

To evaluate the Solace PubSub+ Monitor, go to ["Quick Start"](#) to get up and running with Solace PubSub+ Monitor using default settings.

Solution Package Version

The Solace PubSub+ Monitor can also be installed as a Solution Package within the RTView® Enterprise product. RTView Enterprise 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 system. Used as a Solution Package within RTView Enterprise, the Solace metrics are but one source of data, among many other sources (solution packages are available for TIBCO EMS, Amazon CloudWatch, TIBCO BusinessWorks, MicroSoft SQL and many others), that determine the entire health state of the application.

For more information about RTView® Enterprise, see the *RTView Enterprise User's Guide*, available at <http://www.sl.com/support/documentation/>.

System Requirements

For browser support, hardware requirements, JVM support and other system requirement information, 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

See ["Upgrade Notes"](#) if you are upgrading from an earlier version of Solace PubSub+ Monitor. To install Solace PubSub+ Monitor, download the **RTViewSolaceMonitor_<version>.zip** file and unzip the **RTViewSolaceMonitor_<version>.zip** file into a directory of your choosing. The **RTViewSolaceMonitor/rtvpm/solmon** directory is auto-created after you unzip the file.

Important: On UNIX systems it is a requirement that the installation directory path not contain spaces.

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 **rtvpm** top-level directory. This extra directory must be removed before clicking the **Next** button that performs the final decompression.

On UNIX/Linux systems, use the -a option to properly extract text files.

Upgrade Notes

This section describes the steps necessary to upgrade existing Solace PubSub+ 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 you are upgrading to. Note that this section does not include upgrade information for the Solution Package for Solace. This section includes:

- ["Solace PubSub+ Monitor v5.0 and Earlier"](#) (previously referred to as "RTView Monitor for Solace")

Solace PubSub+ Monitor v5.0 and Earlier

Database Table Schemas

The database table schemas in the **rtvapm\solmon\dbconfig** directory have been updated to include all updated table schemas. To upgrade, drop the following database tables from the RTVHISTORY database:

- SOL_BRIDGE_STATS
- SOL_CSPF_NEIGHBOR
- SOL_VPNS
- SOL_CLIENT_STATS

Recreate the database tables using the appropriate table creation SQL sentence for your supported platform which are in the **rtvapm\solmon\dbconfig** directory.

RTView Configuration Application

The connection properties previously entered with the RTView Configuration Application are functional but not shown in this application correctly. To show connections properly in the RTView Configuration Application remove the past connections and recreate them in the RTView Configuration Application provided in this version of the Solace PubSub + Monitor.

CHAPTER 3 Configuration

This chapter describes how to setup Solace PubSub+ Monitor.

You first **"Setup Data Output Location"** (where you want to send and store your collected monitoring data). If you choose to **"Output Data to PubSub+ Monitor"** you can then proceed to **"Optional Setup"** to setup the many other Solace PubSub+ Monitor features.

This section contains:

- **"Setup Data Output Location"**
- **"Optional Setup"**
- **"Troubleshoot"**

If you wish to evaluate Solace PubSub+ Monitor using default settings, see **"Quick Start"**.

Assumptions

This document assumes that you have:

- verified **"System Requirements"**.
- installed the Monitor per instructions in **"Installation"**.

Setup Data Output Location

To configure the Solace PubSub+ Monitor, first setup your data output location. You have three options:

- **"Output Data to PubSub+ Monitor"**
- **"Output Data to InfluxDB"**
- **"Output Data to Solace Broker"**

Output Data to PubSub+ Monitor

To output monitoring data to PubSub+ Monitor, you **"Start the Solace PubSub+ Monitor"**, **"Login to Solace PubSub+ Monitor"**, **"Open the RTView Configuration Application"** and **"Configure Data Collection"**.

Proceed to **"Start the Solace PubSub+ Monitor"**.

Start the Solace PubSub+ Monitor

Navigate to the **RTViewSolaceMonitor/bin** directory and execute the **start_servers.sh** script (or **start_servers.bat** for Windows).

Proceed to **"Login to Solace PubSub+ Monitor"**.

Login to Solace PubSub+ Monitor

Open a browser and go to:

- **http://IPAddress:8068/rtview-solmon** if you are executing your browser on a different host than where the monitor is running.
- **http://localhost:8068/rtview-solmon** if you are executing your browser in the same host where the monitor is running.

Use **rtvadmin/rtvadmin** for username/password (if login is enabled).

The Solace PubSub+ Monitor opens. The displays populate with data after you add connection properties for your Solace Message brokers (which is subsequently described in these instructions).

Proceed to ["Open the RTView Configuration Application"](#).

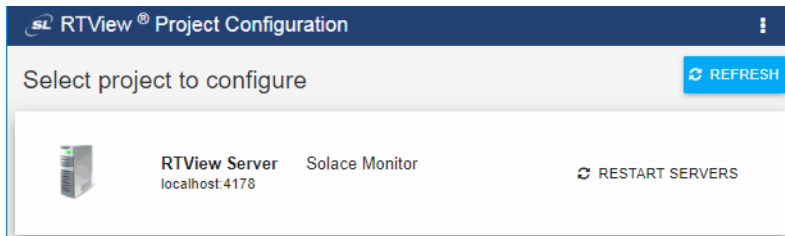
Open the RTView Configuration Application

Open a browser and go to:

- **http://IPAddress:8068/rtview-solmon-rtvadmin** if you are executing your browser on a different host than where the monitor is running.
- **http://localhost:8068/rtview-solmon-rtvadmin** if you are executing your browser in the same host where the monitor is running.

Use **rtvadmin/rtvadmin** for username/password.

The RTView Configuration Application **HOME** page opens.



Select the **Solace Monitor** project.

The main configuration page for the **RTView Server - Solace Monitor** project opens.

The navigation tree is in the left panel and the **General** and **Custom Properties** tabs are shown in the upper part of the main page. The name of the selected tab is highlighted and the other tabs are grayed out. You click on either of the grayed tabs to change the selected tab.

The screenshot shows the RTView Server - Solace Monitor configuration window. The left sidebar contains a navigation tree with the following items: **Server Configuration** (General, Databases, Alerts, Data Server, Historian, Display Server) and **Solution Package Configuration** (Data Cache, Solace). The 'General' tab is selected. The main content area has two tabs: 'GENERAL' (active) and 'CUSTOM PROPERTIES'. The 'GENERAL' tab contains the following fields:

- About**
 - URL: localhost:4178
 - Location: C:\Users\m\Documents\Projects\solace\RTViewSolaceMonitor_5.0.0.0_alpha_20190320\F
 - Version: SOL 5.0.0.0_20190320_200.30202-alpha_1207
- Project Type**: Standard
- Display Name**: Solace Monitor
- Description**: (empty field)
- Identifier**
 - Set a unique identifier for this project. This will be used for alerts as well as setting the proctag to identify this project's processes on unix.
 - Project ID: SOLMON
- Ports**
 - Set the prefix to be used for all ports. While all port values will be set, not all will be open on every process. For example, the receiver port is only open when the data server is run as a receiver.
 - Port Prefix: 41
 - SHOW PORT ASSIGNMENTS button

These instructions use the following format to describe navigation to each tab: **Navigation tree>Tab**. For example, the figure above illustrates the **General>GENERAL Tab**.

Proceed to ["Configure Data Collection"](#) (a required configuration).

Configure Data Collection

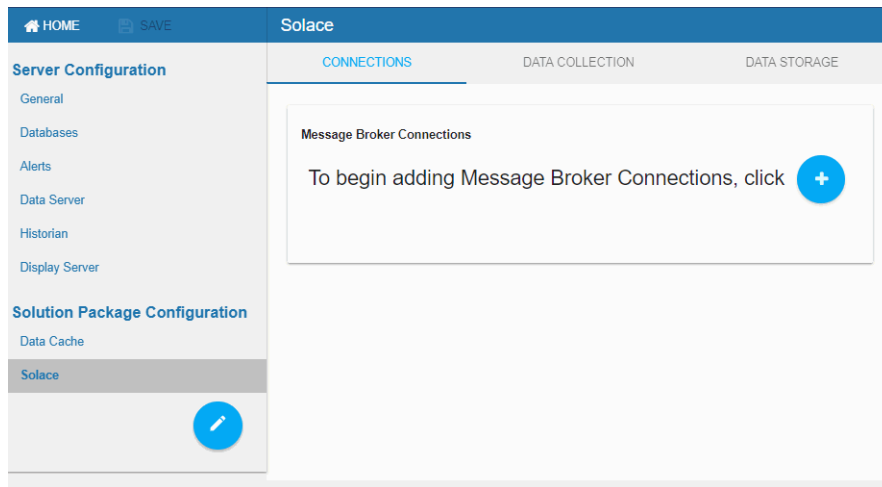
This section describes how to define the connection for the brokers you wish to monitor and verify that data is collected from them. This configuration must be performed before running any deployment of the Monitor. This configuration is the only required configuration.

If you don't have special requirements for running the monitor (such as running multiple data collectors in the same host), there is no need to cover the optional subsections. Consult Technical Support before modifying other configurations to avoid the circumstance of future upgrade issues.

Note that the monitoring data is collected through SEMP (Solace Element Management Protocol), which is a RESTful API for managing Solace brokers. If your virtual brokers (software brokers) are a **version prior to 8.7** or **Solace Appliance version prior to 8.3**, see ["Obtain SEMP Version"](#) for instructions on getting the SEMP version installed in your brokers.

To define Solace broker connections:

1. "Open the RTView Configuration Application", select **Solace** (in navigation tree)>**CONNECTIONS** tab and click .



The **Add Connection** dialog opens.

2. In the **Add Connection** dialog choose either "HA Pair" or "Standalone Broker":

HA Pair



For **HA Pair**, enter the **Connection Name**, **Primary** and **Backup URLs**, **Usernames** and **Passwords**.

Standalone Broker


For **Standalone Broker**, enter the **Connection Name**, **URL**, **Username** and **Password**, and toggle on **Edition** if this is a Solace PubSub+ Cloud service instance. With this setting, two new fields will appear where you enter the **SEMP Version** and the **VPN Name** of your Cloud Broker.

Notes:

- If you don't know the SEMP Version of your Solace PubSub+ Cloud Broker, then leave the defaults. The VPN Name is required.
- Monitoring data is collected through SEMP (Solace Element Management Protocol), which is a RESTful API for managing Solace brokers. If your Solace PubSub+ message brokers are a version prior to 8.7 or your Solace Appliance is version prior to 8.3, see ["Obtain SEMP Version"](#) for instructions on getting the SEMP version installed in your message brokers.

3. Repeat these steps to add more brokers and when finished, click  to close the dialog and  (in title bar) to save your settings.

The connections you created are listed in the **Connections** tab. The connection string for the backup broker will have "**-standby**" concatenated to it.

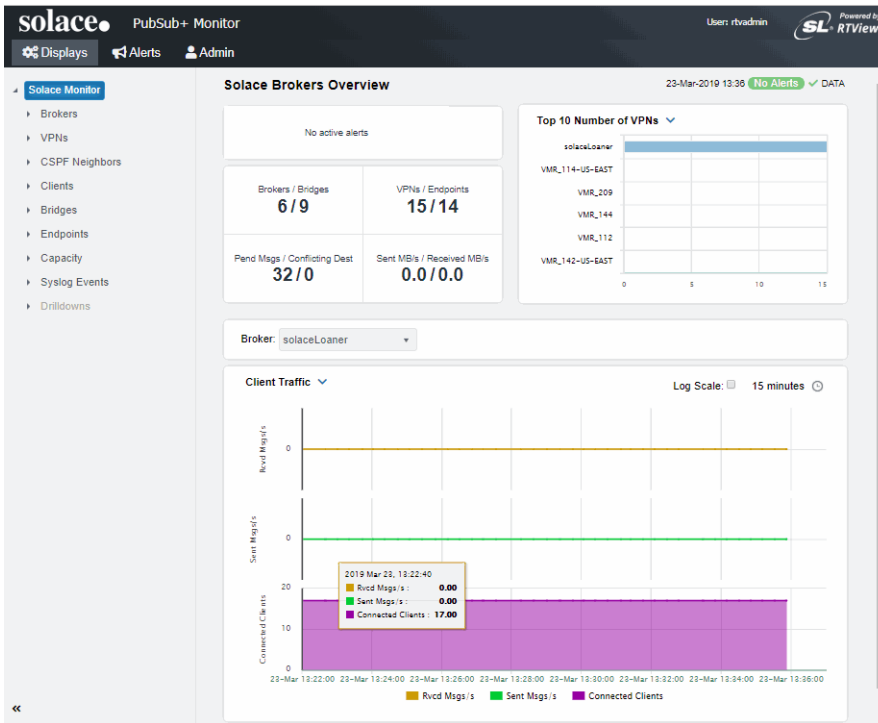
4. Click  to apply changes. The data server will be available again in 10-15 seconds.

5. Open a browser and go to the Solace PubSub+ Monitor:

http://IPAddress:8068/rtview-solmon if you are executing your browser on a different host than where the monitor is running.

http://localhost:8068/rtview-solmon if you are executing your browser in the same host where the monitor is running.

Use **rtvadmin/rtvadmin** for username/password (if login is enabled).



You should now see monitoring data. If you encounter issues, check the log files in the **RTViewSolaceMonitor/projects/rtview-server/log** directory for errors.

6. If you want to output your data to InfluxDB, proceed to ["Create Database and User Account"](#). Otherwise, you have completed configuring data collection! There are no other required configurations.

To take advantage of the many optional Solace PubSub+ Monitor features, proceed to ["Optional Setup"](#).

Output Data to InfluxDB

To output monitoring data to InfluxDB, follow all instructions to ["Output Data to PubSub+ Monitor"](#), then ["Create Database and User Account"](#).

Create Database and User Account

This section assumes you have already configured connections to your Solace Brokers using the RTView Configuration Application.

To send monitoring data to InfluxDB you edit the **stats-receiver.properties** file, located in the **Data Collector** directory, define the metrics to poll and store, and specify the IP address and port number on the InfluxDB platform.

1. Create a database in your InfluxDB platform and a user with read and write privileges using the following InfluxDB shell commands:

```
create database yourSolaceStatsDB
use yourSolaceStatsDB
create user SolaceStatsUser with password 'yourPwdWithSingleQuotes'
with all privileges grant all on yourSolaceStatsDB to SolaceStatsUser exit
```

2. Edit the **stats-receiver.properties** file, located in the directory where the data server will be started.

3. Enable InfluxDB Tap by commenting out the following line:

TAP_PLUGIN_CLASS = com.sl.statsds.RTViewStatsTap and uncomment the line:

TAP_PLUGIN_CLASS = com.solace.psg.enterprisestats.receiver.influxdb.InfluxDBStatsTap

This enables the plugin to send monitoring data to InfluxDB.

Note: At present, there is no option to send monitoring data to both InfluxDB and PubSub+ Monitor. To revert back to collect all caches and send data to the PubSub+ Monitor, uncomment the RTViewStatsTap line and the InfluxDBStatsTap line. Also revert **DB_FIELD_SUBSCRIPTIONS** to its initial value (DB_FIELD_SUBSCRIPTIONS =\ which means the filter passes everything, as appropriate for the PubSub+ Monitor).

4. Select the list of topics identifying the fields to write to InfluxDB by copying the list of topics in the **DB_FIELD_SUBSCRIPTIONS** property. These topics are semicolon separated and multiple lines are identified by "\" at the end of the topic. Initially you can choose from the examples that are provided in the **stats-receiver.properties** file itself. For example:

```
DB_FIELD_SUBSCRIPTIONS=\
SYSTEM_CONFIG-SYNC/authentication/client-certificate/max-certificate-chain-depth;\
SYSTEM_MEMORY/subscription-memory-usage-percent;\
SYSTEM_MEMORY/physical-memory-usage-percent;\
SYSTEM_MEMORY/slot-infos/*/nab-buffer-load-factor;\
SYSTEM_STATS_CLIENT/>;\
SYSTEM_STATS_NEIGHBOR/>;\
SYSTEM_CSPF_NEIGHBOR_STATS/>;\
SYSTEM_MSG-SPOOL_DETAIL/*;\
SYSTEM_MSG-SPOOL_STATS/>;\
VPN_STATS/maximum-spool-usage-mb;\
>;\
```

Refer to Solace documentation for the complete list of metrics that can be requested.

5. Add the connection properties to InfluxDB by scrolling down to the Influx DB Properties and defining the following:

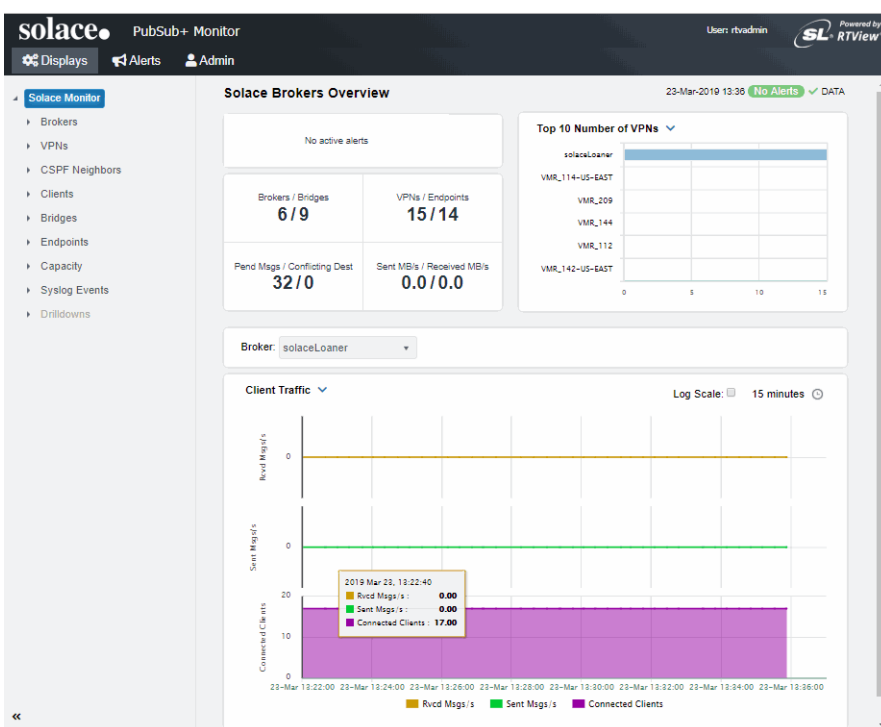
- **INFLUXDB_HOST**: the hostname and port used for Influx DB. For example, if you run it locally in the default port: **INFLUXDB_HOST = localhost:8086**
- **INFLUXDB_USER**: the user previously created in Influx DB to execute the inserts in the DB. For example: **INFLUXDB_USER = SolaceStatsUser** or **INFLUXDB_DB = stats** (this is the default)
- **INFLUXDB_PASSWORD**: the password you set in InfluxDB encrypted with the Solace PSG Password Utility. (You can download this tool from Solace download site: <https://solace.com/downloads/>.)

6. Open a browser and go to the Solace PubSub+ Monitor:

http://IPAddress:8068/rtview-solmon if you are executing your browser on a different host than where the monitor is running.

http://localhost:8068/rtview-solmon if you are executing your browser in the same host where the monitor is running.

Use **rtvadmin/rtvadmin** for username/password (if login is enabled).



You should now see monitoring data. If you encounter issues, check the log files in the **RTViewSolaceMonitor/projects/rtview-server/log** directory for errors.

You have completed configuring data collection! There are no other required configurations.

Output Data to Solace Broker

To send monitoring data to a Solace Brokers do the following in the order provided. The files you edit are located in the **rtapm\solmon\bin\config** directory. Refer to Solace documentation for additional information about the available message formats.

1. Define the Solace Brokers to monitor by editing the **appliance_config_demo.xml** file.
2. Verify that monitoring data that you want to poll is properly set in the **pollers_sl.xml** file (which contains details of the SEMP requests the poller will send to the Solace Brokers and how the response is to be parsed).
3. Verify that the poller groups that you want to use are properly set in the **groups_sl.xml** file (which gives the flexibility of separating the published statistics by groups of interests and publishes the statistics on the associated topic assigned and the configured poll interval).
4. ["Configure Data Collection"](#) (a required configuration).
5. Start statspump as follows:
 In a windows command prompt or UNIX terminal go to **RTViewSolaceMonitor/rtvapm** and execute **rtvapm_init.bat** (Windows) or **.rtvapm_init.bat** (UNIX).:
[statspump|statspump.bat] config\pollers_sl.xml config\groups_sl.xml config\appliance_config_demo.xml

You should now see published monitoring data in the receiving Solace Broker.

You have completed instructions to send monitoring data to a Solace Broker! There are no other required configurations.

Optional Setup

This section describes how to setup optional features that are available if you ["Output Data to PubSub+ Monitor"](#):

- ["Choose and Setup an Application Server"](#): You have two options: ["Using the Pre-configured Apache Tomcat"](#) or ["Using Your Application Server"](#)
- ["Modify Default Polling Rates for Solace Caches"](#): Change the default polling rates for Solace caches.
- ["Modify Default Settings for Storing Historical Data"](#): Change the default settings for how historical data is collected, aggregated and stored in caches.
- ["Change Port Assignments"](#): Change the default port settings.
- ["Configure Alert & Historical Database Connections"](#): Configure a production database.
- ["Configure Alert Notification"](#): Configure alerts to execute an automated action (for example, to send an email alert).
- ["High Availability"](#): Configure high failover and failback for Data Servers and the Historian.
- ["Solace Event Module"](#): Configure PubSub+ Brokers and Solace Monitor to receive syslog events and activate syslog event-driven alerts.
- ["Troubleshoot"](#): Investigate configuration issues.

Choose and Setup an Application Server

Solace PubSub+ Monitor requires an application server. You have two options:

- ["Using the Pre-configured Apache Tomcat"](#)
- ["Using Your Application Server"](#)

Using the Pre-configured Apache Tomcat

Solace PubSub+ Monitor includes a pre-configured Apache Tomcat installation which hosts all of the servlets necessary to run the Monitor on port **8068**. If you would like to use this application server for your deployment, no further configuration is required. You can optionally change user names and passwords for the servlets hosted in Tomcat in

RTViewSolaceMonitor/apache-tomcat*sl/conf/tomcat-users.xml. The user names and passwords in this file can be changed, but you must assign them one of the defined roles as these are required by the servlets. For details about predefined user roles, see ["User Permissions"](#).

Proceed to ["Start the Solace PubSub+ Monitor"](#).

Using Your Application Server

Alternately, you can use your own application server. To use your application server:

1. In a windows command prompt or UNIX terminal go to **RTViewSolaceMonitor/rtvapm** and execute **rtvapm_init.bat** (Windows) or **.rtvapm_init.bat** (UNIX).
2. Change directory (**cd**) to **RTViewSolaceMonitor/projects/rtview-server** and execute **update_wars.bat** (Windows) or **update_wars.sh** (UNIX).
3. Deploy the resulting war files to your application server.
4. If you are using the RTView Manager, repeat the previous two steps in the **projects/rtview-manager** directory.
5. Add the following user roles to your application server: **rtvuser**, **rtvadmin**, **rtvalertmgr**. For details about user roles, see ["User Permissions"](#).

The instructions in this document refer to the pre-configured Apache Tomcat host and port (**localhost:8068**). When following instructions, use your application server's host and port instead.

Modify Default Polling Rates for Solace Caches

To modify the default polling rate settings for Solace caches, perform the following:

- ["Open the RTView Configuration Application"](#) and go to **Solace>DATA COLLECTION** tab.

The screenshot shows the Solace configuration page in the RTView Configuration Application. The left sidebar contains a 'Server Configuration' menu with options: General, Databases, Alerts, Data Server, Historian, and Display Server. Below this is a 'Solution Package Configuration' section with 'Data Cache' and 'Solace' (selected). The main content area is titled 'Solace' and has three tabs: 'CONNECTIONS', 'DATA COLLECTION' (active), and 'DATA STORAGE'. Under 'DATA COLLECTION', there are two sections: 'Poll Rates' and 'Solace Event Module Alerts'. The 'Poll Rates' section has two input fields: 'Poll Rate' (set to 20) and 'Poll Rate Large' (set to 60). The 'Solace Event Module Alerts' section has a 'Clear Time' input field (set to 86400). A blue 'SAVE' button is visible in the bottom right of the configuration area.

Poll Rate: Collection period in seconds. This configuration element affects the following caches: SolEndpointStats, SolEndpoints, SolClients, SolClientStats, SolBridges, SolAppliances, SolBridgeStats, SolApplianceInterfaces and SolApplianceMessageSpool.

Poll Rate Large: Slower collection period in seconds for monitoring data that can impact the performance of the monitoring systems if the rate is very fast. This configuration element affects the following caches: SolCspfNeighbors, SolAppliances and SolEnvironmentSensors.

Solace Event Module Alerts Clear Time: Defines the time interval, in seconds, when non-clearable event alerts from the Solace Event Module will be dismissed from the monitor.

- **SAVE** your settings, then click **RESTART SERVERS** to apply changes. The data server will be available again in 10-15 seconds.

Modify Default Settings for Storing Historical Data

Use the RTView Configuration Application to change the default settings for storing historical data for Solace and the default cache settings to modify the default behavior of the data being collected, aggregated and stored.

- **"Define the Storage of In Memory History":** Specify the maximum number of history rows to store in memory.
- **"Define Compaction Rules":** Define rules for reducing the amount of data stored over time.
- **"Define Duration":** Specify when data becomes expired and/or deleted from the Monitor.
- **"Enable/Disable Storage of Historical Data":** Choose the metrics you want to store in the database and specify a prefix for history table names.
- **"Define Prefix for All History Table Names":** Specify a prefix to prepend to database table names.



Define the Storage of In Memory History

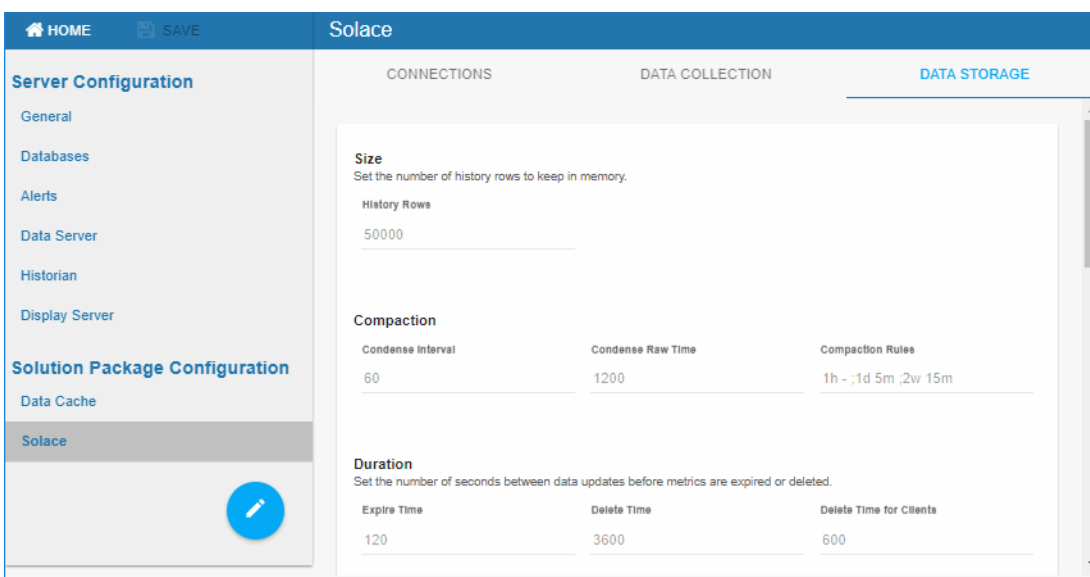
You can define the maximum number of history rows to store in memory in the **Solace/Data Storage/History Rows** property. This property can improve Monitor responsiveness.

Note that changing this value is only recommended if you have a high degree of understanding about how historical data is being stored in memory, as well as how that data is compacted and stored in the database.

The **History Rows** property defines the maximum number of rows to store for the SolVpns, SolClientStats, SolAppliances, SolEndpoints, SolCspfNeighbors, SolBridgeStats, SolApplianceInterfaces, SolApplianceMessageSpool, SolEndpointStats, SolEventModuleEvents and SolAppliancesQuality caches. The default setting for **History Rows** is **50,000**.

To modify the default settings:

- “Open the RTView Configuration Application” and go to **Solace>DATA STORAGE** tab.
- Under **Size**, enter the desired number of rows in the **History Rows** field.
-  **SAVE** your settings, then click  **RESTART SERVERS** to apply changes. The data server will be available again in 10-15 seconds.



The screenshot shows the Solace RTView Configuration Application interface. The left sidebar contains a navigation menu with 'Server Configuration' (General, Databases, Alerts, Data Server, Historian, Display Server) and 'Solution Package Configuration' (Data Cache, Solace). The main content area is titled 'Solace' and has three tabs: 'CONNECTIONS', 'DATA COLLECTION', and 'DATA STORAGE'. The 'DATA STORAGE' tab is active. It contains three sections: 'Size' with a 'History Rows' field set to 50000; 'Compaction' with 'Condense Interval' (60), 'Condense Raw Time' (1200), and 'Compaction Rules' (1h - ;1d 5m ;2w 15m); and 'Duration' with 'Expire Time' (120), 'Delete Time' (3600), and 'Delete Time for Clients' (600). A 'SAVE' button is in the top left, and a 'RESTART SERVERS' button is in the top right of the main area.



Define Compaction Rules

Data compaction, essentially, is reducing redundancy in the data to be stored in the database by using a rule so that you store sampled data instead of raw data, which prevents storing of redundant data which potentially can overload the database. The compaction rule is defined through the following fields:

- **Condense Interval:** The time interval at which the cache history is condensed. The default is **60** seconds, which means that every **60** seconds all rows of the same index are condensed. As a result of this first condensing operation there will be only one row per index every minute. The following caches are impacted by this setting: SolVpns, SolClientStats, SolAppliances, SolEndpoints, SolCspfNeighbors, SolBridgeStats, SolApplianceInterfaces, SolApplianceMessageSpool and SolEndpointStats.

- **Condense Raw Time:** The time span of raw data kept in memory. The default is 1200 seconds. The following caches are impacted by this setting: SolVpns, SolClientStats, SolAppliances, SolEndpoints, SolCspfNeighbors, SolBridgeStats, SolApplianceInterfaces, SolApplianceMessageSpool and SolEndpointStats.
- **Compaction Rules:** This field defines the rules used to condense your historical data in the database. By default, the columns kept in history are aggregated by averaging rows with the following rule **1h -;1d 5m;2w 15m**, which means the data from the last hour is not aggregated (1h - rule), the data from the last day is aggregated every 5 minutes (1d 5m rule), and the data from the last 2 weeks old is aggregated every 15 minutes (2w 15m rule). The following caches are impacted by this setting: SolVpns, SolClientStats, SolAppliances, SolEndpoints, SolCspfNeighbors, SolBridgeStats, SolApplianceInterfaces, SolApplianceMessageSpool and SolEndpointStats.

To modify these settings do the following:

- ["Open the RTView Configuration Application"](#) and go to **Solace>DATA STORAGE** tab.
- Under **Compaction**, enter values in the **Condense Interval**, **Condense Raw Time** and **Compaction Rules** fields.
-  your settings, then click Click  to apply changes.



Define Duration

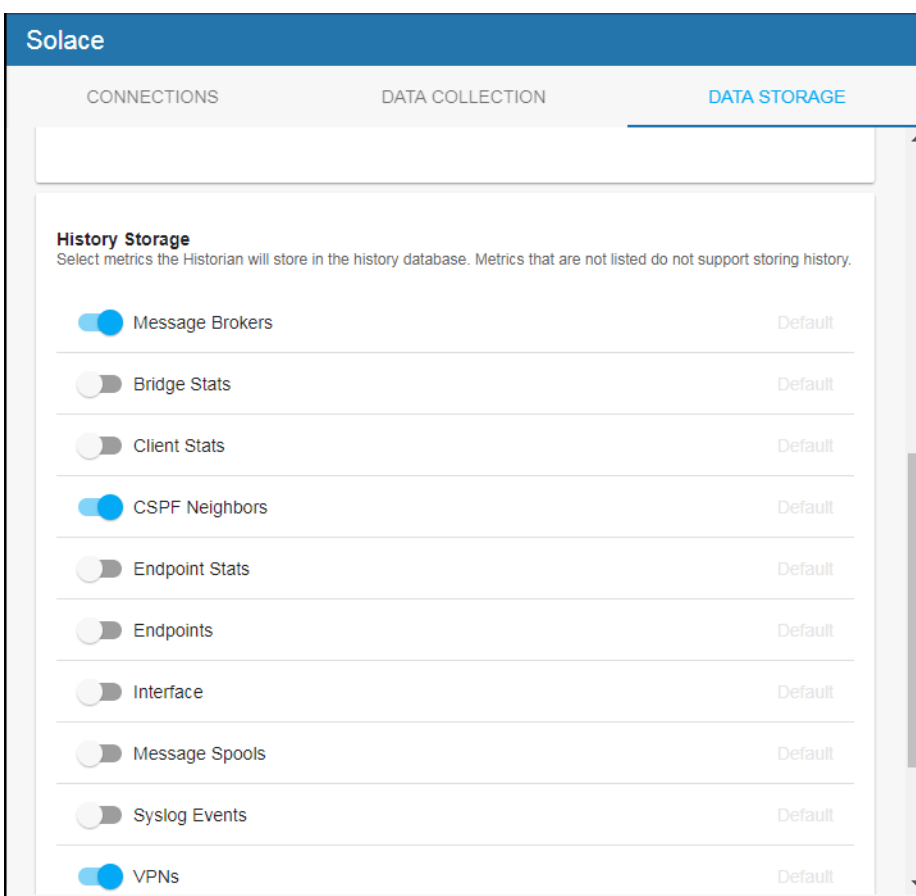
The data for each metric is stored in a specific cache and, when the data is not updated in a certain period of time, that data either marked as expired or, if it has been expired over an extended period of time, it is deleted from the cache altogether.

- **Expire Time:** This field sets the period of time when the Expire metric from the cache is set to true indicating the entry row is expired. The default expiration time is 120 seconds. The following caches have this attribute defined: SolVpns, SolBridges, SolClients, SolClientStats, SolAppliances, SolEndpoints, SolCspfNeighbors, SolBridgeStats, SolApplianceInterfaces, SolApplianceMessageSpool, SolEndpointStats, SolEnvironmentSensors and SolAppliancesQuality.
- **Delete Time:** This field sets the period of time that a given entry row should be expired before it gets deleted from the cache. It defaults to 3600 seconds and applies to the following caches: SolVpns, SolBridges, SolEndpoints, SolBridgeStats, SolEndpointStat and SolEnvironmentSensors caches.
- **Delete Time for Clients:** The meaning of this field is the same as of the Delete Time but applying to the SolClients and SolClientStats caches. The default is 600 seconds.
- **Expire Time for Solace Event Module Events:** This field sets the expiration period exclusively for the SolEventModuleEvents cache, which defaults to 3600 seconds.
- **Delete Time for Solace Event Module Events:** The meaning is as the two previous fields but for the SolEventModuleEvents cache. The default is 1 day (86,400 seconds).

Enable/Disable Storage of Historical Data

Under **History Storage** you can select which tables you want the Historian to store in the database. To enable/disable the collection of historical data, perform the following:

- “Open the RTView Configuration Application” and go to **Solace>DATA STORAGE** tab.
- Scroll down to **History Storage** and toggle to enable/disable the storage of various database tables in the database. Blue (toggled right) enables storage, gray (toggled left) disables storage. The caches impacted by these settings are SolAppliances (Message Brokers), SolBridgeStats (Bridge Stats), SolClientStats (Client Stats), SolCspfNeighbors (CSPF Neighbors), SolEndpointStats (Endpoint Stats), SolEndpoints (Endpoints), SolApplianceInterfaces (Interface), SolApplianceMessageSpool (Message Spools), SolEventModuleEvents (Syslog Events) and SolVpns (VPNs).
-  **SAVE** your settings, then click  **RESTART SERVERS** to apply changes.





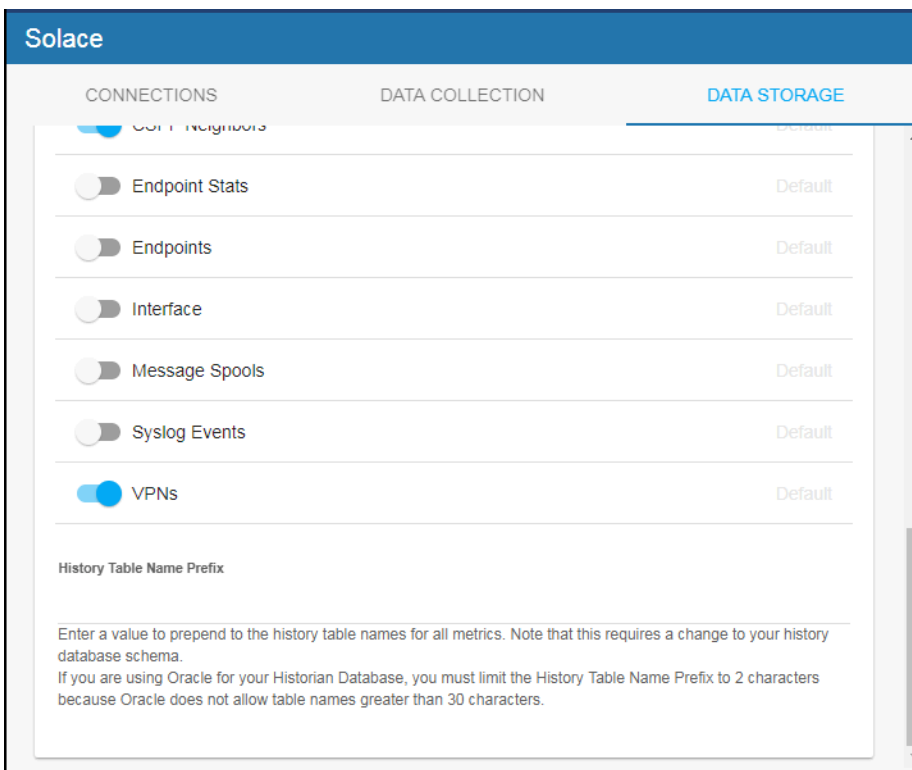
Define Prefix for All History Table Names

The **History Table Name Prefix** field allows you to define a prefix that is added to the database table names so that the Monitor can differentiate history data between data servers when you have multiple data servers with corresponding Historians using the same solution package(s) and database. In this case, each Historian needs to save to a different table, otherwise the corresponding data server will load metrics from both Historians on startup. Once you have defined the **History Table Name Prefix**, you need to create the corresponding tables in your database as follows:

- Locate the .sql template for your database under **RTViewSolaceMonitor/rtvapm/solmon/dbconfig** and make a copy of it
- Add the value you entered for the **History Table Name Prefix** to the beginning of all table names in the copied .sql template
- Use the copied .sql template to create the tables in your database

To add the prefix do the following:

- “Open the RTView Configuration Application”, go to **Solace>DATA STORAGE** tab and scroll down to the bottom of the page.
- In the **History Table Name Prefix** field, enter the desired prefix name.
-  **SAVE** your settings, then click  **RESTART SERVERS** to apply changes.



Solace

CONNECTIONS DATA COLLECTION **DATA STORAGE**

DATA STORAGE

Endpoint Stats Default

Endpoints Default

Interface Default

Message Spools Default

Syslog Events Default

VPNs Default

History Table Name Prefix

Enter a value to prepend to the history table names for all metrics. Note that this requires a change to your history database schema.
If you are using Oracle for your Historian Database, you must limit the History Table Name Prefix to 2 characters because Oracle does not allow table names greater than 30 characters.



Change Port Assignments

This configuration is optional.

There are deployment architectures that might require the change of default ports for selected processes, either because the process will be executed multiple times in the same host or because the selected port number is already in use by another application. In these circumstances, you should reassign ports for Solace using the RTView Configuration Application.

Java Process	Description	Default Port(s)
RTView Data Server	Gathers performance metrics.	Default Port= 4178 Default JMX Port = 4168
Receiver RTView Data Server	Receiver Data Server in a fault tolerant pair.	Default Port= 4172 Default JMX Port= 4168
Sender RTView Data Server	Sender Data Server in a fault tolerant pair.	Default Port= 4176 Default JMX Port= 4166
RTView Historian	Retrieves data from the RTView Data Server and archives metric history to a database.	Default JMX Port= 4167

To modify port settings or deploy Java processes on different hosts (rather than on a single host):

1. “[Open the RTView Configuration Application](#)” and go to **General>GENERAL** tab.
2. Under **Ports** (scroll down to the bottom of the page), specify the port prefix that you want to use in the **Port Prefix** field. Click **Show Port Assignments** to see the port numbers that are created using the **Port Prefix** you specify.
3. Click  (in the title bar), then click  to apply changes.
4. Edit the **update_wars** (**.bat** or **.sh**) file and change the port prefix for all ports to the prefix you just specified.
5. Rebuild the war files and install them to the application server by executing the following script, located in the **RTViewSolaceMonitor/bin** directory:
Windows:
make_all.bat
UNIX:
./make_all.sh

Configure Alert & Historical Database Connections

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 production database, and how to configure the Alert Settings Database connection and the Historian Database connection. You connect and configure the databases using the RTView Configuration Application. You also copy portions of the **database.properties** template file (located in the **common\dbconfig** directory) into the RTView Configuration Application.

Monitor Databases

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 cannot work correctly.

Historian

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

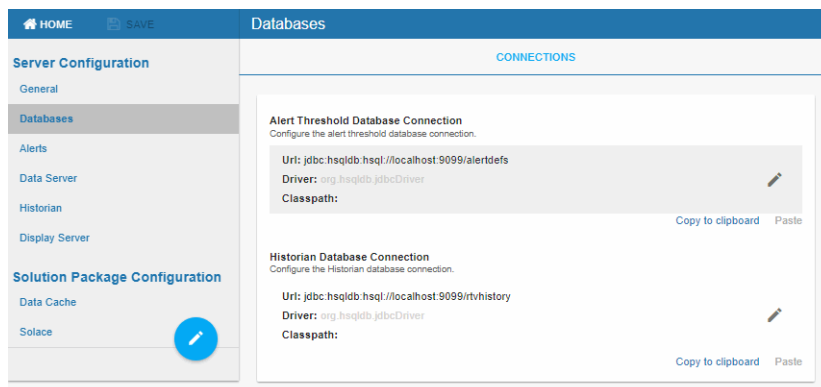
To Configure the ALERTDEFS and RTVHISTORY Databases:

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 **database.properties** template file, which is located in the **common\dbconfig** directory, find the line that corresponds to your supported database in the "Define the ALERTDEFS DB" section and make a note of this information. Keep the **database.properties** template file open.

3. "Open the RTView Configuration Application" and go to **Databases>CONNECTIONS** tab.



4. Click the **Alert Threshold Database Connection** to open the **Edit Connection** dialog.
5. Enter the information (you previously noted from the **database.properties** file) into the **Edit Connection** dialog and click **Save**.

URL: Enter the full database URL to use when connecting to this database using the specified JDBC driver.

Driver: Enter the fully qualified name of the JDBC driver class to use when connecting to this database.

Classpath: Enter the location of the jar where the JDBC driver resides in your environment.

Username: Enter the username to enter into this database when making a connection.

Password: Enter the password to enter into this database when making a connection.

Run Queries Concurrently: Select this check box to run database queries concurrently.

Click  to close the dialog and  (in title bar) to save your settings.

6. Return to the **database.properties** template file, which is located in the **common\dbconfig** directory, find the line that corresponds to your supported database in the "Define the RTVHISTORY DB" section and make a note of this information.

7. In the RTView Configuration Application, click the **Historian Database Connection** to open the **Edit Connection** dialog.

8. Enter the information (you previously retrieved from the **database.properties** file) into the **Edit Connection** dialog and click **Save**.

URL: Enter the full database URL to use when connecting to this database using the specified JDBC driver.


Driver: Enter the fully qualified name of the JDBC driver class to use when connecting to this database.

Classpath: Enter the location of the jar where the JDBC driver resides in your environment.

Username: Enter the username to enter into this database when making a connection.

Password: Enter the password to enter into this database when making a connection.

Run Queries Concurrently: Select this check box to run database queries concurrently.

9. Click  to store the newly added connection and close the dialog and  (in title bar) to save your settings.

10. Click  to apply changes.

11. 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** and **solmon** directories, where:

<db> = {db2, mysql, oracle, sqlserver, sybase}

- **Alert Settings**

**RTViewSolaceMonitor/rtvapm/common/dbconfig/
create_common_alertdefs_tables_<db>.sql**

- **Historian**

**RTViewSolaceMonitor/rtvapm/solmon/dbconfig/
create_solmon_history_tables_<db>.sql**

**RTViewSolaceMonitor/rtvapm/common/dbconfig/
create_common_history_tables_<db>.sql**

**RTViewSolaceMonitor/rtvapm/rtvmgr/dbconfig/
create_rtvmgr_history_tables_<db>.sql**

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. To configure alert notifications, proceed to [Configure Alert Notification](#).

Troubleshoot

This section includes:

- [“Log Files for Solace”](#)
- [“JAVA_HOME”](#)
- [“Permissions”](#)
- [“Network/DNS”](#)
- [“Data Not Received from Data Server”](#)

Log Files for Solace

When any Solace PubSub+ Monitor component encounters an error, an error message is output to the console and/or to the corresponding log file. Logging is enabled by default. If you encounter issues with log files, verify the **logs** directory exists.

Solace PubSub+ Monitor Log Files

If you encounter issues, look for errors in the following log files, located in the **RTViewSolaceMonitor/projects/rtview-server/logs** directory:

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

RTView Manager Log Files

If you encounter issues, look for errors in the following log files, located in the **RTViewSolaceMonitor/projects/rtview-manager/logs** directory:

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

JAVA_HOME

If you encounter issues starting Solace PubSub+ Monitor or RTView Manager processes on Linux, verify that JAVA_HOME is set correctly in the path as JAVA_HOME is required for Tomcat to start correctly. On Windows, JAVA_HOME or JRE_HOME should exist as environment variables indicating a valid Java path.

Permissions

If you encounter permissions-related errors in the response from the **start_servers** 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 also verify confirm with your network administrator that you're not being blocked from accessing the remote system.

Data Not Received from Data Server

In the Solace PubSub+ Monitor, if you go to the **Administration>RTView Cache Tables** display and see that caches are not being populated with monitoring data (the number of rows in the table is zero), check for connection property errors that are provided to the Data Server. Do the following:

1. ["Open the RTView Configuration Application"](#) and go to the **Solace>CONNECTIONS** tab.
2. Verify the connection parameters associated with your brokers.
3. Verify the SEMP version is correct for each of your brokers (monitoring data cannot be collected if the SEMP version is incorrect) and make corrections if necessary.

Click  in the title bar when finished, then click  to apply changes. It takes about 10-15 seconds for the data server to be available again.

4. In the Solace PubSub+ Monitor, go to the **Admin>RTView Cache Tables** display and verify that all caches are being populated with monitoring data (the number of rows in the table is greater than zero).

CHAPTER 4 Additional Configurations

This section contains the following:

- “Property Editor REST API”
- “High Availability”
- “Solace Event Module”
- “Obtain SEMP Version”

Property Editor REST API

This section describes the Monitor REST API you can use to add, edit and delete properties on a running data server. This means that you can update connection properties without restarting the data server.

Note: Changes to Solace connections that are not to Cloud Brokers require restart. They are not applied when the server properties are updated. Changes to Cloud Broker connection properties do not require restart.

To complete these instructions you need the abbreviated name for the Monitor--also called the **PackageName**. The **PackageName** for Solace PubSub+ Monitor and the Solution Package for Solace is **solmon**. Where indicated, you:

replace **<PackageName>** with **solmon**

For example, change:

node main.js -action=getPropertyDescriptions -sp=<PackageName>

to:

node main.js -action=getPropertyDescriptions -sp=solmon

A sample node.js-based application is available in the **rtvapm/sampleapps/propeditor** directory which you can use to edit properties via the same rtvadmin servlet that is used by the RTView Configuration Application. This sample application also serves as an example of how to post to the rtvadmin servlet from your own application. For instructions about how to setup and run the sample application see the **README.txt** file in the same directory.

Two use cases are supported:

- [“Import Initial Properties & Connections into Configuration Application”](#): Rather than manually entering each connection, you can use the REST API to import initial connections into the Configuration Application. You can subsequently edit those connections using the Configuration Application.
- [“Automate Connection Updates”](#): Rather than using the Configuration Application to manage your connection properties, you can use the REST API to add, edit and delete connections. This is useful when you have an automated system for provisioning and want to automatically add monitoring as part of the provisioning process. These connections will not be included in the Configuration Application and will only be edited via the REST API.

Also see [“Design Notes”](#) for details about [“Supported API Actions”](#), [“FileNames”](#), [“Sample json”](#), [“Adding, Editing, Deleting JsonPrimitive Properties”](#), [“Adding and Editing JsonObject Properties”](#), [“Deleting JsonObject Properties”](#), [“Updating vs. Restarting Data Servers”](#) and [“High Availability”](#).

This section also contains:

- [“Import Initial Properties & Connections into Configuration Application”](#)
- [“Automate Connection Updates”](#)
- [“Encrypt Property Text”](#)
- [“Design Notes”](#)

Import Initial Properties & Connections into Configuration Application

Replace **<PackageName>** with the **PackageName** for the solution package you are configuring.

To Import Properties:

1. Install and start the Monitor.
2. Open a command prompt and navigate to the **rtvapm/sampleapps/propeditor** directory. Follow the instructions in the **README.txt** file to configure the node application to connect to the Monitor.
3. By default, all properties (including passwords) are sent to the rtvadmin servlet and on to the Data Server in plain text. You can optionally encrypt that text. See [“Encrypt Property Text”](#) for details.
4. Use the sample application to retrieve a list of solution packages in your data server as follows:
node main.js -action=getSPs
5. Use the sample application to get a list of available properties for your solution package as follows:
node main.js -action=getPropertyDescriptions -sp=<PackageName>
 where **<PackageName>** is the abbreviated name for a solution package on the retrieved list.

6. Create a json file containing the connections and other properties you would like to add. Note that the file contents must be valid json. See ["Sample json"](#) for details about json properties.
7. Confirm that the Configuration Application is NOT in use.
8. Use the sample application to add the properties as follows:
node main.js -action=editProperties -filename=project -propstoadd=jsonfile.json
Note that the file name must be **project** in this use case. Otherwise, the properties will not be applied. See ["Adding, Editing, Deleting JsonPrimitive Properties"](#) for additional information.
9. Use the sample application to update or restart the data server. An update will apply connection properties. A restart is required to apply non-connection properties:
Node main.js -action=updatePropertiesOnServer
Or
Node main.js -action=restartServers
10. Now that the initial properties are imported you can use the RTView Configuration Application to edit your configuration.

Automate Connection Updates

Replace **<PackageName>** with the **PackageName** for the solution package you are configuring.

To Auto-update Connections:

1. Install and start the Monitor.
2. In a text editor, open **projects\rtview-server\rtvservers.dat** and add -
properties:autoconnections at the end of the dataserver line.
3. Open a command prompt and navigate to the **rtvapm/sampleapps/propeditor** directory. Follow the instructions in the **README.txt** file to configure the node application to connect to the Monitor.
4. By default, all properties (including passwords) are sent to the rtvadmin servlet and on to Data Server in plain text. You can optionally encrypt that text. See ["Encrypt Property Text"](#) for details.
5. Use the sample application to get a list of solution packages in your Data Server as follows:
node main.js -action=getSPs
6. Use the sample application to get the list of available properties for a solution package as follows:
node main.js -action=getPropertyDescriptions -sp=<PackageName>
where **<PackageName>** is the abbreviated name for a solution package on the retrieved list.

7. Create a json file containing the connections and other properties you would like to add. Note that the file contents must be valid json. See ["Design Notes"](#) below for details about json properties.

8. Use the sample application to add the properties as follows:

node main.js -action=editProperties -filename=autoconnections -propstoadd=jsonadd.json

Note that the file name must match the **-properties** command line argument that you entered in **rtvservers.dat**. See ["Filenames"](#) for more information.

9. Use the sample application to update or restart the data server. An update will apply connection properties. A restart is required to apply non-connection properties:

Node main.js -action=updatePropertiesOnServer

Or

Node main.js -action=restartServers

10. Now that the initial connections have been added, you can delete or modify those connections as follows:

node main.js -action=editProperties -filename=autoconnections -propstoadd=jsonadd.json -propstoremove=jsondelete.json -merge=true

See ["Design Notes"](#) for more information.

Note: In this scenario it is possible that the automated property updates occur at the same time as someone is editing other properties in the Configuration Application. Since all properties files are re-read when you execute the **updatePropertiesOnServer** post, the properties saved by the Configuration Application are re-read as well. The Configuration Application might say that you need to restart servers when it isn't necessary.

To encrypt property text, proceed to ["Encrypt Property Text"](#).

Encrypt Property Text

By default, properties (including passwords) are sent in plain text from the client application to the servlet. To use AES encryption on the text, do the following:

1. In the sample node.js-based application (in the **rtvapm\sampleapps\propeditor** directory), set the **cryptKey** variable to the key you want to use for the AES encryption.

The application might clip or pad this key as needed in order to generate a 16 element byte array that can be used by AES encryption.

2. In the data server's **rtvservers.dat** file, pass the value you used for **cryptKey** into the command line using the **-propkey** command line argument on the data server line.

You can either enter the key in plain text or you can scramble it using the **encode_string** command line utility.

For example, you could pass in **-propkey:propertyKeyValue**. Or you could scramble the key as follows on the command line: **encode_string propertyKeyValue**

which returns this value:

01343013550134901335013330134801335013500134601331013490134901353013450134801334.

You can then use that value on the command line instead: -

propkey:01343013550134901335013330134801335013500134601331013490134901353013450134801334

Design Notes

This section contains:

- ["Supported API Actions"](#)
- ["Filenames"](#)
- ["Sample json"](#)
- ["Adding, Editing, Deleting JsonPrimitive Properties"](#)
- ["Adding and Editing JsonObject Properties"](#)
- ["Deleting JsonObject Properties"](#)
- ["Updating vs. Restarting Data Servers"](#)
- ["High Availability"](#)

Supported API Actions

The REST API supports several actions. To get the list of actions, go to the sample application as described above and execute the following on the command line:

node main.js -action=getActions

To get the description of a single action:

node main.js -action=getActions -name=actionName

You can also execute any action that start with get in a browser as follows (where **host**, **port** and **rtvadmin** are the values you specified in the sample application):

http://host:port/rtvadmin/api?action=getActions&name=actionName

Filenames

When using the REST API to import initial properties into the Configuration Application, the filename must be **project**. This is because the Configuration Application reads and writes the project properties files and all RTView projects automatically read them. When using the REST API to automatically update properties that are not included in the Configuration application, the filename must match the **-properties** argument in the **rtvservers.dat** file and must NOT be **project**.

Sample json

You can optionally use the Configuration Application to generate sample json to get you started. Properties saved from the Configuration Application are in **projects\rtview-server\project.properties.json**.

Adding, Editing, Deleting JsonPrimitive Properties

All primitive json values must be enclosed in quotes, even boolean and number values. The top level solution package element must be included.

The following example uses **solmon** properties to illustrate. See the generating sample json properties for details about generating properties for your solution package.

Example:

```
{
  "solmon": {
    "expiretime": "10000"
  }
}
```

Adding and Editing JsonObject Properties

Solution package connections are arrays of JsonObjects. The property descriptions indicate which fields in the json object are required and which are indexes. When adding a new connection (or other JsonObject), you must include all of the required and index fields or the property will not be saved. The top level solution package element must be included.

The following example uses **solmon** properties to illustrate. See the generating sample json properties for details about generating properties for your solution package.

Example:

```
{
  "solmon": {
    "conn": [{
      "iscloudvmr": "true",
      "__name": "conn2",
      "url": "http://host2:8080/SEMP",
      "version": "7.4VMR",
      "vpnnamelist": "vpn1;vpn2"
    },
    {
      "iscloudvmr": "true",
      "__name": "conn3",
      "url": "http://host3:8080/SEMP"
    }
  ]
}
```

When adding connections to an existing file, you can either merge the new connections into the existing connection list or you can replace the whole list with the connections. This is controlled by the merge parameter. When merge is true, the indexes are used to control whether a new connection is added or an existing connection is modified.

Deleting JsonObject Properties

Solution package connections are arrays of JsonObjects. The property descriptions indicate which fields in the json object are indexes. When deleting a connection (or other JsonObject), only the index fields are required. The top level solution package element must be included.

The following example uses **solmon** properties to illustrate. See the generating sample json properties for details about generating properties for your solution package.

Example:

```
{
  "solmon": {
    "conn": [{
      "__name": "conn2"
    },
    {
      "__name": "conn3",
    }
  ]
}
```

Updating vs. Restarting Data Servers

All connection properties support updates. Once you have added, edited or deleted connections using the REST API, you can apply those changes with the `updatePropertiesOnServer` action. Restart is not required. Note that when connections are removed from your configuration, they are not immediately removed from the monitor. They stay in the caches (and display) but do not receive further updates. They will expire and be removed based on the settings in the DATA STORAGE tab of the Configuration Application. All non-connections properties are applied on restart, so they must be applied with the `restartServers` action. Restarting your servers will also cause any deleted connections to be immediately removed from the caches and displays.

High Availability

To edit properties for HA-configured servers, first follow the instructions in the **High Availability** section of this document to configure the `rtvadmin` servlet for High Availability.

High Availability

High Availability (HA) mitigates single point of failure within the Solace PubSub+ Monitor system 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.

This section contains the following:

- ["HA Architecture"](#)
- ["Requirements"](#)
- ["Configure HA"](#)
- ["Verify HA Setup"](#)

HA Architecture

Data Server HA

The primary and backup data servers connect to each other via socket. If the primary data server stops, then the backup server takes over. If the primary then comes back online, then the primary takes over again and the backup returns to standby mode. The data client connections will move between the two servers accordingly.

Display Server HA (Classic UI-RTView Manager Only)

In display server deployments, the primary display server and backup display server do not connect to each other. The rtvdisplay servlet is configured to connect first to the primary and, if that fails, it tries to connect to the backup. At any point, if the one it is connected to becomes unavailable, then it will try to connect to the other. You can configure whether to have the rtvdisplay server connect back to the primary server when it comes back online or stay connected to the backup server until it goes offline.

HTML UI HA (Solace PubSub+ Monitor UI)

The HTML UI client connects to the data server via an HA configured rtvquery servlet.

Historian HA

The primary and backup historian connect to each other via socket. If the primary historian stops, then the backup takes over. If the primary historian comes back online, then the primary takes over again and the backup returns to standby mode. Only the active historian writes to the database.

The historian is a data client of the data server and connects to it via a fault tolerant URL (socket only), which means that the data servers and historians can fail over separately or together.

Requirements

The following are minimum requirements for High Availability:

- Two host machines, one for the primary host and one for the backup host.
- Both hosts must be configured such that the RTView processes on each host can connect to each other via socket.
- Both hosts must be able to access:
 - the same data connections
 - the same historian database
 - the alert threshold database
- The RTView processes on both hosts must be able to run against identical properties files. In the case where drivers or other third party jars are located in different directories on the two hosts, create a directory in the same location in each host, copy the jar files into and reference that directory in your properties.
- Tomcat or other Application Server

Configure HA

To configure high availability:

1. On both the primary and backup hosts, define the following environment variables:
 - **PRIMARYHOST** - the IP Address or hostname of the host running the primary servers (for example, **set PRIMARYHOST=MyHost**).
 - **BACKUPHOST** - the IP Address or hostname of the host running the backup servers (for example, **set BACKUPHOST=OtherHost**).
2. Install Solace PubSub+ Monitor on both the primary and backup host.
3. Configure your Solace PubSub+ Monitor servlets to be HA and deploy them to your application server:
 - **cd projects\rtview-server**
 - In a text editor, open **update_wars (.bat or .sh)** and fill in the values for **HOST** and **HA_HOST** as described in the script.
 - Run the **update_wars(.sh or .bat)** script.
 - Copy the generated war files to the **webapps** directory of your application server.
4. Configure your RTView Manager servlets to be HA and deploy them to your application server:
 - **cd projects\rtview-manager**
 - In a text editor, open **update_wars (.bat or .sh)** and fill in the values for **HOST**, **HA_HOST**, **HA_DISPLAYHOST**, and **HA_FAILBACK** as described in the script.
 - Run the **update_wars (.sh or .bat)** script.
 - Copy the generated war files to the **webapps** directory of your application server.
5. To run high availability, you must run from the command line:

Windows:

- From the command line on the primary host, type **bin\start_servers -haprimary**.
- From the command line on the backup host, type **bin\start_servers -habackup**.

UNIX:

- From the command line on the primary host, type **bin/start_servers.sh -haprimary**.
- From the command line on the backup host, type **bin/start_servers.sh -habackup**.

Verify HA Setup

Verify failover and failback configurations by looking for the following in the log files:

- "Primary Data Server Log File"
- "Backup Data Server Log File"
- "Primary Historian Log File"
- "Backup Historian Log File"
- "Primary Display Server Log File"
- "Backup Display Server Log File"

Note: If the PRIMARYHOST and/or BACKUPHOST environment variable(s) is/are not set, you will get the following error in the log files and HA will be disabled:

```
ERROR: Disabling HA because the PRIMARYHOST and/or BACKUPHOST environment variable is not set.
```

Primary Data Server Log File

```
startup
[rtview] Starting as primary HA data server accessible via //primaryhostname:4178,//
backuphostname:4178
[rtview] DataServerHA: connected to backuphostname:4178
[rtview] DataServerHA: run as primary server, backuphostname:4178 has lower priority than
this server
[rtview] leaving standby mode
```

Backup Data Server Log File

```
startup
[rtview] Starting as backup HA data server accessible via //primaryhostname:4178,//
backuphostname:4178
[rtview] entering standby mode
after failover (primary data server exits)
[rtview] DataServerHA: error receiving message: java.net.SocketException: Connection
reset (primaryhostname:4178)
[rtview] DataServerHA: becoming primary server, lost connection to primary server
primaryhostname:4178
[rtview] leaving standby mode
after failback (primary data server comes back up)
[rtview] DataServerHA: resigning as primary server, got standby directive from other
server primaryhostname:4178
[rtview] connected to primaryhostname:4178
[rtview] entering standby mode
```


Primary Historian Log File

```
[rtview] Starting as primary HA historian paired with backup historian at
<backuphostname>:4122
[rtview] ServerGroup: status of member <backuphostname>:4122 : primary, priority= 1,
started=Wed Nov 14 12:56:01 PST 2018
[rtview] ServerGroup: primary server = local
[rtview] ServerGroup: becoming primary server
```

Backup Historian Log File

```
[rtview] Starting as backup HA historian paired with primary historian at
<primaryhostname>:4122
[rtview] ServerGroup: status of member <primaryhostname>:4122 : primary, priority= ,
started=Wed Nov 14 12:56:01 PST 2018
[rtview] ServerGroup: primary server = <primaryhostname>:4122
after failover (primary historian exits):
[rtview] error receiving message: java.io.EOFException (primaryhostname:4122 )
[rtview] ServerGroup: disconnected from primaryhostname:4122
[rtview] ServerGroup: primary server = local
after failback (primary historian starts back up):
[rtview] ServerGroup: status of member primaryhostname:4122 : primary, priority= 2,
started= Tue Nov 20 09:12:43 PST 2018
[rtview] ServerGroup: connected to primaryhostname:4122
[rtview] ServerGroup: primary server = primaryhostname:4122
```

Primary Display Server Log File

2018-11-19 14:08:09,366 INFO main - [rtview] Starting as primary HA display server paired with backup display server on <backuphostname>

Backup Display Server Log File

2018-11-19 14:08:09,366 INFO main - [rtview] Starting as backup HA display server paired with primary display server on <primaryhostname>

Solace Event Module

You can monitor Solace PubSub+ message broker Syslog events using the Solace Event Module application. To use the Solace Event Module you ["Configure PubSub+ Message Broker & Syslog Destination"](#) to send Syslog messages, set the Solace Event Module to run and listen for the Syslog messages the broker sends, and ["Configure RTView"](#) to run and receive data from the Solace Event Module.

This section contains:

- ["Introduction"](#)
- ["Configure PubSub+ Message Broker & Syslog Destination"](#)
- ["Configure RTView"](#)
- ["Solace Event Module Properties"](#)
- ["Solace Event Module Log Properties File"](#)

Introduction

To monitor the PubSub+ message brokers using Syslog events, you can use the Solace Event Module application. The Solace Event Module listens for Syslog event messages that are generated by Solace PubSub+ message brokers and filters them to generate Syslog event-based alerts when required.

The Syslog event messages generated in the PubSub+ message brokers are forwarded to the SolEventModuleEvents cache from the RTView Solace Data Server. The events that trigger alerts are stored in the SolEventModuleAlerts cache from the RTView Solace Data Server.

The Solace Event Module is licensed separately from the Solace PubSub+ Monitor. And therefore, it is not executed by default and requires additional configuration.

To start the Solace Event Module you add a command line argument to the **rtvservers.dat** file, configure the severity level of the Syslog event-based alerts and the Syslog destination address and port.

Configure PubSub+ Message Broker & Syslog Destination

To use the Solace Event Module, you configure your Solace brokers to send Syslog messages for either the **system.log** or **event.log** and also configure a receiver for those messages that can be accessed by your Solace data server.

For the configuration of PubSub+ message brokers with Syslog, please refer to:

<https://docs.solace.com/System-and-Software-Maintenance/Monitoring-Events-Using-Syslog.htm>

Configure RTView

This section contains:

- ["Edit rtvservers.dat"](#)
- ["Syslog Receiver Connections"](#)

Edit rtvservers.dat

Do the following to configure RTView to run and receive data from the Solace Event Module.

1. ["Open the RTView Configuration Application"](#), add a connection to each broker for which you will be receiving Syslog events through the Solace Event Module and save these changes.
2. Stop RTView by executing the **RTViewSolaceMonitor\bin\stop_servers.bat/sh** script.
3. Open the **RTViewSolaceMonitor\projects\rtvservers.dat** file, locate the following line:

```
solmon      ./rtview-server dataserver    rundata -propfilter:receiver
```


and add **-soleventmodule** to the end of it. For example:

```
solmon      ./rtview-server dataserver    rundata -propfilter:receiver -soleventmodule
```
4. Add a connection for one or more Syslog receivers in the **RTViewSolaceMonitor\rtvapm\solmon\soleventmodule\config\soleventmodule**

.properties file using the **TCP_EVENT_LISTNERS** property. The other properties can optionally be configured, but the **TCP_EVENT_LISTENERS** property is required.

For details about other properties in the **soleventmodule.properties** file, see ["Solace Event Module Properties"](#).

5. ["Start the Solace PubSub+ Monitor"](#), then look at the **soleventmodule.log** file, located in the same logs directory that contains your data server log, and verify that the Solace Event Module is running.

Solace Event Module Properties

The

RTViewSolaceMonitor\rtvapm\solmon\soleventmodule\config\soleventmodule.properties file is used to configure connections and filtering for Syslog events and alerts that are forwarded to RTView.

This section contains:

- ["Syslog Receiver Connections"](#)
- ["Alert Filter"](#)
- ["Event Filter"](#)
- ["Alert Duration"](#)

Syslog Receiver Connections

This section describes how to define the connection to your Syslog event receivers.

TCP_EVENT_LISTENERS – Connection to one or more Syslog event receivers. The format is name|bindAddress|logFile where name is a unique string used to identify this receiver, bindAddress is the ipaddress:port for Syslog messages and logFile is either **event.log** or **system.log** to match the settings on your broker. Use a comma to separate multiple connections.

Examples:

TCP_EVENT_LISTENERS=SystemSyslogListener|172.30.1.12:10601|system.log

Alert Filter

This section describes how to filter out which Syslog events generate alerts that are forwarded to RTView and stored in the SolEventModuleAlerts cache. The filter is not required, but if used, you must specify all three properties. By default, this filter limits alerts to System alerts with a priority of WARNING or higher. Several example filters for different scenarios are included in **solevelmodule.properties**.

ALERT_FILTER_LIST_PRIORITY – Specify WHITELIST or BLACKLIST to define which takes priority for Syslog messages that match both filters.

ALERT_WHITELIST - Comma separated list of XPath expressions returning a Boolean using the Alert Fields listed at the top of the soleventmodule.properties file.

ALERT_BLACKLIST- Comma separated list of XPath expressions returning a Boolean using the Alert Fields listed at the top of the soleventmodule.properties file.

Examples:

ALERT_FILTER_LIST_PRIORITY = WHITELIST

```

ALERT_WHITELIST = \
    eventName='SYSTEM_NAB_ZIP_ENGINE_RESTART_INITIATED',\
    eventName='SYSTEM_AD_MSG_SPOOL_CHG',\
    eventName='SYSTEM_ROUTING_CSPF_CONN_DOWN'
ALERT_BLACKLIST = \
    severityCode>=5,\
    scope='CLIENT',\
    scope='VPN'

```

Event Filter

This section describes how to filter out which Syslog events are forwarded to RTView and stored in the SolEventModuleEvents cache. The filter is not required, but if used, you must specify all three properties. By default, this filter limits events to System events. Several example filters for different scenarios are included in **soleventmodule.properties**.

EVENTWRITER_FILTER_LIST_PRIORITY - Specify WHITELIST or BLACKLIST to define which takes priority for Syslog messages that match both filters.

EVENTWRITER_WHITELIST - Comma separated list of XPath expressions returning a Boolean using the Alert Fields listed at the top of the soleventmodule.properties file.

EVENTWRITER_BLACKLIST - Comma separated list of XPath expressions returning a Boolean using the Alert Fields listed at the top of the soleventmodule.properties file.

Examples:

By default, this filter limits events to System events. Several example filters for different scenarios are included in **soleventmodule.properties**.

Alert Duration

This section describes how to define the amount of time to wait after a clearable event is received for the corresponding clear event before executing the alert. This does not apply to non-clearable alerts which are executed as soon as the corresponding event is received.

ALERT_DURATION = The number of seconds to wait after receiving a clearable event for the corresponding clear event before executing the alert.

For example:

```
ALERT_DURATION = 30
```

Solace Event Module Log Properties File

You can adjust the logging for the solace event module by modifying **RTViewSolaceMonitor/rtvapm/solmon/soleventmodule/config/log4j2.properties**.

This section contains:

- [“RTView Solace Event Module Caches and Alerts”](#)
- [“The SolEventModuleAlerts Cache”](#)

RTView Solace Event Module Caches and Alerts

The Syslog events from the Solace Event Module are stored in the SolEventModuleEvents cache and displayed in the **Solace PubSub+ Monitor/Syslog Events** display. See the [“Solace Event Module Log Properties File”](#) and the [“Event Filter”](#) section for information about how to filter events that are sent to this cache.

This cache keeps history and can optionally be stored to the history database by the Historian. You can adjust the history settings in the RTView Configuration Application using the following fields in the **Solace>DATA-STORAGE** tab:

Size>History Rows – sets the maximum number of rows to keep in memory for this cache

Duration>Expire Time For Solace Event Module Events – the time (in seconds) between updates to expire rows in this cache

Duration>Delete Time For Solace Event Module Events – the time (in seconds) between updates to delete rows in this cache

History Storage>Syslog Events – toggle to true to have the Historian store this cache to the History database

The SolEventModuleAlerts Cache

The Solace Event Module generates alerts based on incoming Syslog events. The definitions of which Syslog events generate which alerts were provided by Solace. Events and alerts are scoped to SYSTEM, VPN and CLIENT. Some alerts are clearable. In this case, a syslog message generates an alert and another syslog message clears the alert.

Other alerts are not clearable. In this case, a syslog message generates the alert, but there is no corresponding syslog message to clear it. In this case, the alert automatically clears in RTView after 24 hours.

The

RTViewSolaceMonitor\rtvapm\solmon\soleventmodule\config\events\event_details.json file lists all events that generate alerts. The

RTViewSolaceMonitor\solmon\soleventmodule\config\events\event_correlation.json file lists the raising and clearing events for all clearable alerts. These files must not be modified, but used for reference only.

Alert events from the Solace Event Module are stored in the SolEventModuleAlerts cache. See the [“Solace Event Module Log Properties File”](#) and the [“Alert Filter”](#) section for information about how to filter alerts that are sent to this cache.

This cache is not visible in displays, nor does it store history. It is used solely to generate the three alerts described below.

Alert events are deleted from this cache within 2 minutes of the alert being cleared. These alert events are cleared in 2 ways:

- Clearable alerts are cleared when the clearing event is received by the Solace Event Module.
- Non-clearable alerts are cleared after 24 hours. This time can be adjusted in the Configuration Application under **Solace>DATA-COLLECTION>Solace Event Module Alerts>Clear Time**. The value is in seconds.

The following RTView alerts are generated from the SolEventModuleAlerts cache:

SolEventModuleBrokerAlert – This alert is generated for rows in the SolEventModuleAlerts where Scope=SYSTEM. In Enterprise Monitor, this alert is mapped to the SOLACE-MSGROUTER CType.

SolEventModuleVpnAlert - This alert is generated for rows in the SolEventModuleAlerts where Scope=VPN. In Enterprise Monitor, this alert is mapped to the SOLACE-VPN CType.

SolEventModuleClientAlert - This alert is generated for rows in the SolEventModuleAlerts where Scope=CLIENT. In Enterprise Monitor, this alert is mapped to the SOLACE-CLIENT CType.

Obtain SEMP Version

Skip this step if your Solace software broker message brokers are using Solace PubSub+ version 8.7+ and Solace Appliance version 8.3+. This step is required if your Solace PubSub+ message brokers are using software versions prior to Solace PubSub+ version 8.7+ and Solace Appliance version 8.3+.

Note: It is recommended to not include a SEMP version string in commands, and only include one if a known deprecated behavior is needed from a particular SEMP schema.

In order to properly request monitored data, the Monitor requires the exact SEMP version on your message brokers. These instructions describe how to use SolAdmin to determine the SEMP version for each of your Solace message brokers or PubSub+ software. You will need this information when you connect your message brokers and edit connection properties.

Note: These instructions are for SolAdmin on Windows. For Linux, only the path to the log file changes.

1. Navigate to the SolAdmin installation folder. For example, **C:\Program Files (x86)\SolAdmin**.
2. Change directory (**cd**) to the **bin** directory and open the **log4j.properties** file in a text editor.
3. Change the logging level to **DEBUG** and provide the full path to the logging file (for example, **C:\Logs**) while retaining all other settings. The edited properties are as follows:
 # full path to the location where you want the log file to be stored. In this example C:\Logs
 log4j.appender.A1.File=**C:\Logs\soladmin.log**
 # Set the logging category to DEBUG
 log4j.category.com.solacesystems=**DEBUG**, A1
4. Save the **log4j.properties** file.
5. Start SolAdmin and add your message brokers or PubSub+ software as managed instances.
6. Open the **soladmin.log** file and locate the semp-version tag in SEMP requests. The SEMP version that will be used by the Monitor replaces underscores (_) with dots (.). For example, if the SEMP request in the SolAdmin log file is **7_2VMR**, you use **7.2VMR** for the **\$solSempVersion** substitution of the Monitor connection property.

Return to ["Quick Start"](#).

CHAPTER 5 Configure Alert Notification

This section describes how to configure alerts to execute an automated action (such as sending an email alert). To setup alert notification you select the event you want to notify on and then select the action to execute.

You set alerts to execute notifications based on the following events:

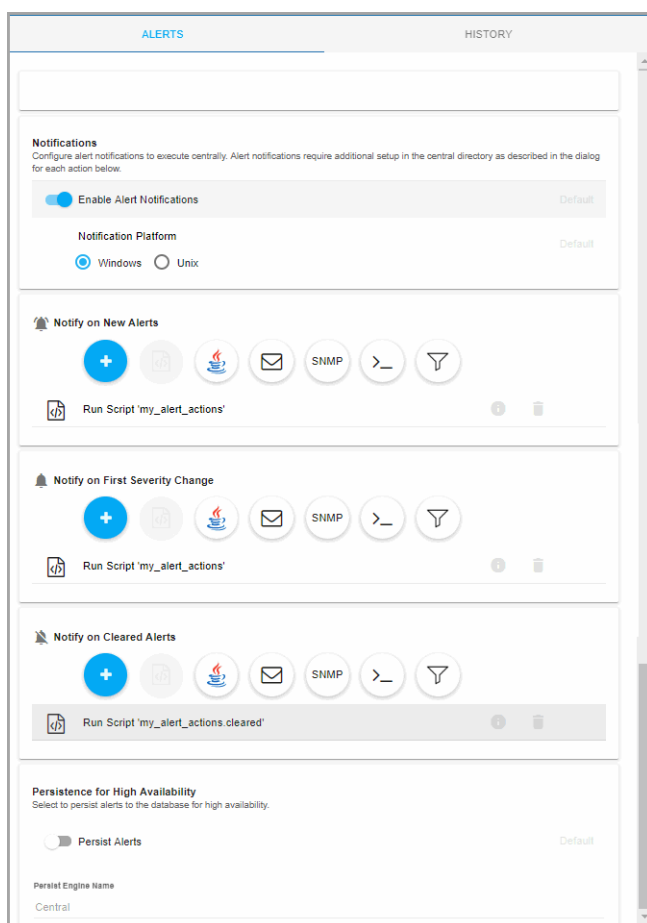
- when a new alert is created
- the first time the **Severity** level on an alert changes
- when an alert is cleared
- periodically renotify unacknowledged alerts


By default, a **.bat** script is executed for new alerts and on the first severity change for an alert. 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). 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 #####
```

To configure Alert Notification:

1. Open the RTView Configuration Application, select **Alerts** (in the navigation tree) and then the **Alerts** tab.



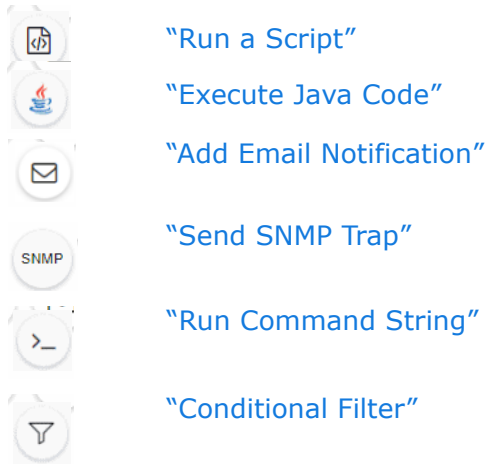
2. Toggle on **Enable Alert Notifications** and select the **Notification Platform** type (**Windows or Unix**).
3. Select an alert event that you want to notify on by clicking  next to the option.

Alert Event Options

- **Notify on New Alerts:** A notification is executed every time a new alert is created.
- **Notify on First Severity Change:** A notification is executed the first time the **Severity** changes for each alert.
- **Notify on Cleared Alerts:** A notification is executed every time an alert is cleared.
- **Periodically Renotify on Unacknowledged Alerts:** Enter the **Renotification Interval** (number of seconds). A notification is executed for each unacknowledged alert per the interval you specify here. If the Renotification Interval is greater than **0** and no actions are defined, the **New Alerts** action will be used for renotifications.

4. Select the alert action(s) you want to execute.

Alert Action Options



You can choose multiple actions.

5. Click **SAVE** to close the dialog and **SAVE** (in title bar) to save your changes.
6. Some alert notification actions require additional setup as described in the dialog for each action. See the descriptions of each action below for details on the dialogs and additional setup for each action.
7. Click **RESTART SERVERS** to apply changes.

Run a Script

This alert notification action executes the following script in the **projects/rtview-server** directory:

- **my_alert_actions.bat/sh** – New and First Severity Change
- **my_alert_actions.cleared.bat/sh** – Cleared
- **my_alert_actions.renotify.bat/sh** – Periodically Renotify

This action can only be added once per notification type. In addition to selecting this action in the Configuration Application, you must also modify the appropriate script to execute the actions for your notification. This script has access to the following fields from the alert: **Alert Name**, **Alert Index**, **ID**, **Alert Text** and **Severity**.

Return to ["Alert Event Options"](#).

Execute Java Code

This alert notification action allows you to implement your alert notification actions using Java code. It executes the **my_alert_notification.\$domainName.\$alertNotifyType.\$alertNotifyCol** command in your Custom Command Handler and passes the row from the alert table that corresponds to the alert.

This action can only be added once per notification type. In addition to selecting this action the Configuration Application you must also modify the custom command handler to execute the actions for your notification. A sample custom command handler is included under **projects/custom**. It prints the alert notification to the console. You will modify this command handler to implement your own notification actions.

Make the following entries:

- **Custom Command Handler Class Name:** Enter the fully qualified name of the Custom Command Handler class. This defaults to the sample Custom Command Handler in the **projects/custom** directory.
- **Custom Command Handler Jar:** Enter the path and name of the jar containing the Custom Command Handler class. The path may be absolute or relative to the location of data server. This defaults to the sample Custom Command Handler in the **projects/custom** directory.

Note that if you can only have one custom command handler per Data Server, so changing these settings for one notification event will change them for the rest of the notification events.

Customizing the Custom Command Handler

The source for the Custom Command handler is provided in the **RtvApmCommandHandler.java** file, located in the **RTViewEnterpriseMonitor\projects\custom\src\com\sl\rtvapm\custom** 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_all.bat** or **make_all.sh**) in **projects\custom\src** directory.

Return to ["Alert Event Options"](#).

Add Email Notification

This alert notification action sends an email. This action can be added multiple times per notification type. No additional setup is required beyond filling in the **Add Email Notification** dialog in the Configuration Application.

Make the following entries:

- **SMTP Host:** The SMTP host address. This is required. Consult your administrator.
- **SMTP Port:** The SMTP port number. This is required. Consult your administrator.
- **From:** The email address to which to send the email. This is required.
- **To:** The email address to which to send the email. This is required and may contain multiple entries.
- **Subject:** The subject for the email. This is required. You can include the value from any column in the alert table in your subject. Click the **Show More** link at the bottom of the dialog to see the alert column values you can use in the **Subject**.
- **Body:** The body of the email. This is optional. Click the **Show More** link at the bottom of the dialog to see the alert column values you can use in the **Subject**.
- **User:** The user name for the account from which you are sending the email. This is optional.
- **Password:** The password for the account from which you are sending the email. This is optional.

Return to ["Alert Event Options"](#).

Send SNMP Trap

This alert notification action sends an SNMP Trap as described in **rtvapi/rtview/lib/SL-RTVIEW-MIB.txt**. This action can be added multiple times per notification type. No additional setup is required beyond filling in the **Add SNMP Trap Notification** dialog in the Configuration Application

Make the following entries:

- **Trap Type:** Select the SNMP version of the trap. This is required.
- **Destination Address:** The system name or IP address of the receiving system. This is required.
- **Destination Port:** The UDP port on the receiving system. This is required.
- **Community Name:** (This field is visible when **Trap Type v2/v3** is selected.) The SNMP v2 Community Name string. This is required.

Return to ["Alert Event Options"](#).

Run Command String

This alert notification action executes a specified command. This action can be added multiple times per notification type. Make the following entry:

Command String: Enter the command string for any command supported by RTView Classic. To enter a command string, you must know the correct syntax for the command. Contact Technical Support for assistance on syntax. You can include the value from any column in the alert table using the syntax in the Show More link at the bottom of the dialog.

Return to ["Alert Event Options"](#).

Conditional Filter

This alert notification action alert allows you to execute different actions for different alerts based on information in the alert. For example, you can configure EMS alerts to send emails to your EMS team and Solace alerts to send emails to your Solace team. This action can be added multiple times per notification type.

To create a condition, make the following entries:

- **Alert Field:** Select an alert field: **Alert Name**, **Alert Index**, **Category**, **CI Name**, **Owner**, **Package**, **Primary Service** or **Severity**. This is required. Note that **CI Name** and **Primary Service** fields are for RTViewCentral only.
- **Operator:** Select one - **EQUALS**, **DOES NOT EQUAL**, **STARTS WITH**, **ENDS WITH** or **CONTAINS**. This is required.
- **Value:** Enter the value to which to compare the Alert Field. Cannot contain wildcard characters. This is required.
- **Action(s):** Select one or more actions to execute when this condition is met - ["Run a Script"](#), ["Execute Java Code"](#), ["Send SNMP Trap"](#), ["Add Email Notification"](#), ["Run Command String"](#).

Return to ["Alert Event Options"](#).

CHAPTER 6 Using the Monitor

The Solace PubSub+ Monitor is an advanced messaging platform that allows customer applications to efficiently exchange messages over dedicated VPNs. The Solace PubSub+ Monitor provides pre-configured alerts and dashboards to monitor current status and manage history for the Solace broker. The Solace PubSub+ Monitor can help operators avoid or detect many problems relating to configuration, topology, and performance. This section describes Monitor features, graphs and functionality as well as Monitor displays.

This section contains:

- [“Login to Solace PubSub+ Monitor”](#): Describes how to access the Solace PubSub+ Monitor and [“User Permissions”](#).
- [“Overview”](#): Describes the Monitor [“Graphic Elements”](#) and functionality.
- [“Displays”](#): Describes Monitor displays under the [“Displays”](#) tab.
- [“Alerts”](#): Describes Monitor displays under the [“Alerts”](#) tab.
- [“Admin”](#): Describes Monitor displays under the [“Admin”](#) tab.
- [“RTView Manager”](#): Describes how to [“Login to RTView Manager”](#) and the displays used for monitoring your monitoring system.

Login to Solace PubSub+ Monitor

To access Solace PubSub+ Monitor to monitor your Solace components, browse to:

http://IPAddress:8068/rtview-solmon if you are executing your browser on a different host than where the monitor is running.

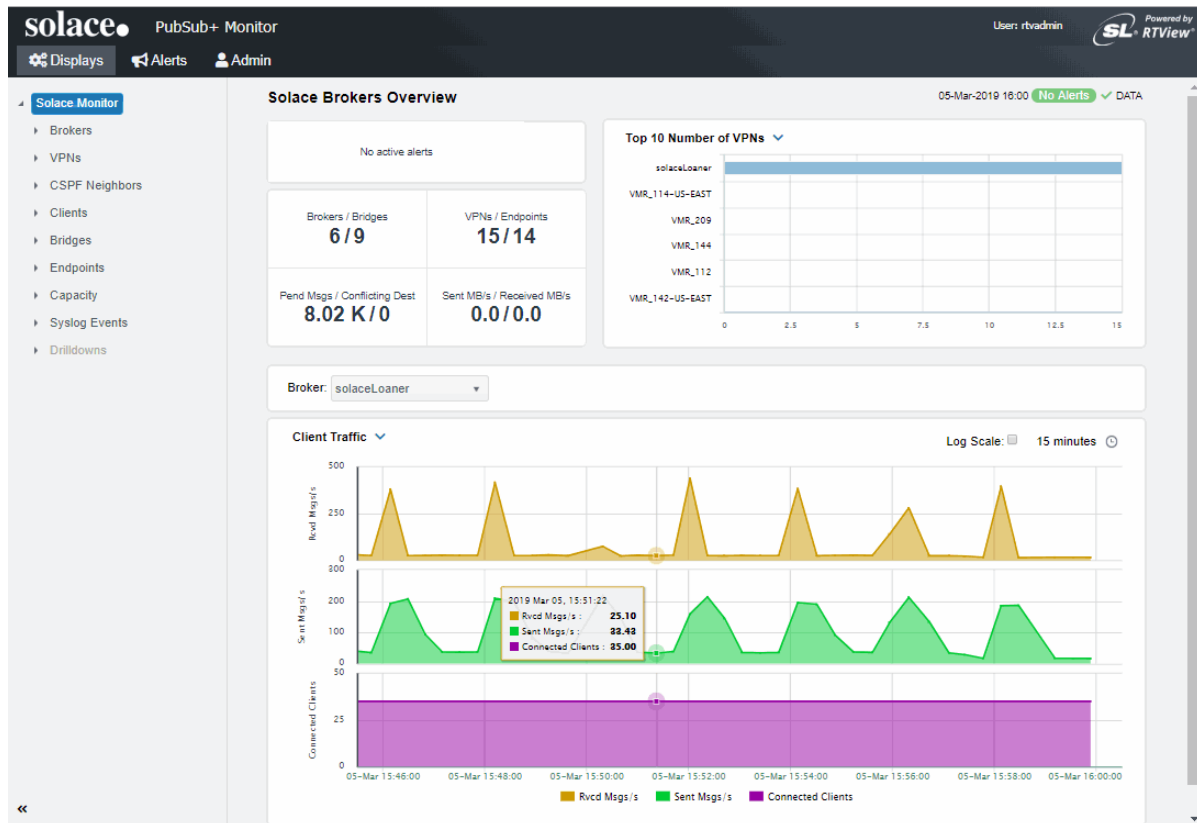
http://localhost:8068/rtview-solmon if you are executing your browser in the same host where the monitor is running.

User Permissions

There are three types of users:

- **End-users** use `rtvuser/rtvuser` as their username/password which permits read-only access to all displays except for **Admin** tab displays.
- **End-user with alert management privileges** use `rtvalertmgr/rtvalertmgr` as their username/password which permits the same access as the end-user. Additionally, you can use the **Own**, **Ack**, **Unack** and **Comment** functions in the **Alerts Table**.
- **Administrators** use `rtvadmin/rtvadmin` as their username/password which permits read-only access to all displays as well as **Admin** tab displays. You can also enable and administer alerts, view cache contents and use the **Own**, **Ack**, **Unack** and **Comment** functions in the **Alerts Table**.

The Solace PubSub+ Monitor Displays home page opens, which provides a health summary of all your Solace brokers (see the following figure).



On larger screens the page contains a horizontal menu bar with three tabs:

- **Displays** contains the screens for PubSub+ performance data which you select from the navigation tree in the left panel.
- **Alerts** is used for viewing and managing alerts.
- **Admin** is used for administering alerts and viewing cache contents directly. This tab is only accessible to users with administrator privileges (user accounts with the rtvadmin role). You can hide the navigation tree by clicking << (on the lower left).

Navigation through the displays is recorded in the browser history and you can use the browser's back and next buttons to traverse that history. You can hide the navigation tree in the **Displays** and **Admin** tabs by clicking << (on the lower left).

On smaller screens, the horizontal menu bar is replaced by a vertical menu whose visibility is toggled by clicking the menu icon in the upper right corner of the page.

Once a user is logged in, that user remains logged in until the browser window is closed. Closing just the browser tab that contains the user interface does not log out the user, the browser itself must be closed.

See "Displays" for details about displays for Solace PubSub+.

Overview

This section describes the general operation of the Solace PubSub+ Monitor, the user interface as well as “Graphic Elements” such as “Heatmaps”, “Tables”, “Trend Graphs” and “Icons and Buttons”.

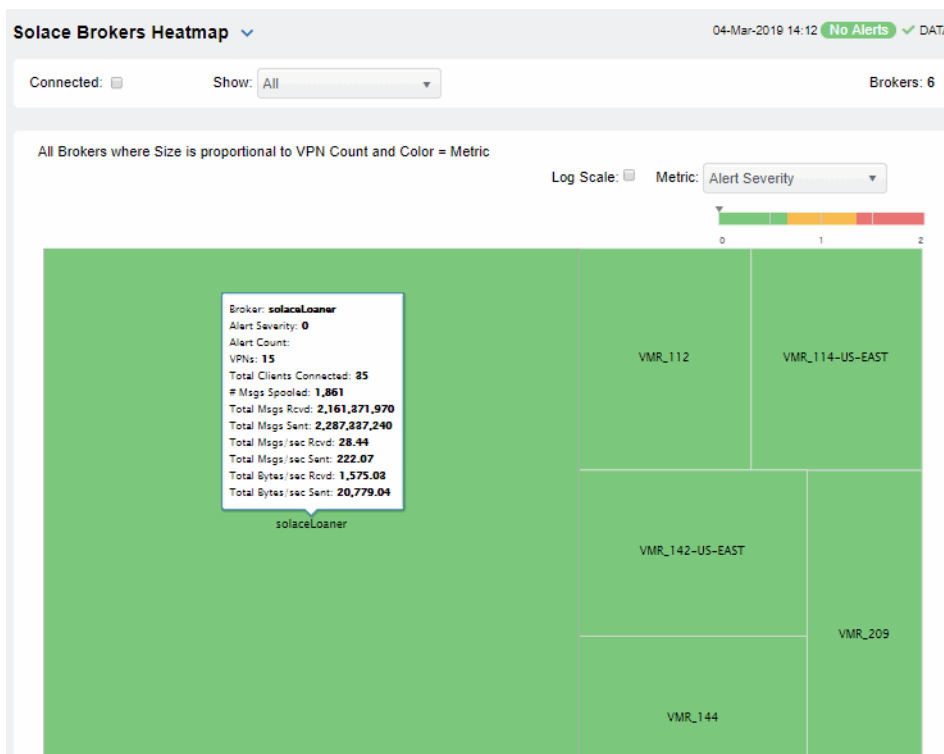
Graphic Elements


This section describes the graphic objects that are used in displays and their behavior:

- “Heatmaps”
- “Tables”
- “Trend Graphs”
- “Icons and Buttons”

Heatmaps

Heatmaps organize your Solace PubSub+ resources (brokers, VPNs, Clients, Bridges, Endpoints and so forth) 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 resources in the rectangle; a larger size is a larger value. Heatmaps include drop-down menus by which to filter data. The filtering options vary among heatmaps (the **Solace Brokers Heatmap** is shown below).



For example, the **Solace Brokers Heatmap** contains a **Metric** drop-down menu with options such as **Alert Severity** and **Alert Count**. 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 a connection. A red rectangle in the heatmap indicates that one or more resources associated with that connection currently has an alert in an alarm state. The yellow rectangles in the heatmap indicate that one or more resources associated with that host 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.

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

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 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.

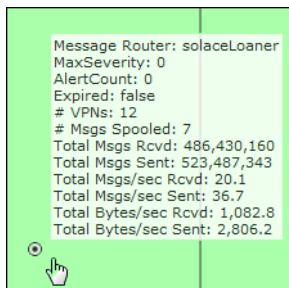
● Metrics that have not exceeded either specified threshold have an **Alert Severity** value of **0**. For a given rectangle, this indicates that no metrics have reached their warning or alert thresholds.

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.

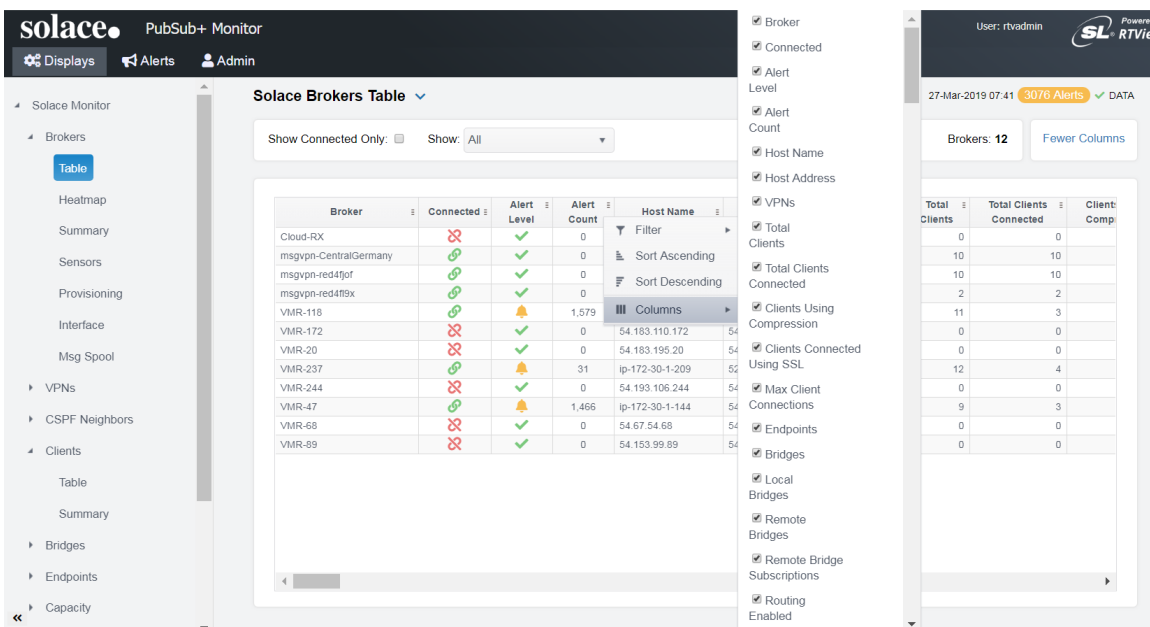
Mouse-over

The mouse-over functionality provides additional detailed data in a tool-tip 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.



Tables

Solace PubSub+ Monitor tables contain the same data that is shown in the heatmap in the same View, and additional data not included in the heatmap. For example, the **Solace Brokers Table** display (shown below) shows the same data as the **Solace Brokers Heatmap** display. The following figure also illustrates the "Column Visibility" which allows you to select the columns you want in the table.



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"
- "Column Visibility"
- "Column Filtering"
- "Column Reordering"
- "Row Paging"

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-sensitive.

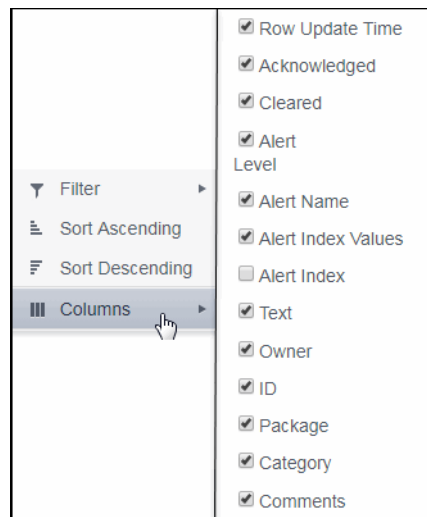
To sort multiple columns, click on the column header for each column you want to sort. The sorting is performed in the order that the column headers were clicked. Multiple column sorting is a very useful feature, but can also cause confusion if you intend to sort on a single column, but forget to "unsort" 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.



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

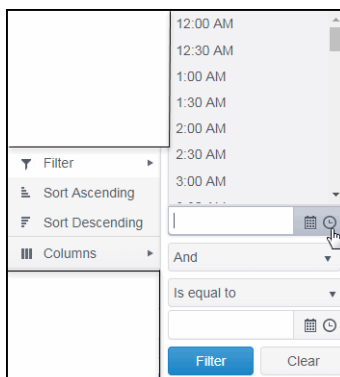
Column Filtering

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.

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 drop-down 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.
- **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 drop-down list:



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.

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.

Row Paging

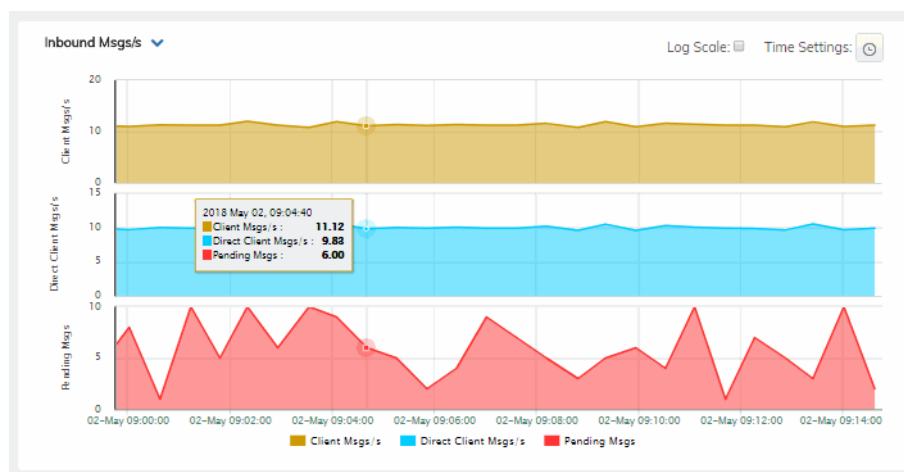
If the data table contains more than one 200 rows, page controls appear at the bottom of the grid.

217	emreference	sl.rtvew.sql.sqldb	sl.rtvew.sub	\$rtvConfigDataServer.CONFIG_SERVER
229	emreference	sl.rtvew.properties.queryTimeOut	10	
216	emreference	sl.rtvew.sql.sqldb	ALERTDEFS - - - __none - - -	

Page 1 of 2 1 - 200 of 235 items

Trend Graphs

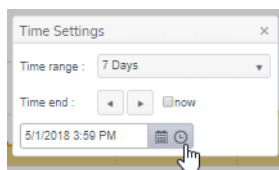
Solace PubSub+ Monitor trend graphs enable you to view and compare various important metrics over time, such as server memory and virtual memory utilization.



Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings** and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar ..
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows .

Restore settings to current time by selecting **now** .

Mouse-over

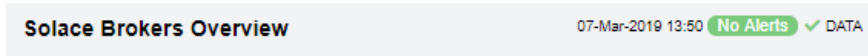
The mouse-over functionality provides additional detailed data in an over imposed pop-up window when you mouse-over trend graphs.

Log Scale

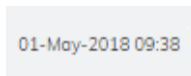
The Log Scale option enables visualization on a logarithmic scale. This option should be used when the range in your data is very broad. For example, if you have data that ranges from the tens to the thousands, then data in the range of tens will be neglected visually if you do not check this option.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

Icons and Buttons

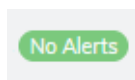
Displays share the same title bar as shown below.



The following describes GUI icons and behavior in the title bar.



The current local date and time. If the time is incorrect, this might indicate that the monitor stopped running. When the date and time is correct and the **Data** indicator is green, this is a strong indication that the platform is receiving current and valid data.

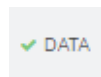
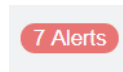


ALERTS: Opens the **Alerts Table**, shows the total number of alerts associated with items currently in the display as well as the maximum alert severity of these, where:

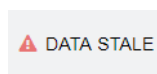
- Green indicates that no metrics have exceeded their alert thresholds.

- Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

- Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.



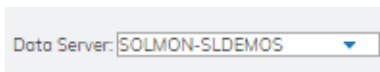
DATA: The data source is currently connected. When the date and time is correct and the **DATA** indicator is green, this is a strong indication that the platform is receiving current and valid data.



DATA STALE: The data source is currently disconnected. There has been no response from the Data Server for 31+ seconds.

Log Scale

Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.



Drop-down menus filter the item/s you want to view. Options differ among displays.

Displays

The Solace PubSub+ Monitor organizes displays under the following Views:

- **"Brokers"**: The displays in this View present broker-level metrics, which reflect configuration settings, total throughput, current status, errors, and value-added calculations that summarize metrics across all of the VPNs.
- **"CSPF Neighbors"**: The displays in this View present a topology and metrics of your brokers, PubSub+ and servers as well as and their configuration settings.
- **"VPNs"**: The displays in this View present VPN-level metrics.
- **"Clients"**: The displays in this View present metrics for all clients of the broker. These views can be filtered to limit the displays to clients for a single VPN.
- **"Bridges"**: The displays in this View present a topology and metrics of your bridges and VPNs. These views can be filtered to limit the displays to bridges for a single VPN.
- **"Endpoints"**: The displays in this View present metrics for topics and queues on the broker, which can be filtered to limit the displays to topics and queues for a single VPN.
- **"Capacity"**: The displays in this View present current metrics, alert count and severity at the broker level.
- **"Syslog Events"**: View details about Syslog events.
- **"Drill Down Displays"**: These displays are accessed via other displays.

Brokers

These displays provide detailed metrics for brokers and their connected brokers. Displays in this View are:

- **"Brokers Overview"**: Health snapshot of top 10 most utilized VPNs, trend graphs trace key performance metrics such as messages sent/received and connected clients.
- **"Brokers Heatmap"**: A color-coded heatmap view of the current status of each of your brokers.
- **"Brokers Table"**: A tabular view of all available broker performance data.
- **"Broker Summary"**: Current and historical metrics for a single broker.
- **"Broker Sensors"**: Provides value and status information for all sensors on a single broker or for all sensors for all brokers.
- **"Broker Provisioning"**: Provides broker details such as host, chassis, redundancy, memory, and fabric data for a particular broker.
- **"Broker Interface"**: Provides detailed data and status information for the interfaces associated with one or all broker(s). You can also view current and historical amounts of incoming and outgoing packets and bytes for a selected interface in a trend graph.
- **"Brokers Message Spool"**: Provides status and usage data for message spools associated with one or all broker(s).

Brokers Overview

The **Brokers Overview** is the top-level display, which provides a good starting point for immediately getting the status of all your brokers on your Data Server.

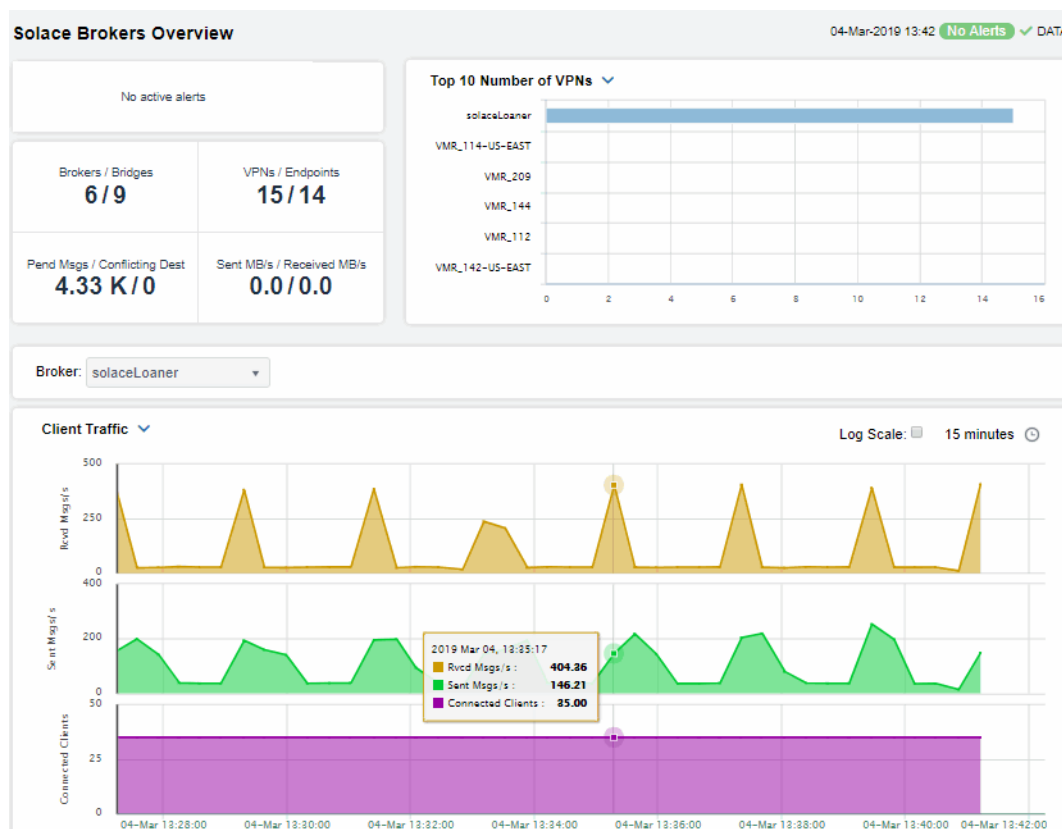
Select a data server, broker and metric from the drop-down menus. Consider keeping this display open for monitoring at a glance. You can easily view the current data for that Data Server including:

- **Top 10** most utilized **VPNs / Endpoints**, **Clients Connected** and **Spooled Messages**.
- The number of **Brokers / Bridges**.
- The number of **Pending Messages / Conflicting Destinations**.
- The number of **Sent MBs per second / Received MB per second**.

You can hover over each area in the upper half of the Overview to see more detail. You can also drill down to see even more detail by clicking on each metric card in the Overview.

The bottom half of the display provides a performance trend graph for queries for a selected broker. The trend graph traces the performance metric you select: **Client Traffic**, **Spool Msgs** or **Memory**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.



CRITICAL

Total number of current critical alerts for brokers on the selected data server.

WARNING

Total number of current critical alerts for brokers on the selected data server.


Brokers/Bridges



Total number of brokers/bridges on the selected data server.

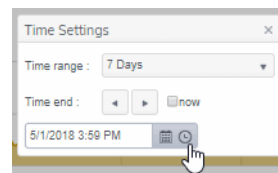
VPNs/Endpoints	Total number of VPNs/endpoints on the selected data server.
Pending Msgs/Conflicting Dest	Total number of pending messages/conflicting destinations on the selected data server.
Sent MBs/Received MBs	Total number of MBs sent/MBs received on the selected data server.
Top 10 Number of VPNs	Ten brokers with the greatest number of connected VPNs.
Broker	<p>Select a broker to trace performance metrics in the trend graph, then choose a metric:</p> <p>Client Traffic: Traces the number of messages received per second, messages sent per second and the number of connected clients.</p> <p>Spool Msgs: Traces the number of spooled messages and spool size (in megabytes.)</p>



Time Settings




By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .


Restore settings to current time by selecting **now** .

Log Scale

Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.




Brokers Heatmap

View the current status and alerts in a heatmap of all brokers or a subset of brokers. Use the **Show** dropdown menu to choose **All** brokers, **Expired** brokers, **Unexpired** brokers or only brokers in **Standby** mode

Each rectangle in the heatmap is a single broker where the rectangle size represents the number of connections. The rectangle color maps where the current value is on its color gradient  bar. Select a broker from the drop-down menu. For example, by default, **Alert Severity** is shown:

Alert Severity

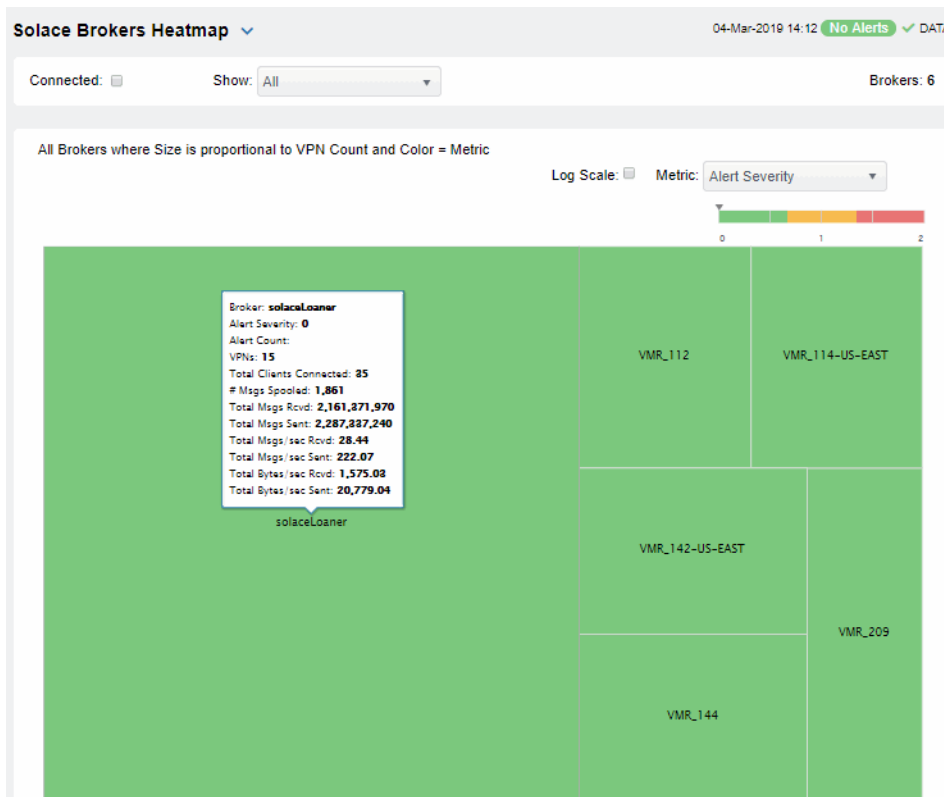
The current alert severity. Values range from **0** - **2**, as indicated in the color gradient  bar, where **2** is the highest Alert Severity:













-  Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.
-  Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.
-  Green indicates that no metrics have exceeded their alert thresholds.

Click a rectangle to drill down to details about a broker in the ["Broker Summary"](#) display.

Mouse over a rectangle to see additional details. Use the check-box ☒ to include / exclude **Connected** brokers and enable **Log Scale** mode.

Consider keeping this display open for monitoring your Solace brokers at a glance.



Alert Severity	<p>The current alert severity. Values range from 0 - 2, as indicated in the color gradient  bar, where 2 is the highest Alert Severity:</p> <ul style="list-style-type: none">  Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.  Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.  Green indicates that no metrics have exceeded their alert thresholds.
Alert Count	<p>The total number of critical and warning alerts. The color gradient  bar, populated by the current heatmap, shows 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 average alert count.</p>
# Msgs Spooled	<p>The total number of spooled messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolMsgRouterPendingMsgsHigh. The middle value in the gradient bar indicates the middle value of the range.</p>
Total Msgs Rcvd	<p>The total number of received messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of total messages received in the heatmap. The middle value in the gradient bar indicates the average count.</p>
Total Msgs Sent	<p>The total number of sent messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of total messages sent in the heatmap. The middle value in the gradient bar indicates the average count.</p>
Total Msgs/ sec Rcvd	<p>The number of messages received per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolMsgRouterInboundMsgRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p>
Total Msgs/ sec Sent	<p>The total number of messages sent per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolMsgRouterOutboundMsgRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p>
Total Bytes/ sec Rcvd	<p>The total number of bytes received per second in the broker. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolMsgRouterInboundByteRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p>
Total Bytes/ sec Sent	<p>The total number of bytes sent per second in the broker. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolMsgRouterOutboundByteRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p>

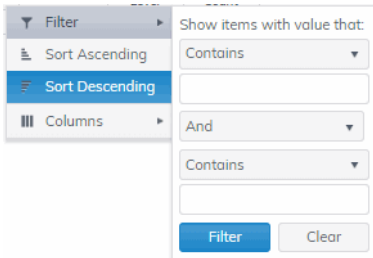
Brokers Table

Investigate detailed utilization metrics for all brokers. This display provides a tabular view of the performance metrics shown in the "[Brokers Heatmap](#)" (alert level, alert count, and so forth), but with additional metrics such as **Egress** and **Ingress** values.

Use the **Show:** dropdown menu to view the current status of **All** brokers, **Expired** brokers, **Unexpired** brokers or just brokers in **Standby** mode.

Each row in the table contains data for a particular broker. Click a column header to sort column data in ascending or descending order. Double-click on a table row to drill down to the “[Broker Summary](#)” display and view metrics for that particular broker. Toggle between the commonly accessed Table and Heatmap displays by clicking the drop down list on the display title.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



The dialog box is titled 'Filter' and contains the following elements:

- A dropdown menu labeled 'Filter' with a right-pointing arrow.
- A section titled 'Show items with value that:' containing two dropdown menus, both set to 'Contains', and two empty text input fields.
- A section titled 'Sort' with three options: 'Sort Ascending', 'Sort Descending' (highlighted in blue), and 'Columns' (with a right-pointing arrow).
- A section titled 'And' with a dropdown menu set to 'And'.
- Buttons for 'Filter' (in blue) and 'Clear'.

Brokers: (in the upper right portion) is the number of brokers in the display.

Use the check-boxes ☒ to include / exclude **Connected** and **Expired** brokers.

Export to Excel by right-clicking a column heading.

Toggle between **More Columns** / **Fewer Columns**

[More Columns](#)

Solace Brokers Table 11-Jul-2019 11:57 1 Alert DATA

Show Connected Only: ☐ Show Expired: All Show Standby: All Brokers: 23

[Fewer Columns](#)


Broker	Connected	Alert Level	Alert Count	Host Name	Host Address	VPNs	Total Clients	Total Clien Connecti
Sol_Mule_Azure			0	solhcdemo0.francecen		0	0	
Sol_Mule_GCP			0	35.234.63.231	35.234.63.231	0	0	
Sol_Mule_SC			0	vmr-mr8v6yiwiawhm	34.227.76.129	1	0	
solDemo			0	solace	192.168.220.5	15	40	
Team-2-Ali-cloud			0	47.74.235.254	47.74.235.254	0	0	
Team-2-AWS			0	ec2-35-177-122-45.e	35.177.122.45	0	0	
Team-2-Azure			0	demotion-team20.sov		0	0	
Team-2-Google-cloud			0	35.187.64.112	35.187.64.112	0	0	
Team-2-lab-appliance			0	london.solace.com	217.196.247.77	1	0	
Team-2-Solace-cloud			0	mr-xy4p45t57.messag		0	0	
Team-4-PCF-demo			0	shared-vmr-1.system	35.201.65.176	0	0	
Team-6-Alibaba			0	47.74.235.254	47.74.235.254	0	0	
Team-6-AnalyticsVMR			0	54.179.163.185	54.179.163.185	0	0	
Team-6-OnPremVMR-backup			0	54.191.207.187	54.191.207.187	0	0	
Team-6-OnPremVMR-primar			0	34.214.62.219	34.214.62.219	0	0	
Team-6-PCF			0	shared-vmr-1.system	35.201.65.176	0	0	
Team-6-SolaceCloud			0	mr-91b692durd.mess		0	0	
VMR-112			0	ip-172-30-1-112	172.30.1.112	2	11	


Column Values**Broker**

The name of the broker.

Connected

The broker state:


 Red indicates that the broker is NOT connected.


 Green indicates that the broker is connected.

Alert Severity

The current alert severity:

 Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.

 Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

 Green indicates that no metrics have exceeded their alert thresholds.

Alert Count

The total number of alerts.

Expired

When checked, performance data about the sensor has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapm_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the sensor. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired
after this number of seconds
#
collector.sl.rtvapm.sub=$solRowExpirationTime:45
collector.sl.rtvapm.sub=$solRowExpirationTimeForDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

Host Name

The name of the host.

Platform

The name of the platform.

OS Version

The version of the operating system.

Up Time

The amount of time that the broker has been up and running.

VPNs

The total number of VPNs configured on the broker.

Total Clients

The total number of clients associated with the broker.

Total Clients Connected

The total number of clients that are currently connected to the broker.

Clients Using Compression

The number of clients who send/receive compressed messages.

Clients Using SSL

The number of clients using SSL for encrypted communications.

Max Client Connections	The maximum number of available client connections.
Endpoints	The total number of Endpoints configured on the broker.
Bridges	The total number of bridges configured on the broker.
Local Bridges	The total number of local bridges configured on the broker.
Remote Bridges	The total number of remote bridges configured on the broker.
Remote Bridge Subscriptions	The total number of remote bridge subscriptions configured on the broker.
Routing Enabled	This check box is checked when the broker is configured to route messages to other brokers.
Routing Interface	The name of the interface configured to support message routing.
Total # Conflicting Destinations	The total number conflicting destinations.
Pending Messages	The number of pending messages on the broker.
Total Client Msgs Rcvd	The total number of client messages received on the broker.
Total Client Msgs Sent	The total number of client messages sent by the broker.
Total Client Msgs Rcvd/sec	The total number of client messages received per second by the broker.
Total Client Msgs Sent/ sec	The total number of client messages sent by the broker.
Total Client Bytes Rcvd	The total number of client bytes received by the broker.
Total Client Bytes Sent	The total number of client bytes sent by the broker.
Total Client Bytes Rcvd/sec	The total number of client bytes received per second by the broker.
Total Client Bytes Sent/sec	The total number of client bytes sent per second by the broker.
Total Client Direct Msgs Rcvd	The total number of direct client messages received by the broker.
Total Client Direct Msgs Sent	The total number of direct client messages sent from the broker.
Total Client Direct Msgs Rcvd/sec	The total number of direct client messages received per second by the broker.
Total Client Direct Msgs Sent/sec	The total number of direct client messages sent per second by the broker.
Total Client Direct Bytes Rcvd	The total number of direct client bytes received by the broker.
Total Client Direct Bytes Sent	The total number of direct client bytes sent by the broker.
Total Client Direct Bytes Rcvd/sec	The total number of direct client bytes received per second by the broker.

Total Client Direct Bytes Sent/sec	The total number of direct client bytes sent per second by the broker.
Total Client Non-Persistent Msgs Rcvd	The total number of non-persistent client messages received by the broker.
Total Client Non-Persistent Msgs Sent	The total number of non-persistent client messages sent by the broker.
Total Client Non-Persistent Msgs Rcvd/sec	The total number of non-persistent client messages received per second by the broker.
Total Client Non-Persistent Msgs Sent/ sec	The total number of non-persistent client messages sent per second by the broker.
Total Client Non-Persistent Bytes Rcvd	The total number of non-persistent client bytes received by the broker.
Total Client Non-Persistent Bytes Sent	The total number of non-persistent client bytes sent by the broker.
Total Client Non-Persistent Bytes Rcvd/sec	The total number of non-persistent client bytes received per second by the broker.
Total Client Non-Persistent Bytes Sent/sec	The total number of non-persistent client bytes sent per second by the broker.
Total Client Persistent Msgs Rcvd	The total number of persistent client messages received by the broker.
Total Client Persistent Msgs Sent	The total number of persistent client messages sent by the broker.
Total Client Persistent Msgs Rcvd/sec	The total number of persistent client messages received per second by the broker.
Total Client Persistent Msgs Sent/ sec	The total number of persistent client messages sent per second by the broker.
Total Client Persistent Bytes Rcvd	The total number of persistent client bytes received by the broker.
Total Client Persistent Bytes Sent	The total number of persistent client bytes sent by the broker.
Total Client Persistent Bytes Rcvd/sec	The total number of persistent client bytes received per second by the broker.
Total Client Persistent Bytes Sent/ sec	The total number of persistent client bytes sent per second by the broker.
Avg Egress Bytes/min	The average number of outgoing bytes per minute.
Avg Egress Compressed Msgs/min	The average number of outgoing compressed messages per minute.
Avg Egress Msgs/min	The average number of outgoing messages per minute.
Avg Egress SSL Msgs/min	The average number of outgoing messages per minute being sent via SSL-encrypted connections.
Avg Egress Uncompressed Msgs/min	The average number of uncompressed outgoing messages per minute.
Avg Ingress Bytes/min	The average number of incoming bytes per minute.
Avg Ingress Compressed Msgs/min	The average number of compressed incoming message per minute.
Avg Ingress Msgs/min	The average number of incoming messages per minute.

Average Ingress SSL Msgs/min	The average number of incoming messages per minute being received via SSL-encrypted connections.
Avg Ingress Uncompressed Msgs/min	The average number of uncompressed messages per minute.
Current Egress Bytes/sec	The current number of outgoing bytes per second.
Current Egress Compressed Msgs/sec	The current number of outgoing compressed messages per second.
Current Egress Msgs/sec	The current number of outgoing messages per second.
Current Egress SSL Msgs/sec	The current number of outgoing messages per second sent via SSL-encrypted connections.
Current Egress Uncompressed Msgs/sec	The current number of outgoing uncompressed messages per second.
Current Ingress Bytes/sec	The current number of incoming bytes per second.
Current Ingress Compressed Msgs/sec	The current number of incoming compressed messages per second.
Current Ingress Msgs/sec	The current number of incoming messages per second.
Current Ingress SSL Msgs/sec	The current number of incoming messages per second received via SSL-encrypted connections.
Current Ingress Uncompressed Msgs/sec	The current number of incoming uncompressed messages per second.
Ingress Comp Ratio	The percentage of incoming messages that are compressed.
Egress Comp Ratio	The percentage of outgoing messages that are compressed.
Egress Compressed Bytes	The number of outgoing compressed bytes.
Egress SSL Bytes	The number of outgoing compressed bytes being sent via SSL-encrypted connections.
Egress Uncompressed Bytes	The number of outgoing uncompressed bytes.
Ingress Compressed Bytes	The number of incoming compressed bytes.
Ingress SSL Bytes	The number of incoming bytes via SSL-encrypted connections.
Ingress Uncompressed Bytes	The number of incoming uncompressed bytes.
Total Egress Discards	The total number of outgoing messages that have been discarded by the broker.
Total Egress Discards/sec	The total number of outgoing messages per second that have been discarded by the broker.
Total Ingress Discards	The total number of incoming messages that have been discarded by the broker.
Total Ingress Discards/sec	The total number of incoming messages per second that have been discarded by the broker.
Client Authorization Failures	The number of failed authorization attempts

Client Connect Failures (ACL)	The number of client connection failures caused because the client was not included in the defined access list.
Subscribe Topic Failures	The number of failed attempts at subscribing to topics.
TCP Fast Retrans Sent	The total number of messages that were retransmitted as a result of TCP Fast Retransmission (one or more messages in a sequence of messages that were not received by their intended party that were sent again).
Memory (KB)	The total available memory (in kilobytes) on the broker.
Memory Free (KB)	The total amount of available memory (in kilobytes) on the broker.
Memory Used (KB)	The total amount of memory used (in kilobytes) on the broker.
Memory Used %	The percentage of total available memory that is currently being used.
Swap (KB)	The total available swap (in kilobytes) on the broker.
Swap Free (KB)	The total amount of available swap (in kilobytes) on the broker.
Swap Used (KB)	The total amount of swap used (in kilobytes) on the broker.
Swap Used %	The percentage of total available swap that is currently being used.
Subscription Mem Total (KB)	The total amount of available memory (in kilobytes) that can be used by queue/topic subscriptions.
Subscription Mem Free (KB)	The current amount of available memory (in kilobytes) that can be used by queue/topic subscriptions.
Subscription Mem Used (KB)	The current amount of memory (in kilobytes) being used by queue/topic subscriptions.
Subscription Mem Used %	The percentage of available memory being used by queue/topic subscriptions.
Chassis Product Number	The product number of the chassis in which the broker is contained.
Chassis Revision	The revision number of the chassis.
Chassis Serial	The serial number of the chassis.
BIOS Version	The basic input/output system used by the chassis.
CPU-1	The name of the central processing unit (CPU 1) used by the broker.
CPU-2	The name of the central processing unit (CPU 2) used by the broker.
Operational Power Supplies	The number of available power supplies that are operational on the chassis.
Power Redundancy Config	The configuration used by the backup broker.
Max # Bridges	The maximum number of bridges allowed on the broker.

Max # Local Bridges	The maximum number of local bridges allowed on the broker.
Max # Remote Bridges	The maximum number of remote bridges allowed on the broker.
Max # Remote Bridge Subscriptions	The maximum number of remote bridge subscriptions allowed on the broker.
Redundancy Config Status	The status of the redundancy configuration.
Redundancy Status	The status of the redundant broker.
Redundancy Mode	Refer to Solace documentation for more information.
Auto-revert	Refer to Solace documentation for more information.
Mate Router Name	If redundancy is configured, this field lists the redundant broker name (mate broker name).
ADB Link Up	This check box is checked if a broker is set up to use guaranteed messaging and an Assured Delivery Blade (ADB) is set up and working correctly.
ADB Hello Up	Refer to Solace documentation for more information.
Pair Primary Status	The primary status of the broker and its redundant (failover) mate.
Pair Backup Status	Refer to Solace documentation for more information.
Expired	<p>When checked, performance data about the broker has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapm_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the broker. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvview.sub=\$solRowExpirationTime:45 collector.sl.rtvview.sub=\$solRowExpirationTimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Time Stamp	The date and time the row of data was last updated.

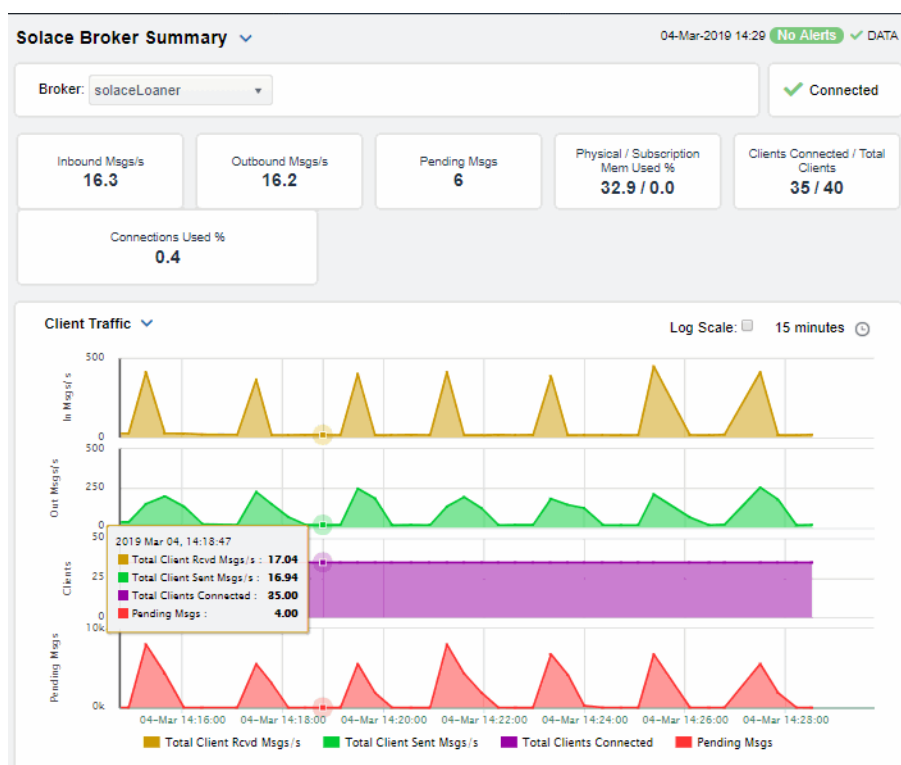
Broker Summary

View performance and processing details for a single broker, such as the total **Inbound / Outbound Messages per second**, **Pending Messages** and **Clients Connected / Total Clients**.

Choose a broker from the **Broker** drop-down menu to view its total number of connected clients, number of incoming messages, **Up Time**, and additional information. You can also view alert statuses and **Spool Status** data for the broker. You can hover over each area in the upper half of the to see more detail. You can also drill down to see even more detail by clicking on each metric card.

The bottom half of the display provides current and historical performance metrics for the selected broker. The trend graph traces the performance metric you select: **Client Traffic**, **Spool Msgs** or **Memory**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.



The connection status (connected/disconnected).



Inbound Msgs/s




The number of messages received per second.

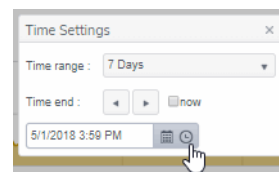
Outbound Msgs/s



The number of messages sent per second.


Pending Msgs/s

The number of pending messages.

Physical / Subscription Mem Used %	The total percentage of physical memory used / the total percentage of subscription memory used.
Clients Connected / Total Clients	The current number of clients connected / the total number of clients.
Connections Used %	The percentage of connections used.
Trend Graphs Traces the sum for the selected broker.	
Client Traffic	<ul style="list-style-type: none"> • In Msgs/s - Traces the total number of client messages received per second. • Out Msgs/s - Traces the total number of client messages sent per second. • Clients - Traces the total number of connected clients. • Pending Msgs - Traces the total number of pending messages.
Spool Msgs	<ul style="list-style-type: none"> • Pending Msgs - Traces the total number of pending spool messages. • Spool Usage MB - Traces the total amount of space used by spool messages, in megabytes.
Memory	<ul style="list-style-type: none"> • Memory Used % - Traces the percent of memory used.
Subscription Mem Used %	Traces the percent of memory used by subscriptions.
Log Scale	Select to enable a logarithmic scale. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.
Time Settings	<p>By default, the time range end point is the current time. To change the time range, click the Time Settings  and either:</p> <ul style="list-style-type: none"> • choose a Time range from 5 Minutes to 7 Days in the drop-down menu. • specify begin/end dates using the calendar . • specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Broker Sensors

This tabular display contains environmental sensor metrics for a selected broker. Use this display to find out the type, name, value, and status of the sensors.

Select a broker from the drop-down menu. Note that display does not show data for PubSub+ Software as it only applies to brokers.

Search by clicking the right side of a column heading **/Filter** to open the Search, Sort and Choose Columns dialog:

Solace Broker Environmental Sensors							04-Mar-2019 14:38 Alerts DATA
Broker: solaceLoaner							
Sensor Readings							
Type	Sensor Name	Value	Units	Status	Expired	Time Stamp	
Voltage	BB +1.5V	1.469	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +1.5V AUX	1.490	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +1.5V ESB	1.482	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +1.8V	1.803	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +12V AUX	12.090	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +3.3V	3.337	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +3.3V STB	3.337	volts	OK		04-Mar-2019 14:37:52	
Voltage	BB +5V	5.070	volts	OK		04-Mar-2019 14:37:52	
ThermalMargin	CPU1 Therm Margin	-87.000	degrees C			04-Mar-2019 14:37:52	
ThermalMargin	CPU2 Therm Margin	-59.000	degrees C			04-Mar-2019 14:37:52	
Temperature	Chassis Temp.	23.000	degrees C			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 1	7714	RPM			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 2	8057	RPM			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 3	7714	RPM			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 4	7543	RPM			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 5	7371	RPM			04-Mar-2019 14:37:52	
Fan speed	Chassis Fan 6	7288	RPM			04-Mar-2019 14:37:52	
Power system status	Power Redundancy	yes				04-Mar-2019 14:37:52	

Sensor Readings

Each row in the table is a different sensor on the broker.

Type	See vendor documentation for details.
Sensor Name	The name of the sensor.
Value	Lists the value of the sensor.
Units	Lists the unit of measure for the sensor.
Status	The current status of the sensor.

Expired

When checked, performance data about the sensor has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapm_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the sensor. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired after this number of seconds
#
collector.sl.rtvapm.sub=$solRowExpirationTime:45
collector.sl.rtvapm.sub=$solRowExpirationTimeForDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

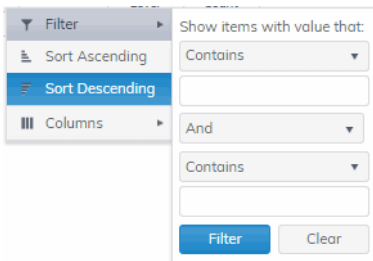
Time Stamp

The date and time the row of data was last updated.

Broker Provisioning

This display shows provisioning metrics for a single broker. Use this to see the host, platform, chassis, memory, redundancy and fabric data for a specific broker.

Select a broker from the drop-down menus. Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



Broker Provisioning 04-Mar-2019 14:39 No Alerts DATA

Broker: solaceLoaner

Host Name: **solace** CPU-1: Intel(R) Xeon(R) CPU E5450 @ 3.00GHz
 CPU-2: Intel(R) Xeon(R) CPU E5450 @ 3.00GHz Platform: Solace 3260
 Chassis Product Number: CHS-3260AC-01-B BIOS Version: S5000.86B.10.00.0094.101320081858
 Chassis Revision: 1.4 Chassis Serial: S009000226 Power Redundancy Config: 2+2

Total Memory (KB): 15,965,652 Memory Used (KB): 9,332,304 Memory Used %: 32.89
 Swap (KB): 2,007,992 Swap Used (KB): 0 Swap Used %: 0.0

Operational Power Supplies: 4 Mate Router Name: Redundancy Config Status: **Shutdown**
 Redundancy Status: **Down** Redundancy Mode: **N/A** Pair Primary Status: **Local Active**
 Pair Backup Status: **Shutdown** Auto Revert: **false** ADB Link To Mate Up: **false**
 ADB Hello To Mate Up: **false**

Last Update: 04-Mar-2019 14:39:28

Fabric

Product	Fw-Version	Card Type	Slot	Serial #
NAB-0801ET-01-A	6.2.0.496	Network Acceleration Blade	1/1	S003000276
		in use by slot 1/1	1/2	
TRB-000000-02-A		Topic Routing Blade	1/3	P004045787
HBA-0204FC-02-A		Host Bus Adapter Blade	1/4	LFC0848B99469
ADB-000000-01-A		Assured Delivery Blade	1/5	S003000844
		empty	2/1	
		empty	2/2	
		empty	2/3	

Host Name	The name of the host.
Platform	The platform on which the broker is running.
Chassis Product #	The product number of the chassis in which the broker is contained.
Chassis Revision #	The revision number of the chassis.
Chassis Serial #	The serial number of the chassis.
Power Configuration	The power configuration used by the chassis.
Operational Power Supplies	The number of available power supplies that are operational on the chassis.
CPU 1	The name of the central processing unit (CPU 1) used by the broker.
CPU 2	The name of the central processing unit (CPU 2) used by the broker.
BIOS	The basic input/output system used by the chassis.
Memory (KB)	
Physical	Lists the Total amount, the Free amount, the Used amount, and the Used % of physical memory.
Swap	Lists the Total amount, the Free amount, the Used amount, and the Used % of swap memory.
Redundancy	
These fields describe a fault tolerant pair of brokers.	

Mate Router Name	If redundancy is configured, this field lists the redundant broker name (mate broker name).
Configuration Status	The status of the configuration for the backup broker.
Redundancy Status	The status of the redundant broker.
Redundancy Mode	Refer to Solace documentation for more information.
Primary Status	The status of the primary broker.
Backup Status	Refer to Solace documentation for more information.
Auto-Revert	Refer to Solace documentation for more information.
ADB Link Up	This check box is checked if a broker is set up to use guaranteed messaging and an Assured Delivery Blade (ADB) is set up and working correctly.
ADB Hello Up	Refer to Solace documentation for more information.

Fabric

Slot	Displays the slot number on the network switch.
Card Type	The type of card connected to the particular slot.
Product	The product associated with the particular slot.
Serial #	The serial number of the product.
Fw-Version	The firmware version of the product.

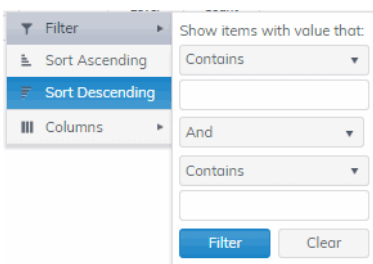
Broker Interface

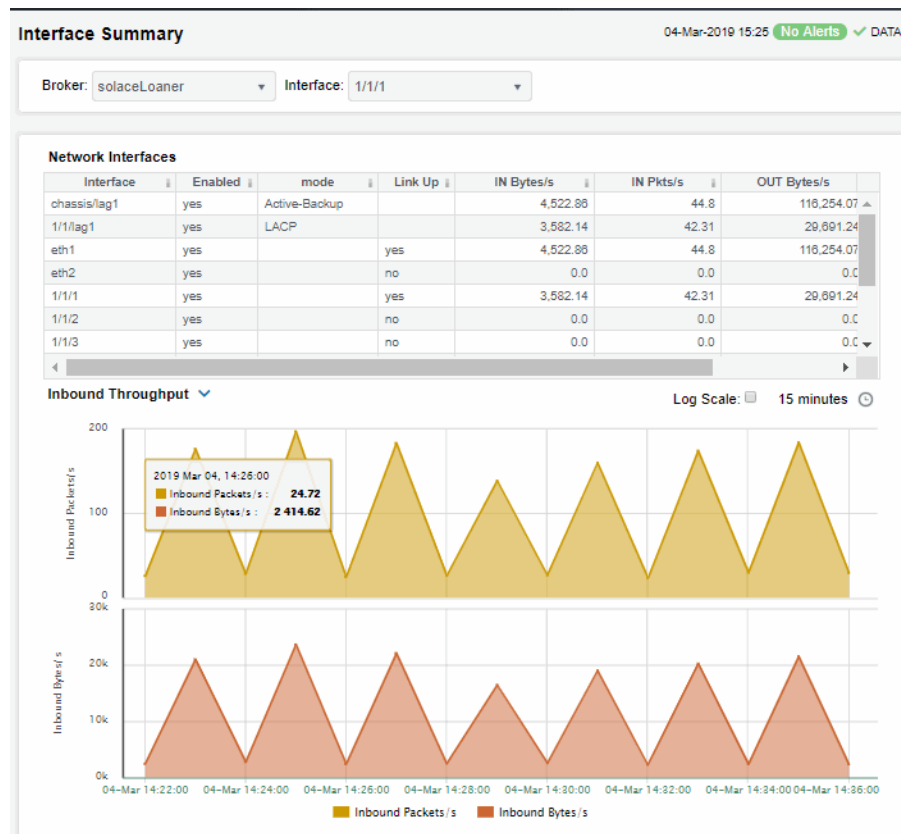
This display lists all network interfaces on a selected broker, and shows network interface status, in/out throughput per second and additional detailed metrics.

Select a broker and interface from the drop-down menus. Each row in the table is a different network interface. Double-click a row to trace its current and historical performance data in the trend graph (bytes in/out and packets in/out per second).

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



**Interface**

The name of the network interface.

Enabled

Displays whether or not the network interface is enabled.

mode

Describes how the interface is configured to support networking operations.

Link Up

Indicates whether the interface is electrically signaling on the transmission medium.

IN Bytes/sec

The number of bytes per second contained in incoming messages.

IN Pkts/sec

The number of incoming packets per second.

OUT Bytes/sec

The number of bytes per second contained in the outgoing messages.

OUT Pkts/sec

The number of outgoing packets per second.

Trend Graphs**Inbound Pkts/sec**

Traces the number of incoming packets per second.


Outbound Bytes/sec



Traces the number of bytes per second contained in the incoming messages.

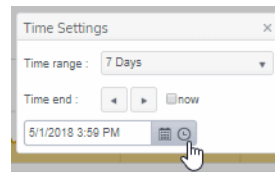
Log Scale



Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.


Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



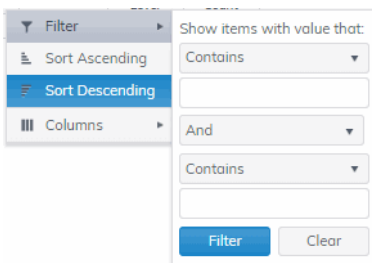
Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Brokers Message Spool

Select a broker from the drop-down menu or select **All**. This display shows operational status and spooling performance metrics (if spooling is enabled on the broker) for one or all brokers.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



Refer to Solace documentation for details about data in this display.

Solace Broker Spool Table 04-Mar-2019 15:35 No Alerts DATA

Broker: - All -

Count: 1

Pool MB	Msg Spool Used By Queue	Msg Spool Used By DTE	Message Count % Usage	Delivered UnAcked Msgs % Usage	Ingress Flow Count	It Flow
0.0	13	1	0.0	0.0	18	

Count	The number of brokers that are using spooling in the table.
Connection	The name of the broker.
Config Status	The status of the connection's configuration.
Operational Status	The operational status of the spool on the broker.
Current Spool Usage (MB)	The current amount of spool used in megabytes on the broker (calculated by summing spool used for each endpoint).
Msg Spool Used By Queue	The amount of spool used by the queue.
Msg Spool Used By DTE	The amount of spool used by DTE.
Message Count % Utilization	The percentage of total messages that use the message spool.
Delivered UnAcked Msgs % Utilization	The percentage of messages delivered via the spool that have not been acknowledged.
Ingress Flow Count	The current incoming flow count.
Ingress Flows Allowed	The total number of incoming flows allowed.
Queue/Topic Subscriptions Used	The number of queue/topic subscriptions used.
Max Queue/Topic Subscriptions	The maximum number of queue/topic subscriptions available.
Sequenced Topics Used	The number of sequenced topics used.
Max Sequenced Topics	The maximum number of sequenced topics available.
Spool Files Used	The number of spool files used.
Spool Files Available	The maximum number of spool files available.

Spool Files % Utilization	The percentage of available spool files that have been used.
Active Disk Partition % Usage	The percentage of available active disk partition that has been used.
Standby Disk Partition % Usage	The percentage of available standby disk partition that has been used.
Disk Usage Current (MB)	The current amount of spool disk usage in megabytes.
Disk Usage Max (MB)	The maximum amount of available spool disk usage in megabytes.
Transacted Sessions Used	The current number of transacted sessions.
Transacted Sessions Max	The maximum number of transacted sessions allowed.
Transacted Session Count % Utilization	The percentage of allowable transacted sessions that have been used.
Transacted Session Resource % Utilization	The percentage of allowable transacted session resources that have been used.
Expired	<p>When checked, performance data about the broker has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapm_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the broker. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvapm.sub=\$solRowExpiration Time:45 collector.sl.rtvapm.sub=\$solRowExpiration TimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>

CSPF Neighbors

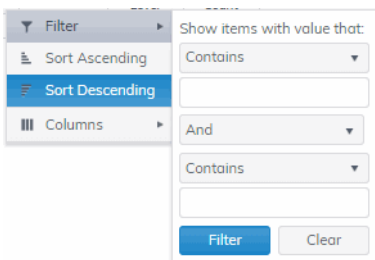
These displays provide detailed data and statuses for CSPF neighbor brokers. You can check trends on network traffic among CSPF neighbors. Note that these displays are empty if you are only monitoring Solace Cloud PubSub+ Brokers. Displays in this View are:

- **"Neighbors Table"**: View metrics for Solace neighbor brokers that use the Content Shortest Path First (CSPF) routing protocol to determine the shortest path in which to send messages from one broker to another broker in the Solace network.
- **"Neighbors Diagram"**: Topological view of CSPF Neighbors that shows broker connections and status of servers (Active/Inactive).
- **"Neighbors Summary"**: View detailed performance metrics for a single Solace neighbor broker that uses the CSPF routing protocol.

Neighbors Table

This tabular display shows Content Shortest Path First (CSPF) “neighbor” metrics for a broker. Select a broker from the drop-down menu. View metrics for a Solace neighbor broker that uses the CSPF routing protocol to determine the least cost path in which to send messages from one broker to another broker in the Solace network.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

Solace CSPF Neighbors Table 14-Aug-2018 16:16 No Alerts DATA ?

Msg Router: - All - More Columns

Show Ok Only: ☐ Show: All Neighbors: 4

Message Router	Name	Expired	State	Sent Msgs/s	Sent Bytes/s	Connections
VMR-112	ip-172-30-1-144		Ok	0.15	24.38	4
VMR-144	ip-172-30-1-112		Ok	0.2	0.0	4
VMR-144	ip-172-30-1-209		Ok	0.2	0.0	4
VMR-209	ip-172-30-1-144		Ok	0.17	29.41	4

Neighbor Count:

The number of neighbor brokers connected to the selected **Broker**.

Show:

OK

Select to *only* show neighbor brokers that are connected (**State** is **OK**). By default, this option is not selected (all neighbor brokers are shown).

Expired

Select to show *both* expired and non-expired neighbor brokers. By default, this option is not selected (only non-expired neighbor brokers are shown).

Table:

Each table row is a different neighbor broker.

Broker





The name of the neighbor broker.

State	The current state of the broker.
Up Time	The amount of time the broker has been up and running.
Connections	The number of connections.
Link Cost Actual	Refer to Solace documentation for more information.
Link Cost Configured	Refer to Solace documentation for more information.
Data Port	Refer to Solace documentation for more information.
Expired	<p>When checked, performance data about the broker has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapi_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the broker. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvapi.sub=\$solRowExpirationTime:45 collector.sl.rtvapi.sub=\$solRowExpirationTimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Timestamp	The date and time the row of data was last updated.

Neighbors Diagram

Use this topology display to monitor the health of network components: Solace brokers, VMRs and servers. Quickly identify broker neighbors, servers that are inactive and which resources their performance impacts. Drag and drop objects to arrange them on the screen (doing so does not logically impact the Solace brokers, PubSub+ Software and servers).

Each object is a Solace broker, VMR or server. Each are labeled with their name and color coded as follows:

-  Red indicates that the object has one or more alerts in a critical state.
-  Yellow indicates that the object has one or more alerts in a warning state.
-  Green indicates that there are no alerts on the object.
-  Gray indicates that the object is off-line.

Mouse-over objects to see their host IP address.

Right-click on VMR objects and select **Open VMR UI** to open the Solace VMR login web page.

Save: Saves the arrangement of the objects.

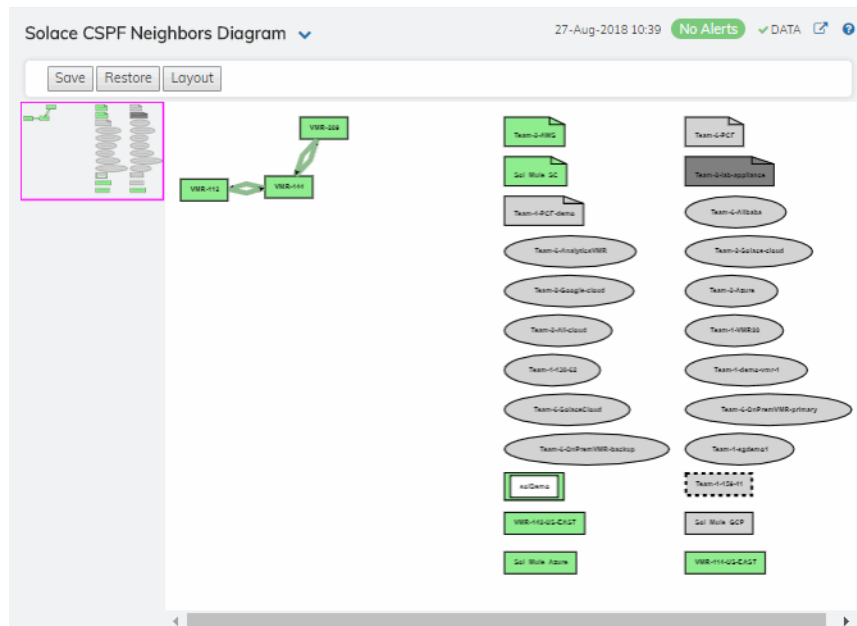
Restore: Returns objects to their previous positions.

Layout: Toggles between two types of layouts. One layout positions objects to the right so you might scroll in that direction to see them. The other layout pulls the objects close together to the left, vertically and in hierarchical order.

Look at the miniature view in (upper left) to see all objects in either layout. Zoom in on an area in the topology by clicking it in the miniature view.

Drill down to investigate in the ["Neighbors Table"](#).

To monitor network bridges and VPNs, see the ["Bridges - Diagram"](#).



Neighbors Summary

View neighbor broker current configuration details and message throughput rates.

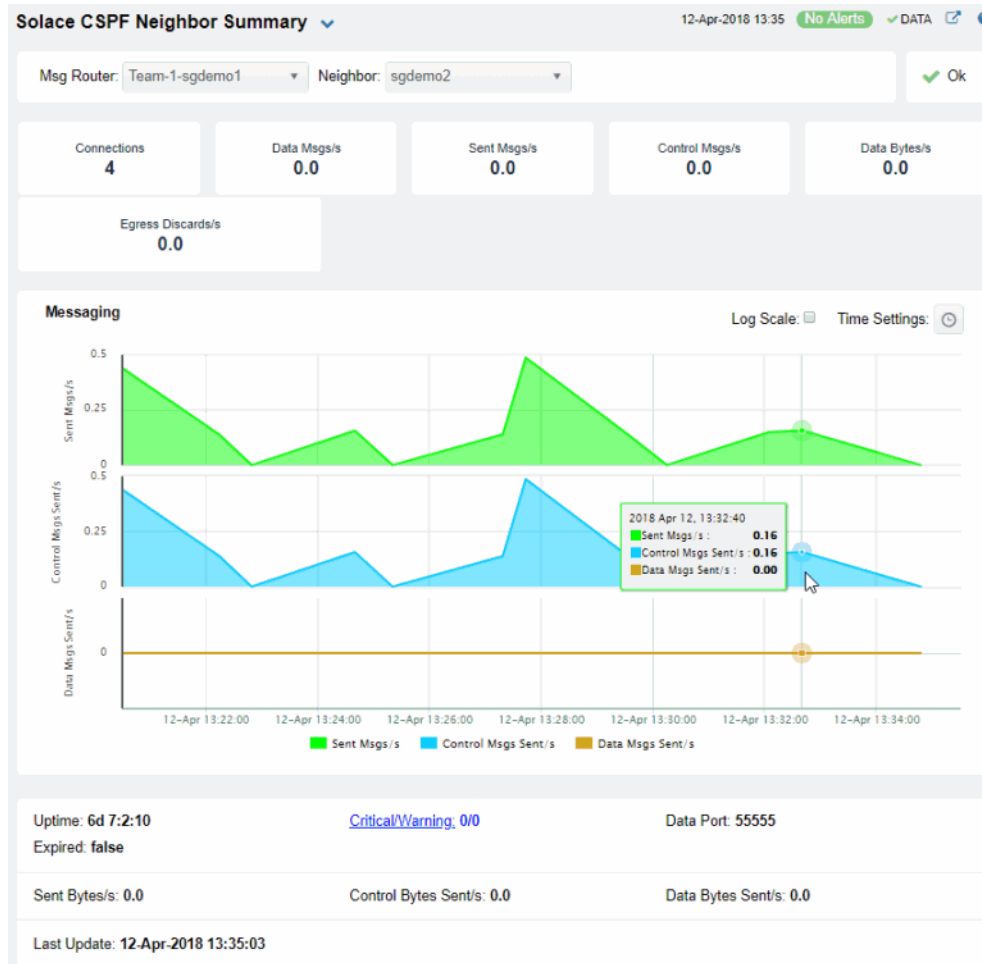
Select a broker and a neighbor broker from the drop down menus. Check message throughput rates to the neighbor broker, as well as neighbor **Up Time, State, Data Port**, number of connections and link costs.

You can hover over the metric cards to see more performance metrics and also drill down to see even more detail by clicking on them.

The bottom half of the display provides current and historical performance metrics for the selected broker. The trend graph traces the performance metric you select: **Message Flow** or **Throughput**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

The trend graph traces the current and historical message throughput (**Data**, **Control**, **Discards** and **Total**).



Neighbor: Select the neighbor broker for which you want to show data in the display.

Connections The current number of connections.

Data Msgs/s Refer to Solace documentation for more information.

Sent Msgs/s Refer to Solace documentation for more information.

Control Msgs/s Refer to Solace documentation for more information.

Data Bytes/s Refer to Solace documentation for more information.




Egress Discards/s The total number of discarded messages sent from the selected **Broker** to the selected **Neighbor** broker since the broker was last started.

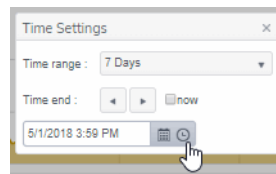
Trend Graphs



Traces the rates of messages sent from the selected **Broker** to the selected **Neighbor** broker.


Sent Msgs/s Refer to Solace documentation for more information.

Control Msgs/s Refer to Solace documentation for more information.

- Discards/s** Traces the number of discarded messages sent, per second, from the selected **Broker** to the selected **Neighbor** broker.
- Log Scale** Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.
- Time Settings** By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:
- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
 - specify begin/end dates using the calendar .
 - specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

VPNs

You can view data for all VPNs configured on a specific broker in heatmap, table, or grid formats, or you can view data for a single VPN. Displays in this View are:

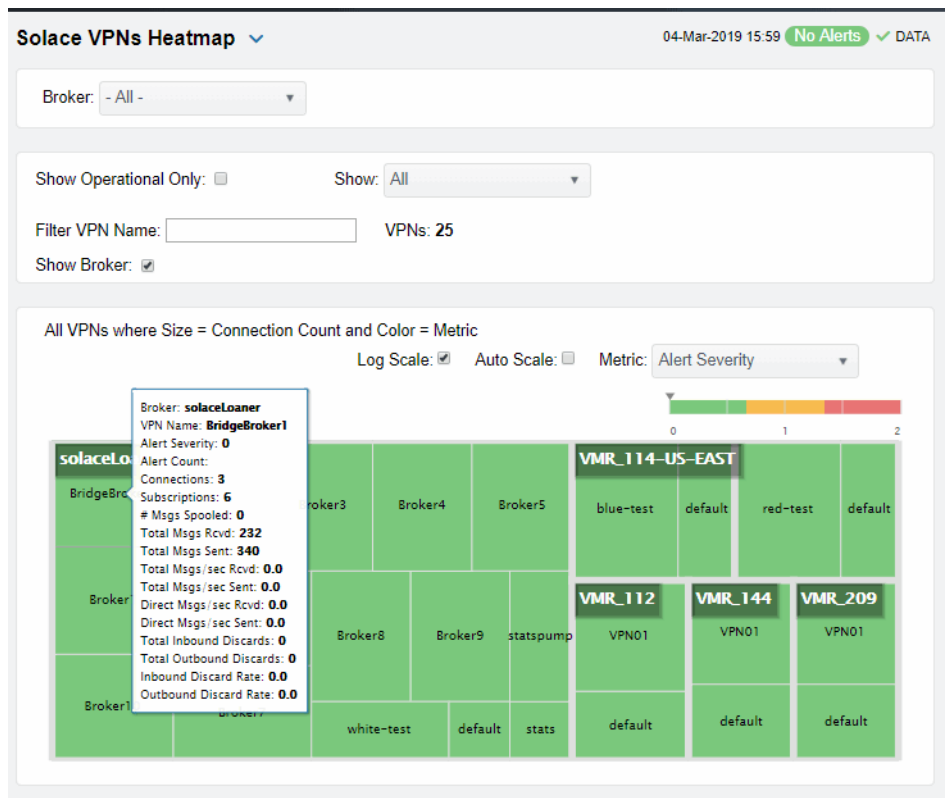
- [“VPNs Heatmap” on page 91](#): A color-coded heatmap view of the current status of all VPNs configured on a specific broker.
- [“VPNs Table” on page 95](#): A tabular view of all available data for all VPNs configured on a specific broker.
- [“VPNs Summary” on page 99](#): Current and historical metrics for a single VPN.

VPNs Heatmap

View the status of all VPNs configured on a specific broker in a heatmap format, which allows you to quickly identify VPNs with critical alerts. Each rectangle in the heatmap represents a VPN. The rectangle color indicates the alert state and rectangle size represents the number of connections.

Select a broker from the **Broker** drop-down menu, or enter a search string in the **Filter VPN Name** field, and select a metric from the **Metric** drop-down menu. Use the **Show Operational Only** check-box ☒ to include or exclude non-operational VPNs in the heatmap. Use the **Log Scale** and **Auto Scale** check-boxes ☒ to apply log or auto scale. Use the **Show Broker** check-box ☒ to include or exclude broker names in the heatmap.

By default, this display shows **Alert Severity**, but you can mouse over a rectangle to see additional metrics. Drill down and investigate by clicking a rectangle in the heatmap to view details for the selected application in the “VPNs Summary” display.



Operational When checked, only shows operational brokers.

Filter VPN Name Enter a string to show only VPNs with this string in their name.


Metric Choose a metric to view in the display.

Alert Severity Visually displays the level at which the VPN has or has not exceeded its alarm level threshold. Values range from **0** - **2**, as indicated in the color gradient bar, where **2** is the highest Alert Severity:

- Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.
- Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.
- Green indicates that no metrics have exceeded their alert thresholds.


Alert Count The total number of critical and warning alerts. The color gradient bar, populated by the current heatmap, shows 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 average alert count.

Connections

The total number of connections. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolVpnConnectionCountHigh**. The middle value in the gradient bar indicates the middle value of the range.

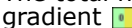
When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Subscriptions

The total number of subscriptions. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolVpnSubscriptionCountHigh**. The middle value in the gradient bar indicates the middle value of the range.

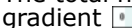
When **Auto** is checked, the numeric values in the color gradient bar show the range of the data being displayed rather than the default values. The middle value changes accordingly to indicate the color of the middle value of the range.

Msgs Spooled

The total number of spooled messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolMsgRouterPendingMsgsHigh**. The middle value in the gradient bar indicates the middle value of the range.


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.

Total Msgs Rcvd

The total number of received messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of messages received in the heatmap. The middle value in the gradient bar indicates the average count.

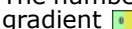
The **Auto** flag does not impact this metric.

Total Msgs Sent

The total number of sent messages. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of messages sent in the heatmap. The middle value in the gradient bar indicates the average count.


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

Total Msgs/ sec Rcvd


The number of messages received per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolVpnInboundMsgRateHigh**. The middle value in the gradient bar indicates the middle value of the range.

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.


Total Msgs/ sec Sent

The number of messages sent per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolVpnOutboundMsgRateHigh**. The middle value in the gradient bar indicates the middle value of the range. 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.

Total Bytes/ sec Rcvd


The number of bytes contained in messages received per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolVpnInboundByteRateHigh**. The middle value in the gradient bar indicates the middle value of the range. 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.

Total Bytes/ sec Sent

The number of bytes contained in direct messages sent per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of **SolMsgRouterOutboundByteRateHigh**. The middle value in the gradient bar indicates the middle value of the range.


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.

Direct Msgs/sec Rcvd

The number of direct messages received per second. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the average number of direct messages received per second in the heatmap. The middle value in the gradient bar indicates the average count.


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

Direct Msgs/sec Sent




The number of direct messages sent per second in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the average number of direct messages sent per second in the heatmap. The middle value in the gradient bar indicates the average count.

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

Total Inbound Discards

The total number of discarded inbound messages in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of discarded inbound messages in the heatmap. The middle value in the gradient bar indicates the average count.

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

Total Outbound Discards	<p>The total number of discarded outbound messages in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the maximum count of discarded outbound messages in the heatmap. The middle value in the gradient bar indicates the average count.</p> <p>The Auto flag does not impact this metric.</p>
Inbound Discard Rate	<p>The number of discarded inbound messages per second in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolVpnInboundDiscardRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p> <p>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.</p>
Outbound Discard Rate	<p>The number of discarded outbound messages per second in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from 0 to the defined alert threshold of SolVpnOutboundDiscardRateHigh. The middle value in the gradient bar indicates the middle value of the range.</p> <p>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.</p>

VPNs Table

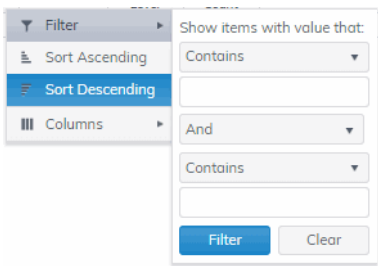
View data shown in the “VPNs Heatmap” display, as well as additional details, in a tabular format. Use this display to view all available data for each VPN associated with a specific broker.

By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

Select a broker from the **Broker** drop-down menu. Each table row is a different VPN associated with the broker. Click a column header to sort column data in numerical or alphabetical order.

Sort data in numerical or alphabetical order on column headers. Use the check-box ☒ to include / exclude non-operational VPNs. Use the **Show** drop-down to see **All** VPNs, **Expired Only** or **Unexpired Only**. Enter a string in the **Filter VPN Name** field to show only VPNs with this string in their name.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



Double-click a row to drill down and investigate in the "VPNs Summary" display.

Solace VPNs Table

04-Mar-2019 16:05 No Alerts DATA

Broker: - All - Less Columns

Show Operational Only: Show: All

Filter VPN Name: * VPNs: 25

Broker	VPN Name	Alert Level	Alert Count	Connections	Operational
solaceLoaner	BridgeBroker1	✓		3	✓
solaceLoaner	Broker1	✓		3	✓
solaceLoaner	Broker10	✓		3	✓
solaceLoaner	Broker2	✓		3	✓
solaceLoaner	Broker3	✓		3	✓
solaceLoaner	Broker4	✓		3	✓
solaceLoaner	Broker5	✓		3	✓
solaceLoaner	Broker6	✓		3	✓
solaceLoaner	Broker7	✓		3	✓
solaceLoaner	Broker8	✓		3	✓
solaceLoaner	Broker9	✓		3	✓
solaceLoaner	default	✓		0	
solaceLoaner	stats	✓		0	
solaceLoaner	statspump	✓		1	✓
solaceLoaner	white-test	✓		1	✓

Broker

The name of the broker.

VPN Name

The name of the VPN.

Alert Level

The maximum level of alerts in the row:

- Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.
- Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.
- Green indicates that no metrics have exceeded their alert thresholds.

Alert Count

The total number of active alerts for the VPN.

Connections

The total number of connections for the VPN.

Operational	When checked, this status indicates that the VPN is enabled and is operating normally.
Total Unique Subscriptions	The total number of unique subscriptions to the VPN.
Total Client Messages Rcvd	The total number of messages received from clients connected to the VPN.
Total Client Messages Sent	The total number of messages sent to clients connected to the VPN.
Total Client Bytes Rcvd	The total number of bytes contained in messages received from clients connected to the VPN.
Total Client Bytes Sent	The total number of bytes contained in messages sent to clients connected to the VPN.
Total Client Msgs/sec Rcvd	The total number of messages received per second from clients connected to the VPN.
Total Client Msgs /sec Sent	The total number of messages sent per second to clients connected to the VPN.
Total Client Bytes/sec Rcvd	The total number of bytes contained in messages received per second from clients connected to the VPN.
Total Client Bytes/sec Sent	The total number of bytes contained in messages sent per second to clients connected to the VPN.
Client Direct Msgs Rcvd	The total number of direct messages received from clients connected to the VPN.
Client Direct Msgs Sent	The total number of direct messages sent to clients connected to the VPN.
Client Direct Bytes Rcvd	The total number of bytes contained in direct messages received from clients connected to the VPN.
Client Direct Bytes Sent	The total number of bytes contained in direct messages sent to clients connected to the VPN.
Client Direct Msgs/sec Rcvd	The total number of direct messages received per second from clients connected to the VPN.
Client Direct Msgs/sec Sent	The total number of direct messages sent per second to clients connected to the VPN.
Client Direct Bytes/sec Rcvd	The total number of bytes contained in the direct messages received per second from clients connected to the VPN.
Client Direct Bytes/sec Sent	The total number of bytes contained in the direct messages sent per second to clients connected to the VPN.
Client NonPersistent Msgs Rcvd	The total number of non-persistent messages received from clients connected to the VPN.
Client NonPersistent Msgs Sent	The total number of non-persistent messages sent to clients connected to the VPN.
Client NonPersistent Bytes Rcvd	The total number of bytes contained in the non-persistent messages received from clients connected to the VPN.
Client NonPersistent Bytes Sent	The total number of bytes contained in the non-persistent messages sent per second to clients connected to the VPN.
Client NonPersistent Msgs/sec Rcvd	The total number of non-persistent messages received per second from clients connected to the VPN.
Client NonPersistent Msgs/sec Sent	The total number of non-persistent messages sent per second to clients connected to the VPN.

Client NonPersistent Bytes/sec Rcvd	The total number of bytes contained in the non-persistent messages received per second from clients connected to the VPN.
Client NonPersistent Bytes/sec Sent	The total number of bytes contained in the non-persistent messages sent per second to clients connected to the VPN.
Client Persistent Msgs Rcvd	The total number of persistent messages received from clients connected to the VPN.
Client Persistent Msgs Sent	The total number of persistent messages sent to clients connected to the VPN.
Client Persistent Bytes Rcvd	The total number of bytes contained in persistent messages received from clients connected to the VPN.
Client Persistent Bytes Sent	The total number of bytes contained in persistent messages sent to clients connected to the VPN.
Client Persistent Msgs/sec Rcvd	The total number of persistent messages received per second from clients connected to the VPN.
Client Persistent Msgs/sec Sent	The total number of persistent messages sent per second to clients connected to the VPN.
Client Persistent Bytes/sec Rcvd	The total number of bytes contained in the persistent messages received per second from clients connected to the VPN.
Client Persistent Bytes/sec Sent	The total number of bytes contained in the persistent messages sent per second to clients connected to the VPN.
Total In Discards	The total number of discarded incoming messages.
Total In Discards/sec	The number of discarded incoming messages per second.
Total Out Discards	The total number of discarded outgoing messages.
Total Out Discards/sec	The number of discarded outgoing messages per second.
Max Spool Usage (MB)	The maximum amount of disk storage (in megabytes) that can be consumed by all spooled message on the VPN.
Authentication Type	The defined authentication type on the VPN.

Expired

When checked, performance data about the VPN has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapm_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the VPN. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired after this
number of seconds
#
collector.sl.rtvview.sub=$solRowExpirationTime:4
5
collector.sl.rtvview.sub=$solRowExpirationTimeFo
rDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

Time Stamp

The date and time the row data was last updated.

VPNs Summary

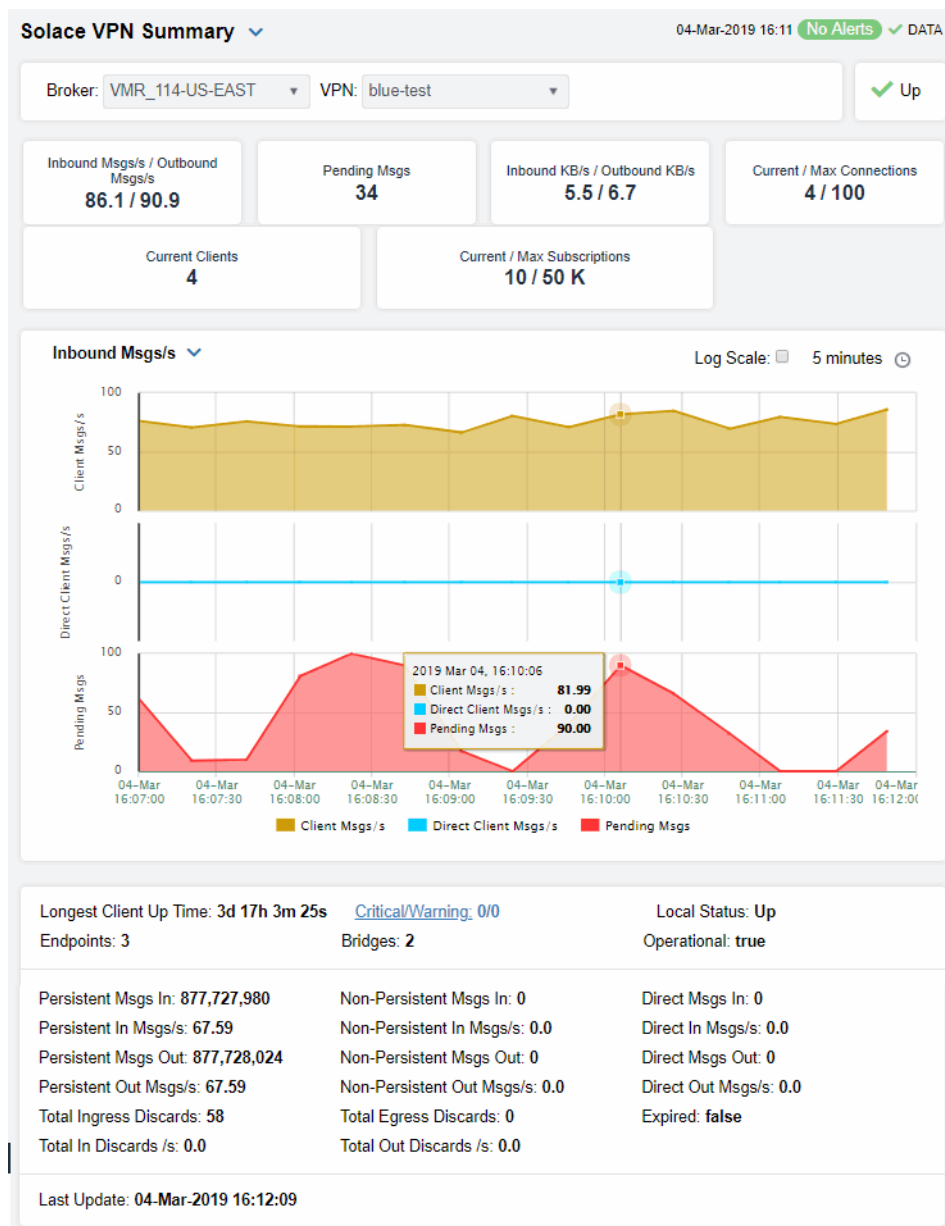
View neighbor broker current configuration details and message throughput rates.

Select a broker and a neighbor broker from the drop down menus. Check message throughput rates to the neighbor broker, as well as neighbor **Up Time, State, Data Port**, number of connections and link costs.

You can hover over the metric cards to see more performance metrics and also drill down to see even more detail by clicking on them.

The bottom half of the display provides current and historical performance metrics for the selected broker. The trend graph traces the performance metric you select: **Ingress Flows, Egress Flows** or **Spool Msgs**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.



Alerts

- Red indicates that one or more metrics exceeded their **ALARM LEVEL** threshold.
- Yellow indicates that one or more metrics exceeded their **WARNING LEVEL** threshold.
- Green indicates that no metrics have exceeded their alert thresholds.

Up

Inbound/Outbound Msgs/s The number of inbound/outbound messages per second.

Pending Msgs	The number of pending messages.
Inbound/Outbound KB/s	The number of inbound/outbound messages in KBs per second.
Current/Max Connections	The total number of current connections / maximum number of supported connections for the VPN.
Current Clients	The number of connected clients.
Current/Max Subscriptions	The total number of current subscribers and maximum number of supported subscribers for the VPN.

Inbound Msgs/s Trend Graphs

Traces the sum of inbound message processing for the selected VPN.



- **Pending Msgs**: The number of pending messages for the VPN.
- **Client Msgs/sec**: The rate of incoming messages (per second) from client.
- **Direct Client Msgs/sec**: The rate of direct incoming messages (per second) from the direct client.

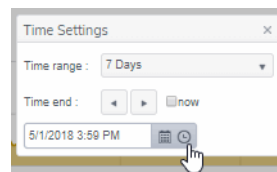
Log Scale



Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.


Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Longest Client Up Time	The number of days, hours and minutes for the longest, currently active, client connection.
Endpoints	The number of endpoints.
Persistent Msgs In	The total number of incoming persistent messages.
Persistent In Msgs/s	The number of incoming persistent messages per second.
Persistent Msgs Out	The total number of outgoing persistent messages.
Persistent Out Msgs/s	The number of outgoing persistent messages per second.
Total In Discards	The total number of incoming messages that were discarded.

Total In Discards/sec	The total number of incoming messages that were discarded, per second.
Critical/Warning	The number of critical alerts / warning alerts which also opens the Alerts Table .
Bridges	The number of bridges.
Non-Persistent Msgs In	The total number of incoming non-persistent messages.
Non-Persistent In Msgs/s	The number of incoming non-persistent messages per second.
Non-Persistent Msgs Out	The total number of outgoing non-persistent messages.
Non-Persistent Out Msgs/s	The number of outgoing non-existent messages per second.
Total Out Discards	The total number of outgoing messages that were discarded.
Total Out Discards/sec	The total number of outgoing messages that were discarded, per second.
Direct Msgs In	The total number of incoming direct messages.
Direct In Msgs/s	The number of incoming direct messages per second.
Direct Msgs Out	The total number of outgoing direct messages.
Direct Out Msgs/s	The number of outgoing direct messages per second.
Expired	<p>When true, performance data about the VPN has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapm_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the VPN. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvview.sub=\$solRowExpirationTime:45 collector.sl.rtvview.sub=\$solRowExpirationTimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Last Update	The date and time of the last data update.

Clients

These displays allow you to view the current and historical metrics for clients configured on a VPN. Displays in this View are:

- **"Clients Table"**: A tabular view of data for all clients configured on a VPN.
- **"Client Summary"**: Current and historical metrics for a single client configured on a VPN.

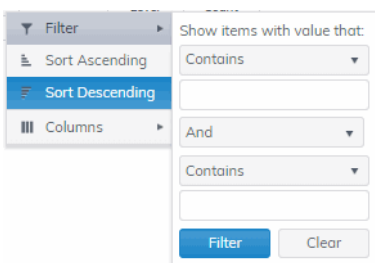
Clients Table

View VPN clients configured on all brokers, a single broker, all VPNs or a single VPN. Each table row is a different VPN client connection. Use the drop-down menus to show **All**, **Expired** or **Unexpired** clients as well as **All**, **Internal** or **Primary** clients (processes that run on the broker under the Solace OS). Enter a string for **Filter Client Name** to show only clients with this string in their name.

By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

This display is populated by two caches, SolClientsStats and SolClients. SolClientsStats provides most of the data. SolClients provides the static data. If the SolClients cache encounters an issue the static fields in this display are blank.

Search by clicking the right side of a column heading **/Filter** to open the Search, Sort and Choose Columns dialog:



Double-click a row to drill down and investigate in the ["Client Summary"](#) display.

Solace Broker Clients Table 05-Mar-2019 08:38 No Alerts DATA




Broker: - All - VPN: - All - Less Columns

Show Type: All Show: All Filter Client Name:

Clients: 101

Broker	VPN	Client Name	Alert Level	Alert Count	Stc Subc
solaceLoaner	BridgeBroker1	#bridge/local/B114toSolDemo/solace/8798/16	✓		
solaceLoaner	BridgeBroker1	#bridge/local/B142toSolDemo/solace/8798/15	✓		
solaceLoaner	BridgeBroker1	#client	✓		
solaceLoaner	Broker1	#bridge/local/testBridgeToNoVwhere/solace/8798/9	✓		
solaceLoaner	Broker1	#bridge/remote/B1_to_B2/solace/8796/0	✓		
solaceLoaner	Broker1	#client	✓		
solaceLoaner	Broker1	S-HOST10/5236/#00010001	✓		
solaceLoaner	Broker10	#bridge/local/B112toSolDemo/solace/8798/14	✓		
solaceLoaner	Broker10	#bridge/local/B144toSolDemo/solace/8798/12	✓		
solaceLoaner	Broker10	#bridge/local/B209toSolDemo/solace/8798/13	✓		
solaceLoaner	Broker10	#client	✓		
solaceLoaner	Broker10	S-HOST10/5152/#00010001	✓		
solaceLoaner	Broker10	S-HOST10/5448/#00010001	✓		
solaceLoaner	Broker2	#bridge/local/B1_to_B2/solace/8798/10	✓		
solaceLoaner	Broker2	#client	✓		
solaceLoaner	Broker2	S-HOST10/5212/#00010001	✓		
solaceLoaner	Broker3	#bridge/local/Bridge_loanerToVMR144/solace/879	✓		

Page 1 of 3 1 - 40 of 101 items

Broker	Lists the name of the selected broker.
VPN	Lists the name of the selected VPN.
Client Name	The name of the client.
Alert Level	<p>The maximum level of alerts in the row:</p> <ul style="list-style-type: none">  Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.  Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.  Green indicates that no metrics have exceeded their alert thresholds.
Alert Count	Total number of alerts for the client.
Slow Subscriber	This check box will be checked if the client consistently fails to consume their messages at the offered rate (which causes their egress queues to fill up).
Total Egress Flows	The total number of outgoing flows.
Total Ingress Flows	The total number of incoming flows.
Subscriptions	The total number of subscriptions.
Subscription Msgs Rcvd	The total number of messages received from subscriptions.
Subscription Msgs Sent	The total number of messages sent from subscriptions.
Type	Lists the type of alert.
Uptime	Lists the amount of time the client has been up and running.
Client ID	Lists the client ID.
Client UserName	Lists the user name for the client.
Client Address	The IP Address of the client.
Profile	The client profile that is assigned to the client.
ACL Profile	The access control list profile to which the client is assigned.
Description	Lists a description of the client.
Platform	Lists the platform of the client.
Software Version	The version of the platform.
Total Flows Out	The total number of outbound message flows for the client.
Total Flows In	The total number of inbound message flows for the client.
# Subscriptions	The number of subscribers connected to the client.
Add Sub Msgs Rcvd	The number of Add Subscription messages received.
Add Sub Msgs Sent	The number of Add Subscription Messages sent.

Already Exists Msgs Sent	Refer to Solace documentation for more information.
Assured Ctrl Msgs Rcvd	Refer to Solace documentation for more information.
Assured Ctrl Msgs Sent	Refer to Solace documentation for more information.
Total Client Msgs Rcvd	The total number of messages received by the client.
Total Client Msgs Sent	The total number of messages sent by the client.
Total Client Bytes Rcvd	The total number of bytes contained within the messages received by the client.
Total Client Bytes Sent	The total number of bytes contained within the messages sent by the client.
Total Client Msgs Rcvd/sec	The total number of messages received per second by the client.
Total Client Msgs Sent/sec	The total number of messages sent per second by the client.
Total Client Bytes Rcvd/sec	The total number of bytes contained within the messages received per second by the client.
Total Client Bytes Sent/sec	The total number of bytes contained within the messages sent per second by the client.
Ctl Bytes Rcvd	The number of control data bytes received by the client.
CTL Bytes Sent	The number of control data bytes sent by the client.
Ctl Msgs Rcvd	The number of control data messages received by the client.
Ctl Msgs Sent	The number of control data messages sent by the client.
Client Data Bytes Rcvd	The number of bytes contained within the data messages received by the client.
Client Data Bytes Sent	The number of bytes contained within the data messages sent by the client.
Client Data Msgs Rcvd	The number of data messages received by the client.
Client Data Msgs Sent	The number of data messages sent by the client.
Client Direct Msgs Rcvd	The number of direct messages received by the client.
Client Direct Msgs Sent	The number of direct messages sent by the client.
Client Direct Bytes Rcvd	The number of bytes contained within direct messages received by the client.
Client Direct Bytes Sent	The number of bytes contained within direct messages sent by the client.
Client Direct Msgs Rcvd/sec	The number of direct messages received per second by the client.
Client Direct Msgs Sent/sec	The number of direct messages sent per second by the client.
Client Direct Bytes Rcvd/sec	The number of bytes contained within the messages received per second by the client.
Client Direct Bytes Sent/sec	The number of bytes contained within the messages sent per second by the client.
Client NonPersistent Msgs Rcvd	The number of non-persistent messages received by the client.

Client NonPersistent Msgs Sent	The number of non-persistent messages sent by the client.
Client NonPersistent Bytes Rcvd	The number of bytes contained within the non-persistent messages received by the client.
Client NonPersistent Bytes Sent	The number of bytes contained within the non-persistent messages sent by the client.
Client NonPersistent Msgs Rcvd/sec	The number of non-persistent messages received per second by the client.
Client NonPersistent Msgs Sent/sec	The number of non-persistent messages sent per second by the client.
Client NonPersistent Bytes Rcvd/sec	The number of bytes contained within the non-persistent messages received per second by the client
Client NonPersistent Bytes Sent/sec	The number of bytes contained within the non-persistent messages sent per second by the client
Client Persistent Msgs Rcvd	The number of persistent messages received by the client.
Client Persistent Msgs Sent	The number of persistent messages sent by the client.
Client Persistent Bytes Rcvd	The number of bytes contained within the persistent messages received by the client.
Client Persistent Bytes Sent	The number of bytes contained within the persistent messages sent by the client.
Client Persistent Msgs Rcvd/sec	The number of persistent messages received per second by the client.
Client Persistent Msgs Sent/sec	The number of persistent messages sent per second by the client.
Client Persistent Bytes Rcvd/sec	The number of bytes contained within the persistent messages received per second by the client.
Client Persistent Bytes Sent/sec	The number of bytes contained within the persistent messages sent per second by the client.
Denied Dup Clients	Refer to Solace documentation for more information.
Denied Subscribe Permission	The number of denied subscription requests due to improper permissions.
Denied Subscribe Topic-ACL	The number of denied subscriptions to topics due to the fact that the client requesting was not on the Access Control List.
Denied Unsubscribe Permission	The number of denied unsubscribe requests due to improper permissions.
Denied Unsubscribe Topic-ACL	The number of denied unsubscribe requests to topics due to the fact that the client requesting was not on the Access Control List.
DTO Msgs Rcvd	The number of Deliver-To-One messages received by the client.
Egress Compressed Bytes	The number of compressed bytes contained within outgoing messages.
Ingress Compressed Bytes	The number of compressed bytes contained within incoming messages.
Total Ingress Discards	The total number of discarded incoming messages.
Total Egress Discards	The total number of discarded outgoing messages.
Total Ingress Discards/sec	The total number of discarded incoming messages per second.

Total Egress Discards/sec	The total number of discarded outgoing messages per second.
Keepalive Msgs Rcvd	The number of Keepalive messages received by the client.
Keepalive Msgs Sent	The number of Keepalive messages sent by the client.
Large Msgs Rcvd	The number of large messages received by the client.
Login Msgs Rcvd	The number of login message received by the client.
Max Exceeded Msgs Sent	The number of responses sent by the client informing the connected broker(s) that the number of the message(s) sent exceeded the maximum allowed.
Not Enough Space Msgs Sent	The number of responses sent by the client informing the connected broker(s) that the size of the message(s) sent exceeded the maximum allowable size, or that the message caused the client's Local Spool Quota to exceed the maximum amount of space.
Not Found Msgs Sent	Refer to Solace documentation for more information.
Parse Error on Add Msgs Sent	Refer to Solace documentation for more information.
Parse Error on Remove Msgs Sent	Refer to Solace documentation for more information.
Remove Subscription Msgs Rcvd	The number of remove subscription requests received by the client.
Remove Subscription Msgs Sent	The number of remove subscription requests sent by the client.
Subscribe Client Not Found	The number of subscription requests for clients that were not found.
Unsubscribe Client Not Found	The number of unsubscribe requests for clients that were not found.
Update Msgs Rcvd	Refer to Solace documentation for more information.
Update Msgs Sent	Refer to Solace documentation for more information.
Expired	<p>When checked, performance data about the client has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapi_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the client. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvapi.sub=\$solRowExpirationTime: 45 collector.sl.rtvapi.sub=\$solRowExpirationTimeF orDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Timestamp	The date and time the row of data was last updated.

Client Summary

View current and historical performance and utilization metrics for a single VPN client.

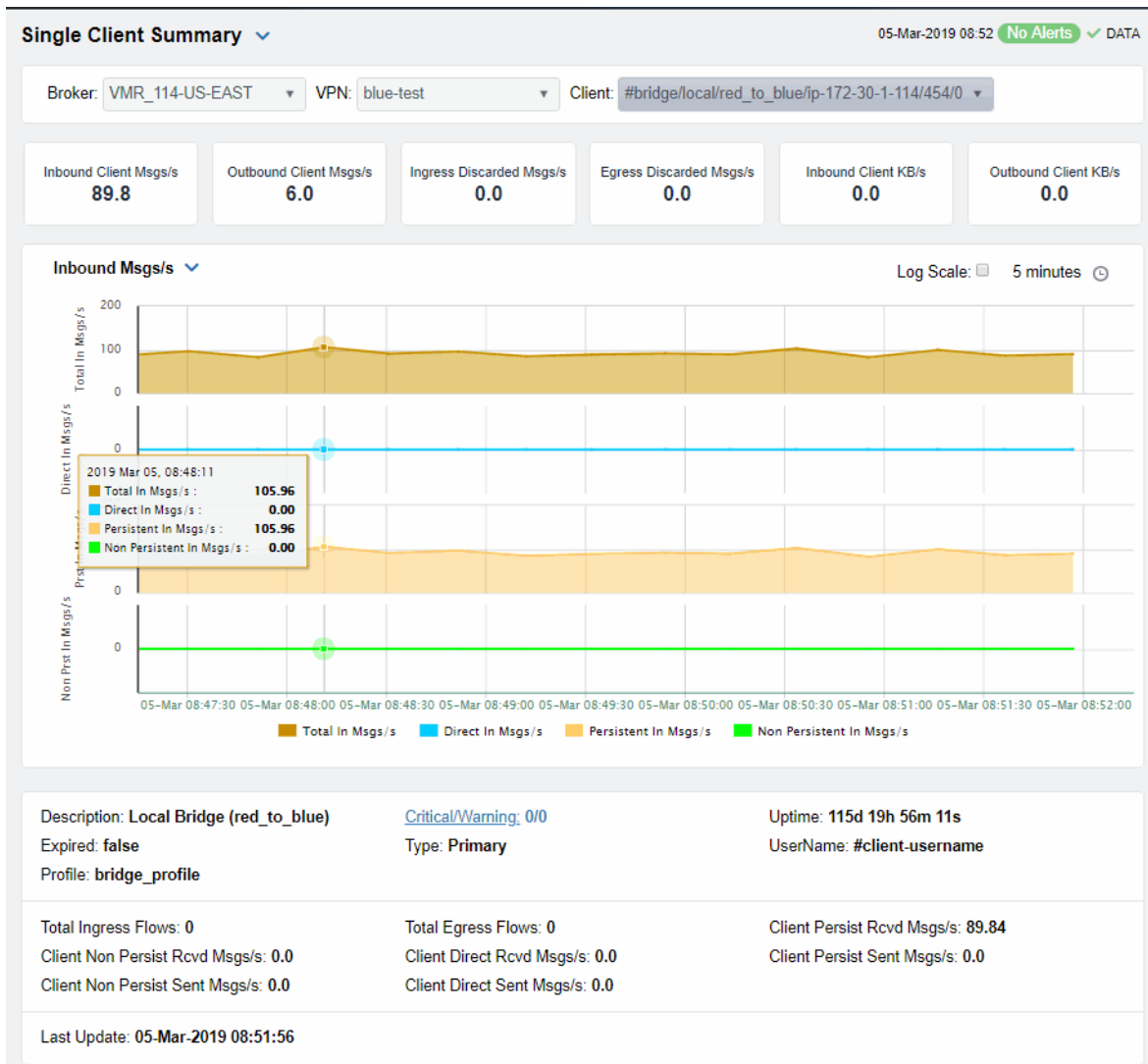
Select a broker, VPN and client from the drop-down menus. You can view the **Client Type**, the **User Name**, the **Client ID**, the associated **Platform**, the current **Up Time**, and additional information specific to the client. You can also view the total number of incoming and outgoing messages, as well as the number of incoming and outgoing persistent, non-persistent, direct, and discarded messages.

You can hover over the metric cards to see more performance metrics and also drill down to see even more detail by clicking on them.

The bottom half of the display provides current and historical performance metrics for the selected broker. The trend graph traces the performance metric you select: **Ingress Flows** or **Egress Flows**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

This display is populated by two caches, SolClientsStats and SolClients. SolClientsStats provides most of the data. SolClients provides the static data. If the SolClients cache encounters an issue the graphic elements that have no data are replaced with **N/A**.

**Inbound Client Msgs /sec**

The number of incoming client messages per second.

Outbound Client Msgs /sec

The number of outgoing client messages per second.

Ingress Discarded Msgs /sec

The number of discarded ingress messages per second.

Egress Discarded Msgs /sec

The number of discarded egress messages per second.

Inbound Client KB/sec

The amount of incoming data from the client in KBs per second.

Outbound Client KB/sec

The amount of outgoing data for the client in KBs per second.

Trend Graphs

Traces the sum of message processing for the selected client.



- **Total In Msgs/sec**: The number of incoming messages (per second) for the client.
- **Dir-In Msgs/sec**: The number of incoming direct messages (per second) for the client.
- **Persistent In Msgs/sec**: The number of incoming persistent messages (per second) for the client.
- **Non Persistent In Msgs/sec**: The number of incoming non-persistent messages (per second) for the client.

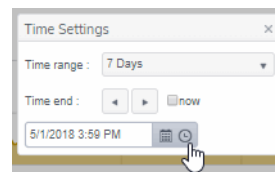
Log Scale



Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.


Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Description

The description of the client.

Expired

When checked, performance data about the client has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapi_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the client. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired after this number of
seconds
#
collector.sl.rtvapi.sub=$solRowExpirationTime:45
collector.sl.rtvapi.sub=$solRowExpirationTimeForDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

Profile

The client's profile.

Total Ingress Flows

The number of inflows coming to the client.

Persistent Msgs In/sec	The number of persistent incoming messages per second.
Persistent Msgs Out/sec	The number of persistent outgoing messages per second.
Last Update	The date and time of the last data update.
Critical/Warning	The number of critical alerts / warning alerts which also opens the Alerts Table .
Non Persistent Msgs In/sec	The number of non-persistent incoming messages per second.
NonPersistent Msgs Out/sec	The number of non-persistent outgoing messages per second.
Uptime	If the VPN's Local Status is Up , this field displays the length of time that the VPN has been up and running.
Username	The client's user name.
Direct In Msgs /sec	The number of non-persistent incoming messages per second.
Direct Out Msgs /sec	The number of non-persistent outgoing messages per second.

Bridges

These displays provide process data for bridges configured on a VPN. Displays in this View are:

- **"Bridges Table"**: A tabular view of all available process performance data for all bridges configured on a VPN.
- **"Bridges - Diagram"**: Topological view of Solace network bridges that shows bridge broker connections and status.
- **"Bridge Summary"**: Current and historical metrics for a single bridge.

Bridges Table

This display allows you to view data for all bridges configured for a VPN.

By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

Select a broker and VPN from the drop-down menus. Use the check-boxes ☒ to include / exclude **Enabled** and **Expired** bridges. Each table row is a different bridge.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:

The screenshot shows a dialog box for filtering and sorting data. On the left is a sidebar with four options: 'Filter' (selected), 'Sort Ascending', 'Sort Descending', and 'Columns'. The main area of the dialog is titled 'Show items with value that:'. It contains two 'Contains' dropdown menus, one of which is open. Between the dropdowns is an 'And' dropdown menu. At the bottom are 'Filter' and 'Clear' buttons.

Rows listing bridges that are disabled or expired display with a shaded background. Double-click a row to drill down and investigate in the “[Bridge Summary](#)” display.

Broker	Local VPN	Bridge Name	Remote VPN	Remote Router
VMR_114-US-EAST	blue-test	#bridge/v:solace/BridgeBroker1/15	BridgeBroker1	v:solace
VMR_114-US-EAST	blue-test	red_to_blue	red-test	v:ip-172-30-1-1

Broker

Displays the name of the broker

Local VPN

The name of the local VPN.

Bridge Name

The name of the bridge.

Alert Level

The current level of alerts in the row.

● Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.

● Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

● Green indicates that no metrics have exceeded their alert thresholds.

Alert Count

The total number of active alerts for the process.

Remote VPN

The name of the remote VPN that is connected to the local VPN via the bridge.

Remote Router

The name of the remote broker.

Admin State

Indicates whether the bridge has been administratively enabled (via SolAdmin or the command line interface).

Inbound Operational State

The current inbound operational status of the bridge. (The administrator can turn off a bridge's input or output for maintenance or other reasons.)

Outbound Operational State

The current outbound operational status of the bridge. (The administrator can turn off a bridge's input or output for maintenance or other reasons.)

Queue Operational State

The current operational status of the queue.

Connection Establisher	Indicates whether the administrator created and configured the bridge directly on the broker using SolAdmin or the command line interface, or indirectly from another broker.
Redundancy	Displays whether the bridge is the primary bridge, the backup bridge, the static bridge (default bridge used when no other bridge is available), or whether it is the only bridge available (none).
Uptime	The current amount of time in which the bridge has been up and running.
Client Name	The name of the client.
Connected Via Addr	The local IP address and port used for the bridge.
Connected Via Interface	The name of the network interface used for the bridge.
Client Direct Bytes Rcvd	The number of bytes contained within direct messages received by the client via the bridge.
Client Direct Bytes/sec Rcvd	The number of bytes contained within direct messages received per second by the client via the bridge.
Client Direct Bytes Sent	The number of bytes contained within direct messages sent by the client via the bridge.
Client Direct Bytes/sec Sent	The number of bytes contained within direct messages sent per second by the client via the bridge.
Client Direct Msgs/sec Rcvd	The number of bytes contained within direct messages received per second by the client via the bridge.
Client Direct Msgs Sent	The number of direct messages sent by the client via the bridge.
Client Direct Msgs/sec Sent	The number of direct messages sent per second by the client via the bridge.
Client NonPersistent Bytes Rcvd	The number of bytes contained within non-persistent messages received by the client via the bridge.
Client NonPersistent Bytes/sec Rcvd	The number of bytes contained within non-persistent messages received per second by the client via the bridge.
Client NonPersistent Bytes Sent	The number of bytes contained within non-persistent messages sent by the client via the bridge.
Client NonPersistent Bytes/sec Sent	The number of bytes contained within non-persistent messages sent per second by the client via the bridge.
Client NonPersistent Msgs Rcvd	The number of non-persistent messages received by the client via the bridge.
Client NonPersistent Msgs/sec Rcvd	The number of non-persistent messages received per second by the client via the bridge.
Client NonPersistent Msgs Sent	The number of non-persistent messages sent by the client via the bridge.
Client NonPersistent Msgs/sec Sent	The number of non-persistent messages sent per second by the client via the bridge.
Client Persistent Bytes Rcvd	The number of bytes contained within persistent messages received by the client via the bridge.
Client Persistent Bytes/sec Rcvd	The number of bytes contained within persistent messages received per second by the client via the bridge.
Client Persistent Bytes Sent	The number of bytes contained within persistent messages sent by the client via the bridge.

Client Persistent Bytes/sec Sent	The number of bytes contained within persistent messages sent per second by the client via the bridge.
Client Persistent Msgs Rcvd	The number of persistent messages received by the client via the bridge.
Client Persistent Msgs /sec Rcvd	The number of persistent messages received per second by the client via the bridge.
Client Persistent Msgs Sent	The number of persistent messages sent by the client via the bridge.
Client Persistent Msgs/sec Sent	The number of persistent messages sent per second by the client via the bridge.
Total Client Bytes Rcvd	The number of bytes contained within all messages received by the client via the bridge.
Total Client Bytes/sec Rcvd	The number of bytes contained within all messages received per second by the client via the bridge.
Total Client Bytes Sent	The number of bytes contained within all messages sent by the client via the bridge.
Total Client Bytes/sec Sent	The number of bytes contained within all messages sent per second by the client via the bridge.
Total Client Msgs Rcvd	The total number of all messages received by the client via the bridge.
Total Client Msgs/sec Rcvd	The total number of all messages received per second by the client via the bridge.
Total Client Msgs Sent	The total number of all messages sent by the client via the bridge.
Total Client Msgs/sec Sent	The total number of all messages sent per second by the client via the bridge.
Total Out Discards	The total number of discarded outgoing messages sent by the client via the bridge.
Total Out Discards/sec	The total number of discarded outgoing messages sent per second by the client via the bridge.
Total In Discards	The total number of discarded incoming messages received by the client via the bridge.
Total In Discards/sec	The total number of discarded incoming messages received per second by the client via the bridge.

Expired

When checked, performance data about the bridge has not been received within the time specified (in seconds) in the `$solRowExpirationTime` field in the `conf\rtvapi_solmon.properties` file. The `$solRowExpirationTimeForDelete` field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the bridge. To view/edit the current values, modify the following lines in the `.properties` file:

```
# Metrics data are considered expired after this
number of seconds
#
collector.sl.rtvapi.sub=$solRowExpirationTime:4
5
collector.sl.rtvapi.sub=$solRowExpirationTimeFo
rDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.





Timestamp

The date and time the row of data was last updated.

Bridges - Diagram

Use this topology view to monitor the health of your network bridges and VPNs. Quickly identify bridge and VPN connections, their health status and which resources their performance impacts. Drag and drop objects to arrange them on the screen (doing so does not logically impact the network bridges and VPNs). Arrows show the connections between VPNs and bridges.

Each object is a network bridge or VPN. Each is labeled with their name and color coded as follows:

-  Red indicates that the object has one or more alerts in a critical state.
-  Yellow indicates that the object has one or more alerts in a warning state.
-  Green indicates that there are no alerts on the object.
-  Gray indicates that the object is off-line.

Save: Saves the arrangement of the objects.

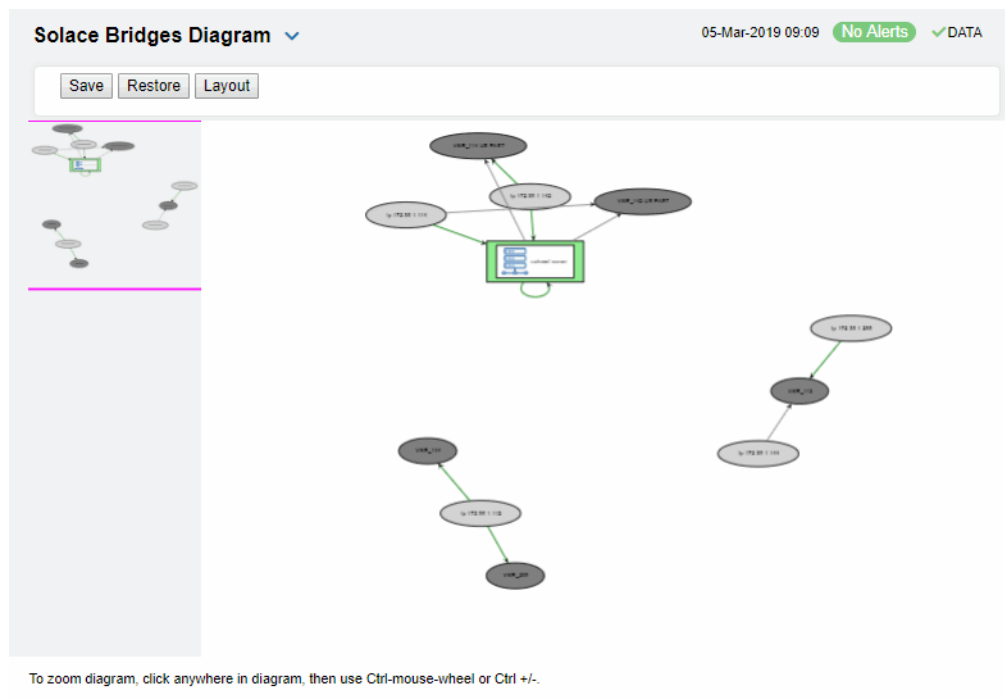
Restore: Returns objects to their previous positions.

Layout: Toggles between two types of layouts. One layout positions objects to the right so you might scroll in that direction to see them. The other layout pulls all the objects close together to the left, vertically, in hierarchical order.

Look at the miniature view in (upper left) to see all objects in either layout. Or zoom into the display using **Ctrl**+/- or **Ctrl**+ mouse wheel.

Drill down to investigate in the ["Bridges Table"](#).

To monitor network brokers, VMRs and servers, see the ["Neighbors Diagram"](#).



Bridge Summary

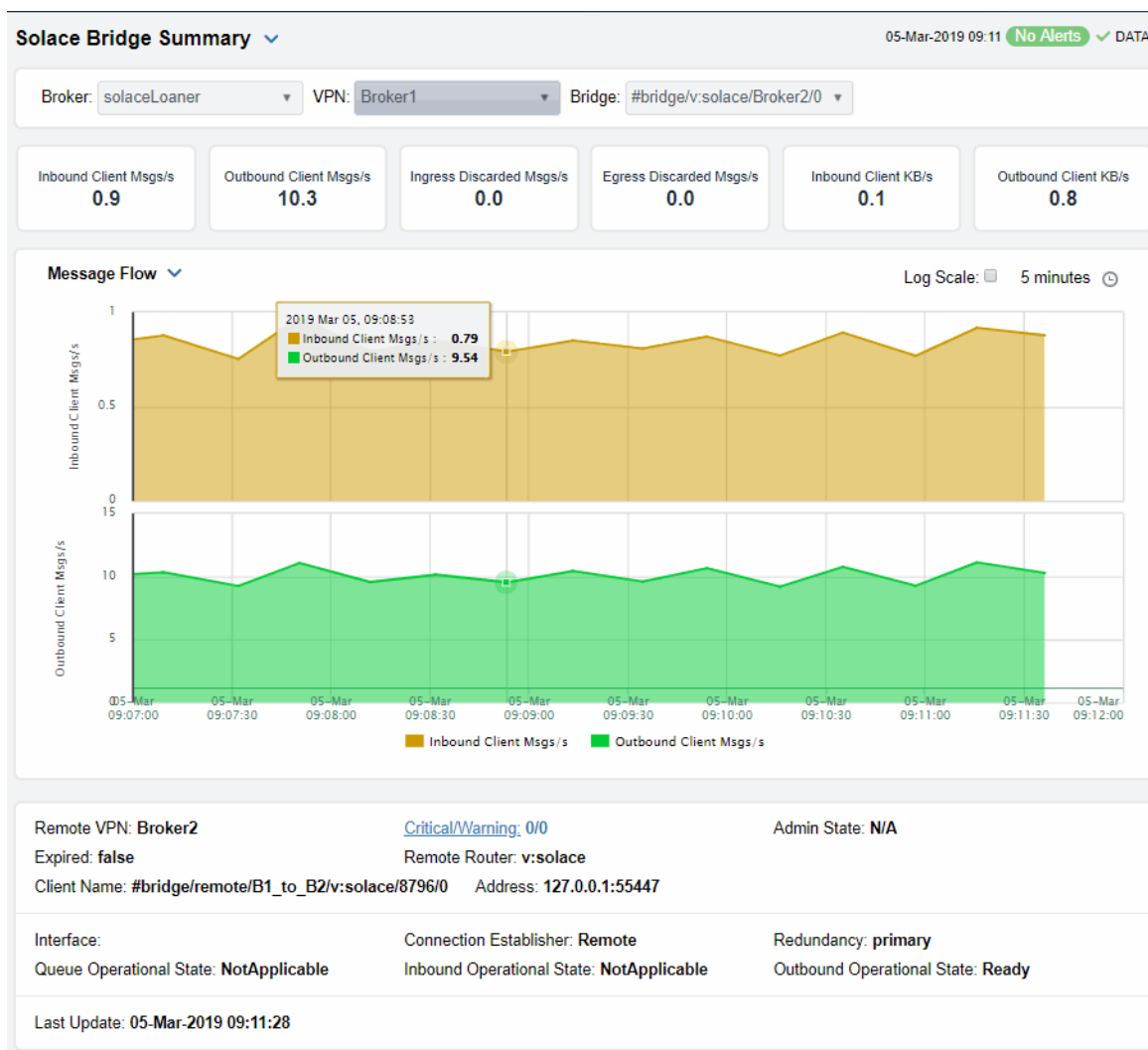
View current and historical performance and utilization metrics for a particular bridge on a VPN.

Select a broker, a VPN, and a bridge from the drop-down menus. Metric cards at the top of the displays show **Inbound and Outbound Client Messages per second**, **Ingress** and **Egress Discarded Messages**, and **Ingress** and **Egress KBs per second**.

You can hover over the metric cards to see more performance metrics and also drill down to see even more detail by clicking on them.

The trend graph traces current and historical performance metrics for the selected broker. The trend graph traces the performance metric you select: **Message Flow** or **Throughput**.

You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

**Inbound Client Msgs/s**

The number of client messages received per second.

Outbound Client Msgs/s

The number of client messages sent per second.

Ingress Discarded Client Msgs/s

The number of discarded ingress messages per second.

Egress Discarded Msgs/s

The number of discarded egress messages per second.

Inbound Client KB/s

The amount of incoming client data, in KB per second.

Outbound Client KB/s

The amount of outgoing client data, in KB per second.

Messages Flow Trend Graphs

Traces the sum for the selected client.



- **Inbound Client Msgs/s**: The number of client messages received per second.
- **Outbound Client Msgs/s**: The number of client messages sent per second.

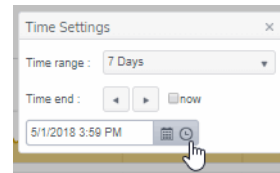
Log Scale



Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.


Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Remote VPN

The name of the remote VPN that is connected to the local VPN via the bridge.

Expired

When true, performance data about the bridge has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapi_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the bridge. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired after this number
of seconds
#
collector.sl.rtvapi.sub=$solRowExpirationTime:45
collector.sl.rtvapi.sub=$solRowExpirationTimeForDelete:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

Address

The IP address.

Interface

The interface ID.

Queue Operational State

Refer to Solace documentation for more information.

Last Update

The date and time of the last data update.

Critical/Warning

The number of critical alerts / warning alerts which also opens the **Alerts Table**.

Remote Router

The remote broker.

Conn Establisher	Refer to Solace documentation for more information.
Inbound Operational State	The current inbound operational status of the bridge. (The administrator can turn off a bridge's input or output for maintenance or other reasons.)
Admin State	Indicates whether the bridge has been administratively enabled (via SolAdmin or the command line interface).
Client Name	The name of the client.
Redundancy	Indicates whether the bridge is the primary bridge, the backup bridge, the static bridge (default bridge used when no other bridge is available), or whether it is the only bridge available (none).
Outbound Op State	The current outbound operational status of the bridge. (The administrator can turn off a bridge's input or output for maintenance or other reasons.)

Endpoints

These displays list data for one or more endpoints configured on a VPN. Displays in this View are:

- ["Endpoints Table"](#)
- ["Endpoint Summary"](#)

Endpoints Table

View all endpoints configured on a VPN. Each row in the table lists the details for a specific endpoint.

By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

Select a broker and VPN from the drop-down menus. Filter the table using the **Show Ingress Config Status Down Only** check-box ☒ and use the **Show** drop-down menus to include **All**, **Expired** or **Unexpired**.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:

You can click a column header to sort column data in numerical or alphabetical order, or double-click a row to drill down and investigate in the [“Endpoint Summary”](#) display.

Solace Endpoints Table 05-Mar-2019 09:13 No Alerts DATA

Broker: solaceLoaner VPN: Broker1 Less Columns

Show Ingress Config Status Down Only: ☐ Show: All Filter Endpoint Name: Endpoints: 2

Broker	VPN	Endpoint Name	Alert Level	Alert Count	Bind Count	Spooled Messages	Cur Spool Usage MB	High-Wa Mark M
solaceLoaner	Broker1	bridgeq	✓		1	2	0.0	
solaceLoaner	Broker1	q1	✓		0	0	0.0	

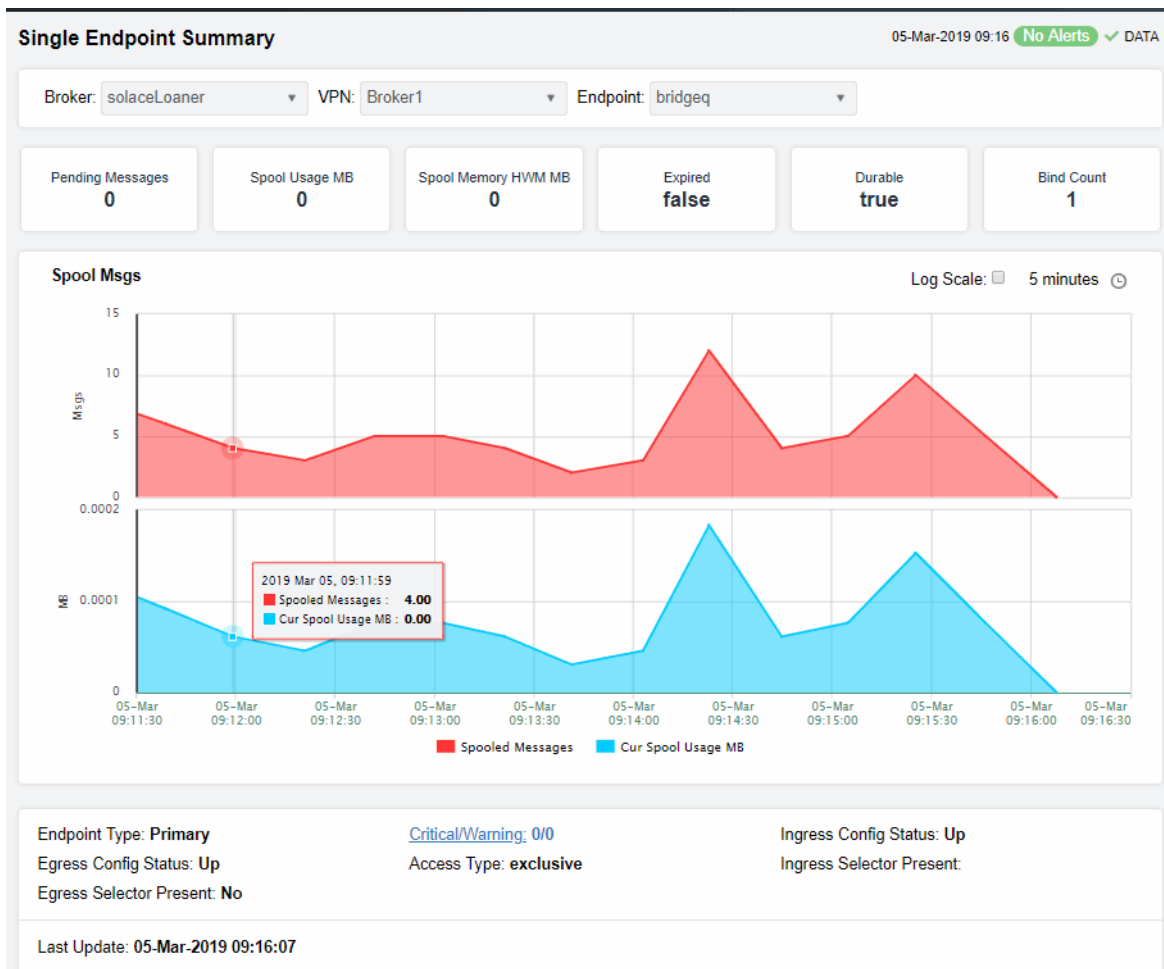
Broker	Displays the name of the broker
VPN	The name of the VPN.
Endpoint Name	The name of the endpoint.
Alert Level	<p>The current alert severity in the row.</p> <ul style="list-style-type: none"> Red indicates that one or more metrics exceeded their ALARM LEVEL threshold. Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold. Green indicates that no metrics have exceeded their alert thresholds.
Alert Count	The total number of active alerts for the endpoint.
Bind Count	The total number of binds connected to the endpoint.
Endpoint Type	The type of endpoint (either queue or topic).
Durable	Displays whether or not the endpoint is durable (checked) or non-durable (unchecked). Durable endpoints remain after an broker restart and are automatically restored as part of an broker’s backup and restoration process.
In Config Status	Refer to Solace documentation for more information.
Out Config Status	Refer to Solace documentation for more information.
Type	Refer to Solace documentation for more information.
Access Type	Refer to Solace documentation for more information.

Pending Messages	The total number of pending messages on the endpoint.
Spool Usage (MB)	The total spool usage consumed on the endpoint (in megabytes).
High Water Mark (MB)	The highest level of spool usage on the endpoint (in megabytes).
In Selector	Refer to Solace documentation for more information.
Out Selector	Refer to Solace documentation for more information.
Expired	<p>When checked, performance data about the endpoint has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapi_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the endpoint. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvapi.sub=\$solRowExpirationTime:45 collector.sl.rtvapi.sub=\$solRowExpirationTimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Time Stamp	The date and time the row of data was last updated.

Endpoint Summary

This display allows you to view endpoint information, message data, and a trend graph for pending and spool messages for a specific endpoint configured on a VPN. Choose a broker, a VPN, and an endpoint from the drop-down menus, and use the **Time Settings** to “zoom-in” or “zoom-out” on a specific time frame in the trend graph.

This display is provided by default and should be used if you do not want to collect message spool data for specific VPNs. However, if you do want to configure message spool monitoring for specific VPNs, then you should use the **Single Endpoint Summary Rates** display instead, which is not included in the navigation tree by default.



Pending Messages

The total number of pending messages on the endpoint.

Spool Usage (MB)

The current spool usage consumed on the endpoint (in megabytes).

Spool Memory HWM MB

Refer to Solace documentation for more information

Expired

When **true**, performance data about the endpoint has not been received within the time specified (in seconds) in the **\$solRowExpirationTime** field in the **conf\rtvapi_solmon.properties** file. The **\$solRowExpirationTimeForDelete** field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the endpoint. To view/edit the current values, modify the following lines in the **.properties** file:

```
# Metrics data are considered expired after this number
of seconds
#
collector.sl.rtvapi.sub=$solRowExpirationTime:45
collector.sl.rtvapi.sub=$solRowExpirationTimeForDelete
:3600
```

In the example above, the **Expired** check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.

Durable

Displays whether or not the endpoint is durable (checked) or non-durable (unchecked). Durable endpoints remain after an broker restart and are automatically restored as part of an broker's backup and restoration process.

Bind Count

The total number of binds connected to the endpoint.

Trend Graphs

Traces the sum of metrics for the endpoint.

- **Spooled Msgs**: The amount of spooled messages, in megabytes.
- **Cur Spool Usage**: The amount of space used by spooled messages, in megabytes.


Log Scale



Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.

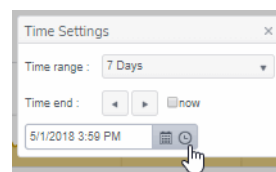
Base at Zero



Select to use zero (**0**) as the Y axis minimum for all graph traces.


Time Settings

By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:

- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
- specify begin/end dates using the calendar .
- specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows  .

Restore settings to current time by selecting **now** .

Endpoint Type	The type of endpoint.
Egress Config Status	Refer to Solace documentation for more information.
Egress Selector Present	Refer to Solace documentation for more information.
Last Update	The date and time of the last data update.
Critical/Warning	The number of critical alerts / warning alerts which also opens the Alerts Table .
Access Type	Refer to Solace documentation for more information.
Ingress Config Status	Refer to Solace documentation for more information.
Ingress Selector Present	Refer to Solace documentation for more information.

Capacity

These displays provide current broker capacity metrics, alert count and severity at the broker level. Displays in this View are:

- **"Capacity Table"**: View client, spool usage, incoming messages, outgoing messages, incoming bytes, and outgoing bytes data for all brokers.
- **"Capacity - Summary"**: View client, spool usage, incoming messages, outgoing messages, incoming bytes, and outgoing bytes data for a specific broker.
- **"Capacity Trends"**: View the broker capacity data for a specific broker in a trend graph format.

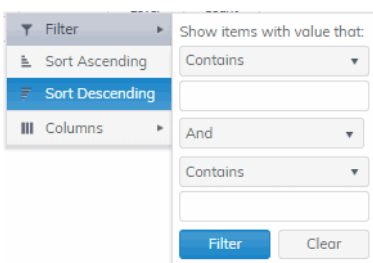
Capacity Table

View current and HWM (high water mark for the last 30 days) capacity utilization data for all brokers.

By default, a subset of available metrics is shown. Use **More Columns/Less Columns** to toggle to the complete set of metrics available (and back to the subset).

You can view client, spool usage, incoming message, outgoing message, incoming bytes, and outgoing bytes data for the broker. Each table row is a different broker.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



Double-click a row to drill down and investigate in the "Capacity - Summary" display.

Broker Capacity Table 05-Mar-2019 09:19 No Alerts ✓ DATA

Show: All Brokers: 1 [Less Columns](#)

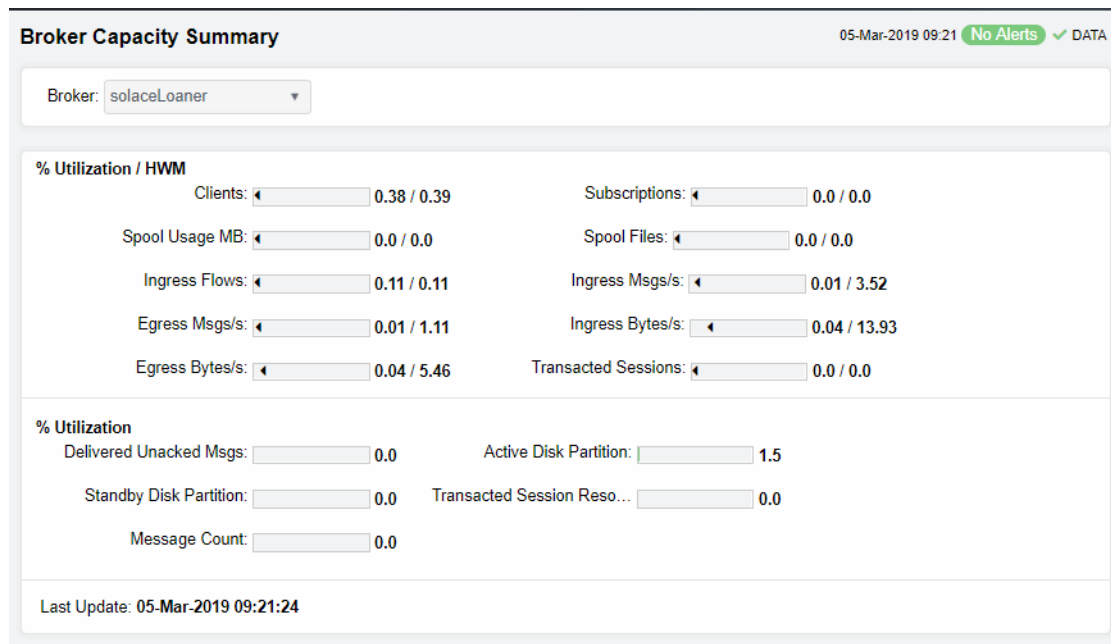
Broker	Alert Level	Alert Count	Current Client Connections	Connections HWM	Connections Max	Connections Reserved	Connections Used %
solaceLoaner	✓		35	35	9,000	135,000	

Broker	The name of the broker.
Alert Level	<p>The maximum level of alerts in the row:</p> <ul style="list-style-type: none"> ● Red indicates that one or more metrics exceeded their ALARM LEVEL threshold. ● Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold. ● Green indicates that no metrics have exceeded their alert thresholds.
Alert Count	The total number of active alerts.
Current Client Connections	The current number of clients connected.
Connections HWM	The greatest number of connections in the last 30 days.
Connections Max	The greatest number of connections since the broker last started.
Connections Reserved	The current number of reserved connections.
Connections Used %	The current amount of connections used, in percent.
Connections Used HWM %	The greatest amount of connections used, in percent, in the last 30 days.
Cur Spool Usage MB	The current amount of used spool disk, in megabytes.
Cur Spool Usage HWM	The greatest amount of spool disk used in the last 30 days.
Spool Disk Allocated	The amount of allocated spool disk.
Spool Reserved	The amount of reserved spool disk.
Current Spool Usage %	The current amount of used spool disk, in percent.
Current Spool Usage % HWM	The greatest amount of used spool disk in the last 30 days, in percent.

Delivered Unacked Msgs Util %	Refer to Solace documentation for more information.
Ingress Flow Count	The number of ingress flows.
Ingress Flow HWM	The greatest number of ingress flows in the last 30 days.
Ingress Flows Allowed	The maximum number of ingress flows allowed.
Ingress Flow Count %	The amount of ingress flows in percent.
Ingress Flow Count HWM %	The greatest amount of ingress flows in the last 30 days, in percent.
Ingress Msgs/s	The number of ingress messages per second.
Ingress Msgs/s HWM	The greatest number of ingress messages per second in the last 30 days.
Max Ingress Msgs/s	The maximum number of ingress flows per second allowed.
Ingress Msgs %	The amount of ingress messages in percent.
Ingress Msgs/s HWM %	The greatest amount of ingress messages in the last 30 days, in percent.
Cur Egress Msgs/s	The number of egress messages per second.
Egress Msgs/s HWM	The greatest number of egress messages per second in the last 30 days.
Max Egress Msgs/s	The maximum number of egress flows per second allowed.
Egress Msgs %	The amount of egress messages in percent.
Egress Msgs/s HWM %	The greatest amount of ingress messages in the last 30 days, in percent.
Cur Egress Bytes/s	The amount of egress in bytes per second.
Egress Bytes/s HWM	The greatest amount of egress, in bytes per second, in the last 30 days, in percent.
Expired	<p>When checked, performance data about the VPN has not been received within the time specified (in seconds) in the \$solRowExpirationTime field in the conf\rtvapm_solmon.properties file. The \$solRowExpirationTimeForDelete field allows you to define the amount of time (in seconds) in which the row will be removed from the table if there is no response from the VPN. To view/edit the current values, modify the following lines in the .properties file:</p> <pre># Metrics data are considered expired after this number of seconds # collector.sl.rtvview.sub=\$solRowExpirationTime:45 collector.sl.rtvview.sub=\$solRowExpirationTimeForDelete:3600</pre> <p>In the example above, the Expired check box would be checked after 45 seconds, and the row would be removed from the table after 3600 seconds.</p>
Time Stamp	The date and time the row of data was last updated.

Capacity - Summary

This display, a pivoted view of the “[Capacity Table](#)”, allows you to view current and HWM (high water mark for the last 30 days) capacity utilization data for a single broker. Select a broker from the drop-down menu to view client, spool usage, incoming message, outgoing message, incoming bytes, and outgoing bytes data for the broker.



% Utilization/HWM

These values show high water marks (peak capacity utilization) for the last 30 days.

Clients

The current number of clients connected to the broker.

Spool Files

The highest number of spool files on the broker in the past 30 days.

Egress Msgs/s

The highest number of outgoing messages per second on the broker in the past 30 days.

Transacted Sessions

The highest number of transacted sessions on the broker in the last 30 days.

Subscriptions

The highest number of subscriptions on the broker in the last 30 days.

Ingress Flows

The highest number of inflows on the broker in the last 30 days.

Ingress Bytes/s

The highest amount of inflows, in bytes per second, on the broker in the past 30 days.

Spool Usage MB

The highest amount of spool utilization, in megabytes per second, on the broker in the past 30 days.

Ingress Msgs/s

The highest number of incoming messages per second on the broker in the past 30 days.

Egress Bytes/s

The highest number of outgoing messages per second on the broker in the past 30 days.

% Utilization

These values show current capacity utilization.

Delivered Unacked Msgs

The current number of delivered messages that were not acknowledged divided by the maximum number of delivered messages that were not acknowledged allowed on the broker.

Transacted Sessions Reso...

The current number of transacted sessions that were resolved on the broker.

Active Disk Partition

The percentage of available active disk partition that is used.

Message Count

The current number of messages on the broker.

Standby Disk Partition

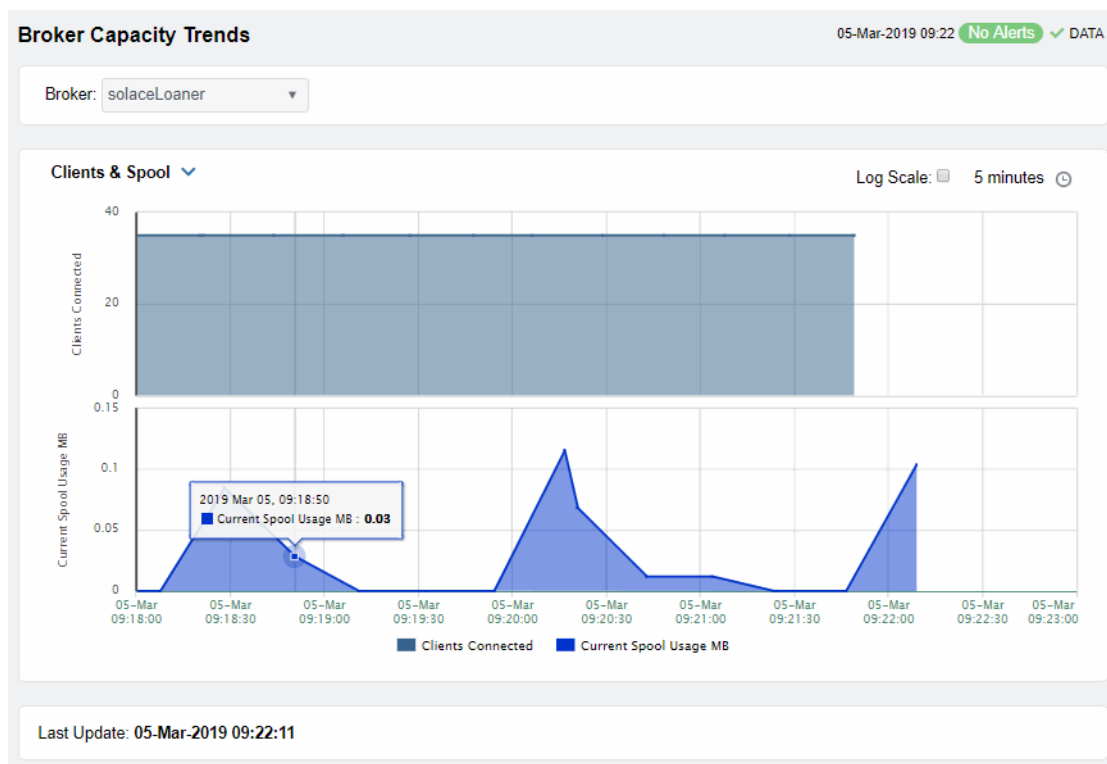
The percentage of available standby disk partition that has been used.

Last Update

The date and time of the last data update.

Capacity Trends




This display allows you to view a trend graph that traces broker performance data for clients & spool data, message flow and throughput. Select a broker and a performance metric from the drop-down menus.

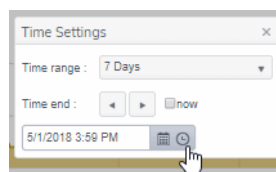
**Clients & Spool**




The trend graph traces the following performance metrics:

Clients Connected: The current number of clients connected to the broker.

Current Spool Usage: The current spool usage, in megabytes, on the broker.

- Message Flow** The trend graph traces the following:
Ingress Msgs/sec: The number of incoming messages per second on the broker.
Egress Msgs/sec: The number of outgoing messages per second on the broker.
- Throughput** The trend graph traces the following:
Ingress KB/sec: The amount of incoming per second, in KB, on the broker.
Egress KB/sec: The number of outgoing data per second, in KB, on the broker.
- Log Scale** Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.
- Base at Zero** Select to use zero (0) as the Y axis minimum for all graph traces.
- Time Settings** By default, the time range end point is the current time. To change the time range, click the **Time Settings**  and either:
- choose a **Time range** from 5 Minutes to 7 Days in the drop-down menu.
 - specify begin/end dates using the calendar .
 - specify begin/end time using the clock .



Toggle forward/backward in the trend graph per the period you choose (from the **Time range** drop-down menu) using arrows   .
 Restore settings to current time by selecting **now**  .

Syslog Events

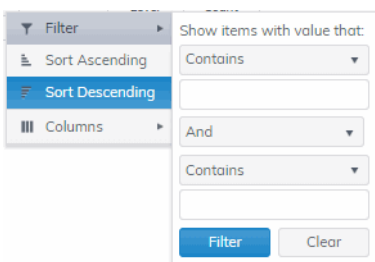
The Solace Syslog Events Table allows you to supervise the last Syslog event messages from the Solace Message Brokers that have been configured for syslog monitoring. See the Solace product documentation for an in depth description of Syslog monitoring in Solace products and how to configure the Message Brokers and the Syslog destination.

This display requires the Solace Event Module from the RTView Solace Monitor to be properly configured with a Syslog destination and running. See [“Solace Event Module”](#) for additional information.

Syslog Events Table

This display lists all Syslog events collected from all Solace brokers. Each row in the table is a different message. Use the drop-down menus to filter the list by **Connection**, **Scope** and alert **Severity** level. Filter messages per single broker or all brokers. Click a column header to sort column data in numerical, alphabetical or chronological order.

Search by clicking the right side of a column heading/**Filter** to open the Search, Sort and Choose Columns dialog:



Provisioning

Interface

Msg Spool

VPNs

CSPF Neighbors

Clients

Table

Summary

Bridges

Endpoints

Capacity

Syslog Events

Table

Drilldowns

Component Alerts Table

Component Alert Detail

Component Alert

Configuration

Solace Syslog Events Table

27-Mar-2019 12:33 DATA

Connection: - All -

More Columns

Scope: - All -

Severity: - All -

Show: All

Events: 3,194

time_stamp	Connection	Solace Scope	Host	Facility	Solace Event...	Syslog Seve...	Type	Message	Additional Fi...	Cl
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-47	SYSTEM	ip-172-30-1-144	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			
26-Mar-2019 12: VMR-118	SYSTEM	ip-172-30-1-112	19	SYSTEM_AUTH	notice	SYSLOG_MSG	Tue Mar 26 19:3 ("sessionType":			

Page 1 of 80

1 - 40 of 3194 items

Connection

Select the connection string assigned when the message brokers connection properties were added with the RTView Configuration Application.

More/Fewer Columns

Switches to another syslog events table display containing the full set of columns coming from Syslog.

Scope:	<p>This drop down selects the type of the event. The SYSTEM events are coming from conditions related to the state of the message broker. VPN events are events with the state of the message brokers VPNs. CLIENT events refer to the state of clients executions in the messaging infrastructure.</p> <p>Available options are:</p> <ul style="list-style-type: none">• SYSTEM• VPN• CLIENT• ALL shows messages from all sources.
Severity:	<p>Selects the severity level of the events that will be presented in the table. All options go from the less severe to the most important to the health of the systems unless one specifies one single type of severity. For instance, Warning will only show the events that are defined as Warning, filtering out events more damaging, whereas Warning or higher will show all Syslog events that are either Warning, Error, Alert or Emergency. To avoid missing any key event, selection of Warning or higher is recommended.</p> <p>Available options are:</p> <ul style="list-style-type: none">• INFO• NOTICE• NOTICE or higher• WARN• WARN or higher• ERROR• ERROR or higher• CRITICAL• ALERT• EMERGENCY• ALL shows messages regardless of severity level from all sources.
Show:	<p>Selects the Expiration flag of the event. Due to the large number of events that can exist, it is recommended to select Unexpired Only to see exclusively the events that are active.</p> <p>Available options are:</p> <ul style="list-style-type: none">• Expired Only• Unexpired Only• ALL shows expired and unexpired messages from all sources.
Events:	<p>The number of events currently shown in the table.</p>
Time Stamp	<p>The date and time the row of data was last updated.</p>

Drill Down Displays



The displays described in this section are only accessible from other displays. These displays are used for managing alerts at the component level.

This View includes the following displays:

- [“Alerts Table by Component - HTML”](#): Track alerts associated with CIs shown in a display.
- [“Alert Detail for Component - HTML”](#): Investigate an alert instance and its history.
- [“Alert Configuration for Component - HTML”](#): Refine alert threshold settings.

Alerts Table by Component - HTML

As an alternative to the **Alerts Table**, use the **Alerts Table by Component** to track and manage all alerts that are specifically associated with the CIs shown in a display.

You access the **Alerts Table by Component** by clicking  (the alert status icon) in the title bar of other displays. The display in which you click  is the source display.

Package provides the technology label associated with the alerts shown. For example, **Jvm**, **Tomcat** and **Host** are the technology labels for Java Virtual Machines, Tomcat applications and servers (respectively). These labels are also correlated with the RTView solution package names (for example, the Solution Package for Host Agent). **Category** lists all alert categories related to the source display.

Use the **ACK** and **Cleared** drop-downs to filter the table by **All**, **True** or **False**.

See the **Alert Level** column icon, where:



The alert reached its ALARM LEVEL threshold in the table row.



The alert reached its WARNING LEVEL threshold in the table row.

To investigate, click:


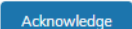
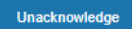



to open the **Alert Detail for Component** where you can see the current and historical conditions that precipitated the alert being executed.



to open the summary display for the CI associated with the alert where you can investigate utilization metrics for the CI leading up to the alert being executed.

You can search, filter, sort and choose columns to include by clicking a column header icon (to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Right-click on a table cell to **Export to Excel**. Use **Ctrl + click** or **Shift + click** to select multiple alerts.












With one or more alerts selected, click  to set the alert(s) owner field,  to acknowledge the alert(s),  to clear the acknowledgement on previously acknowledged alert(s),  to add a comment to the alert(s).

You must be logged in as **rtvalertmgr** or **rtvadmin** to perform the **Own**, **Ack**, **Unack**, or **Comment** actions. Otherwise, you get an error dialog.

Alerts Table by Component 02-May-2019 11:05:09 ✔ DATA OK [🔗](#) [📘](#)

Package: Host Category: CPU;Network;Storage Cleared: False ACK: False

Alert Count: 16

Row	Update Time	Acknowledge	Cleared	Alert Level	Alert Name	Alert Index Values	
2018-Nov-09 23:54:0					HostCpuPercentHigh	SL-DEMO;SLHOST16(sl_qa)	High V
2018-Oct-01 06:20:10					HostCpuPercentHigh	SL-DEMO;SLHOST17(sl_amx)	High A
2019-May-02 03:28:5					HostMemoryUsedHigh	SL-DEMO-LX;192.168.200.92	High V
2018-Oct-01 06:19:38					HostVirtualMemoryUsedH	SL-DEMO;SLHOST17(sl_amx)	High A
2018-Oct-01 06:18:38					HostMemoryUsedHigh	SL-DEMO;SLHOST17(sl_amx)	High V
2018-Jan-12 11:38:56					HostCpuPercentHigh	SL-DEMO-LX;192.168.200.205	High A
2019-May-02 10:40:3					HostVirtualMemoryUsedH	SL-DEMO-LX;192.168.200.42	High A
2019-Apr-25 10:19:43					HostMemoryUsedHigh	SL-DEMO;SLHOST8	High V
2018-Jun-19 09:22:23					HostCpuPercentHigh	SL-DEMO-LX;192.168.200.202	High A
2018-Nov-09 10:33:54					HostVirtualMemoryUsedH	SL-DEMO;SLHOST16(sl_qa)	High A
2018-May-01 03:45:4					HostCpuPercentHigh	SL-DEMO-LX;192.168.200.202	High A

[Alert Detail](#)
[Go to CI](#)
[Own](#)
[Acknowledge](#)
[Unacknowledge](#)

[Add Comment](#)
[Clear All Comments](#)

Alert Detail for Component - HTML

Use the **Alert Detail for Component** display to investigate current and historical activity of a specific alert instance as it applies to the associated CI, and also compare against **Metric History** trends of the associated CI. A trend graph for the CI associated with the alert instance. You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

Access the **Alert Detail for Component** display by clicking [Details](#) in the **Alerts Table** or [Alert Detail](#) in the **Alerts Table by Component** display.

The **Alert History** table at the bottom of the display contains a row of data for each time the alert instance was updated. See the alert **ID**, **Row Update Time**, **Cleared** status and **Reason**, **Owner** and the **Alert Level** column icon, where:



The alert reached its ALARM LEVEL threshold in the table row.

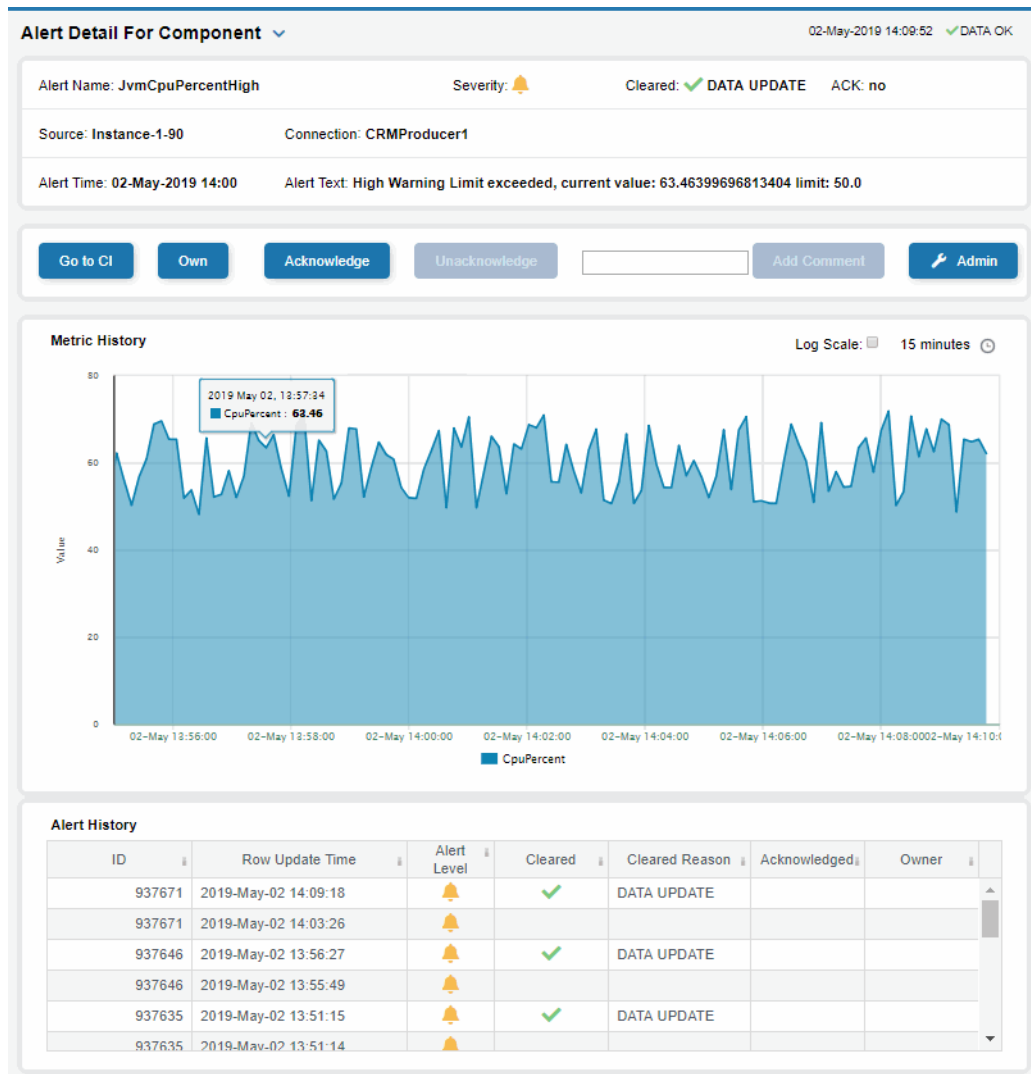


The alert reached its WARNING LEVEL threshold in the table row.

You can search, filter, sort and choose columns to include by clicking a column header icon (to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Right-click on a table cell to **Export to Excel**. Use **Ctrl + click** or **Shift + click** to select multiple alerts.

To investigate, click:

- [Go to CI](#) to see utilization conditions for the CI associated with the alert in a summary display.
- [Admin](#) to open the **Alert Configuration for Component** display where you can see, modify and refine alert threshold settings for that particular alert. A trend graph traces the relevant alert metric for the CI so you can adjust thresholds in real-time.



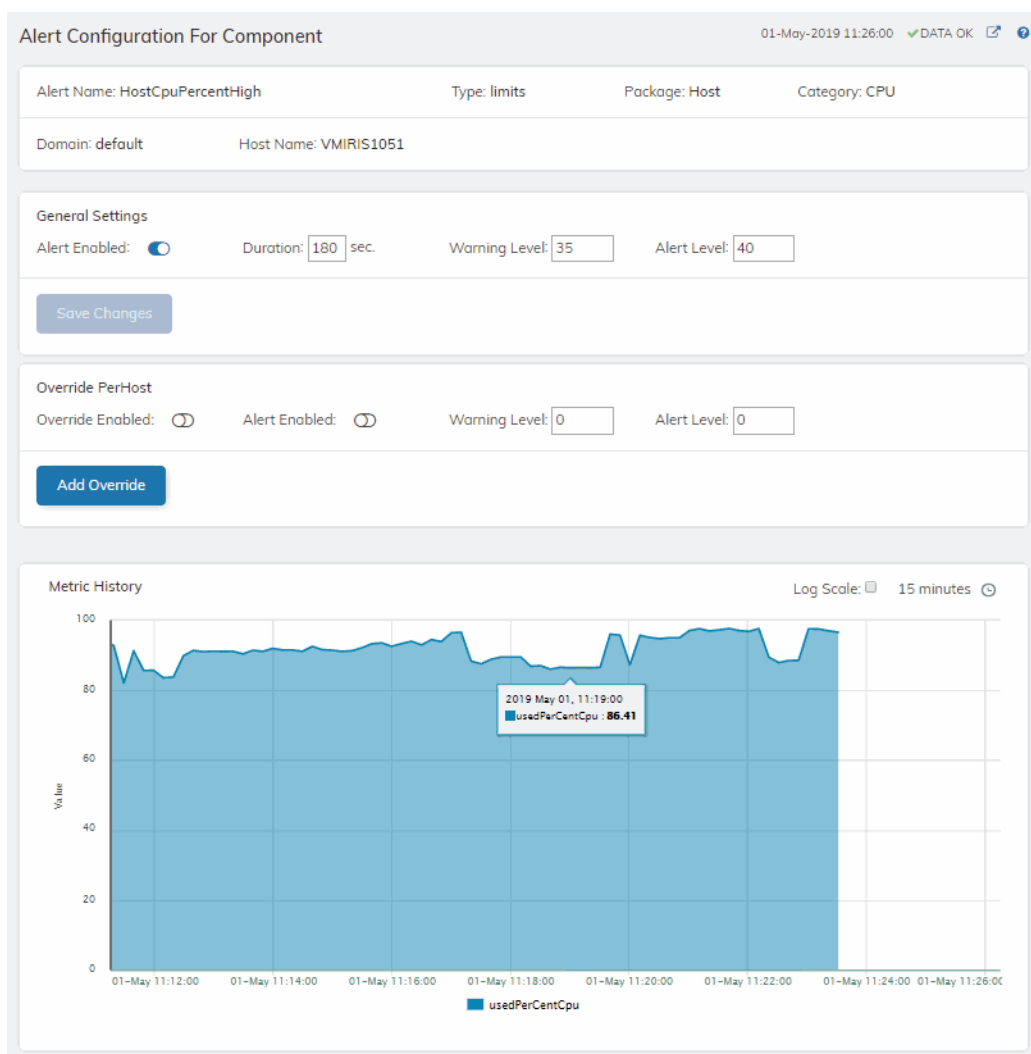
Alert Configuration for Component - HTML

Use the **Alert Configuration for Component** display to see, modify and refine alert threshold settings for a particular alert. A trend graph traces the history of the relevant metric for this alert so you can adjust thresholds in real-time. You can also modify alert thresholds, add an override alert and toggle ON or OFF  both global and override alerts.

Access the **Alert Configuration for Component** display by clicking  in the **Alert Detail for Component** display.

The bottom half of the display provides a **Metric History** trend graph which traces the performance metric pertaining to the alert. You can hover over the trend graph to see the values at a particular time. You can specify the time range for the trend graph and view data based on a log scale, which enables visualization on a logarithmic scale and should be used when the range in your data is very broad.

You must be logged in as rtvalertmgr or rtvadmin to modify alerts.



Alerts

Alerts Table

Use this display to track and manage all alerts that have occurred in the system, where:



One or more alerts exceeded their ALARM LEVEL threshold in the table row



One or more alerts exceeded their WARNING LEVEL threshold in the table row

You can search, filter, sort and choose columns to include by clicking a column header icon (located to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Use the **Ack'd** and **Cleared** drop-downs to filter the table by those columns. Right-click on a table cell to **Export to Excel** or **Copy Cell Value**. Use **Ctrl + click** or **Shift + arrow** to select multiple alerts. To investigate, select one alert and click:

Details

to open the **Component Alert Detail** display to get details about that particular alert instance as it specifically applies to the associated CI.

CI

to see utilization conditions for the CI associated with the alert during the seconds (minutes, hours or days) leading up to the alert being executed in a summary display.

With one or more alerts selected, you can click **Own** to set the alert(s) owner field, **Ack** to acknowledge the alert(s), **Unack** to clear the acknowledgement on previously acknowledged alert(s) and **Comment** to add a comment to the alert(s).

You must be logged in as rtvalertmgr or rtvadmin to perform the **Own**, **Ack**, **Unack**, or **Comment** actions. Otherwise, you get an error dialog.

Alerts Table										
30-Apr-2019 13:47:46 DATA										
<div> <div>Own</div> <div>Ack</div> <div>Unack</div> <div>Comment</div> <div>Details</div> <div>CI</div> </div> <div> <div>Ack'd: all</div> <div>Cleared: false</div> <div>Cmd Filter: *****</div> <div>Alert Count: 92</div> </div>										
Time	Ack	Clr	Sev	Alert Name	Alert Text	Owner	ID	Source	Comments	CI
2019-Apr-30 00:04:07				JvmNotConnected	Server disconnected		1043	RTV-DATA-TIB		win4
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1009	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1008	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1007	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1006	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1005	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1004	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1003	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1002	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1001	Z-SIMDATA-1		local
2019-Apr-30 01:34:49				JvmNotConnected	Server disconnected		1000	Z-SIMDATA-1		local
2019-Apr-30 12:01:02				JvmCpuPercentHigh	High Alert Limit exceed		1064	Z-SIMDATA-1		local
2019-Apr-30 13:44:01				JvmCpuPercentHigh	High Warning Limit exc		928739	RTV-DATA-KAF		Insta
2019-Apr-30 13:47:04				JvmCpuPercentHigh	High Warning Limit exc		928747	RTV-DATA-KAF		Insta
2019-Apr-30 01:36:49				HostCpuPercentHigh	High Warning Limit exc		1010	Z-SIMDATA-1		defa
2019-Apr-30 01:36:49				HostCpuPercentHigh	High Warning Limit exc		1010	Z-SIMDATA-1		defa
2019-Apr-30 02:05:10				HostCpuPercentHigh	High Alert Limit exceed		1011	Z-SIMDATA-1		defa
<div> <div>Page 1 of 3</div> <div>1 - 40 of 92 items</div> </div>										

Admin

These displays enable you to set alert thresholds, observe how alerts are managed, and view internal data gathered and stored by RTView (used for troubleshooting with SL Technical Support). Displays in this View are:

- **"Alert Administration"**: Displays active alerts and provides interface to modify, enable and manage alerts.
- **"Alert Overrides Admin"**: Set and modify alert overrides. Access this display from the **Alert Administration** display.
- **"Cache Table"**: View cached data that RTView is capturing and maintaining, and use this data use this for debugging with SL Technical Support.

Alert Administration

The **Alert Administration** display allows administrators to enable/disable alerts and manage alert thresholds. The table describes the global settings for all alerts on the system.

You can set the **Delay** time (the number of seconds that must pass before an alert is triggered, where **0** sets it to immediately execute).

You can set the **Warning Level** which executes a single warning alert when the number of seconds specified here is exceeded. To set the warning to occur sooner, reduce the **Warning Level** value. To set the warning to occur later, increase the **Warning Level** value.

You can set the **Alarm Level** which executes a single alarm alert when the number of seconds specified here is exceeded. To set the alarm to occur sooner, reduce the **Alarm Level** value. To set the alarm to occur later, increase the **Alarm Level** value.

Note: For low value-based alerts (an alert that executes based on a value going below a certain threshold), to set the alarm to occur sooner you increase the **Alarm Level** value. To set the alarm to occur later, reduce the **Alarm Level** value.

You can apply alert thresholds globally or as an *override*. Setting override alerts allows you to set thresholds for a subset of your resources, or for a single resource (for example, a single server). Override alerts are useful if the majority of your resources require the same threshold setting, but there are a few resources 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. See below for instructions.

You can filter, sort and choose columns to include by clicking a column header icon (located to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Use the **Ack'd** and **Cleared** drop-downs to filter the table by those columns. Right-click on a table cell to **Export to Excel**.

To set thresholds and enable a global alert:

Select an alert and, under **Settings for alert** (in the lower portion of the screen), modify settings for the alert **Delay**, **Warning Level** and/or **Alarm Level** and **Save Settings**. With that alert selected, check the **Alert Enabled** box under **Settings for alert** (in the lower portion of the screen) and **Save Settings**. The **Alert Enabled** box (next to the selected alert) is now checked.

To set thresholds and enable an override alert:

To set an override alert, select an alert and click **Override Settings** to open the **Alert Overrides Admin** display.

Alerts Administration 30-Apr-2019 10:34:01 ✓ DATA OK

Package: All http://rtvdemos.sl.com/emdemo_central_rtvquery

Alert Name	Alert Enabled	Alert Delay	Warning Level	Alert Level	Override Count
HostNetworkTxRateHigh	<input type="checkbox"/>	30	50	75	0
HostProcessCountLow	<input type="checkbox"/>	30	15	5	0
HostStateData	<input type="checkbox"/>	30			0
HostStorageUsedHigh	<input type="checkbox"/>	30	80	90	0
HostSwapUsedHigh	<input type="checkbox"/>	30	75	90	0
HostVirtualMemoryUsedHigh	<input type="checkbox"/>	30	75	90	0
JvmCpuPercentHigh	<input checked="" type="checkbox"/>	60	50	70	0
JvmGcDutyCycleHigh	<input type="checkbox"/>	30	50	75	0
JvmMemoryUsedAfterGCHigh	<input type="checkbox"/>	0	1	80	0
JvmMemoryUsedHigh	<input checked="" type="checkbox"/>	60	75	86	0
JvmNotConnected	<input checked="" type="checkbox"/>	60			0
JvmStateData	<input type="checkbox"/>	30			0
JvmThreadCountHigh	<input checked="" type="checkbox"/>	60	8000	12000	0

Page 2 of 5 101 - 200 of 432 items

Settings for alert

Alert Enabled: ☐ Delay: Warning Level: Alert Level:

Alert Selected: **HostSwapUsedHigh** Description: **The percentage of swap space used is above the limits defined for that Host**

For additional details, see ["Alert Overrides Admin"](#).

Alert Name	The name of the alert.
Alert Enabled	When checked, the alert is enabled globally.
Alert Delay	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.

Warning Level	The global warning threshold for the selected alert. When the specified value is exceeded a warning is executed.
Alert Level	The global alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed.
Override Count	The number of times thresholds for this alert have been defined individually in the Tabular Alert Administration display. A value of: -0 indicates that no overrides are applied to the alert. -1 indicates that the alert does not support overrides.

Settings for alert

Select an alert in the table to use the following options:

Alert Enabled	Check / uncheck this box to enable or disable the selected alert globally.
Delay	Enter the amount of time (in seconds) that the value must be above the specified Warning Level or Alarm Level threshold before the selected alert is executed. 0 is for immediate execution.
Warning Level	Enter 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.
Alert Level	Enter 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.
Save Settings	Click to apply alert settings for the selected alert.
Original Defaults	Click to revert to original alert settings for the selected alert.
Override Settings	Click to set an alert override in the Alert Overrides Admin display on the selected alert.

Alert Overrides Admin

Administrators use this display to create override alerts. To access this display, select an alert in the **Alert Administration** display and choose **Override Settings**.

The table lists all the resources to which you can apply the alert you selected from the **Alert Administration** display. Each row in the table is a different resource, columns describe whether that alert is enabled (globally and as an override) and if so, the current alert thresholds for each.

You can filter, sort and choose columns to include by clicking a column header icon (located to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Use the **Display** drop-down to filter the table to show **All** resources, only resources with the **Overridden** alert applied or **Free** resources (to show only resources without the alert override applied). Right-click on a table cell to **Export to Excel** or **Copy Cell Value**.

To set an override alert:

Select a resource and **Override Type** from the drop-down menu (depending on the alert, there might be only one type). Under **Settings for selected index** (in the lower portion of the screen), modify settings for the alert **Delay**, **Warning Level** and/or **Alarm Level** and **Add Override**. The table updates with your new settings.

With that resource selected, toggle on **Override Enabled** and **Alert Enabled** under **Settings for alert** (in the lower portion of the screen) and **Save Settings**. The table updates with your new settings. The **Alert Administration** display **Override Count** also updates for the alert.

Alert Overrides Administration
11-Mar-2019 15:28:11 DATA OK

Alert: **SolVpnSubscriptionCountHigh**
Override Type: **PerVPN**
Display: **All**

Connection	vpn-name	Override Enab..	Alert Enabled	Warning Level	Alert Level
solaceLoaner	BridgeBroker1				
solaceLoaner	Broker1				
solaceLoaner	Broker10				
solaceLoaner	Broker2				
solaceLoaner	Broker3				
solaceLoaner	Broker4				
solaceLoaner	Broker5				
solaceLoaner	Broker6				

Settings for selected index

Override Enabled: ☒
Alert Enabled: ☒
Warning Level:
Alert Level:

Add Override
Save Settings
Remove Override

Cache Table

View the raw data that RTView is capturing and maintaining to investigate utilization and capacity metrics, as well as connection details, for caches on a data server.

Select a **Data Server** from the drop-down menu. The upper table contains a row of data for each cache on the selected data server. You can see the current number of **Rows** and **Columns** in each table and the amount of **Memory** used. You can also find out the cache **Table** type of which there are five:

- **current** tables show the most recently received values for each index.
- **current_condensed** tables are current tables with primary compaction configured.
- **history** tables show the historical values for each index.
- **history_condensed** tables are history tables with primary compaction configured.
- **history_combo** tables are history tables with primary compaction configured, and which is also configured to store rows of recent raw data followed by rows of older condensed data.

Select a cache to see connection utilization details for that cache in the lower table. The lower table shows the contents of the selected cache table. Available columns vary by cache. For example, a JVM cache table might provide **BootClassPath** and **InputArgument** columns, and a Tomcat cache might provide **RateAccess** and **cacheMaxSize** columns.

You can search, filter, sort and choose columns to include by clicking a column header icon (to the right of each column label) and selecting **Filter**, **Sort Ascending**, **Sort Descending** or **Columns**. Or just click a column header to sort.

Right-click on a table cell to **Export to Excel** or **Copy Cell Value**. Use **Ctrl + click** or **Shift + click** to select multiple alerts. Use **History Tables** to include / exclude history tables in the table. Right-click on a table cell to **Export to Excel** or **Copy Cell Value**.

This low-level option can be useful to identify the source of the problem when the displays are not showing the expected data. Use this data for debugging and troubleshooting with Technical Support.

Cache Table 07-May-2019 14:11 ✓ DATA

Data Server: central-alert History Tables: ☐

Data Server URL: https://rtvdemos.sl.com/emdemo_central_rtvquery

Cache	Table	Rows	Columns	Memory
JmxStatsTotals	current	1	4	441
RtvAlertGroupMap	current	493	3	67424
RtvAlertMapByCI	current	82	5	13614
RtvAlertSourceStats	current	8	2	940
RtvAlertStatsByArea	current	8	9	2930
RtvAlertStatsByAreaAndAlertGroup	current	8	10	3454
RtvAlertStatsByCI	current	59	5	9228
RtvAlertStatsByCIAndAlertGroup	current	59	6	12506

Cache: RtvAlertStatsByCIAndAlertGroup Table: current

time_stamp	CITYPE	CINAME	ALERTGROUP	MaxSeverity	AlertCount
2019-May-07 14:11:33	JVM	localhost:JOLMON_TOM	None	2	1
2019-May-07 14:11:33	JVM	localhost:EMSMON_DAT	None	2	1
2019-May-07 14:11:33	JVM	localhost:SOLMON_DISF	None	2	1
2019-May-07 14:11:33	JVM	localhost:SOLMON_DAT	None	2	1
2019-May-07 14:11:33	JVM	localhost:EMSMON_DISI	None	2	1
2019-May-07 14:11:33	JVM	localhost:SOLMON_TOM	None	2	1
2019-May-07 14:11:33	JVM	localhost:EMSMON_DAT	None	2	1
2019-May-07 14:11:33	JVM	Instance-1-90;CRMBroke	None	1	1
2019-May-07 14:11:33	JVM	Instance-1-90;CRMZooki	None	1	1
2019-May-07 14:11:33	JVM	Instance-1-171;CRMCon	None	1	1
2019-May-07 14:11:33	JVM	Instance-1-171;CRMCon	None	1	1
2019-May-07 14:11:33	JVM	Instance-1-171;CRMBrok	None	1	1
2019-May-07 14:11:33	JVM	localhost:TMolecule5_2	None	1	1
2019-May-07 14:11:33	JVM	localhost:PMolecule12_1	None	1	1

Page 1 of 2 1 - 40 of 59 items

RTView Manager

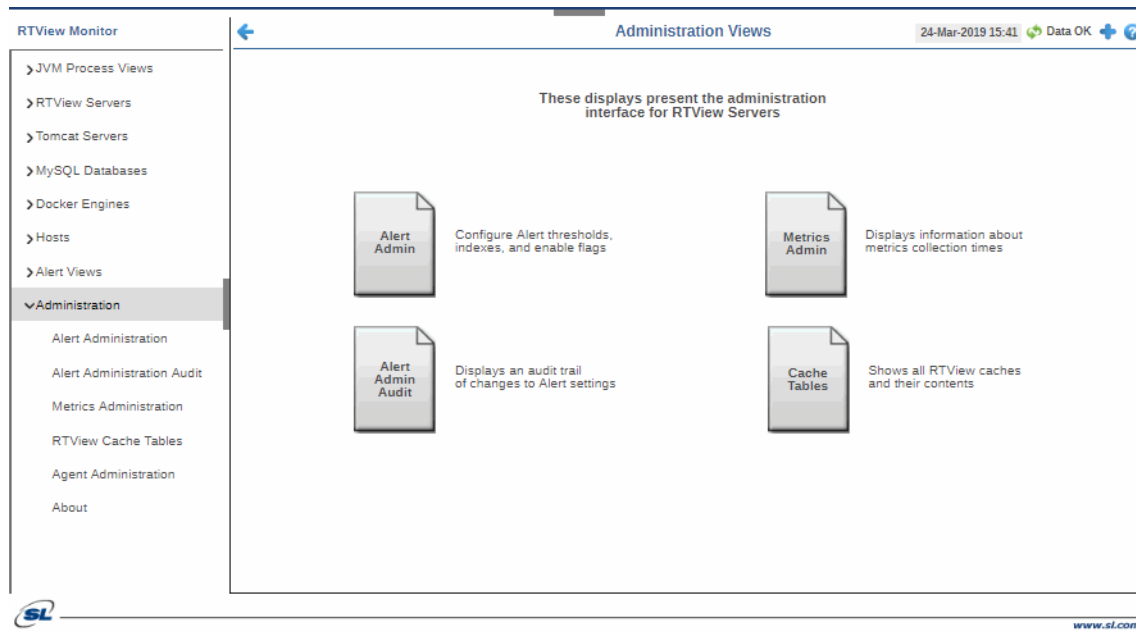
This section describes RTView Manager displays. Use RTView Manager displays to track the health of your monitoring system.

Login to RTView Manager

To access RTView Manager browse to:

- **<http://IPAddress:8068/rtview-manager-classic>** if you are executing your browser on a different host than where the monitor is running.
- **<http://localhost:8068/rtview-manager-classic>** if you are executing your browser in the same host where the monitor is running.

Use `rtvadmin/rtvadmin` for username/password.
The RTView Manager opens (see the following figure).



See “[RTView Manager](#)” for details about RTView Manager displays.

The RTView Manager organizes displays under the following Views:

- “[JVM Process Views](#)”
- “[Tomcat Servers](#)”
- “[RTView Servers](#)”
- “[Tomcat Servers](#)”
- “[Hosts](#)”
- “[Alert Views](#)”

JVM Process Views

These displays present performance data for monitored Java Virtual Machine (JVM) Processes. Use these displays to examine the performance and resource use of JVMs in summary and detail. Any JVM that is enabled for monitoring can be included in these displays. The displays include summary overviews and detail pages with historical trends.

You can set alert thresholds on performance and resource metrics for your JVMs, including **CPU Percent**, **Memory Used** and **Gc Duty cycle**. Alerts are shown in the “[All JVMs Heatmap](#)” display. Use the detailed JVM displays to investigate further; for example a **Memory Used** alarm might take you to the “” display to get historical memory use, or a **Gc Duty Cycle** alarm might take you to the “[JVM GC Trends](#)” display.

Displays in this View are:

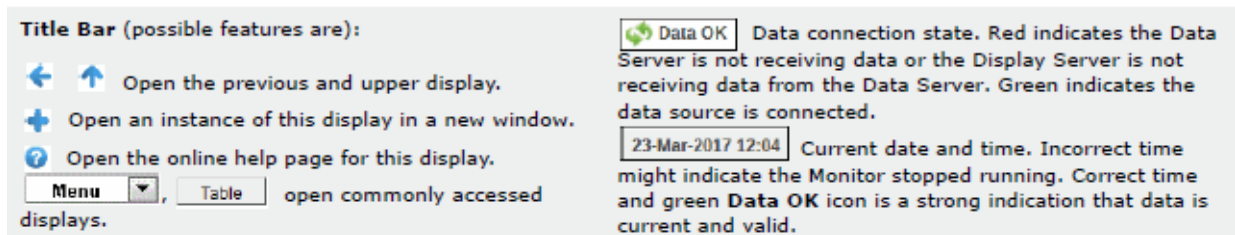
- **"All JVMs Heatmap"**: Heatmap of alert states for all JVM connections.
- **"All JVMs Table"**: Table of connection details for all JVM connections.
- **"JVM Summary"**: Table of connection details for a single JVM as well as performance trend graphs.
- **"JVM System Properties"**: Table of system details for a single JVM.
- **"JVM Memory Pool Trends"**: Trend graphs of memory pool utilization.
- **"JVM GC Trends"**: Trend graphs of garbage collection memory utilization.

All JVMs Heatmap

View the most critical alert state for all monitored JVM connections for one or all sources, as well as CPU and memory utilization. The heatmap organizes JVM connections by source and host, and uses color to show the most critical Metric value for each JVM connection associated with the selected source. Each rectangle in the heatmap represents a JVM connection. The rectangle size represents the amount of memory reserved for that process; a larger size is a larger value. Each Metric (selected from the drop-down menu) has a color gradient bar that maps relative values to colors.

Choose one or **All Sources** from the **Source** drop-down menu. Use the check-boxes ☒ to include or exclude labels in the heatmap. Move your mouse over a rectangle to see detailed JVM connection information (including **PID**). Drill-down and investigate by clicking a rectangle in the heatmap to view details for the selected connection in the **JVM Summary** display.





Fields and Data

This display includes:

Source Choose one or **All Sources** to display.









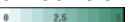
JVM Count The number of JVM connections shown in the display.

Show Inactive Select to show inactive connections.

Connection Select to show JVM connections names.


Metric

Select the Metric to display in the heatmap. Each Metric has a color gradient bar that maps relative values to colors.

Alert Severity	<p>The maximum level of alerts in the heatmap rectangle. Values range from 0 - 2, as indicated in the color gradient  bar, where 2 is the highest Alert Severity.</p> <p> Red indicates that one or more alerts have reached their alarm threshold. Alerts that have exceeded their specified ALARM LEVEL threshold have an Alert Severity value of 2.</p> <p> Yellow indicates that one or more alerts have reached their alarm threshold. Alerts that have exceeded their specified WARNING LEVEL threshold have an Alert Severity value of 1.</p> <p> Green indicates that no alerts have reached their alert thresholds. Alerts that have not exceeded their specified thresholds have an Alert Severity value of 0.</p>
Alert Count	<p>The number of alerts for the rectangle. The color gradient  bar values range from 0 to the maximum number of alerts in the heatmap.</p>
CPU %	<p>The total percent (%) CPU utilization for the rectangle. The color gradient  bar values range from 0 to the maximum percent (%) CPU utilization in the heatmap.</p>
Memory %	<p>The total percent (%) memory utilization for the rectangle. The color gradient  bar values range from 0 to the maximum percent (%) memory utilization in the heatmap.</p>
Current Heap	<p>The current amount of heap committed for the connection, in kilobytes. The color gradient  bar values range from 0 to the maximum amount in the heatmap.</p>
Used Heap	<p>The total amount of heap used by the connection, in kilobytes. The color gradient  bar values range from 0 to the maximum amount used in the heatmap.</p>

All JVMs Table

View JVM connection details for one or all sources, the most critical alert state for each JVM connection, as well as CPU and memory utilization in a tabular format. Each row in the table is a different connection.

Choose one or **All Sources** from the **Source** drop-down menu. Check the **Show Inactive** box to include inactive connections. The row color for inactive connections is dark red. Click Sort  to order column data. Drill-down and investigate by clicking a row in the table to view details for the selected connection in the **JVM Summary** display.

Heatmap All JVMs - Table View 19-Jan-2017 14:01 Data OK

Source: All Sources

JVM Count: 56 ☒ Show Inactive

All JMX Connections

Connection	Source	Expired	Connected	Alert Severity	Alert Count	Host	Port	
ALERT_SERVER	localhost	<input type="checkbox"/>		0	0	localhost	10023	102
ALERT_SERVER	TBSender	<input type="checkbox"/>		0	0	localhost	10023	102
ALERTHISTORIAN	localhost	<input type="checkbox"/>		0	0	localhost	10025	110
ALERTHISTORIAN	TBSender	<input type="checkbox"/>		0	0	localhost	10025	110
AMXMON-alpha-TB34	localhost	<input type="checkbox"/>		0	0	192.168.200.34	6368	309
AMXMON-alpha-TB34	TBSender	<input type="checkbox"/>		0	0	192.168.200.34	6368	309
AMXMON-alpha-TB34-HIST	localhost	<input type="checkbox"/>		0	0	192.168.200.34	6367	639
AMXMON-beta-TB3-HIST	localhost	<input type="checkbox"/>		0	0	192.168.200.133	6367	479
BWVMON-alpha-TB34	localhost	<input type="checkbox"/>		0	0	192.168.200.34	3368	321
BWVMON-alpha-TB34	TBSender	<input type="checkbox"/>		0	0	192.168.200.34	3368	321
BWVMON-alpha-TB34-HIST	localhost	<input type="checkbox"/>		0	0	192.168.200.34	3367	329
BWVMONITOR-release-WIN-8	localhost	<input type="checkbox"/>		0	0	192.168.200.146	3368	904
BWVMONITOR-TB8	localhost	<input type="checkbox"/>		0	0	192.168.200.138	3368	270
CONFIG_SERVER	localhost	<input type="checkbox"/>		0	0	localhost	10013	990
CONFIG_SERVER	TBSender	<input type="checkbox"/>		0	0	localhost	10013	990
DISPLAYSERVER	localhost	<input type="checkbox"/>		0	0	localhost	10024	106
DISPLAYSERVER	TBSender	<input type="checkbox"/>		0	0	localhost	10024	106
DISPLAYSERVER_DARKSTY	localhost	<input type="checkbox"/>		0	0	localhost	10124	118
DISPLAYSERVER_DARKSTY	TBSender	<input type="checkbox"/>		0	0	localhost	10124	118
EMSMON_SENDER-alpha-TB	TBSender	<input type="checkbox"/>		0	0	192.168.200.34	3166	289
EMSMON_SENDER-alpha-TB	localhost	<input type="checkbox"/>		0	0	192.168.200.34	3166	289

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.

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.

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:

Source Choose one or **All Sources** to display.

JVM Count: The number of JVM connections in the table.

Show Inactive Select to include inactive connections.

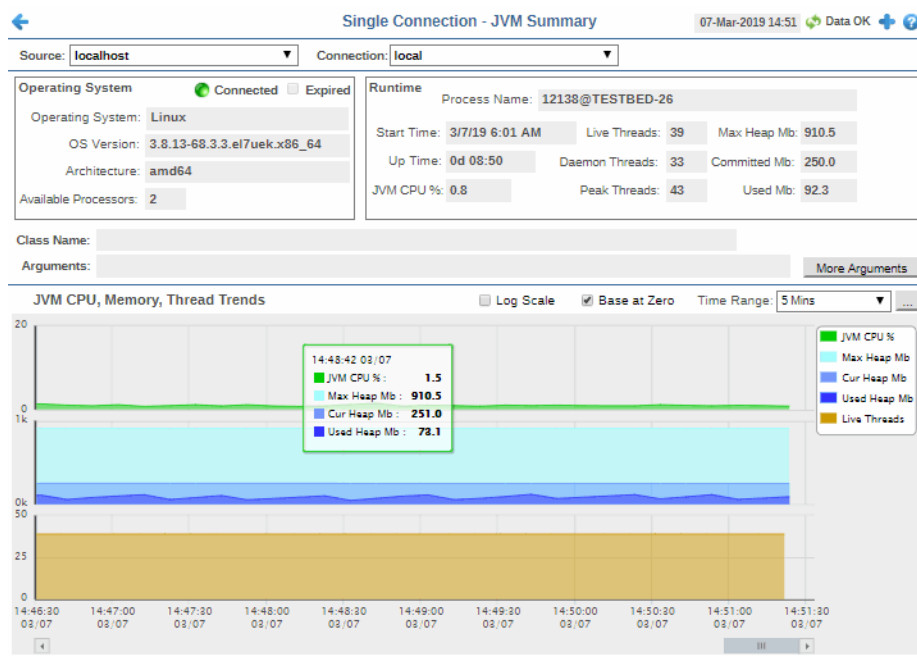
All JMX Connections Table

Connection	The name of the JVM connection.
Source	The name of the source.
Expired	When checked, this connection is expired due to inactivity.
Connected	The data connection state:  Disconnected.  Connected.
Alert Severity	The maximum level of alerts associated with the connection. Values range from 0 to 2 , where 2 is the greatest Alert Severity.  One or more alerts associated with the connection exceeded their ALARM LEVEL threshold.  One or more alerts associated with the connection exceeded their WARNING LEVEL threshold.  No alerts associated with the connection have exceeded their thresholds.
Alert Count	The current number of alerts for the connection.
Host	The name of the host for this connection.
Port	The port number for the connection.
PID	The connection PID.
CPU %	The amount of CPU, in percent (%) used by this connection.
Max Heap	The maximum amount of heap used by this connection, in kilobytes.
Current Heap	The current amount of committed heap for this connection, in kilobytes.
Used Heap	The current amount of heap used by this connection, in kilobytes.
Mem % Used	The amount of JVM memory used by this connection, in percent (%).
RtvAppType	The type of RTView application, where: 1 is for the Historian, 3 is for the Data Server; 5 is for the Display Server, and 0 is a non-RTView application.
Source	The Data Server that sent this value.
time_stamp	The date and time this row of data was last updated.

JVM Summary

Track JVM 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.

Use the available drop-down menus or right-click to filter data shown in the display.



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.



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.

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 data 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	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 JVM 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. 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 <i>Maximum</i> 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.

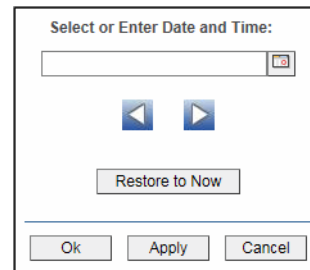
JVM CPU, Memory, Thread Trends


Shows JVM metrics for the selected server.



Log Scale Enable to use a logarithmic scale for the Y axis. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.

Base at Zero Use zero 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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 % 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).

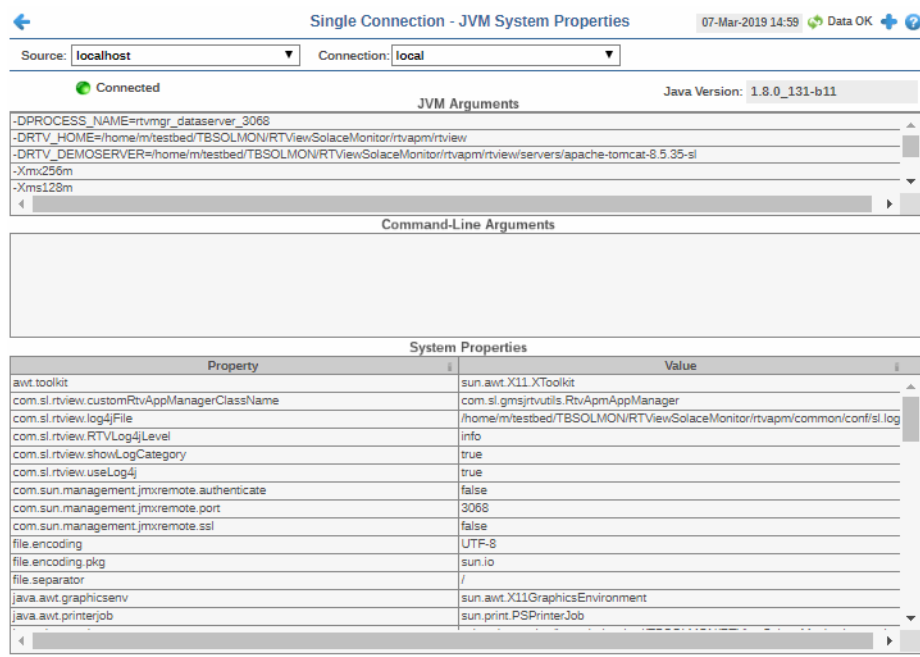
Cur Heap Mb Traces the current amount of memory, in megabytes, used for memory management by the application in the time range specified.

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.

JVM System Properties

Track JVM input arguments and system properties for a single connection. Use the available drop-down menus or right-click to filter data shown in the display.



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.
- open commonly accessed displays.

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.

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.

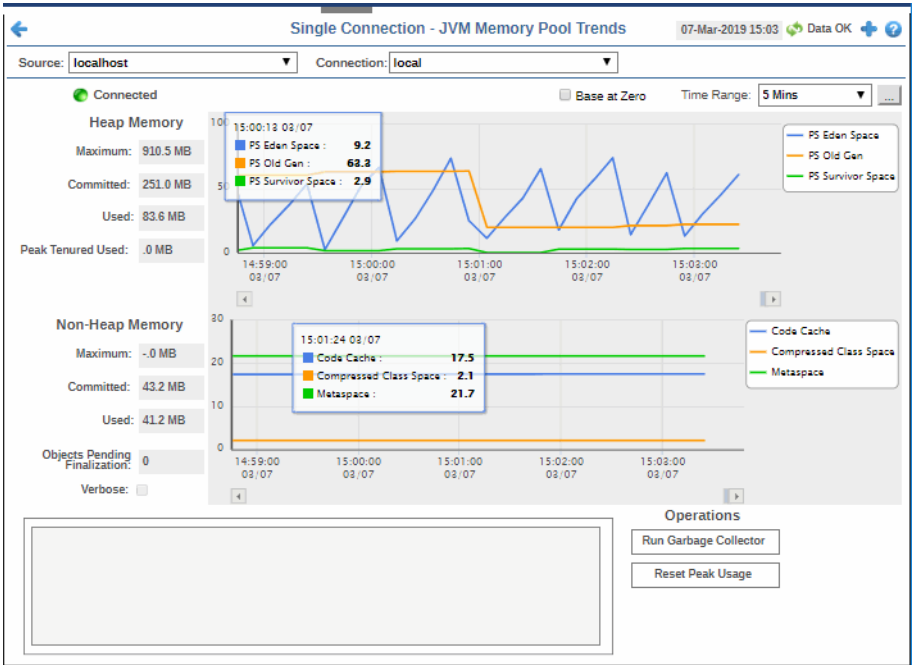
Command Line Arguments Arguments used to start the application.

System Properties
This table lists and describes system property settings.

Property	Name of the property.
Value	Current value of the property.


JVM Memory Pool Trends


Track JVM heap and non-heap memory usage for a single connection. Use the available drop-down menus or right-click to filter data shown in the display.



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.

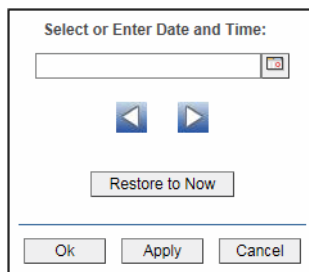
 **Data OK** Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.


 **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.



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** Use zero 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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	<p>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.</p> <p>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).</p>
Committed	<p>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.</p>
Used	<p>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.</p>
Peak Tenured Used	<p>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.</p>
Eden Space	<p>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.</p>
Survivor Space	<p>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.</p>
Tenured Gen	<p>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.</p>

Non-Heap Memory

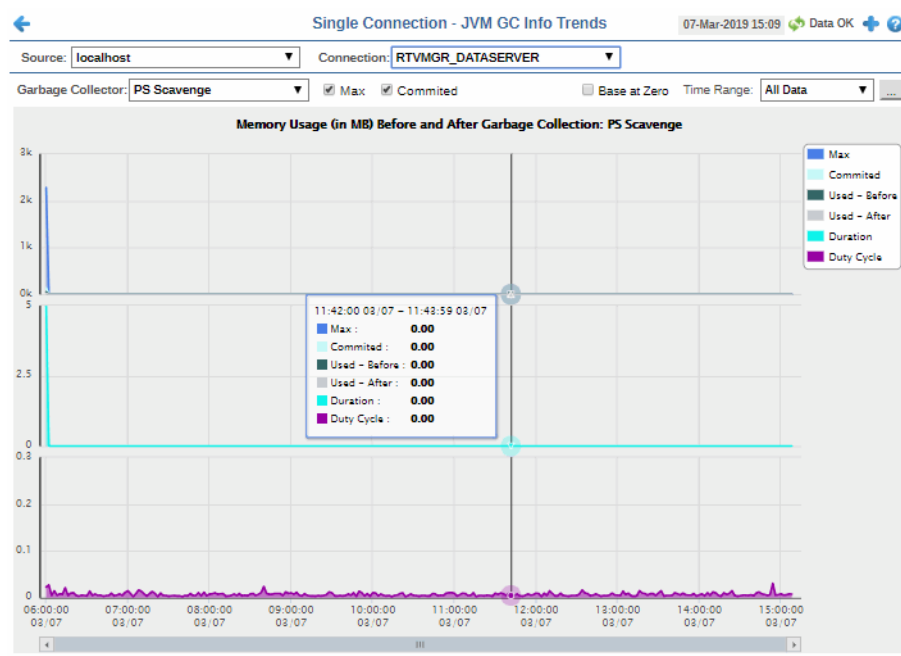
Maximum	The maximum amount of memory, in megabytes, used for JVM non-heap memory management by the application in the time range specified.
Committed	The amount of memory, in megabytes, guaranteed to be available for use by JVM non-heap memory management. The amount of committed memory can be a fixed 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.
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 JVMs 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 GC Trends

Track JVM garbage collection memory usage for a single connection. Use the available drop-down menus or right-click to filter data shown in the display.



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.

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.

Fields and Data


This display includes:

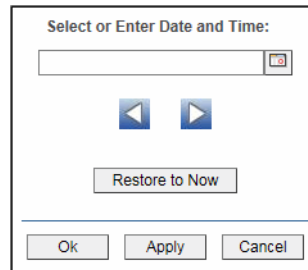
- Source** Select the type of connection to the RTView Server.
- Connection** Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.
- Garbage Collector** Select a garbage collection method: **Copy** or **MarkSweepCompact**.
- Max** 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



Use zero 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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**Maximum**

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.

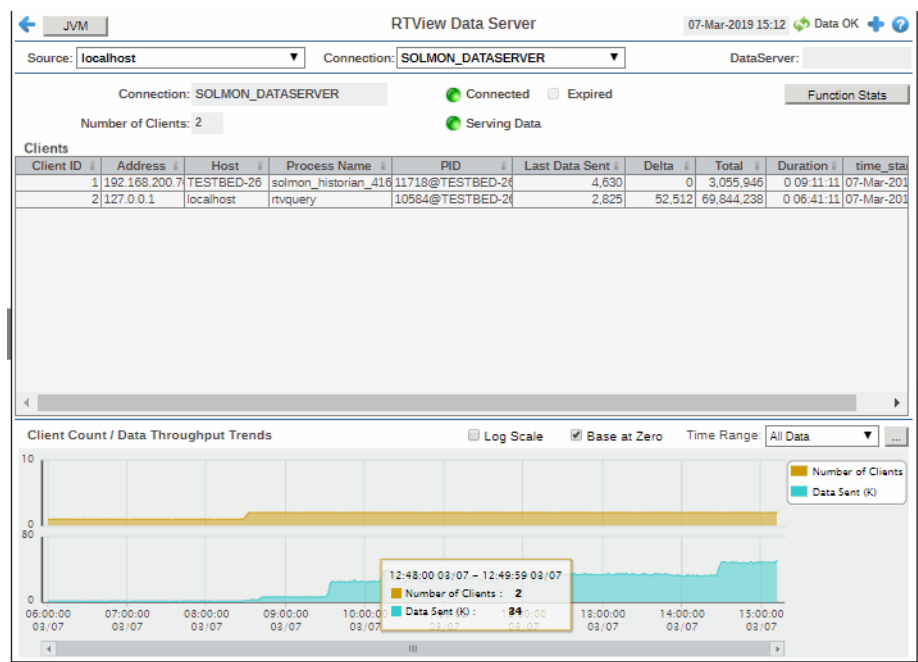
RTView Servers

These displays present performance data for all RTView Servers. Displays in this View are:

- "Data Servers": Shows metrics for RTView Data Servers.
- "Display Servers": Shows metrics for RTView Display Servers.
- "Historian Servers": Shows metrics for RTView Historian Servers.
- "Version Info": Shows the version information.

Data Servers

Track data transfer metrics for RTView Data Servers, client count and throughput trends. Use the available drop-down menus or right-click to filter data shown in the display.



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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.

- 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.
- 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 Data Server connection state:  Disconnected.  Connected.
Serving Data	 The Data Server is not currently serving data.  The Data Server is currently serving data.
Expired	This server has been marked as expired after no activity.
Function Stats	Opens the RTView Function Stats display which shows detailed performance statistics for RTView functions in the selected Data Server. This button is only enabled if the RTVMGR has a JMX connection defined for the selected Data Server.

Clients

This table describes all clients on the selected server.


Address	The client IP address.
Client ID	The unique client identifier.
Duration	The amount of time for this client session. Format: dd HH:MM:SS <days> <hours>:<minutes>:<seconds> For example: 10d 08:41:38
Host	The client host name.
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.
TIME_STAMP	The date and time this row of data was last updated.

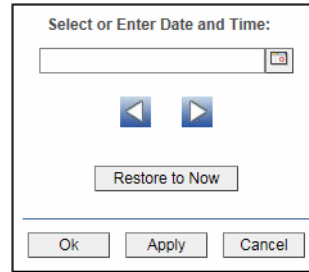
Client Count / Data Throughput Trends


Shows throughput metrics for all clients on the selected server.



Log Scale	Enable to use a logarithmic scale for the Y axis. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.
Base at Zero	Use zero 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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.

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.

Display Servers

Track display utilization metrics for RTView Display Servers.

Use the available drop-down menus or right-click to filter data shown in the display.

The screenshot shows the RTView Display Server interface. At the top, there's a title bar with 'JVM' and 'RTView Display Server'. Below it, there are dropdown menus for 'Source' (set to 'localhost') and 'Connection' (set to 'RTVMGR_DISPLAYSERVER'). A 'DataServer' field is also present. A status bar shows 'Connected' with a green dot and 'Expired' with a grey dot. A 'Function Stats' button is on the right. Below the status bar, there are several configuration fields: 'Display Timeout (seconds): 60', 'Image Quality (0 - 100): 75', 'Number of Active Displays: 7', 'Maximum Number of Active Displays: 80', and 'Sessions with Active Displays: 3'. The main area is titled 'Display Data' and contains a table of 'Active Displays'.

Display Name	Session	Panel ID	Expired	Su
rtv_about.rtv	88cf521fa8549f3aa89000d800256b8	e8d5647b33464822b8c5ccf0f9224f9	<input type="checkbox"/>	SrvPopFlag 0 SrvLast
rtvmgr_title.rtv	88cf521fa8549f3aa89000d800256b8	3e28a0e2e3de4430afb6ab3fb8f30caa	<input type="checkbox"/>	ScurrentDisplay.rtmgr
rtvmgr_title.rtv	6faf757945ba4d719f0d804acea856d1	69a4f7cbedee4b990ea6b62e09531b58	<input type="checkbox"/>	ScurrentDisplay.rtmgr
rtvmgr_navtree.rtv	88cf521fa8549f3aa89000d800256b8	90b8a1247ddb4f0945ed3aace4eb1f3	<input type="checkbox"/>	ScurrentDisplay.rtmgr
rtvmgr_navtree.rtv	3cb4973f040c4699aee93a5c10308c30	c96ebf0f53d341aeb9d22ce2afcb01	<input type="checkbox"/>	ScurrentDisplay.rtmgr
jvm_mempool_trends.rtv	88cf521fa8549f3aa89000d800256b8	a6b9d29afde471ea2d3ded48d0ce9e5	<input type="checkbox"/>	ScolorColumnNameAct
rtv_server_summary_display.rtv	88cf521fa8549f3aa89000d800256b8	bce9973b5cda4850acea9b2be7684d13	<input type="checkbox"/>	ScolName SvalueFact

Title Bar (possible features are):

- ← ↑ Open the previous and upper display.
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- Menu Table open commonly accessed displays.

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.

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 Display Server connection state:
 - Disconnected.
 - Connected.
- Expired** This server has been marked as expired after no activity.
- Function Stats** Opens the **RTView Function Stats** display which shows detailed performance statistics for RTView functions in the selected Display Server. This button is only enabled if the RTVMGR has a JMX connection defined for the selected Display Server.

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.

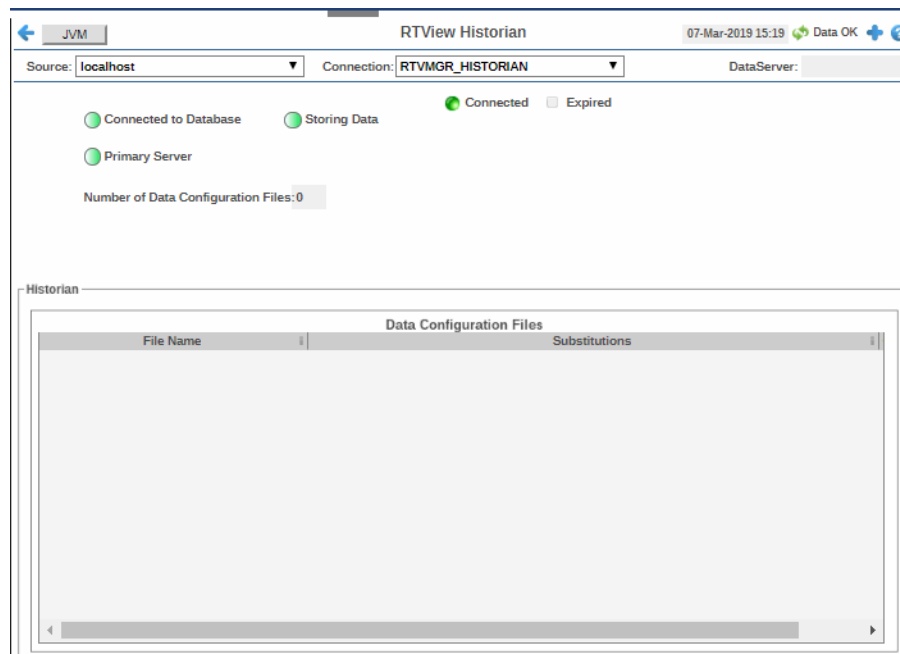
Display Data / Active Displays

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.
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.

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. You can also stop and start the Historian, and purge data.

Use the available drop-down menus or right-click to filter data shown in the display.



Title Bar (possible features are):

- Open the previous and upper display.
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- open commonly accessed displays.

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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.

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 Historian Server connection state: Disconnected. Connected.
Expired	This server has been marked as expired after no activity.
Connected to Database	The Historian Server database connection state: Disconnected. Connected.

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 the Historian is a secondary server.

The Historian Server member state:

-  The Historian Server is a secondary group member.
-  This Historian is the primary 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.

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.

Use the available drop-down menus or right-click to filter data shown in the display.

RTView Application Versions 07-Mar-2019 15:27 Data OK

Source: All Sources Filter Field: Clear

Connection: All Connections Filter Value: ☐ RegEx ☐ Not Equal

Detailed Version for All Connected RTView Applications
Rows where the JarConfiguration does not match ApplicationConfiguration are highlighted in teal

Source	Connection	ApplicationName	JarName	ApplicationConfiguration	
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjagentds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjalertds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjcacheds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjcmdbds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjext.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjflash.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjhttps.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjhttprestds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrmids.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjlog4jds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjmodels.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjpipeds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrrds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrtvhistory.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrtvquery.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrtvreport.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjrtvutils.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjsplunkds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	gmsjsqlsds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	rtvapi_common.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	rtvapi_dockermon.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	rtvapi_hostbase.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	rtvapi_mysqlmon.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DATASERVER	RTView Data Server	rtvapi_rtmgr.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DISPLAYSERVER	RTView Display Server	gmsjagentds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DISPLAYSERVER	RTView Display Server	gmsjalertds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DISPLAYSERVER	RTView Display Server	gmsjcacheds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.
localhost	RTVMGR_DISPLAYSERVER	RTView Display Server	gmsjcmdbds.jar	SOL 5.0.0.0_20190307_070.30730-alpha_116	SOL 5.0.0.

Title Bar (possible features are):

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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.

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.

Tomcat Servers

These displays present performance data for monitored Tomcat Application Servers. Use these displays to examine the state and performance of your Tomcat servers as well as all installed web modules. The server displays include summary overviews and detail pages with historical trends. Displays in this View are:

- ["All Tomcat Servers"](#): Table of connection details and performance metrics for all Tomcat connections.
- ["Tomcat Server Summary"](#): Performance metrics for one Tomcat Server, including current and historic performance metrics.
- ["Tomcat Applications Heatmap"](#): Heatmap of performance metrics for all Web modules for one Tomcat Server.
- ["Single Application Summary"](#): Table and trend graphs of performance metrics for Web modules.

All Tomcat Servers

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 get Tomcat server session counts, access and request rates, cache hit rates and data transmission metrics.

Drill-down and investigate by clicking a row in the table to view details for the selected connection in the **Service Summary** display.

Connection	Source	Sessions Active	Sessions Total	Sessions Expired	Accesses per sec	Accesses Total	Bytes Rcvd per sec	Bytes Rcv Total
TOMCAT	localhost	4	17	13	1.4	30,302	603.1	433,851.8

Title Bar (possible features are):

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- Menu , Table open commonly accessed displays.

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Fields and Data

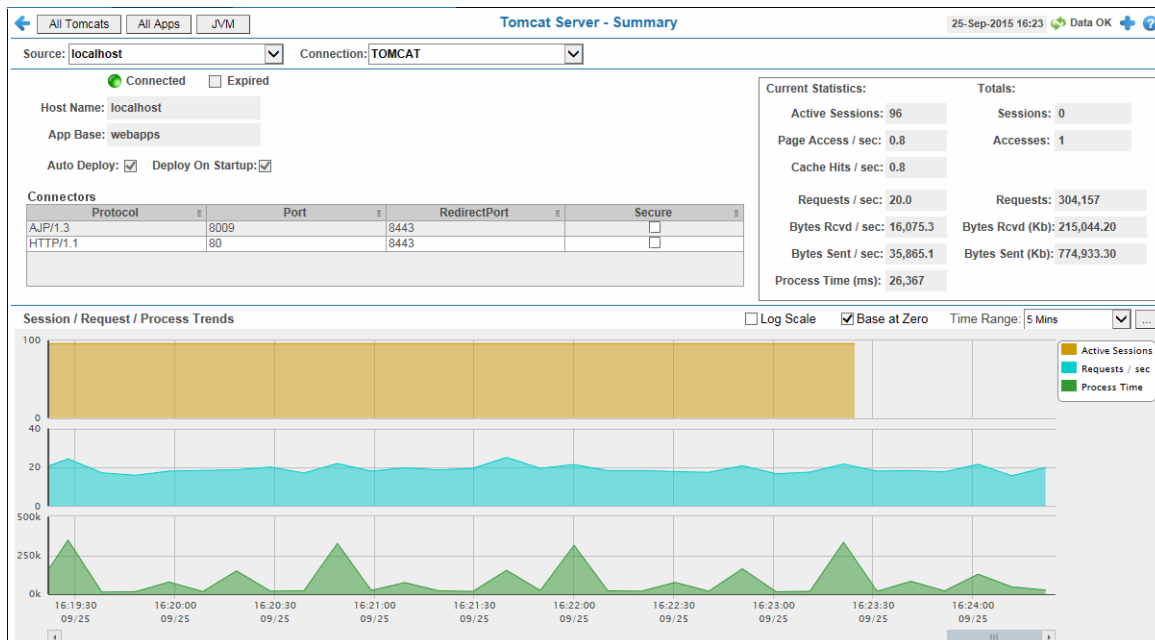
This display includes:

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.
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 Server Summary

Track the performance of one Tomcat Server and get Tomcat hosting and connection details. You can drill down to this display from the Servers table for detailed information and historical trends for a specific server. The trends include Active Sessions, Requests per Sec, and Process Time.



Title Bar (possible features are):

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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.
- Connected** The Tomcat Server connection state:
 - Disconnected.
 - 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 modules are installed.

Auto Deploy When checked, indicates that the 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 / Totals

Active Sessions	The number of clients currently in session with the servlet.
Sessions	The total number of client sessions since the server was started.
Page Access / sec	The number of times pages are accessed, per second.
Accesses	The total number of page accesses since the server was started.
Cache Hits / sec	The number of times the cache is accessed, per second.
Requests / sec	The number of requests received, per second.
Requests	The total number of requests since the server was started.
Bytes Rcvd / sec	The number of bytes received, per second.
Bytes Rcvd (Kb)	The number of kilobytes received since the server was started.
Bytes Sent / sec	The number of bytes sent, per second.
Bytes Sent (Kb)	The total number of kilobytes sent since the server was started.
Process Time	The amount of time, in milliseconds, for the servlet to process client requests.

Session / Request / Process Trends

Shows metrics for the selected server.

Log Scale

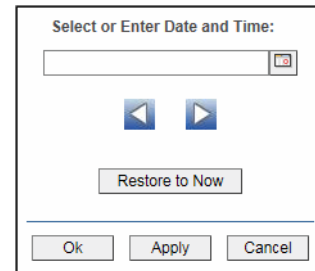
Select to enable a logarithmic scale. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.


Base at Zero


Use zero 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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.

Active Sessions

Traces the number of currently active client sessions.

Requests /sec

Traces the number of requests received, per second.

Process Time

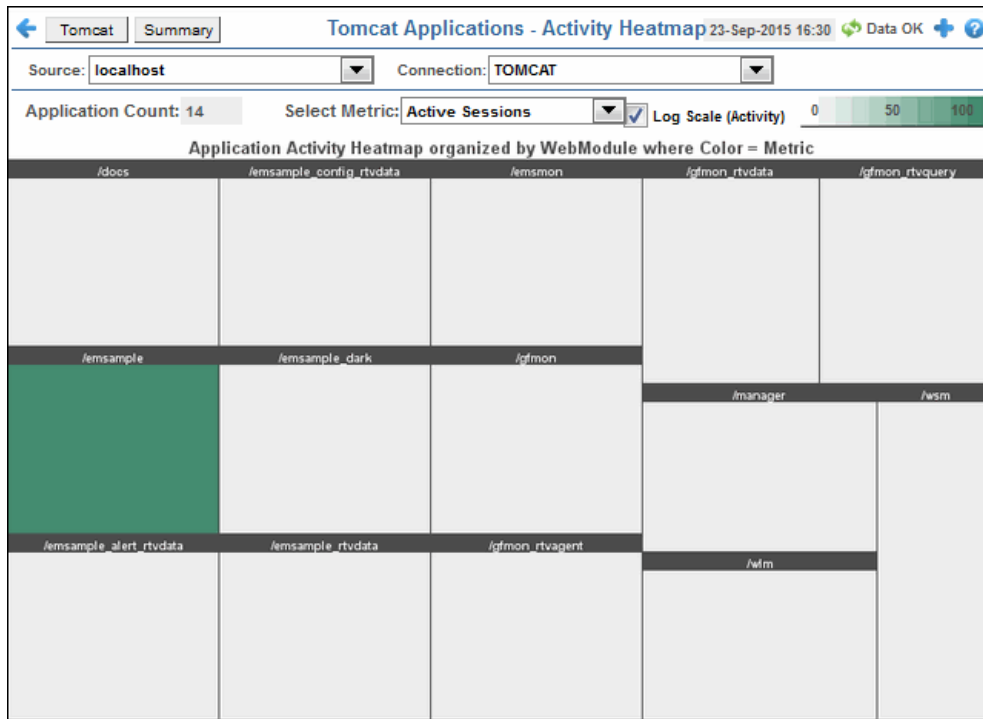
Traces the average amount of time, in milliseconds, to process requests.

Tomcat Applications 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 at-a-glance the health of all your web applications. 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 or right-click 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 **Application Summary** display.



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.
- open commonly accessed displays.

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.

Fields and Data

This display includes:

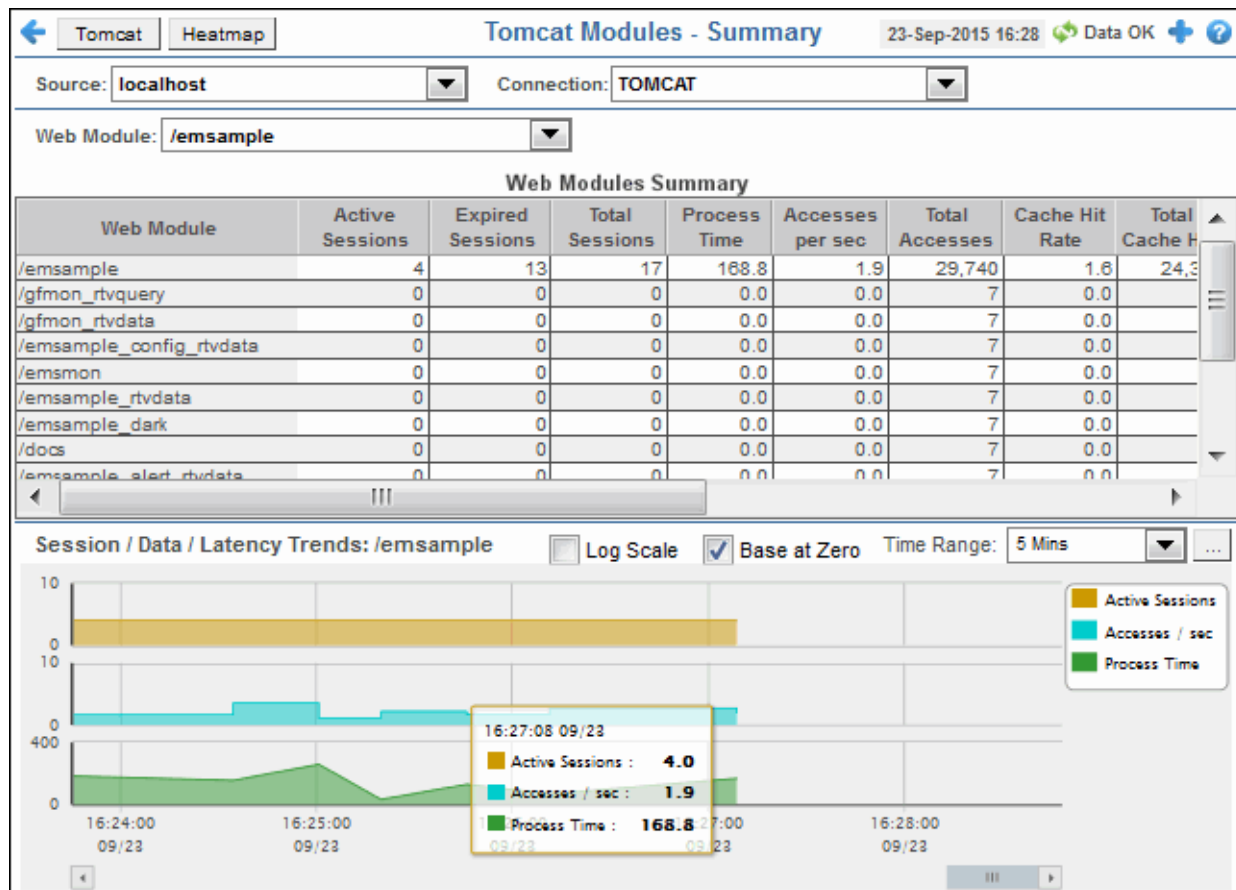
- Source** Select the host where the Tomcat Server is running.
- Connection** Select a Tomcat Server from the drop-down menu.
- Application Count** The number of Tomcat applications in the heatmap.
- Log Scale (Activity)** Select to enable a logarithmic scale. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.
- Select Metric** Select the metric to display in the heatmap. Each Metric has a color gradient bar that maps relative values to colors.

Single Application Summary

Track the performance of all web application modules in a server and view utilization details. The table summarizes the sessions, accesses, cache hit and so forth, for all installed web modules. Each row in the table is a different web application module. The row color for inactive modules is dark red. Select a web application module to view metrics in the trend graph.

Use this data to verify response times of your Web application modules.

Use the available drop-down menus or right-click to filter data shown in the display.



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.

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.

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. This menu is populated by the selected Connection. The Web Module you select populates the trend graphs.

Web Module Summary

Web Module	The name of the Web module.
Sessions Active	The number of currently active client sessions.
Sessions Total	The total number of client sessions since the application was started.
Sessions Expired	The total number of client sessions that expired since the application 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 application was started.
Bytes Rcvd per sec	The number of bytes received per second.
Bytes Rcvd Total	The total number of bytes received since the application was started.
Bytes Sent per sec	The number of bytes sent per second.
Bytes Sent Total	The total number of bytes sent since the application 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 application was started.
Process Time	The average amount of time, in milliseconds, to process requests.
Error Count	The number of errors occurred since the application was started.
appBase	The directory in which Tomcat is installed.
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

Shows metrics for the selected Web module. The Web module can be selected from the **Web Module** drop-down menu or the **Web Modules Summary** table.


Log Scale

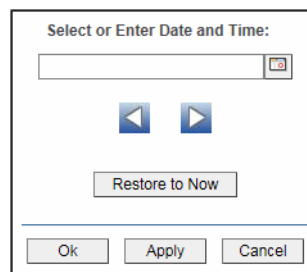
Select to enable a logarithmic scale. Use Log Scale to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. Log Scale makes data on both scales visible by applying logarithmic values rather than actual values to the data.

Base at Zero


Use zero 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 Calendar .



The dialog box titled "Select or Enter Date and Time:" contains a text input field with a calendar icon on the right. Below the input field are two blue navigation arrows (left and right). Underneath the arrows is a button labeled "Restore to Now". At the bottom of the dialog are three buttons: "Ok", "Apply", and "Cancel".

By default, the time range end point is the current time. To change the time range end point, click Calendar  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.

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.

Hosts

Hosts displays provide extensive visibility into the health and performance of your hosts.

Displays are:

- "All Hosts Heatmap"
- "All Hosts Table"
- "All Hosts Grid"
- "All Processes Table"
- "All Network Table"
- "All Storage Table"
- "Host Summary"

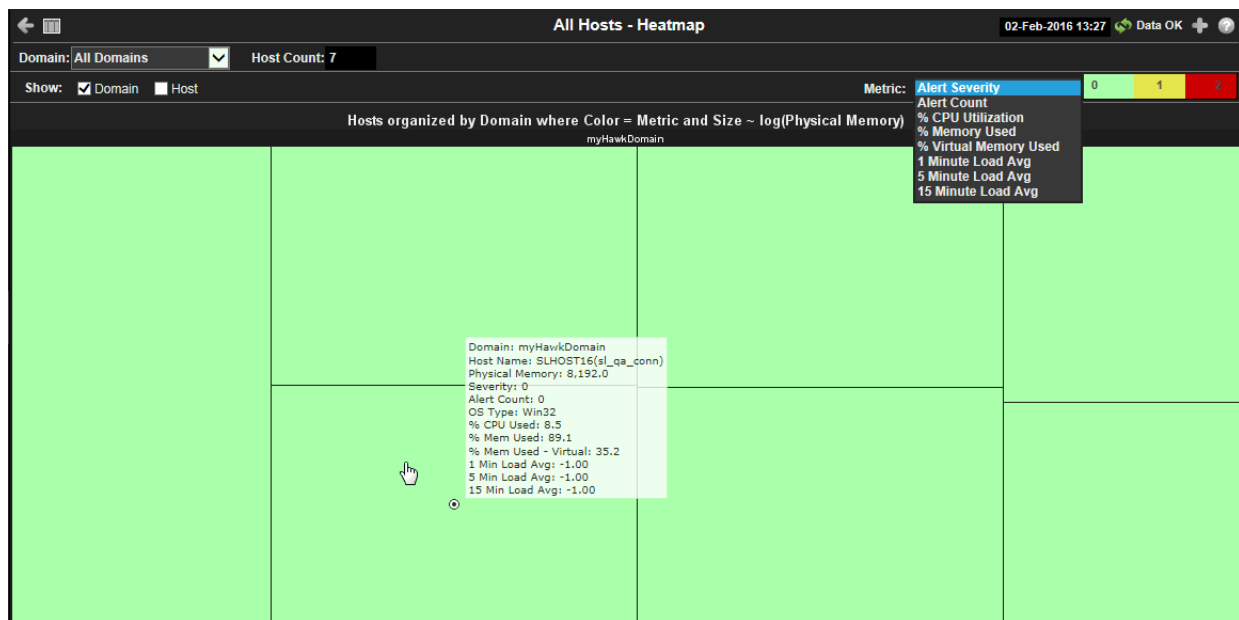
All Hosts Heatmap

View the most critical alert states pertaining to your hosts. Use this display to quickly identify hosts with critical alerts.

Each rectangle in the heatmap represents a host. The rectangle color indicates the most critical alert state associated with the host for the selected **Metric**. The rectangle size represents the amount of physical memory present on the host; a larger size is a larger value.

Choose a domain or **All Domains** from the **Domain** drop-down menu to filter data shown in the display. Choose a different metric to display from the **Metric** drop-down menu. Mouse over a rectangle to see additional metrics. By default, this display shows **Alert Severity**.

Drill-down and investigate a host by clicking a rectangle in the heatmap to view details in the **Host Summary** display.



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.
- open commonly accessed displays.

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.

Filter By:

The display might include these filtering options:

Domain: Choose a domain to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.


Fields and Data:




Host Count: The total number of hosts currently shown in the display.


Show: **Domain** When selected, includes the Domain name in the display.


Host When selected, includes the Host name in the display.


Metric Choose a metric to view in the display.


Alert Severity The maximum level of alerts in the heatmap rectangle. Values range from **0** - **2**, as indicated in the color gradient  bar, where **2** is the highest Alert Severity:

-  Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.
-  Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.
-  Green indicates that no metrics have exceeded their alert thresholds.

Alert Count The total number of critical and warning alerts in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows 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 average alert count.

% CPU Utilization The percent of CPU used in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows 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 average count.

% Memory Used The percent of memory used in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows 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 average count.

% Virtual Memory Used The percent of virtual memory used in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows 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 average count.

1 Minute Load Avg The average number of processes running over 1 minute.

5 Minute Load Avg The average number of processes running over 5 minutes.

15 Minute Load Avg The average number of processes running over 15 minutes.

All Hosts Table

View host utilization data in a tabular format. Use this display to see all available data for this View.

Each row in the table is a different host. Choose a domain or **All Domains** from the **Domain** drop-down menu. Click a column header to sort column data in numerical or alphabetical order. Drill-down and investigate by clicking a row to view details for the selected application in the **Host Summary** display.

All Hosts - Table View 02-Feb-2016 13:37 Data OK

Domain: All Domains

Host Count: 7

Domain	Host Name	Expired	Severity	Alert Count	Uptime	% CPU User	% CPU System	% CPU Idle	Memory Used	Memory Total	Memory Used %	Swap Used	Swap Total	Swap Used %	Virtual Us
myHawkDomain	SLHOST16(sl_amx)			0	120d 02:24	8.27	-1.00	91.73	7,309	8,192	89.2	1,581	8,192	19.3	
myHawkDomain	SLHOST16(sl_qa_conn)			0	120d 02:21	8.37	-1.00	91.63	7,306	8,192	89.2	1,581	8,192	19.3	
myHawkDomain	SLHOST17(sl_amx)			0	120d 02:17	0.71	-1.00	99.29	4,875	8,192	59.5	180	8,192	2.2	
myHawkDomain	SLHOST21(dev)			0	120d 04:40	3.03	-1.00	96.97	14,339	16,384	87.5	2,975	16,384	18.2	
myHawkDomain	SLHOST22(sl_qa_conn)			0	54d 02:41	0.00	0.00	100.00	2,578	7,824	32.9	0	9,999	0.0	
myHawkDomain	SLHOST5(domain5)			0	0d 13:34	17.19	-1.00	82.81	2,313	4,096	56.5	26	4,096	0.6	
myHawkDomain	SLHOST6(domain6)			0	0d 13:36	1.87	-1.00	98.13	2,137	3,072	69.6	27	3,072	0.9	

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.

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.

Filter By:

The display might include these filtering options:

Domain: Choose a domain to show data for in the display.

Fields and Data:

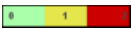



Host Count: The total number of hosts in the table.

Table:

Each row in the table is a different host.

Domain The domain in which the host resides. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.

Host Name The name of the host.

Expired	When checked, data has not been received from this host in the specified amount of time. The host will be removed from the Monitor in the specified amount of time. The default setting is 60 seconds.
Severity	<p>The maximum level of alerts in the row. Values range from 0 - 2, as indicated in the color gradient  bar, where 2 is the highest Alert Severity:</p> <ul style="list-style-type: none">  Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.  Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.  Green indicates that no metrics exceeded their alert thresholds.
Alert Count	The total number of active alerts associated with the host.
Uptime	<p>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</p>
% CPU Used	The amount of CPU used, in percent.
% CPU System	The amount of CPU used, in percent.
% CPU Idle	The amount of CPU not used, in percent.
Memory Used	The amount of memory, in megabytes, currently used.
Memory Total	The total amount of memory, in megabytes.
Memory Used%	The amount of memory used, in percent.
Swap Used	The amount of swap space, in megabytes, currently used.
Swap Total	The total amount of swap space, in megabytes.
Swap Used %	The amount of swap space used, in percent.
Virtual Mem(ory) Used	The amount of virtual memory currently used, in megabytes.
Virtual Mem(ory) Total	The total amount of virtual memory, in megabytes.
Virtual Mem(ory) Used%	The amount of virtual memory used, in percent.
Load Avg 1 Minute	The average number of processes running over 1 minute.
Load Avg 5 Minute	The average number of processes running over 5 minutes.
Load Avg 15 Minute	The average number of processes running over 15 minutes.
OS Type	The type of operating system (for example, Linux, HP-UX, Windows 2003).
OS Description	The name of the operating system.
OS Version	The operating system version.
CPU Model	The CPU model.

# CPUs	The number of node connections.
Agent Type	The type of agent from which the data was collected: HOSTMON (a SL Host Agent), Hawk , WMI or SNMP .
Agent Class	The specific version of the agent software.
Source	The name of the SL Data Server where the host data was collected.
Timestamp	The date and time the data was last updated.

All Hosts Grid

This grid provides a list view of utilization metrics for all hosts. Use this display to track and view in parallel the general performance of your hosts. Drill down and investigate by clicking a host to view details in the **Host Summary** display.



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.

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.

Filter By:

The display might include these filtering options:

Domain:	Choose a domain to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.
Host Count	Displays the number of hosts (including expired hosts) listed in the display.

Time Range: Choose a time range to show data for in the display. Options are: **All Data, 2 Mins, 5 Mins, 20 Mins, 1 Hour, 2 Hours, 4 Hours, 8 Hours, 24 Hours, 2 Days and 7 Days.**

Grid

Utilization data shown for hosts in the selected domain.

Host Name	The name of the host.	
OS Type	The name of the operating system.	
Uptime	The amount of time (days, hours, seconds) the operating system has been running.	
Phys Mem	The amount of physical memory used, in megabytes.	
Virtual Mem	The amount of virtual memory used, in megabytes.	
Load Avg	1	The average number of processes running over 1 minute.
	5	The average number of processes running over 5 minutes.
	15	The average number of processes running over 15 minutes.
CPU Usage	The bar graph shows the amount of CPU currently used.	
VMem Usage	The bar graph shows the amount of virtual memory currently used.	

Trend Graphs

CPU	Traces the amount of CPU currently used.
VM Usage	Traces the amount of virtual memory currently used.
Rx KB/s	Traces the amount data currently being received per second.
Tx KB/s	Traces the amount data currently being transmitted per second.

All Processes Table

View host utilization data in a tabular format. Use this display to see all available data for this View. Each row in the table is a different host. Choose a domain or **All Domains** and a host or **All Hosts** from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order. Drill-down and investigate by clicking a row to view details for the selected application in the **Host Summary** display.

← ↑ All Processes - Table View 02-Feb-2016 13:42 Data OK

Domain: All Domains Host: All Hosts

Process Count: 687

Domain	Host Name	Expired	PID	User	Process Name	CPU %	Start Time	Memory Used	Memory Resident	Memory Shared	Page Fault
myHawkDor	SLHOST16(sl_amx)		4	<ACCESS DENIE	System	0.02	01-May-2014 23:18:11	17,056	-1	-1	465,4
myHawkDor	SLHOST16(sl_amx)		376	NT AUTHORITY\	smss.exe	0.00	01-May-2014 23:18:11	504	-1	-1	1,8
myHawkDor	SLHOST16(sl_amx)		540	NT AUTHORITY\	csrss.exe	0.00	01-May-2014 23:18:16	2,472	-1	-1	12,089
myHawkDor	SLHOST16(sl_amx)		628	NT AUTHORITY\	wininit.exe	0.00	01-May-2014 23:18:17	172	-1	-1	1,9
myHawkDor	SLHOST16(sl_amx)		648	NT AUTHORITY\	csrss.exe	0.00	01-May-2014 23:18:17	216	-1	-1	11,3
myHawkDor	SLHOST16(sl_amx)		692	NT AUTHORITY\	services.exe	0.01	01-May-2014 23:18:17	5,736	-1	-1	14,404
myHawkDor	SLHOST16(sl_amx)		708	NT AUTHORITY\	lsass.exe	0.02	01-May-2014 23:18:17	9,576	-1	-1	1,273
myHawkDor	SLHOST16(sl_amx)		716	NT AUTHORITY\	lsim.exe	0.00	01-May-2014 23:18:17	3,500	-1	-1	1,030
myHawkDor	SLHOST16(sl_amx)		800	NT AUTHORITY\	winlogon.exe	0.00	01-May-2014 23:18:17	172	-1	-1	3,6
myHawkDor	SLHOST16(sl_amx)		864	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:20	3,660	-1	-1	1,496
myHawkDor	SLHOST16(sl_amx)		416	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:20	4,376	-1	-1	2,872
myHawkDor	SLHOST16(sl_amx)		472	NT AUTHORITY\	LoponUI.exe	0.00	01-May-2014 23:18:21	2,960	-1	-1	164,7
myHawkDor	SLHOST16(sl_amx)		640	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:21	13,756	-1	-1	111,65
myHawkDor	SLHOST16(sl_amx)		548	NT AUTHORITY\	svchost.exe	0.05	01-May-2014 23:18:21	121,608	-1	-1	111,2
myHawkDor	SLHOST16(sl_amx)		1048	NT AUTHORITY\	svchost.exe	0.28	01-May-2014 23:18:21	26,108	-1	-1	1,605
myHawkDor	SLHOST16(sl_amx)		1220	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:22	7,336	-1	-1	2,716
myHawkDor	SLHOST16(sl_amx)		1316	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:22	13,452	-1	-1	4,123
myHawkDor	SLHOST16(sl_amx)		1548	<ACCESS DENIE	spoolsv.exe	0.00	01-May-2014 23:18:23	3,336	-1	-1	434,0
myHawkDor	SLHOST16(sl_amx)		1576	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:18:23	4,268	-1	-1	3,881
myHawkDor	SLHOST16(sl_amx)		1796	NT AUTHORITY\	HeciServer.exe	0.00	01-May-2014 23:18:24	776	-1	-1	12,6
myHawkDor	SLHOST16(sl_amx)		1820	NT AUTHORITY\	IProsetMonitor.exe	0.00	01-May-2014 23:18:24	756	-1	-1	10,3
myHawkDor	SLHOST16(sl_amx)		2700	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:19:05	780	-1	-1	8,8
myHawkDor	SLHOST16(sl_amx)		684	<ACCESS DENIE	svchost.exe	0.00	01-May-2014 23:21:06	2,468	-1	-1	2,909
myHawkDor	SLHOST16(sl_amx)		2944	NT AUTHORITY\	IAStorDataMgrSvc.exe	0.00	01-May-2014 23:21:08	5,836	-1	-1	1,102
myHawkDor	SLHOST16(sl_amx)		2680	NT AUTHORITY\	jhi_service.exe	0.00	01-May-2014 23:21:19	980	-1	-1	16,6
myHawkDor	SLHOST16(sl_amx)		4216	NT AUTHORITY\	MSI MS.exe	0.00	01-May-2014 23:21:21	1,724	-1	-1	152,0

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.

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.

Filter By:

The display might include these filtering options:

- Domain:** Choose a domain to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.
- Host:** Choose a host to show data for in the display.

Fields and Data:

- Process Count:** The total number of processes in the table.

Table:

Each row in the table is a different host.

- Domain** The domain in which the host resides.
- Host Name** The name of the host.

Expired	When checked, data has not been received from this host in the specified amount of time. The host will be removed from the Monitor in the specified amount of time. The default setting is 60 seconds.
PID	The process ID.
User	The user name.
Process Name	The name of the process.
CPU%	The amount of CPU used, in percent.
Start Time	The host start time, in the following format: 0d 00:00 <days>d <hours>:<minutes>:<seconds> For example: 10d 08:41:38
Memory Used	The amount of memory currently used, in megabytes.
Memory Resident	The amount of memory currently used by the process that resides in physical memory and is not paged out. Set to -1 when the data is not available from an agent. (Hawk does not provide this data.)
Memory Shared	The amount of physical memory that is shared with other processes. Set to -1 when the data is not available from an agent. (Hawk does not provide this data.)
Page Faults	The number of page faults.
Page Faults /sec	The number of page faults per second.
Timestamp	The date and time the data was last updated.

All Network Table

View network interface data in a tabular format. Each row in the table is a different network interface card (NIC). Choose a domain or **All Domains** and a host or **All Hosts** from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order.

Host Network Interfaces						
Domain	Host Name	Expired	if Name	Inet Addr	Mask	Flag
QATB	TESTBED-26	<input type="checkbox"/>	lo	127.0.0.1	255.0.0.0	UP LOOPBACK RUNN
QATB	TESTBED-26	<input type="checkbox"/>	enp0s3	192.168.200.76	255.255.255.0	UP BROADCAST RUN
QATB	TESTBED-34	<input type="checkbox"/>	lo	127.0.0.1	255.0.0.0	UP LOOPBACK RUN
QATB	TESTBED-34	<input type="checkbox"/>	ens32	192.168.200.34	255.255.255.0	UP BROADCAST RUN

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.
- open commonly accessed displays.

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.

Filter By:

The display might include these filtering options:

- Domain:** Choose a domain for which to show NIC data. Domain names are specified when your administrator configures your Data Server.
- Host:** Choose a host for which to show NIC data.

Fields and Data:

- Interface Count:** The total number of NICs in the table.

Table:

Each row in the table is a different NIC.

Domain	The domain in which the NIC resides.
Host Name	The name of the NIC in which the network interface resides.
Expired	When checked, data has not been received from this NIC in the specified amount of time. The NIC will be removed from the Monitor in the specified amount of time. The default setting is 60 seconds.
if Name	The name of the NIC.
Inet Addr	The NIC IP address.
Mask	The NIC subnet mask IP address.
Flags	Descriptive text for NIC flag.
MTU	The largest size packet or frame for the NIC.
Metric	Indicates...
Point To Point	Indicates whether the NIC is a point to point configuration.
Broadcast	Indicates whether the NIC is a broadcast configuration.
rxKBytes	The total number of kilobytes received by the NIC.
rxPackets	The total number of packets received by the NIC.
rxDropped	The total number of received packets that were dropped by the NIC.
rxErrors	The total number of received errors on the NIC.
rxOverruns	The total number of received overruns on the NIC.
rxFrame	The total number of received frames on the NIC.
txKBytes	The total number of kilobytes transmitted by the NIC.
txPackets	The total number of packets transmitted by the NIC.
txDropped	The total number of transmitted packets that were dropped by the NIC.
txErrors	The total number of transmission errors for the NIC.
txOverruns	The total number of transmission overruns for the NIC.
txCollisions	The total number of transmission collisions for the NIC.
txCarrier	The total number of transmission carrier errors for the NIC.
MAC Address	The NIC MAC address.
Rx KB/s	The number of kilobytes received per second.
Tx KB/s	The number of kilobytes transmitted per second.
Rx Packets/s	The number of packets received per second.

Tx Packets/s The number of packets transmitted per second.

Timestamp The date and time the data was last updated.

All Storage Table

View storage data in a tabular format. Each row in the table is a different storage partition. Choose a domain or **All Domains** and a host or **All Hosts** from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order.

Domain	Host Name	Expired	File	%	Total	Used	Available	Mount Point	Type
QATB	WIN-8-CLONE	<input type="checkbox"/>	C:\	86.0	59.90	51.09	8.81	C:\	NTFS/c
QATB	WIN-8-CLONE	<input type="checkbox"/>	\\192.168.200.70	84.0	452.43	377.54	74.89	Z:\	NTFS/r

Title Bar (possible features are):

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- open commonly accessed displays.

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.

Filter By:

The display might include these filtering options:

Domain: Choose a domain or **All Domains** to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.

Host: Choose a host or **All Hosts** to show data for in the display.

Fields and Data:

Storage Count: The total number of storage partitions in the table.

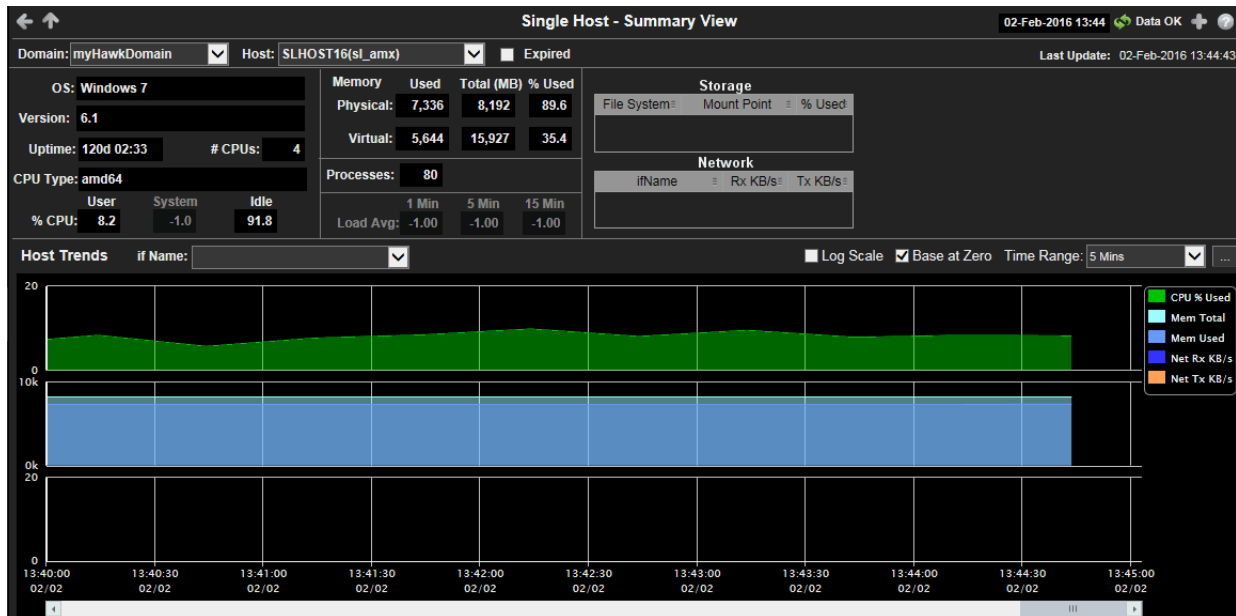
Table:

Each row in the table is a different host.

Domain	The domain in which the host resides.
Host Name	The name of the host in which the storage partition resides.
Expired	When checked, data has not been received from this host in the specified amount of time. The host will be removed from the Monitor in the specified amount of time. The default setting is 60 seconds.
File System	The storage partition location.
% Used	The amount of storage partition used, in percent.
Total Size (GB)	The storage partition size, in gigabytes.
Used (GB)	The amount of storage partition used, in gigabytes.
Available (GB)	The amount of storage partition available, in gigabytes.
Mount Point	The storage partition parent directory.
Type	The file system type.
Timestamp	The date and time the data was last updated.

Host Summary

This display provides a detailed view of utilization metrics for a single server.



Title Bar (possible features are):

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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.

Filter By:

The display might include these filtering options:

- Domain:** Choose a domain to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.
- Host:** Choose a host to show data for in the display.
- Expired** When checked, data has not been received from this host in the specified amount of time. The host will be removed from the Monitor in the specified amount of time. The default setting is **60** seconds.
- Last Update** The time the display was last updated.

Fields and Data:

Data describes the selected host except where noted.

- OS:** The operating system.
- Version:** The operating system version.
- Uptime:** The number of days, hours and minutes since started.
- #CPUs** The number of node connections.


CPU Type:	The type of CPU.	
%CPU	User	The amount of CPU used by the user, in percent.
	System	The amount of CPU used by the system, in percent.
	Idle	The amount of CPU that is not used, in percent.
Physical Memory	Used	The amount of physical memory used, in kilobytes.
	Total(MB)	The amount of physical memory available, in kilobytes.
	%Used	The amount of physical memory used, in percent.
Virtual Memory	Used	The amount of virtual memory used, in kilobytes.
	Total(MB)	The amount of virtual memory available, in kilobytes.
	%Used	The amount of virtual memory used, in percent.
Processes	The number of processes running.	
Load Avg:	1 Min	The average number of processes running over 1 minute.
	5 Min	The average number of processes running over 5 minutes.
	15 Min	The average number of processes running over 15 minutes.
Storage	File System	The amount of storage space used for the file system, in kilobytes.
	Mount Point	The name used by the operating system to mount and provide an entry point to other storage volumes.
	%Used	The amount of storage space used, in percent.
Network	ifName	The name assigned to the network interface by the operating system.
	RxKB/s	The amount of network data received per second, in kilobytes.
	TxKB/s	The amount of network data transmitted per second, in kilobytes.

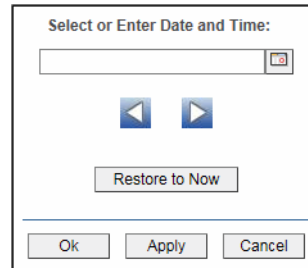
Trend Graphs


Traces metrics for the selected host.



- **CPU% Used:** The amount of CPU used, in percent.
- **Mem Total:** The amount of available memory, in kilobytes.
- **Mem Used:** The amount of memory used, in kilobytes.
- **Net Rx KB/s:** The amount of network data received per second, in kilobytes.
- **Net Tx KB/s:** The amount of network data transmitted per second, in kilobytes.

Log Scale Select to enable a logarithmic scale. Use **Log Scale** to see usage correlations for data with a wide range of values. For example, if a minority of your data is on a scale of tens, and a majority of your data is on a scale of thousands, the minority of your data is typically not visible in non-log scale graphs. **Log Scale** makes data on both scales visible by applying logarithmic values rather than actual values to the data.

- Base at Zero** Select to use zero (0) 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 Calendar .



By default, the time range end point is the current time. To change the time range end point, click Calendar  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 monitoring system. Displays in this View are:


- **"Alert Detail Table"**: Shows current alert data. Use this time-ordered tabular view to track, manage and assign alerts.

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.

The color coded navigation tree shows the contents of the CMDB hierarchically ordered. Choose a node to filter alerts shown in the table. The **Alerts Table** only shows alerts associated with the node you select. A green indicator means the node has no associated alerts. A red indicator means the node has one or more associated alerts.

Service name labels are appended with the Environment and number of alerts. For example, the following illustrates that the **TBE** Service currently has no (0) associated alerts in the **PRODUCTION** Environment.

▼  TIBCO-AS
 TAS-MEMBER (PRODUCTION)

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 a column heading to sort the table on that column data.

Optionally, you can use the **\$rtvUserShowDualTables** substitution to add a table that lists alerts owned by the logged in user.

The screenshot shows the 'Alerts Table' window. At the top, there's a 'Current' dropdown and 'Alert Group: All'. Below that are search and filter fields. The table itself has columns: First Occ, Last Occ, Count, Sup, Owner, Alert Name, Primary Service, and CI. The rows are color-coded: red for 'High Warning Limit exceeded', yellow for 'High Alert Limit exceeded', and green for 'High Alert Limit exceeded'. The status bar at the bottom shows 'Data OK' and 'Alert Settings Conn OK'.

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.

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.

The row color indicates the following:




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.
- Gray indicates that the alert engine that is hosting the alert is not connected, not enabled or not initialized. When you select a gray row the **Own**, **Suppress**, **Unsuppress**, **Close**, **Annotate**, **Options** and **Details** options are disabled.

Fields and Data

This display includes:

Field Filter	<p>Select a table column from the drop-down menu to perform a search in: Alert Name, Alert Text, Alert Class, Service, CI, Closed Reason, Closed, CompId, Count, First Occ, ID, Last Occ, Owner, Primary Service, Sup, TicketGroup, TicketID.</p> <p>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).</p>
Clear	Clears the Field Filter and Search Text entries.
Search Text	Enter the (case-sensitive) string to search for in the selected Field Filter .
CMDB Filter	<p>Shows the selected Owner, Area, Group, Service and Environment filters. By default, all components of the CMDB (*) are included in the search.</p> <p>These CMDB Filter fields are populated when you click Open Alerts Table , which is accessible from the Multi Area Service Views displays, to open the Alerts Table in a new window. The filters selected in the All Management Areas and Multi Area Service Views displays are applied to the Alerts Table (that opens in the new window). NOTE: When you use the navigation tree (in the left panel) to open the Alerts Table display, the Environment filter is applied to the display if it has a value other than * (asterisk).</p>
Clear CMDB Filter	Clears all of the values in the CMDB Filter (Owner, Area, Group, Service and Environment filters). NOTE: This action is not applied to any other display.
RegEx	Toggles the Search Text field to accept Regular Expressions for filtering.
All	Click to show all alerts in the table: Open and Closed alerts.
Open	Click to only show Open alerts in the table.
Closed	Click to only show Closed alerts in the table.
Owner Filter	<p>Select the alert Owner to show alerts for in the table.</p> <p>All Shows alerts for all Owners in the table: Not Owned and Owned By Me alerts.</p> <p>Not Owned Shows only alerts without Owners in the table.</p> <p>Owned By Me Shows only alerts for the current user in the table.</p>
Alert Settings Conn OK	<p>The Alert Server connection state:</p> <p> Disconnected.</p> <p> Connected.</p>
Total	X/Y where X is the total number of alerts in the table with all selected filters applied. Y is the number of alerts in the table with only the CMDB and Cleared filters applied.
Critical	<p>Check to show alerts in the table that are currently in a critical state. NOTE: You must check Critical to see alerts that are in a critical state.</p> <p>X/Y where X is the total number of critical alerts in the table with all selected filters applied. Y is the number of alerts in the table with only the CMDB Filter and Cleared filters applied.</p>

Warning	Check to show alerts in the table that are currently in a warning state. NOTE: You must check Warning to see alerts that are in a warning state. X/Y where X is the total number of warning alerts in the table with all selected filters applied. Y is the number of alerts in the table with only the CMDB and Cleared filters applied.
Suppressed	Check to show alerts in the table that are suppressed. The Suppressed count is not impacted by the Critical and Warning filters. It is impacted only by the CMDB Filter and the Owner Filter . NOTE: You must check Suppressed to see Suppressed alerts in the table.
Own	Click to assign an Owner for the alert. This option is only visible when logged in as one of the following roles: event, full, admin, super. This option is disabled when you select a gray row.
Suppress	Click to suppress the alert. This option is only visible when logged in as one of the following roles: event, full, admin, super. This option is disabled when you select a gray row.
UnSuppress	Click to unsuppress the alert. This option is only visible when logged in as one of the following roles: event, full, admin, super. This option is disabled when you select a gray row or when you select a row.
Close	Click to close the alert. This option is only visible to users with Administrator privileges. This option is disabled when you select a gray row or you select a row where the Primary Service is not in the \$rtvManageableCompID list for the logged in user.

Alerts Table

This table lists all active alerts for the current filters. The table is empty unless you check **Critical**, **Warning**, or both. Filter the list using the search fields and drop-down menus (in the upper portion of the display). To view details about an alert, select an alert and click **Details** (in the bottom right portion of the display) to open the **Alert Detail** dialog. To view details about the CI source of the alert, select an alert and click **Go To CI** (in the bottom right portion of the display) to open its Summary display.

First Occ	The date and time the alert first occurred.
Last Occ	The date and time the alert last occurred.
Count	The number of times the alert was generated.
Sup	When checked, the alert has been suppressed by a user.
Owner	The named owner assigned by the administrator.
Alert Name	The name of the alert.
Primary Service	The name of the Service with which the alert is associated.
CI	The CI alert source.
Alert Text	Description of the alert.
AlertClass	An optional alert field which can be used when integrating with other alerting systems.
CompID	An optional alert field which can be used when integrating with other alerting systems.
TicketID	An optional alert field which can be used when integrating with other alerting systems.
TicketGroup	An optional alert field which can be used when integrating with other alerting systems.

Columns	Id	When checked, shows the ID column in the table.
	Closed	When checked, shows the Closed column in the table.
	Closed Reason	When checked, shows the Closed Reason column in the table.
	Alert Index	When checked, shows the Alert Index column in the table.
Go To CI	Select an alert from the Alerts Table , then click Go To CI to view details for the selected CI in the Summary display.	
Annotate	Select one or more alerts from the Alerts Table , then click Annotate to open the Set Owner and Comments dialog and enter comments or change alert owner. This option is only visible when logged in as one of the following roles: event, full, admin, super. This option is disabled when you select a gray row or when you select a row where the Primary Service is not in the \$rtvManageableCompID list for the logged in user. For details, see Configure User and Role Management .	
	ID	Lists the alert IDs, separated by semicolons, for the alerts selected from the Alert Table .
	Source	Lists the name of the back-end Data Server reporting the alert, separated by semicolons.
	Enter Owner	Enter the name of the owner for one or more alerts, click Set Owner of One Alert to assign the Owner, then click Close . By default, this field displays the current user name.
	Enter Comment	Enter a comment for one or more alerts, click Add Comment on One Alert to apply the Comment, then click Close . By default, this field displays previously entered comments. The text appears in the Comments field for the alert.
	Set Owner	Applies the name of the alert owner in the Enter Owner field for one or more alerts.
	Add Comment	Applies the comment in the Enter Comment field for one or more alerts.
	Clear Comments	Removes all comments for one or more alerts.
	Close	Closes the dialog.
Options	Select a single alert from the Alerts Table , then click Options to open the Alert Options dialog. This dialog is provided for customizing your own alert options. This option is disabled when you select a gray row or more than one row.	
Details	Select a single alert from the Alerts Table , then click Details to open the Alert Detail window and view alert details. This option is disabled when you select a gray row or more than one row.	

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

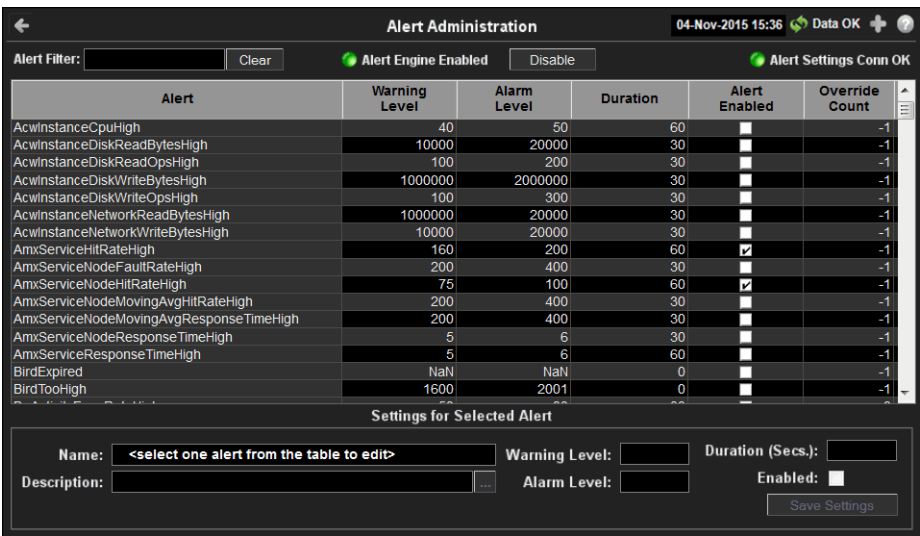
To set a global alert, select an alert from the **Active Alert Table**. The name of the selected alert populates the **Settings for Selected Alert Name** field. Edit the **Settings for Selected Alert** and click **Save Settings** when finished.

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.

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.

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 <input type="text"/> for more detail.
Warning Level	<p>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.</p> <p>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.</p>
Alarm Level	<p>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.</p> <p>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.</p>
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	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>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.</p> <p>Click Save Settings to save settings.</p>

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.

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
EmsServerConnectionCountHigh	60	80	30	<input type="checkbox"/>	0
EmsQueuesProducerCountHigh	15	5	30	<input type="checkbox"/>	0
EmsQueuesProducerCountLow	50	100	30	<input type="checkbox"/>	0
EmsServerAsyncDBSizeHigh	60	80	30	<input checked="" type="checkbox"/>	1
EmsServerInMsgRateHigh	60	80	30	<input type="checkbox"/>	0
EmsServerMemUsedHigh	60	80	30	<input type="checkbox"/>	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.

Alert Administration Audit Trail 07-Mar-2019 16:02 Data OK

Audit Conn OK

TIME_STAMP	USER	ACTION	ALERTNAME	INDEX...	ALERTIND...	WARNINGLEV...	ALARMLE...	DI
03/07/19 06:00:52	RTView.GmsRtView.AlertDs	ADDED	SolEventModuleClientAlert	Default	Default	NaN	NaN	
03/07/19 06:00:52	RTView.GmsRtView.AlertDs	ADDED	SolEventModuleVpnAlert	Default	Default	NaN	NaN	
03/07/19 06:00:52	RTView.GmsRtView.AlertDs	ADDED	SolEventModuleBrokerAlert	Default	Default	NaN	NaN	
03/07/19 06:00:51	RTView.GmsRtView.AlertDs	ADDED	SolMsgBrokerSparseMsgSpot	Default	Default	3	NaN	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmThreadCountHigh	Default	Default	50	75	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	TomcatAppActiveSessionsHigh	Default	Default	85	95	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	TomcatActiveSessionsHigh	Default	Default	85	95	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmMemoryUsedAfterGCHigh	Default	Default	1	80	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	TomcatAppAccessRateHigh	Default	Default	50	100	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	TomcatAccessRateHigh	Default	Default	50	100	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmNotConnected	Default	Default	NaN	NaN	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmGcDutyCycleHigh	Default	Default	50	75	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmMemoryUsedHigh	Default	Default	50	75	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmStateData	Default	Default	NaN	NaN	
04/24/18 19:01:32	RTView.GmsRtView.AlertDs	ADDED	JvmCpuPercentHigh	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostSwapUsedHigh	Default	Default	75	90	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostMemoryUsedHigh	Default	Default	75	90	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostCpuLoadAvg15High	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostCpuLoadAvg5High	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostCpuLoadAvg1High	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostProcessCountLow	Default	Default	15	5	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostNetworkTxRateHigh	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostNetworkRxRateHigh	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostStorageUsedHigh	Default	Default	80	90	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostVirtualMemoryUsedHigh	Default	Default	75	90	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostStateData	Default	Default	NaN	NaN	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	HostCpuPercentHigh	Default	Default	50	75	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	MysqlDelayedWritesHigh	Default	Default	1	2	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	MysqlSlowThreadsHigh	Default	Default	1	2	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	MysqlQcacheLowMemPrunes	Default	Default	1	2	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	MysqlLocksWaitHigh	Default	Default	1	2	
04/24/18 19:01:31	RTView.GmsRtView.AlertDs	ADDED	MysqlSlowQueriesHigh	Default	Default	1	2	

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.



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.

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).

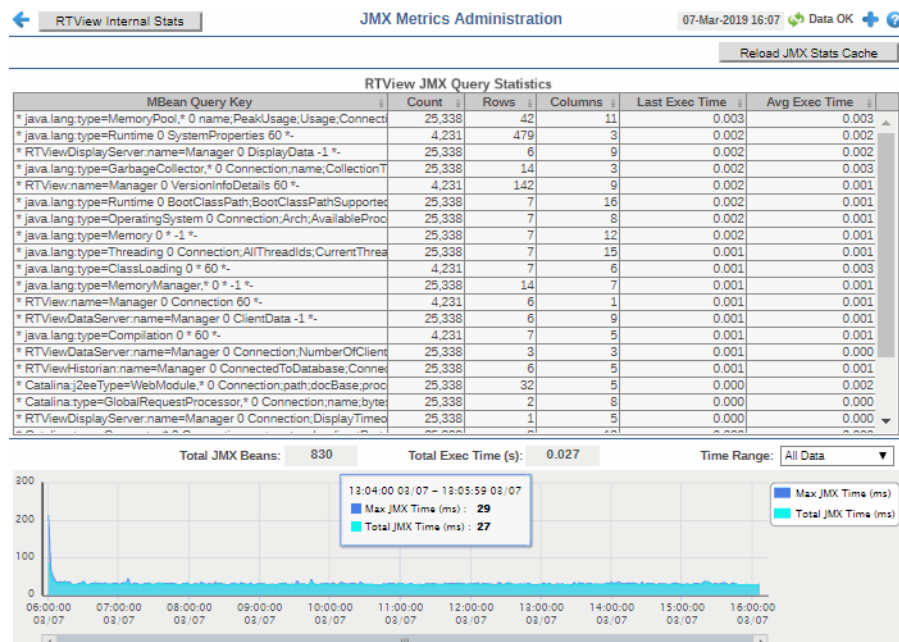
Metrics Administration

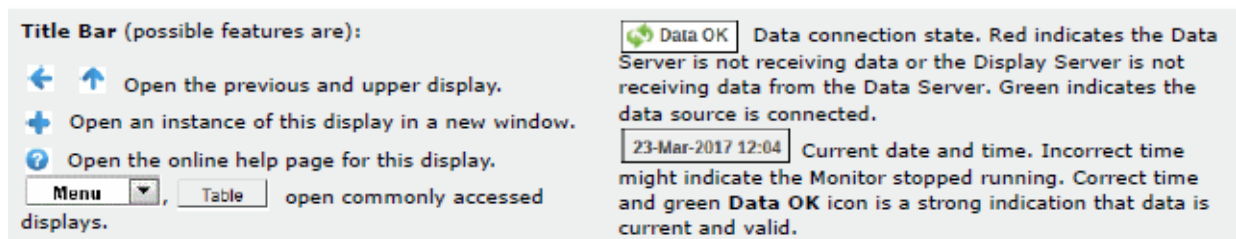
Verify when TIBCO metrics were last queried by the Monitor. The data in this display is predominantly used for debugging by SL Technical Support.

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.





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	Choose All Data or a time range from 2 minutes to 7 days.

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.

RTView Cache Tables

DataServer: <Default> Max Rows: 4000 History Tables

CacheTable	TableType	Rows	Columns	Memory
_snmpHostResource	current	0	0	0
DockerContainer	current	0	53	5,091
DockerContainerEvent	current	0	7	654
DockerContainerEventCount	current	0	5	477
DockerEngine	current	0	51	4,915
HostLogs	current	0	8	746
HostNetwork	current	0	32	2,915
HostProcesses	current	0	15	1,386
HostStats	current	0	30	2,776
HostStorage	current	0	11	1,005
JmxStatsTotals	current	1	4	441

HostLogs Rows: 0

time_stamp	domain	hostname	msg_id	logType	facility	severity	message
------------	--------	----------	--------	---------	----------	----------	---------

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.



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.

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.

RTView Agent Metrics Administration						
10-Nov-2014 16:31 Data OK						
Data Received from Remote Agents						
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-BWVMON-Agent	30018	423,741	8	4.0	10-Nov-2014 16:31:43
slsl4-64	SL-HOSTMON-Agent	30005	68,536	0	0.0	10-Nov-2014 16:31:37
slsl4-64	SL-BWVMON-Agent	30006	91,694	0	0.0	10-Nov-2014 16:31:35
slsl4-64	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-BWVMON-Agent	30032	26,321	14	2.3	10-Nov-2014 16:31:44
slhpux11	SL-BWVMON-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-BWVMON-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-BWVMON-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.

 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.

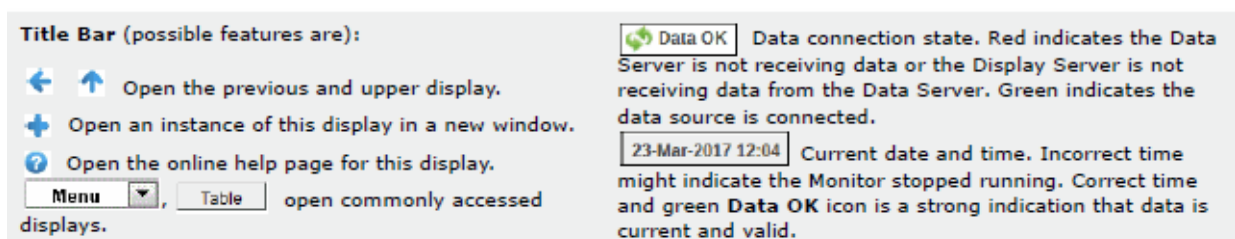
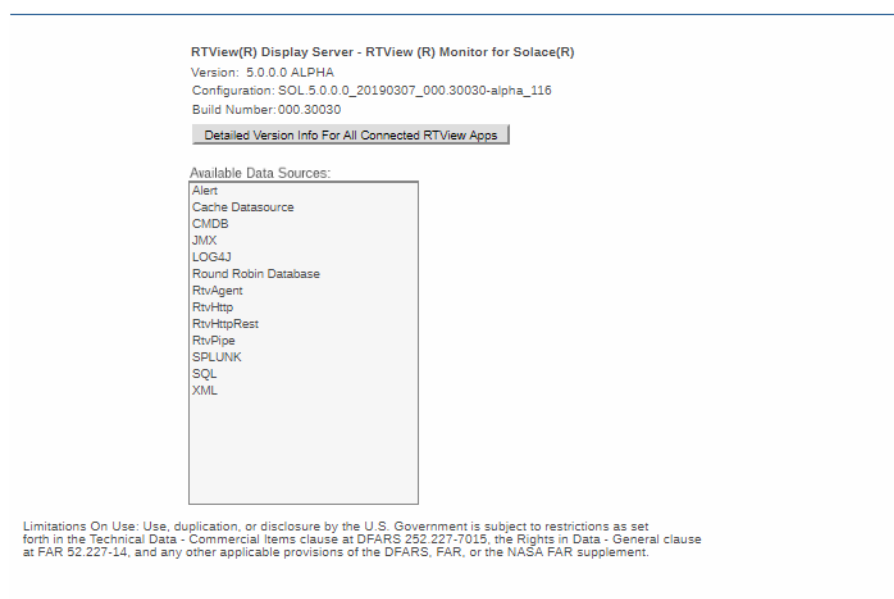
Data Received from Remote Agents Table

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.

About

Get RTView software version and configuration information and a list of all available data sources. For more detailed version information, click **Version Info For All Connected RTView Apps**.



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.	

APPENDIX A Monitor Scripts

This section describes scripts that are available for the Monitor as well as the **rtvservers.dat** configuration file. This section contains:

- “Scripts”
- “rtvservers.dat”

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 this section. On UNIX systems, you must add **.sh** to each command. For example, **rtvapm_init.sh**. Also on UNIX systems, it is a requirement that the installation directory path not contain spaces.

These instructions assume use of a BASH or a BASH-compliant shell.

Script Name	Description
my_alert_actions.bat/sh	Sample script to define actions for alerts. Location: The project directory. Format: my_alert_actions (Append .sh on UNIX)
rtv_setup.bat/sh	Initializes a command prompt or terminal window. Location: <installation directory>/bin This script must be executed in the directory in which it resides. Format: rtv_setup (Append .sh on UNIX)
rtvapm_init.bat/sh	Initializes a command window. Location: rtvapm This script must be executed in the directory in which it resides. Format: rtvapm_init (Append .sh on UNIX)

start_cmd.bat	<p>Starts an initialized Command Prompt window on Windows.</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.</p>
start_rtv.bat/sh	<p>Starts processes in an RTView configuration as specified in the rtvservers.dat configuration file.</p> <p>Location: rtvapm/common/bin</p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file). This script requires rtvapm_init.bat/sh be executed first.</p> <p>An RTView configuration might include a Data Server or Display Server, an Historian and a Central Server Database. start_rtv only attempts to start processes it detects are not running. The action can be applied to all RTView configurations, a single RTView configuration or a single process in an RTView configuration.</p> <p>Before starting an RTView server, this script detects port conflicts caused by another server. If the conflict is caused by another RTView server, it returns a message identifying that server by its rtvapm. For example:</p> <pre>...start_rtv.bat: another dataserver running with JMX port 3268 under C:\rtview\RTViewDataServer\rtvapm</pre> <p>If the port conflict is caused by a non-RTView process, it returns a message similar to this, for example:</p> <pre>...start_rtv.bat: JMX port 3268 in use by PID 1234</pre> <p>In both cases the script includes this advice:</p> <p>Warning: server not started, port conflict</p> <hr/> <p>To avoid port conflicts, run your start script with the -portprefix command line argument to change the first two (2) digits of all your server ports.</p> <p>To persist these port changes, change the port prefix in the RTView Configuration Application or use the -saveportprefix command line argument.</p> <p>Additional arguments can be included on the command line in which case they are passed to every server specified by the command.</p> <p>Additional arguments can also be included in the rtvservers.dat file, in which case they are only applied to the specific server in whose command they are included.</p> <p>Note: If you use the -properties or -propfilter argument with start_rtv, you should also use them with status_rtv and stop_rtv. Those commands use the JMX ports defined for the server, and if any of the properties specified by -properties or -propfilter arguments change those ports, subsequent commands will be unable to find the server unless also given those properties.</p>

-console (or **-c**) - Start the processes with a command window (which is useful for 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
        dataserver
        historian
        displayserver
        database
    sender
        dataserver

```

all

Starts all RTView configurations that are specified in the **rtvservers.dat** file.

all applies the action to all RTView configurations specified in the **rtvservers.dat** file (and corresponding servers or clients specified in each configuration). **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.

Example:

start_rtv all
(Append **.sh** on UNIX)

[Configuration Name]

Starts a single RTView configuration specified in the **rtvservers.dat** file:

start_rtv [Configuration Name]
(Append **.sh** on UNIX)

Configuration Name is the RTView configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.

Example:

start_rtv web_deployment
(Append **.sh** on UNIX)

[Server Name]

Starts a single process in an RTView configuration specified in the **rtvservers.dat** file:

start_rtv [Configuration Name] [Server Name]
(Append **.sh** on UNIX)

Server Name is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.

Example:

start_rtv web_deployment dataserver
(Append **.sh** on UNIX)

Use With Secured JMX Ports

This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.

Securing with username and password

- To secure with a username and password via command-line, use the arguments as follows:

-jmxuser:...

-jmxpass:...

- To secure with a username and password in a property file, use the properties as follows:

sl.rtvview.jmxremote.username=...

sl.rtvview.jmxremote.password=....

Securing with SSL

To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.

- To secure with SSL via command-line, use the arguments as follows:

-sslkeystore:...

-sslkeystorepass:...

-ssltruststore:...

-ssltruststorepass:...

- To secure with SSL in a property file, use the properties as follows:

sl.rtvview.ssl.client.keyStore=...

sl.rtvview.ssl.client.keyStorePassword=...

sl.rtvview.ssl.client.trustStore=...

sl.rtvview.ssl.client.trustStorePassword=....

Password Encryption

To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:

encode_string encoder2 password

This will give you an encrypted value for "password" that you can use in your properties.

start_server.bat/sh

Starts the RTView DataServer.

Location:

<installation directory>

This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.

Format:

start_server

(Append **.sh** on UNIX)

start_servers.bat/sh	<p>Starts the RTViewCentral servers.</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.</p> <p>Format: start_servers (Append .sh on UNIX)</p>
start_tomcat.bat/sh	<p>Starts Apache Tomcat.</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.</p> <p>Format: start_tomcat (Append .sh on UNIX)</p>
status_collector.bat/sh	<p>Returns the status of RTView DataCollector.</p> <p>Location: <installation directory></p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file).</p> <p>Format: status_collector (Append .sh on UNIX)</p>
status_rtv.bat/sh	<p>Returns the status of all RTView configurations that are specified in the rtvservers.dat configuration file.</p> <p>Location: rtvapm/common/bin</p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file). This script requires rtvapm_init.bat/sh be executed first.</p> <p>This action uses defined JMX ports. An RTView configuration might include a Data Server, a Display Server or Viewer, an Historian and a Central Server Database. status_rtv only attempts to start processes it detects are not running. The action can be applied to all RTView configurations, a single RTView configuration or a single process in an RTView configuration.</p> <p>Additional arguments can be included on the command line in which case they are passed to every server specified by the command. Additional arguments can also be included in the rtvservers.dat file, in which case they are only applied to the specific server in whose command they are included.</p> <p>Note that if you use -properties or -propfilter arguments with start_rtv, you should also use them with status_rtv and stop_rtv. Those commands use the JMX ports defined for the server, and if any of the properties specified by -properties or -propfilter arguments change those ports, subsequent commands will be unable to find the server unless also given those properties.</p>

all

Returns the status of all RTView configurations specified in the **rtvservers.dat** file. **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.

Example:

status_rtv all
(Append **.sh** on UNIX)

[Configuration Name]

Returns the status of a single RTView configuration specified in the **rtvservers.dat** file:

status_rtv [Configuration Name]
(Append **.sh** on UNIX)

Configuration Name is the RTView configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.

Example:

status_rtv web_deployment
(Append **.sh** on UNIX)

[Server Name]

Returns the status of a single process in an RTView configuration specified in the **rtvservers.dat** file:

status_rtv [Configuration Name] [Server Name]
(Append **.sh** on UNIX)

Server Name is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.

Example:

status_rtv web_deployment dataserver
(Append **.sh** on UNIX)

Use With Secured JMX Ports

This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.

Securing with username and password

- To secure with a username and password via command-line, use the arguments as follows:

-jmxuser:...

-jmxpass:...

- To secure with a username and password in a property file, use the properties as follows:

sl.rtvview.jmxremote.username=...

sl.rtvview.jmxremote.password=....

Securing with SSL

To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.

- To secure with SSL via command-line, use the arguments as follows:

-sslkeystore:...

-sslkeystorepass:...

-ssltruststore:...

-ssltruststorepass:...

- To secure with SSL in a property file, use the properties as follows:

sl.rtvview.ssl.client.keyStore=...

sl.rtvview.ssl.client.keyStorePassword=...

sl.rtvview.ssl.client.trustStore=...

sl.rtvview.ssl.client.trustStorePassword=....

Password Encryption

To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:

encode_string encoder2 password

This will give you an encrypted value for "password" that you can use in your properties.

status_server.bat/sh

Returns the status of the RTView DataServer.

Location:

<installation directory>

This script must be executed in the project directory (the directory containing the **rtvservers.dat** file).

Format:

status_server

(Append **.sh** on UNIX)

status_servers.bat/sh	<p>Returns the status of the RTViewCentral servers (as well as the Solace PubSub+ Monitor in RTViewSolaceMonitor).</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file).</p> <p>Format: status_servers (Append .sh on UNIX)</p>
stop_collector.bat/sh	<p>Stops the RTView DataCollector.</p> <p>Location: <installation directory></p> <p>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.</p> <p>Format: stop_collector (Append .sh on UNIX)</p>
stop_rtv.bat/sh	<p>Stops processes in an RTView configuration as specified in the rtvservers.dat configuration file.</p> <p>Location: rtvapm/common/bin</p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file). This script requires rtvapm_init.bat/sh be executed first.</p> <p>This action uses defined JMX ports. An RTView configuration might include a Data Server or a Display Server, an Historian and a Central Server Database. stop_rtv only attempts to start processes it detects are not running. The action can be applied to all RTView configurations, a single RTView configuration or a single process in an RTView configuration.</p> <p>Additional arguments can be included on the command line in which case they are passed to every server specified by the command. Additional arguments can also be included in the rtvservers.dat file, in which case they are only applied to the specific server in whose command they are included.</p> <p>Note that if you use -properties or -propfilter arguments with start_rtv, you should also use them with status_rtv and stop_rtv. Those commands use the JMX ports defined for the server, and if any of the properties specified by -properties or -propfilter arguments change those ports, subsequent commands will be unable to find the server unless also given those properties.</p> <p>Location: project directory</p> <p>This script must be executed in the project directory (the directory containing the rtvservers.dat file).</p>

all

Stops all RTView configurations that are specified in the **rtvservers.dat** file. **all** applies the action to all RTView configurations specified in the **rtvservers.dat** file (and corresponding servers or clients specified in each configuration).

Note: When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.

Example:

stop_rtv all
(Append **.sh** on UNIX)

[Configuration Name]

Stops a single RTView configuration specified in the **rtvservers.dat** file:

stop_rtv [Configuration Name]
(Append **.sh** on UNIX)

Configuration Name is the RTView configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.

Example:

stop_rtv web_deployment
(Append **.sh** on UNIX)

[Server Name]

Stops a single process in an RTView configuration specified in the **rtvservers.dat** file:

stop_rtv [Configuration Name] [Server Name]
(Append **.sh** on UNIX)

Server Name is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.

Example:

stop_rtv web_deployment dataserver
(Append **.sh** on UNIX)

Use With Secured JMX Ports

This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.

Securing with username and password

- To secure with a username and password via command-line, use the arguments as follows:

-jmxuser:...

-jmxpass:...

- To secure with a username and password in a property file, use the properties as follows:

sl.rtvview.jmxremote.username=...

sl.rtvview.jmxremote.password=....

Securing with SSL

To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.

- To secure with SSL via command-line, use the arguments as follows:

-sslkeystore:...

-sslkeystorepass:...

-ssltruststore:...

-ssltruststorepass:...

- To secure with SSL in a property file, use the properties as follows:

sl.rtvview.ssl.client.keyStore=...

sl.rtvview.ssl.client.keyStorePassword=...

sl.rtvview.ssl.client.trustStore=...

sl.rtvview.ssl.client.trustStorePassword=....

Password Encryption

To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:

encode_string encoder2 password

This will give you an encrypted value for "password" that you can use in your properties.

stop_server.bat/sh

Stops the RTView DataServer.

Location:

<installation directory>

This script must be executed in the directory in which it resides.

Format:

stop_server

(Append **.sh** on UNIX)

stop_servers.bat/sh	<p>Stops the RTViewCentral servers.</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window.</p> <p>Format: stop_servers (Append .sh on UNIX)</p>
stop_tomcat.bat/sh	<p>Stops Apache Tomcat.</p> <p>Location: <installation directory>/bin</p> <p>This script must be executed in the directory in which it resides.</p> <p>Format: start_tomcat (Append .sh on UNIX)</p>
update_wars.bat/sh	<p>Creates/updates the primary Monitor servlets.</p> <p>Location: <installation directory>/projects/rtview-server</p> <p>This script must be executed in the directory in which it resides. This script requires rtvapm_init.bat/sh be executed first.</p> <p>Format: update_wars.sh [appname [host [portprefix]]]</p> <p>For example: update_wars.sh my-appname my-hostname 99</p> <p>The name, host, and portprefix are declared in variables at the top of the script for easy editing, and can be passed into the scripts on the command-line.</p> <p>You can use ? or help to get a usage message. For example: update_wars.sh help</p> <p>You can edit other variables at the top of the scripts to set properties for high-availability (HA). Set HA_HOST to the hostname of the backup data server. Set HA_DISPLAYHOST to the hostname of the backup display server. Set HA_FAILBACK to true to automatically reconnect to the primary display server.</p>

validate_install.bat/sh

Use this script if you encounter error messages when starting servers, to verify your system environment (for example, to verify that Java is installed) as well as your installation directories.

Location:

<installation directory>/bin

This script must be executed in the directory in which it resides.

Also, in Unix, this script checks and corrects file permissions and file formats (if, for example, the wrong unzip command was used during installation). If file permissions or formats are fixed, the script returns a count of the files fixed. Additionally, if invoked with the argument "-v" (verbose) it returns the names of the files fixed.

The script returns the following information (where **<RTViewInstallation>** is your RTView installation):

- In Windows

Validating installation in /opt/rtview/<RTViewInstallation>

... Java installation correct.

... rtvapm installation correct.

- In UNIX

Validating installation in /opt/rtview/<RTViewInstallation>

... Java installation correct.

... rtvapm installation correct.

... file permissions correct.

... file formats correct.

rtvservers.dat

This section describes the **rtvservers.dat** configuration file which is used to manage your RTView Enterprise deployment and RTView Enterprise processes. This section includes:

- ["Single Configuration File"](#)
- ["Multiple Configuration File"](#)

The **rtvservers.dat** text file contains one or more RTView Enterprise configurations. An RTView Enterprise configuration is a group of servers that should be started together. For example, the configuration might include any of the following: a Data Server, Historian, HSQLDB database, and a Display Server (for a Web Deployment). The **rtvservers.dat** file is used when the following scripts are executed:

- [start_rtv](#) Starts RTView Enterprise processes specified in the **rtvservers.dat** file.
- [stop_rtv](#) Stops the RTView Enterprise processes specified in the **rtvservers.dat** file.
- [status_rtv](#) Returns status information for RTView Enterprise processes specified in the **rtvservers.dat** file.

Single Configuration File

The following **rtvservers.dat** file, located in your project directory, contains a single RTView Enterprise configuration, named **default**.

```
default . dataserver rundata
```

```
default . historian runhist -ds
default . displayserver rundisp -ds
default . database rundb
```

Note: The last line in the **rtvservers.dat** file must end with a new line, or be followed by a blank line.

In this example, to start the **default** configuration type: **start_rtv default** or **start_rtv all**. To start a single server in the configuration, type **start_rtv <Configuration Name> <Server Name>**. For example: **start_rtv default displayserver**.

Each line has the following format consisting of four fields:

<Configuration Name> <Project Settings Directory Location> <Property Filter Identifying the Server> <Command>

<Configuration Name>	The name of the RTView Enterprise configuration (default in this example).
<Project Settings Directory Location>	The RTView Enterprise project settings directory location, relative to the location of the rtvservers.dat file (., the current directory, in this example).
<Property Filter Identifying the Server>	The property filter that identifies the server, which is the property filter under which the server's JMX port 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: <ul style="list-style-type: none"> • rundata: Starts the Data Server. • runhist: Starts the Historian. • rundisp: Starts the Display Server. • rundb: Starts the HSQLDB Database.

Multiple Configuration File

When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. Alternative configurations allow you to alternate between two configurations for a single RTView Enterprise deployment.

For example, the following **rtvservers.dat** file, located in your project directory/**servers** directory, contains two configurations, **bwmon** and **emsmon**. Note that the project settings directory locations differ (**./bwmon** and **./emsmon**, respectively).

```
bwmon ./bwmon dataserver rundata
bwmon ./bwmon historian runhist -ds
bwmon ./bwmon displayserver rundisp -ds

emsmon ./emsmon dataserver rundata
emsmon ./emsmon historian runhist -ds
emsmon ./emsmon displayserver rundisp -ds
```

Because the project settings directory locations differ, you can use type **start_rtv all** to start both configurations. To start only the bwmon configuration, type: **start_rtv bwmon**. To start a single server in the **bwmon** configuration, type **start_rtv <Configuration Name> <Server Name>**. For example: **start_rtv bwmon displayserver**.

APPENDIX B Alert Definitions

This section describes alerts for Solace PubSub+ and their default settings.

Alert	Warning Level	Alarm Level	Duration	Enabled
SolBridgeInboundByteRateHigh The number of inbound bytes per second across the bridge has reached its maximum. Index Type: PerBridge	8000000	10000000	30	FALSE
SolBridgeInboundMsgRateHigh The number of inbound messages per second across the bridge as a whole has reached its maximum. Index Type: PerBridge	40000	50000	30	FALSE
SolBridgeOutboundByteRateHigh The number of outbound bytes per second across the bridge has reached its maximum. Index Type: PerBridge	8000000	10000000	30	FALSE
SolBridgeOutboundMsgRateHigh The number of outbound messages per second across the bridge has reached its maximum. Index Type: PerBridge	40000	50000	30	FALSE
SolBrokerNoQueueFound This is an Event Alert. Event Alerts do not have duration or threshold settings. A single alarm alert when there are discarded queues in the broker. (Delta of discard-queue-not-found is non-zero). Note: This alert cannot be executed for Cloud Brokers. This request XML is a system level request which means that Cloud login credentials do not have permission to execute it. Index Type: PerBroker				FALSE
SolBrokerNoSubscriptionMatch This is an Event Alert. Event Alerts do not have duration or threshold settings. A single alarm alert when there are no current subscription matches (Delta of no-subscription-match is non-zero). Note: This alert cannot be executed for Cloud Brokers. This request XML is a system level request which means that Cloud login credentials do not have permission to execute it. Index Type: PerBroker				FALSE

SolBrokerNoValidDestination This is an Event Alert. Event Alerts do not have duration or threshold settings. A single alarm alert when invalid destinations exist in the broker. (Delta of discard-nodest is non-zero). Note: This alert cannot be executed for Cloud Brokers. This request XML is a system level request which means that Cloud login credentials do not have permission to execute it. Index Type: PerBroker				FALSE
SolClientInboundByteRateHigh The number of outbound bytes per second for the client has reached its maximum. Index Type: PerClient	8000000	10000000	30	FALSE
SolClientInboundMsgRateHigh The number of outbound messages per second for the client as a whole has reached its maximum. Index Type: PerClient	40000	50000	30	FALSE
SolClientOutboundByteRateHigh The number of outbound bytes per second for the client has reached its maximum. Index Type: PerClient	8000000	10000000	30	FALSE
SolClientOutboundMsgRateHigh The number of outbound messages per second for the client as a whole has reached its maximum. Index Type: PerClient	40000	50000	30	FALSE
SolClientSlowSubscriber One or more clients are consuming messages too slowly; endpoints may drop messages! Index Type: PerClient	1	NaN	30	FALSE
SolCspfNeighborDown State is not "OK" for one or more CSPF neighbors. Index Type: PerNeighbor	1	NaN	30	FALSE
SolEndpointNoBridgeClient This is an Event Alert. Event Alerts do not have duration or threshold settings. A single alarm alert when there are no binds for the Solace Endpoint exist (bind-count is zero). Index Type: PerEndpoint				FALSE
SolEndpointNoBridgeTopic This is an Event Alert. Event Alerts do not have duration or threshold settings. A single alarm alert when there are no topics subscribed to the Queue (topic-subscription-count is zero). Index Type: PerEndpoint				FALSE
SolEndpointPendingMsgsHigh The number of pending messages on a queue has reached its maximum. Index Type: PerEndpoint	8000	10000	30	FALSE

SolEndpointSpoolUsageHigh The endpoint is consuming too much message router memory for storing spooled messages. (Threshold units are megabytes.) Index Type: PerEndpoint	40	50	30	FALSE
SolEventModuleBrokerAlert This is an Event Alert. Event Alerts do not have duration or threshold settings. If the Solace Event Module is properly configured and running and this alert is enabled, all Syslog Events that are selected as alerts from the Message Brokers that were enabled for being monitored with Syslog will trigger this type of alert from the SYSTEM scope. Alerts of this type refer to Syslog events that can be clearable and non-clearable of SYSTEM scope. Therefore this alert can be clearable and non-clearable, depending on the event that triggered its execution.				FALSE
SolEventModuleClientAlert This is an Event Alert. Event Alerts do not have duration or threshold settings. If the Solace Event Module is properly configured and running and this alert is enabled, all Syslog Events that are selected as alerts from the Message Brokers that were enabled for being monitored with Syslog will trigger this type of alert from the CLIENT scope. Alerts of this type refer to Syslog events that can be clearable and non-clearable of CLIENT scope. Therefore this alert can be clearable and non-clearable, depending on the event that triggered its execution.				FALSE
SolEventModuleVpnAlert This is an Event Alert. Event Alerts do not have duration or threshold settings. If the Solace Event Module is properly configured and running and this alert is enabled, all Syslog Events that are selected as alerts from the Message Brokers that were enabled for being monitored with Syslog will trigger this type of alert from the VPN scope. Alerts of this type refer to Syslog events that can be clearable and non-clearable of VPN scope. Therefore this alert can be clearable and non-clearable, depending on the event that triggered its execution.				FALSE
SolGuaranteedMsgingHbaLinkDown For Guaranteed Messaging only, the Operational State for each HBA Fibre-Channel should be Online (e.g., not Linkdown). Index Type: PerHbaLink	0	NaN	30	FALSE
SolGuaranteedMsgingMatePortDown For Guaranteed Messaging only, the Mate Link Ports for ADB should have status OK. Index Type: PerADB	0	NaN	30	FALSE
SolGuaranteedMsgingNoMsgSpoolAdActive For Guaranteed Messaging only with Redundancy, at least one message router in an HA pair should show "AD-Active." Index Type: PerPair	0	NaN	30	FALSE
SolMsgRouterActiveDiskUtilHigh The utilization of the active disk partition for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterByteEgressUtilHigh The egress rate (bytes/sec) utilization (current egress rate divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE

SolMsgRouterByteIngressUtilHigh The ingress rate (bytes/sec) utilization (current ingress rate divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterConnectionUtilHigh The connection utilization for the message router (current number of connections divided by max allowed) is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterCpuTemperatureHigh CPU temperature margin is above threshold. Index Type: PerApplianceSensor	-30	-15	30	FALSE
SolMsgRouterCspfNeighborDown Link-detect = no for CSPF neighbor. Index Type: PerAppliance	1	NaN	30	FALSE
SolMsgRouterDelvrdUnAckMsgUtilHigh The delivered unacked messages as a percentage of all messages delivered for the application is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterFailoverDetected The backup message router in a HA pair has assumed control. Index Type: PerAppliance	1	NaN	30	FALSE
SolMsgRouterFanSensorCheckFailed The speed measured for one or more fans is below threshold. Index Type: PerApplianceSensor	5000	2657	30	FALSE
SolMsgRouterInboundByteRateHigh The number of inbound bytes per second for the message router has reached its max threshold. Index Type: PerAppliance	400000	500000	30	FALSE
SolMsgRouterInboundMsgRateHigh The number of inbound messages per second for the message router has reached its max threshold. Index Type: PerAppliance	400000	500000	30	FALSE
SolMsgRouterIngressFlowUtilHigh The ingress flow utilization (current flows divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterInterfaceDown Link-detect = no for one or more enabled network interfaces. Index Type: PerSolInterface	NaN	NaN	30	FALSE
SolMsgRouterMsgCountUtilHigh The message count utilization for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE

SolMsgRouterMsgEgressUtilHigh The message egress rate utilization (current message egress rate divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterMsgIngressUtilHigh The message ingress rate utilization (current message ingress rate divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterNABUsageHigh Network Acceleration Blade memory usage is excessive. Index Type: PerNAB	60	80	30	FALSE
SolMsgRouterNotConnected The message router is not ready for collecting performance monitoring data. Index Type: PerAppliance	NaN	NaN	30	FALSE
SolMsgRouterOutboundByteRateHigh The number of outbound bytes per second for the message router has reached its max threshold. Index Type: PerAppliance	400000	500000	30	FALSE
SolMsgRouterOutboundMsgRateHigh The number of outbound messages per second for the message router has reached its max threshold. Index Type: PerAppliance	400000	500000	30	FALSE
SolMsgRouterPendingMsgsHigh The total number of pending messages for this message router has reached its maximum. Index Type: PerAppliance	400000	500000	30	FALSE
SolMsgRouterPowerSupplyFailed A power supply has failed. Index Type: PerAppliance	0	NaN	30	FALSE
SolMsgRouterSpoolUtilization The amount of spool space used for messages is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterStandbyDiskUtilHigh The utilization of the standby disk partition for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterSubscriptionUtilHigh The subscription utilization (current number of subscriptions divided by max allowed) for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterSwapUsedHigh The amount of swap space used by the message router operating system is excessive. Index Type: PerAppliance	70	85	30	FALSE

SolMsgRouterSyslogAlert This alert executes when a Solace Syslog Warning or Critical message is received. To get Syslog event alerts (in RTView Enterprise or the standalone Monitor), go to the Alert Administration display and enable the SolMsgRouterSyslog alert.	-	-	-	-
SolMsgRouterTemperatureSensorCheckFailed A chassis temperature measurement is above threshold. Index Type: PerAppliance	40	45	30	FALSE
SolMsgRouterTranSessionCntUtilHigh The transacted session count utilization for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterTranSessionResUtilHigh The transacted session resource utilization for the message router is excessive. Index Type: PerAppliance	70	85	30	FALSE
SolMsgRouterVoltageSensorCheckFailed A power supply voltage is high or low. Index Type: PerApplianceSesor	NaN	NaN	30	FALSE
SolSparseMessageSpoolFile This is a Limits Alert that issues a Warning alert and is enabled by default. Important: Do not modify thresholds for this alert as they were set up by Solace development team) This alert is defined to determine when there is a Sparse Message Spool File Condition. When disk space usage is several multiples of persistent store usage, then there is likely a large number of message spool files residing on the disk where each file contains few messages. This is referred to as a sparse message spool file condition, and requires urgent attention to mitigate and avoid the disk reaching capacity. For further information, refer to Solace documentation.				TRUE
SolVpnConnectionCountHigh The number of connections to the server has reached its maximum. Index Type: PerVPN	60	80	30	FALSE
SolVpnInboundByteRateHigh The number of inbound bytes per second for the vpn has reached its maximum. Index Type: PerVPN	8000000	10000000	30	FALSE
SolVpnInboundDiscardRateHigh The number of discarded inbound messages per second for the server is excessive. Index Type: PerVPN	1	5	30	FALSE
SolVpnInboundMsgRateHigh The number of inbound messages per second for the vpn as a whole has reached its maximum. Index Type: PerVPN	40000	50000	30	FALSE
SolVpnOutboundByteRateHigh The number of outbound bytes per second for the VPN has reached its maximum. Index Type: PerVPN	8000000	10000000	30	FALSE

SolVpnOutboundDiscardRateHigh The number of discarded outbound messages per second for the server is excessive. Index Type: PerVPN	1	5	30	FALSE
SolVpnOutboundMsgRateHigh The number of outbound messages per second for the server as a whole has reached its maximum. Index Type: PerVPN	40000	50000	30	FALSE
SolVpnPendingMsgsHigh The total number of pending messages for this destination has reached its maximum. Index Type: PerVPN	8000000	10000000	30	FALSE
SolVpnSubscriptionCountHigh The number of endpoints in this VPN has reached its maximum. Index Type: PerVPN	8000	10000	30	FALSE

APPENDIX C Third Party Notice Requirements

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** Apache HttpClient is embedded in the RTView Core libraries and is licensed under the Apache License Version 2.0

** JEval 0.9.4 is licensed under the Apache License Version 2.0

** Jetty 9.2.19 is licensed under the Apache License Version 2.0

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Version 2.0, January 2004

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That's all there is to it!

APPENDIX D Limitations

This chapter defines the limitations experienced when using iPad Safari.

iPad Safari Limitations

- In the iPad settings for Safari, **JavaScript** must be **ON** and **Block Pop-ups** must be **OFF**. As of this writing, the Thin Client has been tested only on iOS 4.3.5 in Safari.
- The iPad does not support Adobe Flash, so the Fx graph objects (obj_fxtrend, obj_fxpie, obj_fxbar) are unavailable. The Thin Client automatically replaces the Fx graph objects with the equivalent non-Fx object (obj_trendgraph02, obj_pie, obj_bargraph). Note that the replacement objects behave the same as the Fx objects in most cases but not in all. In particular, obj_trendgraph02 does not support the sliding cursor object nor the **legendPosition** property. Custom Fx objects are not supported on the iPad.
- The Thin Client implements scrollbars for table objects and graph objects. However, unlike the scrollbars used on desktop browsers, the scrollbars used on the iPad do not have arrow buttons at each end. This can make it difficult to scroll precisely (for example, row by row) on objects with a large scrolling range.
- At full size, users may find it difficult to touch the intended display object without accidentally touching nearby objects and performing an unwanted drill-down, sort, scroll, and so forth. This is particularly true of table objects that support drill-down and also scrolling, and also in panel layouts that contain the tree navigation control. In those cases, the user may want to zoom the iPad screen before interacting with the Thin Client.
- If the iPad sleeps or auto-locks while a Thin Client display is open in Safari, or if the Safari application is minimized by clicking on the iPad's home button, the display is not updated until the iPad is awakened and Safari is reopened. In some cases it may be necessary to refresh the page from Safari's navigation bar.

Because the iPad uses a touch interface there are differences in the Thin Client appearance and behavior in iOS Safari as compared to the conventional desktop browsers that use a cursor (mouse) interface, such as Firefox and Internet Explorer. These are described below.

- Popup browser windows: An RTView object's drill-down target can be configured to open a display in a new window. In a desktop browser, when the RTView object is clicked the drill-down display is opened in a popup browser window. But in iOS Safari 4.3.5, only one page is visible at a time, so when the RTView object is touched a new page containing the drill-down display opens and fills the screen. The Safari navigation bar can be used to toggle between the currently open pages or close them.
- Mouseover text: When mouseover text and drill-down are both enabled on an RTView object (for example, a bar graph), in iOS Safari the first touch on an element in the object (for example, a bar) displays the mouseover text for that element and the second touch on the same element performs the drill-down.

- **Resize Mode and Layout:** By default, the Display Server runs with **resizeMode** set to **crop**. In **crop** mode, if a display is larger than the panel that contains it only a portion of the display is visible. In a desktop browser, scrollbars become available to allow the user to scroll to view the entire display. In iOS Safari, scrollbars do not appear but the display can be scrolled by dragging two fingers inside the display. (Dragging one finger scrolls the entire page, not the display).

If the Display Server is run with **resizeMode** set to **scale** or **layout**, the display is resized to fit into the panel that contains it. If a desktop browser is resized after a display is opened, the display is resized accordingly. On the iPad, the Safari browser can only be resized by reorienting the iPad itself, between portrait mode and landscape mode.

The panel layout feature is supported in the Thin Client. However, unlike a desktop browser which resizes to match the layout size, the size of Safari is fixed. So if the Display Server is run with **resizeMode** set to **crop** or **scale** mode, there may be unused space at the edges of the display(s) or, in **crop** mode, the panels and displays may be cropped.

This means that **layout** mode should be used for best results on the iPad. For layout mode to be most effective, displays should use the **anchor** and **dock** object properties. Please see RTView documentation for more information.

- **Scrolling:** The Thin Client implements scrollbars for table objects and graph objects. The scrollbars are activated by dragging with one finger.

If an RTView display is viewed in **crop** mode and is too large to be displayed entirely in Safari, scrollbars do not appear (as they would in a desktop browser) but the display can be scrolled by dragging with two fingers inside the display.

Scrollbars do not ever appear in a text area control. If the text area contains more text than is visible, use the two finger drag in the text area to scroll the text.

Regardless of the size of a listbox control, it can only display a single item (typically, the selected item). When the listbox is touched, the list of items appear in a popup list. In other words, on iOS Safari the listbox control and the combobox control behave identically.

- **Context menu:** The Thin Client context menu is opened by a right mouse button click in a desktop browser. It is opened in iOS Safari by touching any location on a display and holding that touch for 2 seconds. The menu appears in the top left corner of the display, regardless of where the display is touched. The items **Export Table to Excel**, **Drill Down**, and **Command** are not included on the context menu in Safari. All other items are available. The **Export Table to HTML** item is enabled if a table object is touched (unless the table object's **drillDownTarget** is configured to open another display). After an **Export to PDF/HTML** is performed, the exported content opens on another page in Safari. From there, the content can either be opened by another application (for example, the iBooks application opens PDF) and emailed, or it can be copied and pasted into an email.