# *RTView® TIBCO® ActiveMatrix BusinessWorks™ Monitor User's Guide*

Version 6.6

RTView®

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# Preface

Welcome to the *RTView® TIBCO® ActiveMatrix BusinessWorks™ 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" on page 1
- "Additional Resources" on page 1
- "Contacting SL" on page 2


## About This Guide

The *RTView® TIBCO® ActiveMatrix BusinessWorks™ Monitor User's Guide* describes how to install, configure and use the Monitor.

### Document Conventions

This guide uses the following standard set of typographical conventions.

| Convention | Meaning |
|---|---|
| *italics* | Within text, new terms and emphasized words appear in italic typeface. |
| **boldface** | Within text, directory paths, file names, commands and GUI controls appear in bold typeface. |
| Courier | Code examples appear in Courier font:<br>`amnesiac > enable`<br>`amnesiac # configure terminal` |
| < > | Values that you specify appear in angle brackets:<br>**interface <ipaddress>** |

## Additional Resources

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


- "Release Notes" on page 2
- "Documentation and Support Knowledge Base" on page 2

### Release Notes

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

### Documentation and Support Knowledge Base

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

## Contacting SL

This section describes how to contact departments within SL.

### Internet

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

### Technical Support

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

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

# CHAPTER 1 Introduction to the Monitor

This section contains the following:


- "Overview" on page 3
- "System Requirements" on page 4
- "Upgrade Notes" on page 4
- "Installation" on page 6
- "Setup" on page 6


## Overview

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

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

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

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

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

### Monitor Stand-alone and Solution Package

The Monitor can also be installed as a Solution Package within the RTView Enterprise Monitor® product. RTView Enterprise Monitor is an end-to-end monitoring platform that allows application support teams to understand how infrastructure, middleware and application performance data affect the availability and health of the entire application. When the Monitor is used as a Solution Package, the ActiveMatrix BusinessWorks System™ metrics and health state are but one source of information which determines the entire health state of the application.

For more information about RTView Enterprise Monitor®, see the *RTView Enterprise Monitor® User's Guide*, available on the SL Product Documentation website.

# System Requirements

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

# Upgrade Notes

This section describes the steps necessary to upgrade existing Monitor applications. To upgrade to version:

- "6.5" -- See these steps to upgrade to version 6.5.
- "6.4" -- No upgrade steps required.
- "6.3" -- See these steps to upgrade to version 6.3.

## 6.5

### Sender/receiver deployments

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

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

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

would be changed to

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

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

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

would be changed to

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

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

## 6.4

No upgrade steps required.

## 6.3

The **Active** and **DeltaCreated** data type columns in the BW_PROCESSES table were converted to real numbers to account for the loss of resolution when compaction is taking place by averaging the metrics. To synchronize cache data with data in the database, use ALTER TABLE SQL as show below for your supported DB platform (Oracle is not required):

- "DB2"
- "SQL Server"
- "MySQL"
- "SyBase"

### DB2

ALTER TABLE "BW_PROCESSES"

ALTER COLUMN "Active" SET DATA TYPE DOUBLE;

ALTER TABLE "BW_PROCESSES"

ALTER COLUMN "DeltaCreated" SET DATA TYPE DOUBLE;

ALTER TABLE "BW_PROCESS_TOTALS"

ALTER COLUMN "Active" SET DATA TYPE DOUBLE;

### SQL Server

ALTER TABLE [BW_PROCESSES]

ALTER COLUMN [Active] FLOAT

ALTER TABLE [BW_PROCESSES]

ALTER COLUMN [DeltaCreated] FLOAT

ALTER TABLE [BW_PROCESS_TOTALS]

ALTER COLUMN [Active] FLOAT

### MySQL

ALTER TABLE "BW_PROCESSES"

MODIFY "Active" DOUBLE ,

MODIFY "DeltaCreated" DOUBLE ;

ALTER TABLE "BW_PROCESS_TOTALS"

MODIFY "Active" DOUBLE ;

### SyBase

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

ALTER TABLE "BW_PROCESSES" MODIFY "Active" FLOAT

ALTER TABLE "BW_PROCESSES" MODIFY "DeltaCreated" FLOAT

ALTER TABLE "BW_PROCESS_TOTALS" MODIFY "Active" FLOAT

# Installation

The Monitor can be installed as a stand-alone monitoring system for technical support teams. The Monitor can also be installed as a Solution Package within the RTView Enterprise Monitor® product.

Download the **BWMonitor_<version>.zip** file and unzip the **BWMonitor_<version>.zip** file into a directory of your choosing.

For more information about RTView Enterprise Monitor see the *RTView Enterprise Monitor® User's Guide*, available on the SL Product Documentation website.

See "Quick Start" for more information on how to install the Monitor.

## File Extraction Considerations

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

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

For more information about RTView Enterprise Monitor see the *RTView Enterprise Monitor® User's Guide*, available on the SL Product Documentation website.

# Setup

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

- "Create a Project Directory" on page 6: This is required.
- "Set TIBCO Environment Variables" on page 7: This is required.
- "Enable Monitoring Via TIBCO Hawk" on page 7: For BW6 engines only.
- "Enable Monitoring Via JMX" on page 9: For BW5 and BWSE engines.

## Create a Project Directory

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

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

The manner in which you set up your project directory is determined by whether you want to monitor TIBCO® ActiveMatrix BusinessWorks System™ version 6 or version 5:

- "To Monitor Version 6 and Version 5"
- "To Monitor Version 5 Only"


### To Monitor Version 6 and Version 5

This section describes how to create your project directory for monitoring both ActiveMatrix BusinessWorks™ version 6 and version 5:

Create a project settings directory in the **bw6mon/projects** directory and name it **mysample**. For example:

**bw6mon/projects/mysample**

Copy all files from the **bw6mon/projects/sample** directory into the **mysample** project directory you just created.

### To Monitor Version 5 Only

This section describes how to create your project directory for monitoring ActiveMatrix BusinessWorks™ version 5 only:

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

**bwmon/projects/mysample**

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

## Set TIBCO Environment Variables

Set the following:

| Name | Description | Example |
|---|---|---|
| **RV_ROOT** | TIBCO Rendezvous installation directory. If you installed Enterprise RTView using the Windows installer, this variable will already be set globally on your system. | **C:\TIBCO\tibrv\8.3** |
| **HAWK_ROOT** | TIBCO Hawk installation directory. If you installed Enterprise RTView using the Windows installer, this variable will already be set globally on your system. | **C:\TIBCO\hawk\4.9** |
| **TIBJMS_ROOT** | TIBCO EMS installation directory. This is only required if you are using an EMS transport for your TIBCO Hawk agents. If you installed Enterprise RTView using the Windows installer, this variable may already be set globally on your system. | **C:\TIBCO\ems\6.3** |

## Enable Monitoring Via TIBCO Hawk

See the appropriate instructions:


- "ActiveMatrix BusinessWorks Version 6," next
- "ActiveMatrix BusinessWorks Version 5" on page 8

### ActiveMatrix BusinessWorks Version 6

Perform these instructions if you are monitoring ActiveMatrix BusinessWorks version 6:

1. Enable your applications for statistics collection. You can do this using the TIBCO BusinessWorks administrator CLI with commands such as:

   **bwadmin enablestats -d MyDomain -a MyAppSpace process MyAppName MyAppVersion**

   Repeat for each application you wish to monitor.

2. Enable the Hawk MicroAgent in your AppNodes for each AppSpace you wish to monitor. Refer to the **Enabling TIBCO Hawk MicroAgent** section of the *TIBCO BusinessWorks6 Administration Guide*.

### ActiveMatrix BusinessWorks Version 5

Perform these instructions if all you are monitoring ActiveMatrix BusinessWorks version 5:

1. In the TIBCO Administrator, go to the **Configuration** page of your application.
2. In the **Configuration Builder** panel, select the name of the application.
3. Go to the **Edit Application Configuration** page.
4. Select the **Advanced** tab.
5. Find the global variable **HawkEnabled** and set its value to **true**.
6. Save the configuration.
7. "Install the RTViewBWAgent Plug-in Microagent", as described (next).

### Install the RTViewBWAgent Plug-in Microagent

This section is for ActiveMatrix BusinessWorks Version 5 users.

---

**Note:** This section does not apply if all your engines are deployed as BusinessWorks Service Engines (BWSE).

---

Install the RTViewBWAgent plug-in microagent in the Hawk Agent for each domain you have configured to communicate with the Monitor.

RTViewBWAgent detects deployed engines and gets their maximum heap size metrics when the Hawk agent is started. If RTViewBWAgent is not installed, deployed engines are not detected until they have been started and report data to the Monitor. When live data is received the engine is added and its **Status** is set to **LIMITED**. The **Status** remains **LIMITED** because, although live data metrics are available, the deployment and maximum heap size metrics are still unavailable.

**Note:** After installation, you can use the Hawk Display to view the RTViewBWAgent microagent and invoke its methods: GetBWDeploymentNames and GetBWDeploymentMaxHeapSizes.

You can also configure the agent to detect deployed engines and make data updates at more frequent, specified intervals. To specify the update interval you uncomment the **-update** argument in the **BWAgentPlugin.hma** file and specify a non-zero value. When the **-update** argument is not used (is commented out), the Monitor does not report that an engine has been deployed or undeployed until the Hawk agent is restarted.

1. Navigate to the **agents/BWAgentPlugin** directory of your Monitor installation and locate the following two files:

- **BWAgentPlugin.jar**
- **BWAgentPlugin.hma**

2. For a given domain, find the plug-in directory via this path:

   **<TIBCO-home>/tra/domain/<domain-name>**

3. Repeat Step 2 for each Hawk domain you have configured to communicate with the Monitor.

4. To (optionally) set RTViewBWAgent to make data updates at more frequent, specified intervals, open the **BWAgentPlugin.hma** file, uncomment the **-update** argument and specify a non-zero value. The value, which defaults to 300, represents the update interval in seconds. For example, a value of **3600** updates every hour:

```
<arguments>
      <arg>-update:3600</arg>
      . .
</arguments>
```

5. Copy the **BWAgentPlugin.jar** file and **BWAgentPlugin.hma** file into the plug-in directory and restart the Hawk Agent.

## Enable Monitoring Via JMX

ActiveMatrix BusinessWorks version 5 engines can also be enabled for JMX monitoring as documented in *TIBCO ActiveMatrix BusinessWorks™ Administration, Monitoring the BusinessWorks Engine Using JMX*:

**To enable via JMX:**

1. To enable local JMX monitoring, add the following properties to **bwengine.tra**:

**Jmx.Enabled=true**
**java.property.com.sun.management.jmxremote=true**

2. To enable remote JMX monitoring, add the following properties to **bwengine.tra**: (Note <**port_number**> can be any available port)

**java.property.com.sun.management.jmxremote.port=<port_number>**
**java.property.com.sun.management.jmxremote.authenticate=false**
**java.property.com.sun.management.jmxremote.ssl=false**

For example, the BW Engine **MyDomain.MyApp.Procs** can be enabled for remote JMX monitoring by adding the following lines to the file

**C:\Tibco\tra\domain\MyDomain\application\MyApp\MyApp-Procs.tra**:

#

```
# Enable JMX on port 9000
#
Jmx.Enabled=true
java.property.com.sun.management.jmxremote=true
java.property.com.sun.management.jmxremote.port=9000
java.property.com.sun.management.jmxremote.authenticate=false
java.property.com.sun.management.jmxremote.ssl=false
```

3. After the BW Engine is enabled for JMX monitoring and restarted, it can be monitored by adding a JMX Connection property to the **sample.properties** file in your project settings directory, and making the Connection name the Engine name. Following the above example:

```
#
# Make JMX connections to BW Engines
#
sl.rtview.jmx.jmxconn=domainslapm.BWApp-1.Procs 192.168.1.102 9000 URL:- - - false
```

**Note:** For the standalone version of the Monitor, this property should be added to the **sample.properties** file in the project directory in which you installed the Monitor. After the Monitor Data Server is (re-)started, the JMX metrics will automatically be retrieved from the engine. See “Create a Project Directory” for more information on the standalone project directory.

For the solution package version of the Monitor, this property should be added to the **sample.properties** file in the **rtvmgr** project directory (which should have been created when RTView Enterprise Monitor was installed, and is parallel to the **bwmon** directory). Once the RTVMGR data server is (re-)started, the JMX metrics will automatically be retrieved. See the *RTView Enterprise Monitor® User's Guide*, which is available on the SL Product Documentation website, for more information on installing RTView Enterprise Monitor.

Proceed to “Configuration” on page 11.

# CHAPTER 2 Configuration

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


- "Overview," next
- "Configure the Data Servers" on page 12
- "Configure RTView Servers" on page 24
- "Configure the Database" on page 26
- "Enable Collection of Historical Data" on page 29
- "Enable Collection of Tomcat Historical Data" on page 30
- "Configure Alert Notification" on page 30
- "Configure High Availability" on page 35
- "Modify Displays, Data Collection and Filtering" on page 36
- "Optional Configurations" on page 39


## Overview

This section describes how to configure the Monitor.

### Basic Steps

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

- Step 1 (**required**): "Configure the Data Servers" on page 12. Define the TIBCO Servers and destinations to be monitored. TIBCO ActiveMatrix (AMX) users also configure the Monitor to accept AMX data for BWSE Engines. This step must be performed before running any deployment of the Monitor.
- Step 2 (**required**): "Configure RTView Servers" on page 24. Configure the RTView Servers.
- Step 3 (optional): "Configure the Database" on page 26. Configure a production database.
- Step 4 (optional): "Enable Collection of Historical Data" on page 29. Enable the collection of historical data.
- Step 5 (optional): "Enable Collection of Tomcat Historical Data" on page 30. Enable the collection of Tomcat historical data.
- Step 6 (optional): "Configure Alert Notification" on page 30. Configure alerts to execute an automated action (for example, to send an email alert).
- Step 7 (optional): "Configure High Availability" on page 35. Configure high availability components.

- Step 8 (optional): “Modify Displays, Data Collection and Filtering” on page 36. Modify the Monitor user interface.
- Step 9 (optional): “Optional Configurations” on page 39. Describes how to enable monitoring of BW5 engines via JMX.

**Assumptions**

This document assumes that you:

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

**Initializing a Command Prompt or Terminal Window**

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

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

**Windows**

Go to your Monitor installation directory and type:

```
rtvapm_init
```

**UNIX**

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

```
. ./rtvapm_init.sh
```

# Configure the Data Servers

This section describes how to configure the Monitor Data Servers. You configure the Data Servers by defining data source connections for each TIBCO BusinessWorks component that you want to monitor. This part of the Monitor configuration is required.

You can configure Hawk by “Editing the sample.properties File” or “Using the Configuration Utility”), you can configure the OSGI Plugin (“Configure for OSGI Plugin (BW6)” on page 18), or you can configure BWSE Engines (for TIBCO ActiveMatrix environments only) and BW6 (for BW6 environments only). If you have a TIBCO ActiveMatrix (AMX) environment you must also “Configure for BWSE Engines (BW5)” on page 22 so the Monitor accepts AMX data (for BWSE Engines).

For most installations, the default Monitor property settings are sufficient. Consult Technical Support before modifying other property files to avoid upgrade issues.

LINUX users might see inconsistently aligned labels in displays.

**Important:** These properties should only be applied to Display Servers on Linux AND only if the text size and alignment issue is observed in the Thin Client. Otherwise it can cause unnecessary overhead or unwanted changes to the appearance of text in RTView displays.

To resolve inconsistently aligned labels in displays:

- Open the **userDefined.properties** file (where **userDefined** is the name you gave the file), located in your **Project Directory/servers/central/** directory.
- Add the following lines:

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

**sl.rtview.global=rtv_fonts.rtv**

- Save the file and restart the Display Server.

If you do not have a **userDefined.properties** file:

- Create the file, add the uncommented lines and save the file.
- Open the **rtvservers.dat** file, located in the **Project Directory/emsample/servers/** directory.
- Add the properties line to the Display Server line, as follows:

**central ./central DisplayServer1 rundisp_appmon -properties:userDefined**

- Save the file and restart the Display Server.

**At this point you have:**

- Verified "System Requirements" on page 4.
- Performed Monitor "Quick Start" on page 3
- Performed "Setup" on page 6 instructions

This section includes:

- "Configure for Hawk (BW5 and BW6)" on page 13:
- "Configure for OSGI Plugin (BW6)" on page 18
- "Configure for BWSE Engines (BW5)" on page 22: For TIBCO ActiveMatrix (AMX) environments only. You must also configure the Monitor to accept AMX data for BWSE Engines (after you configure the Data Servers). Instructions are included here.
- "Enable Monitoring for BW6" on page 23: For BW6 environments only.

# Configure for Hawk (BW5 and BW6)

Do one of the following to define data source connections:

- "Editing the sample.properties File" on page 13: Follow these instructions to configure the Data Servers (or use the Configuration Utility).
- "Using the Configuration Utility" on page 14: Follow these instructions to configure the Data Servers (or by editing the **sample.properties** file).

## Editing the sample.properties File

This section describes how to configure the Monitor Data Servers by editing your **sample.properties** file.

**To configure the Data Servers by editing your sample.properties file**

1. Create your project directory. For details, see “Create a Project Directory” on page 6.
2. Open the **sample.properties** file, located in your project directory, in a text editor.
3. Edit as needed. For example, if we have agents **unixagent1** and **unixagent2**, where the domain is domaineast, and both are using the RVD transport, we add the following:

   **sl.rtview.hawk.hawkconsole domaineast rvd domaineast 7474 ; tcp:7474**

   **sl.rtview.hawk.agentGroup UNIX_AGENTS unixagent1(domaineast) unixagent2(domaineast)**

   And for agent winagent using the EMS transport via TCP port 7011, we add the following:

   **sl.rtview.hawk.hawkconsole domainwest ems domainwest tcp://emshost:7222 emsusername emspassword**
   **sl.rtview.hawk.agentGroup WIN_AGENTS winagent1(domainwest)**
4. Save the file.
5. For TIBCO ActiveMatrix (AMX) environments, proceed to “Configure for BWSE Engines (BW5)” on page 22.

## Using the Configuration Utility

This section describes how to configure the Monitor Data Servers using the RTView Configuration Utility. When you configure Data Servers using the Configuration Utility, an initialization file is created.

**To configure the Data Servers using the RTView Configuration Utility**

1. In an initialized command window, go to the Monitor directory. For details about initializing a command window, see “Initializing a Command Prompt or Terminal Window” on page 12.
2. Execute the following script:

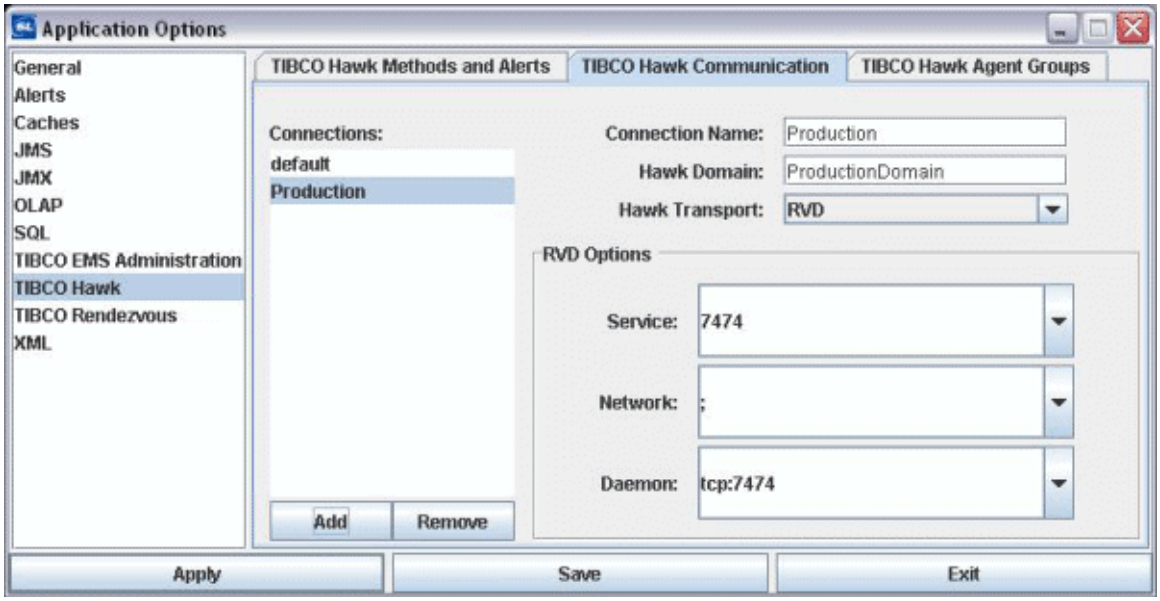
   Windows

   Type: **run_configutil.bat**

   Unix

   Type: **run_configutil -bg**

The **Applications Options** dialog opens.




3. To specify the Hawk Domains to be monitored, select TIBCO Hawk from the left column and click the Configure Hawk Communication tab.

4. Enter a unique Connection Name and Hawk Domain and select a Hawk Transport for that domain.

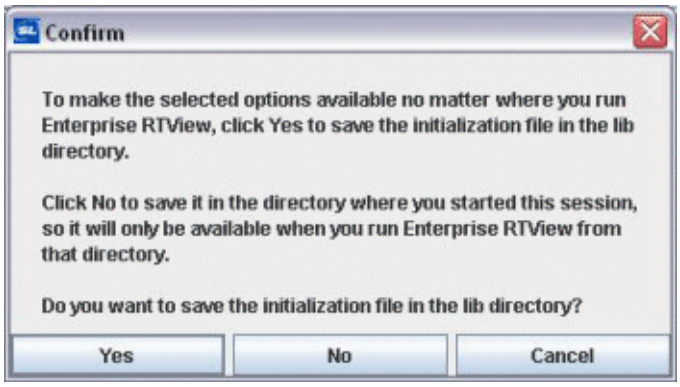
5. Enter **RVD**, **RVA** or **EMS** options as appropriate for the selected transport.

6. Click **Add**.

7. Repeat Steps for all Hawk Domains to be monitored.

8. Save the configuration.

9. In the **Confirm** dialog click **No**.



**10.** To specify the platforms agents run on (Windows or UNIX) so that Hawk Agents are automatically discovered from your configured domains, click the **TIBCO Hawk Agents Groups** tab.

---

**Note:** If Hawk agents are running on virtual machines, select the platform type of the virtual machine.

---

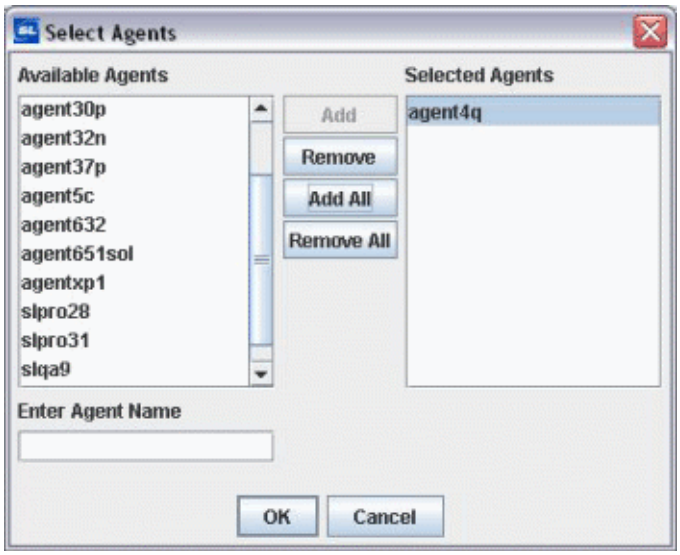
**11.** Double-click the **WIN_AGENTS** group. Active agents on all configured domains will be available in the **Available Agents** list.

---

**Note:** It can take 20-30 seconds for Hawk to discover all available agents.

---

**12.** In the **Select Agents** dialog, choose all Windows agents running your BusinessWorks engines from the **Available Agents** list and click **Add**.




---

**Note:** If an agent is currently disabled, and therefore not listed as available, you can enter it by name in the **Enter Agent Name** text field and click **Add**.

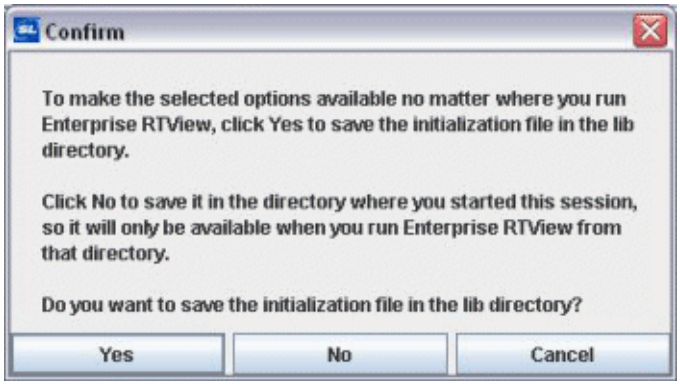
---

**13.** Click **OK** to return to the **TIBCO Hawk Agent Groups** tab.

**14.** Double-click the **UNIX_AGENTS** group.

**15.** Repeat steps for all UNIX agents.

**16.** Click **Save** and **No** in the **Confirm** dialog.




---

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

---

```
2013-05-08 13:39:48,009 INFO  rtv_stdout - [rtview] ... AppMgr.initApp
2013-05-08 13:39:48,009 INFO  rtv_stdout - [rtview] ... BWMON Manager AppMgr.initApp
2013-05-08 13:39:48,025 INFO  rtv_stdout - [rtview] ... using filters file
```

```
<bwmon_filters.xml>
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] ... startApplication()
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] ... startApplication()
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] ---------------------------
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] Group: WIN_AGENTS
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] Agent: demo1(domain1)
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] Agent: demo2(domain1)
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] Agent: demo3(domain1)
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] ---------------------------
2013-05-08 1339:49,056 INFO  rtv_stdout - [rtview] ---------------------------
2013-05-08 13:39:49,056 INFO  rtv_stdout - [rtview] Group: UNIX_AGENTS
2013-05-08 13:39:49,072 INFO  rtv_stdout - [rtview] Agent: demo4(domain2)
2013-05-08 13:39:49,072 INFO  rtv_stdout - [rtview] Agent: demo5(domain2)
2013-05-08 13:39:49,072 INFO  rtv_stdout - [rtview] Agent: demo6(domain2)
2013-05-08 13:39:49,072 INFO  rtv_stdout - [rtview] ---------------------------
```

**17.** For TIBCO ActiveMatrix (AMX) environments, proceed to "Configure for BWSE Engines (BW5)" on page 22.

**18.** For BW6 environments, proceed to "Enable Monitoring for BW6" on page 23.

## Configure for OSGI Plugin (BW6)

This section describes the "Prerequisites" and steps required to install the RTView OSGI (Open Service Gateway Initiative) BusinessWorks plugin into "RTView TIBCO ActiveMatrix BusinessWorks", "Docker", and "Cloud Foundry".

### Prerequisites

BW 6.3.4

BWCE 2.2.0

RTVAPM X.X

### RTView TIBCO ActiveMatrix BusinessWorks

To enable the plugin in RTView® TIBCO® ActiveMatrix BusinessWorks™, perform the following:

**1.** Stop the bwagent, if running.

**2.** Copy the plugin to **$TIBCO_HOME/bw/6.3/system/hotfix/shared**.

**3.** Start the bwagent. Do not start the AppNode(s) yet.

---

**Note:** Continue to step 4 if you want to modify the default property values. You may skip steps 4-9 entirely if you want to use the default property values.

---

**4.** Navigate to the AppSpace folder: **$TIBCO_HOME/bw/6.3/config/**

**5.** Copy the **appspace_config.ini_template** file to a temporary file.

6. Edit the temporary file and set the properties below as needed.

| Available Properties | Default Value |
|---|---|
| sl.rtview.rtvagent.name | updater |
| sl.rtview.rtvagent.target | localhost:3372 |
| sl.rtview.rtvagent.update | 10 (seconds) |
| sl.rtview.bw.activities.enabled | false |

7. Use the **bwadmin config** command to push the configuration to the AppSpace:

```
bwadmin config -d myDomain -cf <temporary-file> appspace myAppSpace
```

8. Use the **bwadmin config** command to push the configuration to each AppNode in the AppSpace:

```
bwadmin config -d myDomain -a myAppSpace -cf <temporary-file> appnode myAppNode
```

9. (Optional) To see plugin output (INFO or TRACE) in the **bwappnode.log** file, add the following to the "user properties" section of the **logback.xml** file (**$TIBCO_HOME/bw/6.3/domains/<domain>/appnodes/<appspace>/<appnode>/logback.xml**):

```
<logger name="com.sl.rtvapm.osgi">
<level value="INFO"/>
</logger>
```

10. Restart the AppNode(s).

11. Repeat steps 7-10 for every AppSpace to be monitored.

12. Add the following to your dataserver **sample.properties** file in your project directory:

```
collector.sl.rtview.cache.config=bw6_osgi_cache_source.rtv
```

13. If you are running BWMON as a solution package, continue on to Steps 14 and 15. If you are running BWMON as a standalone application, run your dataserver with the following option:

**-propfilter:receiver**

14. Edit **servers/rtvservers.dat**, uncomment the following, and save your changes:

```
bw6mon ./bw6mon dataserver rundata -propfilter:receiver
```

15. Run your bw6mon dataserver with: **-properties:sample**

## Docker

To enable the plugin in Docker, perform the following:

1. Download **bwce_cf.zip** from TIBCO (for example, save the file to the **/opt** directory).

```
cd /opt/tibco/bwce/2.2/docker
cp /opt/bwce_cf.zip ./resources/bwce-runtime
```

2. Build the image

```
docker build -t tibco/bwce:latest .
```

3. Add the RTView OSGi plugin to your application by copying the application archive (**tibco.bwce.sample.BookStore.ear**, for example) and the plugin jar (**com.sl.rtvapm.osgi.jar**) to your project directory.

4. Create a Docker file containing:

```
FROM tibco/bwce:latest
MAINTAINER Tibco
ADD tibco.bwce.sample.BookStore.ear /
RUN mkdir -p /resources/addons/jars
ADD com.sl.rtvapm.osgi.jar /resources/addons/jars
EXPOSE 8080
```

5. Build the application:

```
docker build -t tibco/bookstore:latest .
```

6. Configure the plugin via Java system properties, **BW_JAVA_OPTS**, and the Docker run command, for example:

```
OPTS="-Dsl.rtview.rtvagent.target=localhost:3372 \
-Dsl.rtview.rtvagent.name=updater \
-Dsl.rtview.bw.domain=Containers \
-Dsl.rtview.bw.appspace=Docker \
-Dsl.rtview.bw.appnode=docker-1"

docker run -i \
-e ... \
-e BW_JAVA_OPTS="$OPTS" \
-e ... \
tibco/bookstore:latest
```

| Available Properties | Default Value |
|---|---|
| sl.rtview.rtvagent.name | updater |
| sl.rtview.rtvagent.target | localhost:3372 |
| sl.rtview.rtvagent.update | 10 (seconds) |
| sl.rtview.rtvagent.class | SL-BW6MON-Agent |
| sl.rtview.bw.activities.enabled | false |
| sl.rtview.bw.domain | <system default> |
| sl.rtview.bw.appspace | <system default> |
| sl.rtview.bw.appnode | <system default> |

7. The plugin logs to the console at levels INFO and TRACE. You can set the log level for all packages with **BW_LOGLEVEL**, and so on.

```
-e BW_LOGLEVEL=INFO
```

**If configuring for bw6mon, perform the following steps:**

8. Add the following to your **sample.properties** file in your project directory:

```
collector.sl.rtview.cache.config=bw6_osgi_cache_source.rtv
```

9. If you are running BWMON as a solution package, continue on to Steps 10 and 11. If you are running BWMON as a standalone application, run your dataserver with the following option:

   **-propfilter:receiver**

10. Edit **servers/rtvservers.dat**, uncomment the following, and save your changes:

```
bw6mon ./bw6mon dataserver rundata -propfilter:receiver
```

11. Run your bw6mon dataserver with: **-properties:sample**

## Cloud Foundry

To enable the plugin in Cloud Foundry, perform the following:

1. Download the **bwce-buildpack_cf-v2.2.0.18.zip** file from TIBCO.

2. Insert the plugin jar into the zip file at **/resources/addons/jars**.

3. Upload the buildpack to your cloud. For example:

   **cf create-buildpack bw-buildpack bwce-buildpack_cf-v2.2.0.18.zip 1**

4. Configure the plugin via Java system properties and **BW_JAVA_OPTS** in the **manifest.yml** file. For example:

```
. . .
env:
   . . .
   BW_JAVA_OPTS: '-Dsl.rtview.rtvagent.target=hostyy:3372 -
   Dsl.rtview.rtvagent.name=hostxx -Dsl.rtview.bw.domain=BW6 -
   Dsl.rtview.bw.appspace=PCF -Dsl.rtview.bw.appnode=pcf'
. . .
```

| Available Properties | Default Value |
|---|---|
| sl.rtview.rtvagent.name | updater |
| sl.rtview.rtvagent.target | localhost:3372 |
| sl.rtview.rtvagent.update | 10 (seconds) |
| sl.rtview.rtvagent.class | SL-BW6MON-Agent |
| sl.rtview.bw.activities.enabled | false |
| sl.rtview.bw.domain | <system default> |
| sl.rtview.bw.appspace | <system default> |
| sl.rtview.bw.appnode | <system default> |

5. Push the application.

**If configuring for bw6mon, perform the following steps:**

6. Add the following to your **sample.properties** file in your project directory:

```
collector.sl.rtview.cache.config=bw6_osgi_cache_source.rtv
```

7. If you are running BWMON as a solution package, continue on to Steps 8and 9. If you are running BWMON as a standalone application, run your dataserver with the following option:

**-propfilter:receiver**

8. Edit **servers/rtvservers.dat**, uncomment the following, and save your changes:

```
bw6mon ./bw6mon dataserver rundata -propfilter:receiver
```

9. Run your bw6mon dataserver with: **-properties:sample**

## Configure for BWSE Engines (BW5)

This section is for TIBCO ActiveMatrix (AMX) users. This section describes how to configure BW Monitor to monitor BWSE engines. BW Monitor needs access to AMX Node data stored in EMS message queues on the AMX Host system. To make this data available to BW Monitor you will create EMS topics with bridges from the queues.

The TIBCO ActiveMatrix BusinessWorks Service Engine (BWSE) is an ActiveMatrix (AMX) component that enables BW engines to participate in the implementation of AMX services. In this case, the BWSE engines run within an AMX Node and are not visible to BW Monitor. However, you can configure BW Monitor to display these engines, as well as to gather JVM memory metrics for the AMX Nodes in which they are running.

**To Configure for BWSE engines:**

1. To configure the AMX Host, In the EMS administration tool (tibemsadmin), execute the following commands:

**create topic rtv.amx.governance.stats**

**create bridge source=queue:amx.governance.stats target=topic:rtv.amx.governance.stats**

2. To configure BW Monitor, open the **sample.properties** file, located in your project directory, and find the following section:

```
##########################
# SUPPORT FOR BWSE ENGINES
#collector.sl.rtview.cache.config=bw_engine_microagents.rtv
#collector.sl.rtview.cache.config=bw_amx_node_cache.rtv
#collector.sl.rtview.sub=$AMX3.x_STATS_TOPIC:rtv.amx.governance.stats
# Repeat these lines for each AMX host
#collector.sl.rtview.jms.jmsconn=local com.tibco.tibjms.TibjmsTopicConnectionFactory tcp://localhost:7222 admin - - - - -
#collector.sl.rtview.jms.jmstopic=local $AMX3.x_STATS_TOPIC
#collector.sl.rtview.cache.config=bw_amx_node_cache_source.rtv $jms_conn:local
```

3. Uncomment the first three lines:

```
collector.sl.rtview.cache.config=bw_engine_microagents.rtv
collector.sl.rtview.cache.config=bw_amx_node_cache.rtv
collector.sl.rtview.sub=$AMX3.x_STATS_TOPIC:rtv.amx.governance.stats
```

4. Uncomment the last three lines:

collector.sl.rtview.jms.jmsconn=local com.tibco.tibjms.TibjmsTopicConnectionFactory tcp://localhost:7222 admin - - - - -
collector.sl.rtview.jms.jmstopic=local $AMX3.x_STATS_TOPIC
collector.sl.rtview.cache.config=bw_amx_node_cache_source.rtv $jms_conn:local

5. Edit the three lines you just uncommented as follows:

- In the first line, specify the connection information for your EMS server. For example, for **tcp://localhost:7222** we would set as follows:

**collector.sl.rtview.jms.jmsconn=local**
**com.tibco.tibjms.TibjmsTopicConnectionFactory tcp://localhost:7222 admin - - - - -**

- In all three lines, specify your JMS connection name. For example, for **local** we would set as follows:

**collector.sl.rtview.jms.jmsconn=local**
**com.tibco.tibjms.TibjmsTopicConnectionFactory tcp://localhost:7222 admin - - - - -**
**collector.sl.rtview.jms.jmstopic=local $AMX3.x_STATS_TOPIC**
**collector.sl.rtview.cache.config=bw_amx_node_cache_source.rtv $jms_conn:local**

6. If you have additional AMX Hosts, make a copy of the above three lines and provide the EMS server connection information and a (different) connection name for each Host.

7. Configure your Hawk Data Source properties to include the systems where your BWSE components are deployed. See “Editing the sample.properties File” on page 13.

8. In AMX Administrator, in the properties for each BWSE engine, set HawkEnabled to **true**.

9. For BW6 environments, proceed to “Enable Monitoring for BW6” on page 23.

See BWSE “Limitations” on page 1417.

## Enable Monitoring for BW6

If you are running BW Monitor as a Solution Package in RTView Enterprise Monitor and are also running BW6, you must edit three files in your **emsample** project to enable monitoring of BW6 applications.

1. Open the **servers/rtvservers.dat** file and comment out the **BWMON** section and **BW6MON** section (you can also comment out any other sections that are not relevant to your installation).

2. Open the **servers/central/rtview.properties** file, locate the **BW6MON** section and follow the instructions:

##########################################

# BW6MON

#

# Note: BW6MON and BWMON caches may be run in the same data server.

# To enable BW6MON and BWMON, comment out the BWMON section below and uncomment this section.

3. Open the **servers/central/central.properties** file, locate and uncomment the following line:

   "rtvapm_reference=bw6mon"

# Configure RTView Servers

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

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

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

## Java Processes

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

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

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

- “Desktop Deployment” on page 24 - Stand-alone desktop client
- “Browser Deployment” on page 25 - Web application

## Desktop Deployment

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

**To modify desktop deployment settings:**

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

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

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

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

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

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

## Browser Deployment

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

To modify browser deployment settings:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

   Windows:

   **update_wars.bat**

   UNIX:

   **./update_wars.sh**

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

# Configure the Database

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

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

## Database Requirements

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

- **Alert Settings**

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

- **Historical Data**

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

### To Configure the Monitor Database:

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

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

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

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

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

   **collector.sl.rtview.cp=JDBCDriverClassPath**

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

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

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

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

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

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

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

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

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

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

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

   Encrypt Password

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

   **encode_string sql mypassword**

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

   For example:

   **encode_string sql mypassword**

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

   **013430135501346013310134901353013450134801334**

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

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

**#**

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

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

**historian.sl.rtview.historian.username=myusername**

**historian.sl.rtview.historian.password=mypassword**

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

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

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

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

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

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

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

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

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

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

```
create database myDBName;
```

before loading the **.sql** file:

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

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

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

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

# Enable Collection of Historical Data

By default, the Monitor does not save historical BW process or activities data to the database. To enable the collection of this historical data, perform the following steps:

**To Collect Historical Process Data:**

1. Navigate to **rtvapm/bwmon/conf/** and open the **rtvapm.bwmon.properties** file.
2. Under the **HISTORIAN PROPERTIES** section in the file, select (for pasting) the following two lines:

```
#collector.sl.rtview.sub=$BW_PROCESSES_TABLE:BW_PROCESSES
#collector.sl.rtview.sub=$BW_ACTIVITY_TOTALS_TABLE:BW_ACTIVITY_TOTALS
```

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

```
collector.sl.rtview.sub=$BW_PROCESSES_TABLE:BW_PROCESSES
collector.sl.rtview.sub=$BW_ACTIVITY_TOTALS_TABLE:BW_ACTIVITY_TOTALS
```

4. Save your **sample.properties** file.

**To Collect Historical Activities Data:**

1. Navigate to **rtvapm/bwmon/conf/** and open the **rtvapm.bwmon.properties** file.
2. Under the **HISTORIAN PROPERTIES** section in the file, select (for pasting) the following line:

```
#collector.sl.rtview.sub=$BW_ACTIVITIES_TABLE:BW_ACTIVITIES
```

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

```
collector.sl.rtview.sub=$BW_ACTIVITIES_TABLE:BW_ACTIVITIES
```

4. Save your **sample.properties** file.

# Enable Collection of Tomcat Historical Data

By default, collection of Tomcat historical data is disabled. To enable collection of Tomcat history, add the following properties to your **sample.properties** file, located in your project directory:

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

# Configure Alert Notification

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

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

There are two options for configuring Monitor alert notification:

- “Using a Batch File or Shell Script” on page 30

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

- “Using the Java Command Handler” on page 33

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

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

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

## Using a Batch File or Shell Script

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

- “Windows Batch File,” next
- “UNIX/Linux Shell Script” on page 31

## Windows Batch File

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

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

3. Verify the following properties are set as follows:

   # command to execute for new alerts

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

   # command to execute on the first severity change

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

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

5. Restart the Data Server.

## UNIX/Linux Shell Script

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

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

3. Verify the following properties are set as follows:

   # command to execute for new alerts

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

   # command to execute on the first severity change

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

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

sl.rtview.cmd_line=-sub:$scriptEnding:bat

sl.rtview.cmd_line=-sub:$alertActionScript:my_alert_actions

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

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

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

8. Restart the Data Server.

### Batch File or Shell Script Substitutions

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

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

| Argument | Description | Values |
|---|---|---|
| **$alertId** | This substitution specifies the unique ID for the alert.<br>For example:<br>**alertId = 1004** | Text or Numeric |
| **$alertIndex** | This substitution specifies which source triggered the alert. With tabular objects, the first column of data is typically the **Index** column. The value in the **Index** column is a name that uniquely identifies each table row. The **alertIndex** uses the **Index** column name.<br>For example, if the **CapactityLimitAllCaches** alert is configured to monitor all of your caches, and to trigger when any of the caches exceed the specified capacity threshold, the **alertIndex** indicates specifically which cache triggered the alert.<br>With scalar objects, which do not have a table and therefore do not have a column (the **useTabularDataFlag** property is **False**), the **alertIndex** is blank.<br>For example:<br>**alertIndex = MyCache01** | Text or Numeric |
| **$alertName =** | This substitution specifies the name of the alert.<br>For example:<br>**alertName = CapacityLimitAllCaches** | Values vary. |
| **$alertSeverity** | This substitution specifies the severity level of the alert.<br>**0**: The alert limit has not been exceeded therefore the alert is not activated.<br>**1**: The alert warning limit has been exceeded.<br>**2**: The alert alarm limit has been exceeded.<br>For example:<br>**alertSeverity = 1** | Numeric |

| | | |
|---|---|---|
| **$alertText** | This substitution specifies the text that is displayed when the alert executes.<br>For example:<br>**alertText = High Warning Limit exceeded, current value: 0.9452 limit: 0.8** | Text |
| **$alertTime** | This value is the time the alert was initially generated. | Text |

## Using the Java Command Handler

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

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

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

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

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

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

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

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

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

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

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

   **Windows**

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

   **UNIX**

   **-properties:$RTVAPM_HOME/common/conf/custom_handlers**

### Customizing the Java Command Handler

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

1. Open the **RtvApmCommandHandler.java** file.

2. Modify the **OutputAlertString** method as needed. You can replace this method with your own if you modify the **invokeCommand** method to call it, and your method accepts the same arguments as **OutputAlertString**.

3. Save the **RtvApmCommandHandler.java** file.

4. Compile **RtvApmCommandHandler.java** and rebuild **rtvapm_custom.jar** using the supplied script (**make_classes.bat** or **make_classes.sh**) in the **\projects\sample\custom\src** directory.

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

   **Windows**

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

   **UNIX**

   **-properties:$RTVAPM_HOME/common/conf/custom_handlers**

## Java Command Handler Substitutions

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

Argument Description

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

**Additional Optional Properties**

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

- **sl.rtview.notifiercolumns** - Set this to the name of one or more columns to execute the **sl.rtview.alert.notifiercommandchanged** notification when they change. For multiple columns, use a semi-colon delimited list. Note that this should be limited to the minimum number of necessary columns, preferably less than **5**, as a large number of columns increases the persistence load on the central alert server.

### Notification Persistence

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

# Configure High Availability

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

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

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

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

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

#### To configure HA

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

**Windows**

**start_rtv primary**

**UNIX**

**start_rtv.sh primary**

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

**Windows**

**start_rtv backup**

**UNIX**

**start_rtv.sh backup**

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

# Modify Displays, Data Collection and Filtering

This section describes how to modify data collection and Monitor displays. This part of the Monitor configuration is optional. This section includes:


- "Create Customized Filters" on page 36: For BusinessWorks version 5.
- "Enable BW Servers Displays" on page 36: For BusinessWorks version 5.
- "Enable Data Archiving for BW Process Table" on page 37: For BusinessWorks version 5.
- "Enable Data Archiving for BW Activity Table" on page 38: For BusinessWorks version 5 and 6.
- "Reduce Collection of BW5 Process Data" on page 38: For BusinessWorks version 5.
- "Enable Collection of Tomcat History" on page 39: For BusinessWorks version 5.
- "Disable Collection of BW5 Activity Data" on page 39: For BusinessWorks version 5.
- "Disable Collection of BW5 Process Data" on page 39: For BusinessWorks version 5.


## Create Customized Filters

This section applies to BusinessWorks version 5, and describes how to create filtering options for the **Filter:** drop-down menu. By default, the **Filter:** drop-down menu only contains the **No Filter** option.

You can create filtering options that limit display data based on a combination of domain, engine, process and activity names. You configure the filtering options prior to running the Monitor.

To create your filtering options edit the **bwmon_filters.xml** file, located in your project directory. Edit by inserting regular expressions for each type of name you want filter by, as well as a name for the filter. The filter name becomes the option in the Filters: drop-down menu. Instructions and examples are provided in the **bwmon_filters.xml** file.

For details about the project directory, see "Create a Project Directory" on page 6.

## Enable BW Servers Displays

This section applies to BusinessWorks **version 5**, and describes how to make the **BW Servers -** "Server Processes" and "Single Server Process - Summary" displays visible in the Monitor. By default, these displays are not enabled.

The **Server Processes** and **Single Server Summary** displays show information about BW Server operating system processes. Due to limitations in TIBCO Hawk, the data they display is not available from IBM AIX or HP-UX servers.

**To enable the displays:**

1. Open the **bwmon_navtree.xml** file, located in your project directory. For details about the project directory, see "Create a Project Directory" on page 6.

2. Uncomment the following two lines,

```
<!-- <node label="Server Processes" display="bw_server_processes"/> -->
<!-- <node label="Server Process Summary" display="bw_server_process_summary"/> -->
```

3. Save the file.

4. Restart the Monitor.

5. Verify the displays appear under **BW Servers** in the navigation tree.

## Enable Data Archiving for BW Process Table

This section applies to BusinessWorks **version 5**, and describes how to enable data archiving to the History Database for the **BW Processes -** "All Processes Table" display. By default, process data is not archived to the History Database.

---

**Important:** Use caution. When this feature is enabled, and there are more than 5000 processes, resource consumption is high.

---

**To enable data archiving:**

1. Open the **rtvapm.bwmon.properties** file, located in the **RTVAPM_HOME/bwmon/conf** directory.

2. Locate the HISTORIAN PROPERTIES section and proceed as described.

```
############################
# HISTORIAN PROPERTIES
#
# By default we disable collection of historical data for Processes.
#
sl.rtview.sub=$BW_PROCESSES_TABLE:''
sl.rtview.sub=$BW_ACTIVITY_TOTALS_TABLE:''
#
# To enable this, copy the following two lines into your local properties (the
sample.properties file) and uncomment them:
#
#sl.rtview.sub=$BW_PROCESSES_TABLE:BW_PROCESSES
#sl.rtview.sub=$BW_ACTIVITY_TOTALS_TABLE:BW_ACTIVITY_TOTALS
```

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

4. Restart the Monitor.

---

**Note:** To disable this feature, comment out the two lines in the **sample.properties** file.

---

## Enable Data Archiving for BW Activity Table

This section applies to BusinessWorks **version 5 and 6**, and describes how to enable collection of historical data for activities. By default, collection of historical data for activities is disabled.

**To enable data archiving for Activity table:**

1. Open the **rtvapm.bw6mon.properties** file, located in the **RTVAPM_HOME/bw6mon/conf** directory. Or, if you are monitoring BW5 only, open the **rtvapm.bwmon.properties** file, located in the **RTVAPM_HOME/bwmon/conf** directory.

2. Locate the HISTORIAN PROPERTIES section and proceed as described.

```
############################
# HISTORIAN PROPERTIES
#
# By default we disable collection of historical data for Activities.
#
collector.sl.rtview.sub=$BW_ACTIVITIES_TABLE:''
#
# To enable this, copy the following line into your local properties (the sample.properties file) and uncomment it:
#
#collector.sl.rtview.sub=$BW_ACTIVITIES_TABLE:BW_ACTIVITIES
```

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

4. Restart the Monitor.

---

**Note:** To disable this feature, comment out the two lines in the **sample.properties** file.

---

## Reduce Collection of BW5 Process Data

This section describes how to exclude BW5 process data that is collected by the Monitor but not of interest to you. By default, all process data is included. Excluding data stops it from being stored in the cache and removes it from displays. To exclude (or include) data, edit one or both of the following properties in the **sample.properties** file:

- collector.sl.rtview.sub=$bwprocessFilterPattern:''
- collector.sl.rtview.sub=$bwprocessFilterPattern2:''

Each property specifies a regular expression which is applied to a process name. If the name matches the pattern the process is included. To exclude processes, start the filter pattern with **^** (negation).

For example, if you have the following processes:

process01.process

process02.process

process03.process

process04.process

process05.process

process06.process

process07.process

and you set the first property as follows:

**collector.sl.rtview.sub=$bwprocessFilterPattern:'0[3-5]'**

data for process03 to process05 are stored and displayed:

process03.process

process04.process

process05.process

If you set the second property as follows:

**collector.sl.rtview.sub=$bwprocessFilterPattern:'0[^4]'**

data from process04 is excluded and you continue getting data from:

process03.process

process05.process

The Data Server must be restarted for changes to take effect.

### Enable Collection of Tomcat History

By default, collection of Tomcat historical data is disabled. To enable collection of Tomcat history, add the following properties to your **sample.properties** file:

collector.sl.rtview.sub=$TOMCAT_GLOBALREQUESTSTATS_TABLE:TOMCAT_GLOBALREQUESTSTATS

collector.sl.rtview.sub=$TOMCAT_WEBMODULESTATS_TABLE:TOMCAT_WEBMODULESTATS

collector.sl.rtview.sub=$TOMCAT_WEBMODULETOTALS_TABLE:TOMCAT_WEBMODULETOTALS

### Disable Collection of BW5 Activity Data

By default, Activity data is enabled. To disable collection of Activity data, add the following property to your **sample.properties** file:

collector.sl.rtview.sub=$bwActivitiesDisabled:1

### Disable Collection of BW5 Process Data

By default, Process data is enabled. To disable collection of Process data, add the following property to your **sample.properties** file:

collector.sl.rtview.sub=$bwProcessesDisabled:1

## Optional Configurations

This section includes:


- "Enable Monitoring of BW5 Engines Via JMX" on page 40

## Enable Monitoring of BW5 Engines Via JMX

ActiveMatrix BusinessWorks version 5 engines can also be enabled for JMX monitoring as documented in *TIBCO ActiveMatrix BusinessWorks™ Administration, Monitoring the BusinessWorks Engine Using JMX*:

**To enable monitoring of BW5 engines via JMX:**

1. To enable local JMX monitoring, add the following properties to **bwengine.tra**:

**Jmx.Enabled=true**
**java.property.com.sun.management.jmxremote=true**

2. To enable remote JMX monitoring, add the following properties to **bwengine.tra**: (Note <**port_number**> can be any available port)

**java.property.com.sun.management.jmxremote.port=<port_number>**
**java.property.com.sun.management.jmxremote.authenticate=false**
**java.property.com.sun.management.jmxremote.ssl=false**

For example, the BW Engine **MyDomain.MyApp.Procs** can be enabled for remote JMX monitoring by adding the following lines to the file

**C:\Tibco\tra\domain\MyDomain\application\MyApp\MyApp-Procs.tra**:

```
#
# Enable JMX on port 9000
#
Jmx.Enabled=true
java.property.com.sun.management.jmxremote=true
java.property.com.sun.management.jmxremote.port=9000
java.property.com.sun.management.jmxremote.authenticate=false
java.property.com.sun.management.jmxremote.ssl=false
```

3. After the BW Engine is enabled for JMX monitoring and restarted, it can be monitored by adding a JMX Connection property to the **sample.properties** file in your project settings directory, and making the Connection name the Engine name. Following the above example:

```
#
# Make JMX connections to BW Engines
#
sl.rtview.jmx.jmxconn=domainslapm.BWApp-1.Procs 192.168.1.102 9000 URL:- - -
false
```

**Note:** For the standalone version of the Monitor, this property should be added to the **sample.properties** file in the project directory in which you installed the Monitor. After the Monitor Data Server is (re-)started, the JMX metrics will automatically be retrieved from the engine.

# CHAPTER 3 Deployment

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


- "Overview" on page 41
- "Desktop Application Deployment" on page 41
- "Web Application Deployment" on page 43
- "RTView Server Components as Windows Services" on page 45
- "Troubleshooting" on page 46
- "Multiple Distributed Data Servers" on page 47


## Overview

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

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

- "Desktop Application Deployment" on page 41

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

- "Web Application Deployment" on page 43

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

## Desktop Application Deployment

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

**NOTE:** The RTView Data Server, Historian and Display Server can be run as Windows Services. For details, see "RTView Server Components as Windows Services" on page 45.

**To deploy the Monitor as a desktop application:**


- "Windows" on page 42
- "UNIX/Linux" on page 42


## Windows

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

   **rtvapm_init**

2. Change directory (**cd**) to the **<*mon>\projects\mysample** directory where **<*mon>** is the Monitor you are deploying (for example, **bw6mon**, **bwmon**, **tbemon** and **emsmon**).

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

   **start_rtv default all –properties:sample**

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

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

4. Start the Viewer by typing:

   **runv -ds –properties:sample**

   if you have properties configured for the Viewer. Otherwise, start the Viewer by typing:

   **runv –ds**

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

   User Name: **demo**

   Password: **demo**

   The Monitor main display opens.

## UNIX/Linux

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

   **./rtvapm_init.sh**

2. Change directory (**cd**) to the **<*mon>/projects/mysample** directory where **<*mon>** is the Monitor you are deploying (for example, **bw6mon**, **bwmon**, **tbemon** and **emsmon**).

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

**start_rtv.sh default –properties:sample**

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

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

4. Start the Viewer by typing:

   **runv.sh -ds –properties:sample**

   if you have properties configured for the Viewer. Otherwise, start the Viewer by typing:

   **runv –ds**

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

   User Name: **demo**

   Password: **demo**

   The Monitor main display opens.

# Web Application Deployment

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

**NOTE:** The RTView Data Server, Historian and Display Server can be run as Windows Services. For details, see “RTView Server Components as Windows Services” on page 45.

**To deploy the Monitor as a web application:**

- “Windows” on page 43
- “UNIX/Linux” on page 44

**To view a list of iPad Safari limitations:**

- “RTView Server Components as Windows Services” on page 45

## Windows

1. Copy the **.war** files, located in the **rtvapm\<*mon>\webapps** directory, where **<*mon>** is the Monitor you are deploying (for example, **bw6mon**, **bwmon**, **tbemon** and **emsmon**), and deploy them to your Application Server.

2. Start your Application Server.

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

   **rtvapm_init**

4. Change directory (**cd**) to the **<*mon>\projects\mysample** directory.

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

   **start_rtv default all –properties:sample**

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

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

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

   **http://host:port/<*mon>**

   Where **host** is the IP or host name where your Application Server is running, **port** is the port used by your Application Server and **<*mon>** is the Monitor you are deploying. The login display opens in the Web browser.

   Login. The default user name and password are:

   User Name: **demo**

   Password: **demo**

   The main Monitor display opens.

## UNIX/Linux

1. Copy the **.war** files, located in the **rtvapm/<*mon>/webapps** directory, where **<*mon>** is the Monitor you are deploying (for example, **bw6mon**, **bwmon**, **tbemon** and **emsmon**), and deploy them to your Application Server.

2. Start your Application Server.

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

   **./rtvapm_init.sh**

4. Change directory (**cd**) to the **<*mon>/projects/mysample** directory.

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

   **start_rtv.sh default all –properties:sample**

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

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

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

   **http://host:port/<*mon>**

   Where **host** is the IP or host name where your Application Server is running, **port** is the port used by your Application Server and **<*mon>** is the Monitor you are deploying. The login display opens in the Web browser.

   Login. The default user name and password are:

   User Name: **demo**

   Password: **demo**

   The main Monitor display opens.

# RTView Server Components as Windows Services

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

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

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

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

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

2. Change **EMS Monitor** to the name of your Monitor (for example, **BW Monitor**).

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

   **name.sl.rtview.cmd_line=service:name**

---

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

---

For example (and continuing to use EMS Monitor to illustrate), we choose **EMSMonData** as the name for starting a Data Server as a Windows service and **EMSMonDisp** to indicate a name for starting a Display Server as a Windows service.

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

**To install and run**

Execute the following scripts to start the service:

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

**rundata -propfilter:installservice -propfilter:EMSMonData**

**rundisp -propfilter:installservice -propfilter:EMSMonDisp**

**To uninstall**

Execute the following scripts to uninstall the services:

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

**rundisp -propfilter:uninstallservice -propfilter:EMSMonDisp**

**rundata -propfilter:uninstallservice -propfilter:EMSMonData**

# Troubleshooting

## Log Files

When the Monitor encounters an error, Monitor components output an error message to the console and/or to the corresponding log files. Log files are located in the project directory**\logs** directory. Look at the following log files on the machine where the components are running:

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

To enable logging, make sure the directory logs exists in your project directory.

## Verifying Data Received from Data Server

Open the **Cache Viewer Display** to verify data is arriving correctly from the Data Server. To access the **Cache Viewer Display**, choose **Administration** in the navigation tree, then choose **RTView Cache Tables** display or the **RTView Cache Overview** display. You should see all caches being populated with monitoring data (number of rows > 0). Otherwise, there are problems with the connection to the Data Server.

### Restarting the Data Server

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

# Multiple Distributed Data Servers

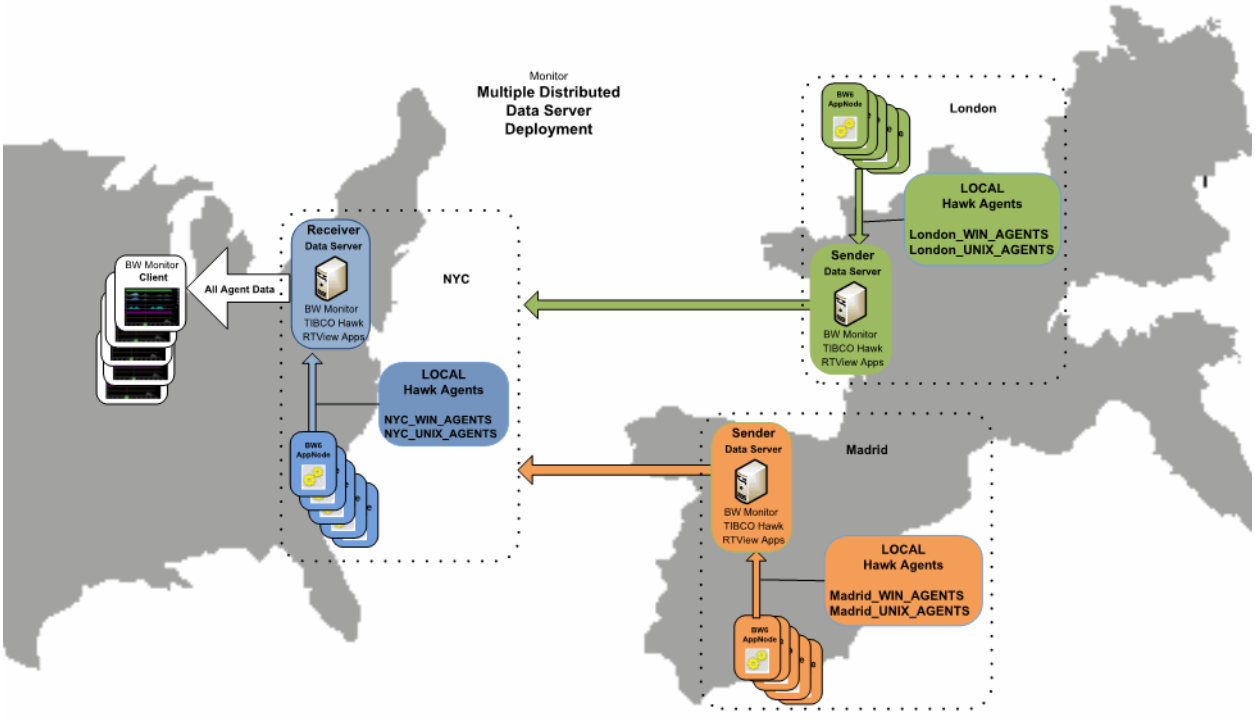
If you have systems running outside your LAN subnet, this deployment option enables you to centralize the Monitor deployment while locating each Data Server near the servers they monitor, thereby optimizing Monitor performance.

**Note:** If the Monitor runs on a single server and monitors servers within a single, local subnet, you do not need to consider this type of deployment.

To set up this type of deployment, determine which Data Server is to be the central Data Server and configure it to be the receiver. Then, configure all the other Data Servers to be the senders. You also need to configure each Data Server (receiver and senders) to automatically detect and gather data strictly from their local Hawk Agents. The sender Data Servers then send their local Hawk Agent data to the receiver Data Server. The receiver Data Server aggregates all data received and makes it available to Monitor displays.

For example, the following illustrates a Monitor deployment for a company headquartered in New York City. The company has systems running locally, as well as outside the LAN in London and Madrid. The NYC Data Server is designated as the receiver, and the London and Madrid Data Servers are designated as senders.

**Note:** Each Data Server gathers data only for its LAN.




| NYC Data Server (Receiver) | London Data Server (Sender) | Madrid Data Server (Sender) |
|---|---|---|
| • Automatically detects and gathers data for its local Agents (**NYC_WIN_AGENTS** and **NYC_UNIX_AGENTS**).<br>• Receives data from London and Madrid senders.<br>• Aggregates data.<br>• Provides data to the Monitor displays.<br>Can see all Agents local to London and Madrid Data Servers, but is configured only to obtain data from its local systems. | • Automatically detects and gathers data for its local Agents (**London_WIN_AGENTS** and **London_UNIX_AGENTS**).<br>• Sends data from its local Agents to NYC Data Server. | • Automatically detects and gathers data for its local Agents (**Madrid_WIN_AGENTS** and **Madrid_UNIX_AGENTS**).<br>• Sends data from its local Agents to NYC Data Server. |

## Configuration

This section describes how to configure the sender(s).

1. Open the **sample.properties** file, located in your project directory (see "Create a Project Directory" for more information), and locate the following lines:

   **sender.sl.rtvapm.dataxfr.target=id=default url=localhost:3372 packages=all**

**sender.sl.rtview.sub=$rtvAgentName:MyMachineName**

2. Change **localhost** to the actual hostname or IP of the receiver's system.
3. Change **MyMachineName** to a descriptive name of the sender.
4. Verify all Data Servers are correctly configured to collect from only their local Hawk connections (see “Configure the Data Servers” on page 12).

---

**Note:** In the case of the receiver there may be no local connections.

---

5. To run the sender, add to the dataserver run command the argument **-propfilter:sender**.
6. To run the receiver, add to the dataserver run command the argument **-propfilter:receiver**.

---

**Note:** Usually the sender and receiver data servers are run on different systems and therefore each can use the default port assignments. If this is not the case, then the port assignment of one must be changed in **sample.properties**.

---

# CHAPTER 4 Using the Monitor

This section describes Monitor features, graphs and functionality as well as Monitor displays. This section includes:


- "Overview" on page 51: Describes the Monitor features and functionality.
- "BW6 Applications" on page 64: The displays in this View present BusinessWorks 6 application performance metrics.
- "BW6 AppNodes" on page 72: The displays in this View present BusinessWorks 6 AppNode performance metrics.
- "BW6 AppSlices" on page 80: The displays in this View present BusinessWorks 6 AppSlice performance metrics.
- "BW6 Processes" on page 88: The displays in this View present BusinessWorks 6 process performance metrics.
- "BW6 Hosts" on page 97: The displays in this View present BusinessWorks 6 host performance metrics.
- "BW Engines" on page 102: The displays in this View present BusinessWorks 5.0 engine performance metrics.
- "BW Processes" on page 113: The displays in this View present BusinessWorks 5.0 process performance metrics.
- "BW Activities" on page 121: The displays in this View present BusinessWorks 5.0 activity performance metrics.
- "BW Servers" on page 129: The displays in this View present BusinessWorks 5.0 server performance metrics.
- "Hawk Views" on page 139: Describes displays for TIBCO® BusinessWorks version 5 and 6 Hawk data.
- "Alert Views" on page 151: The display in this View presents the status of all alerts across all BW Servers, and allows you to track, manage and assign alerts.
- "Administration" on page 156: The displays in this View enable you to set global alerts and override alerts. You can also view internal data gathered and stored by RTView (used for troubleshooting with SL Technical Support).
- "RTView Servers" on page 165: The displays in this View enable you to view performance metrics gathered by RTView, and monitor all RTView Servers.


## Overview

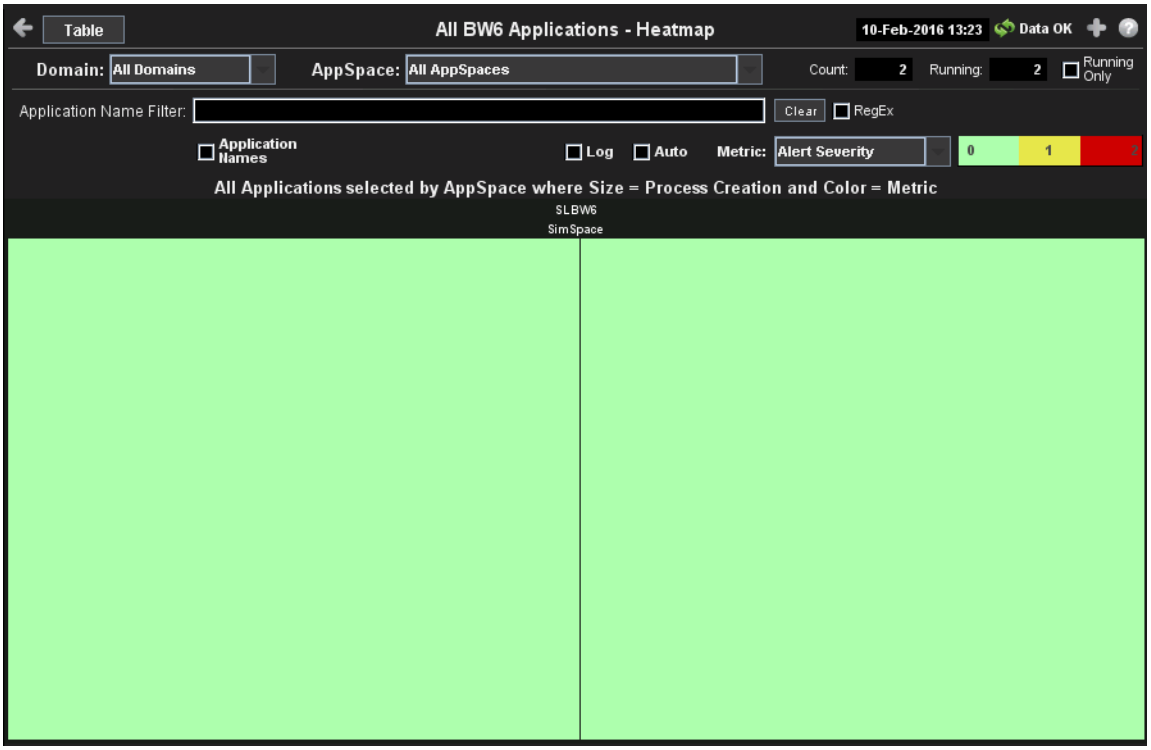
This section describes the main Monitor features, how to read Monitor objects, GUI functionality and navigation. This section includes:


- "Monitor Main Display" on page 52: Describes the Monitor display that opens by default as well as the navigation tree.

- "Heatmaps" on page 53: Describes how to read heatmaps and heatmap functionality.
- "Tables" on page 54: Describes how to read tables and table functionality.
- "Trend Graphs" on page 59: Describes how to read trend graphs and trend graph functionality.
- "Title Bar Functionality" on page 61: Describes the top layer of the title bar shared by Monitor displays.
- "Context Menu" on page 62: Describes right-click popup menu in the Monitor.
- "Multiple Windows" on page 62: Describes opening multiple windows in the Monitor.
- "Export Report" on page 62: Describes how to export reports from the Monitor.

## Monitor Main Display

The **All Applications Heatmap** is the default display of the BW Monitor (if you are running TIBCO ActiveMatrix BusinessWorks™ v.6. Otherwise, the default display is the "All Engines Heatmap"). This color-coded heatmap provides a good starting point for immediately getting the status of all your BW applications. To open TIBCO BusinessWorks Monitor in the RTView Enterprise Monitor®, choose **TIBCO BW6 Applications** in the navigation tree. The following figure illustrates the Monitor.




**NOTE:** It takes about 60 seconds after either a BusinessWorks engine or the Monitor Data Server is started for data to initially appear in Monitor displays. By default, data is collected and displays are refreshed every 30 seconds.

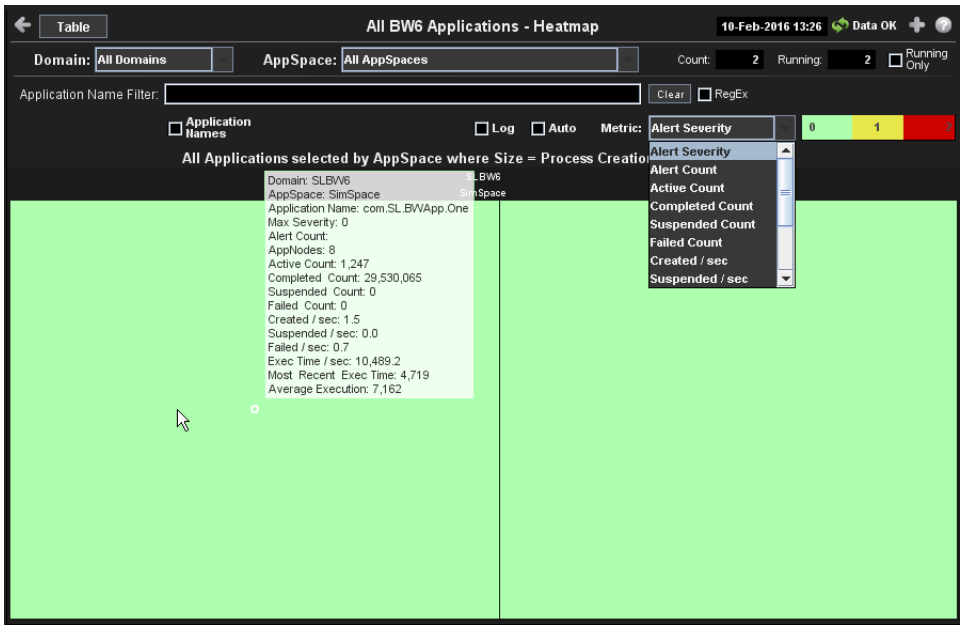
### Navigation Tree

The BW Monitor navigation tree (in the left panel) is organized by *Views*. Each View features performance data for a type of system resource. Typically, the performance data is shown in a tabular, heatmap and summary display for each View.

# Heatmaps

Heatmaps organize your BW resources (servers, processes, and so forth) into rectangles and use color to highlight the most critical values in each. Heatmaps enable you to view various 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 to filter data by. The filtering options vary among heatmaps.

For example, each rectangle in the **All Applications Heatmap** represents an application, where color is representative of the selected **Metric**.




The **Metric** drop-down menu in this heatmap contains options to show **Alert Severity**, **Alert Count**, as well as other metrics. Menu options vary according to the data populating the heatmap. **Alert Severity** is selected and its corresponding color gradient bar is shown. **Alert Severity** is 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 resources associated with that application currently has an alert in an alarm state.

Yellow indicates that one or more resources associated with that application currently have an alert in a warning state.

Green indicates that no resources associated with that application have alerts in a warning or alarm state.

In most heatmaps, you can also drill-down to a *Summary* display containing detailed data for the resource (in this case, you drill-down to detailed data for the selected application in the **Single Application Summary** display). You can also open a new window and then drill-down. The drill-down opens a display that contains relevant and more detailed data.

### Mouse-over

The mouse-over functionality provides additional detailed data in an over imposed pop-up window when you mouse-over a heatmap. The following figure illustrates mouse-over functionality in a heatmap object.

### Log Scale

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

## Tables

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

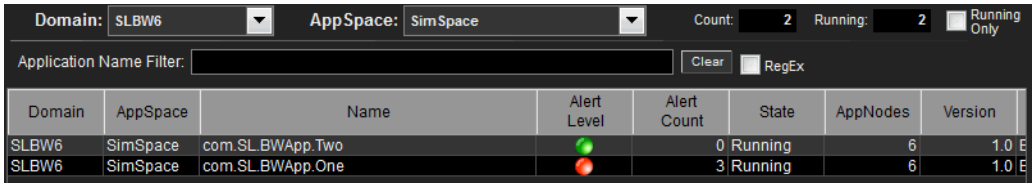



Table rows also sometimes use color to indicate the current most critical alert state for all resources associated with a given row. For example, the color coding is typically as follows:

Red indicates that one or more resources associated with that application currently has an alert in an alarm state.

Yellow indicates that one or more resources associated with that application currently have an alert in a warning state.

Green indicates that no resources associated with that application currently have an alert in a warning or alarm state.

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

Additional features are:

- "Multiple Column Sorting," next

- “Column Visibility” on page 55
- “Column Filtering” on page 55
- “Column Locking” on page 57
- “Column Reordering” on page 57
- “Saving Settings” on page 58
- “Row Paging” on page 58
- “Row Color Code” on page 59
- “Row Keyboard Selection” on page 59


## Multiple Column Sorting

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

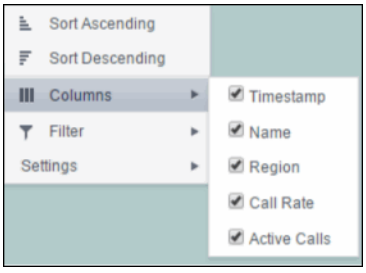
To sort multiple columns, click on the column header for each column you want to sort. The sorting is performed in the order that the column headers were clicked. Multiple column sorting is a very useful feature, but can also cause confusion if you intend to sort on a single column, but forget to "unsort"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

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

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

## Column Visibility

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




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

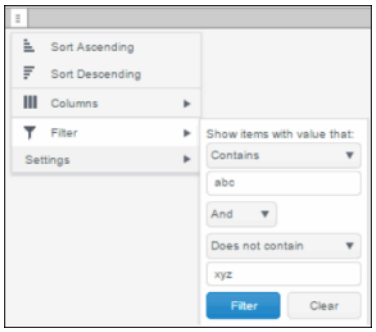
Column visibility changes are NOT reflected in an export to HTML and Excel.

## Column Filtering

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

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

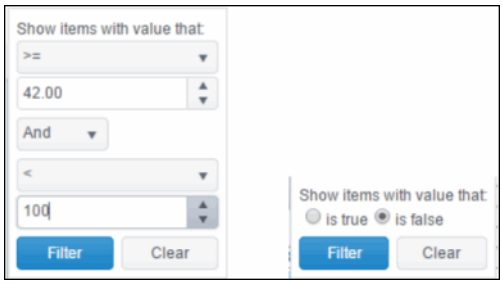
You can configure a filter on any column by clicking on the column's menu icon and choosing **Filter** from the menu. This opens the **Column Filter** dialog:



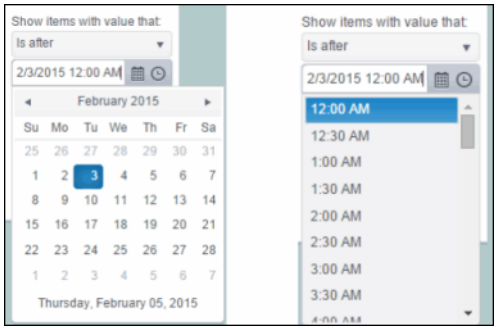

Options in the **Column Filter** dialog vary according to the data type of the selected column:

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

The numeric and boolean filter dialogs are shown below.



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



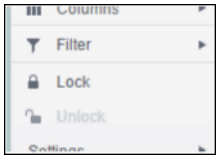

  Alternatively, a date and time can be typed into the edit box. The strings shown in a date column are formatted by the Display Server using its time zone. But if a filter is specified on a date column, the date and time for the filter are computed using the client system's time zone. This can be confusing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

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

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

## Column Locking

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




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

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

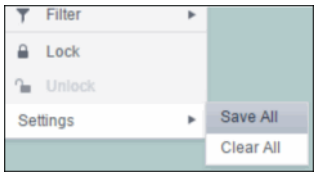
## Column Reordering

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

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

## Saving Settings

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




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

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

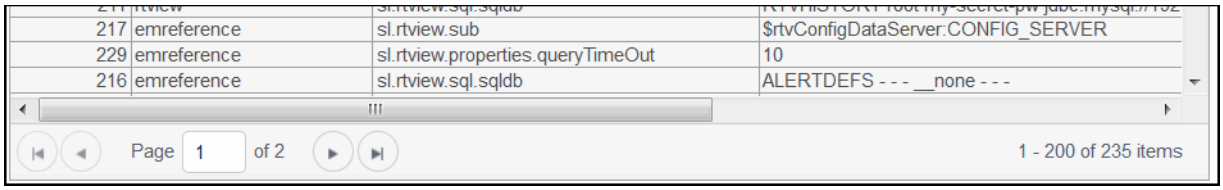
Note that each browser has its own local storage on each host. The local storage items are not shared between browsers on the same host or on different hosts. So, if a user logs in as Joe with **role = admin**, in Internet Explorer on host H1, and saves grid settings for display X, then those grid settings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

### Revert Table Settings

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

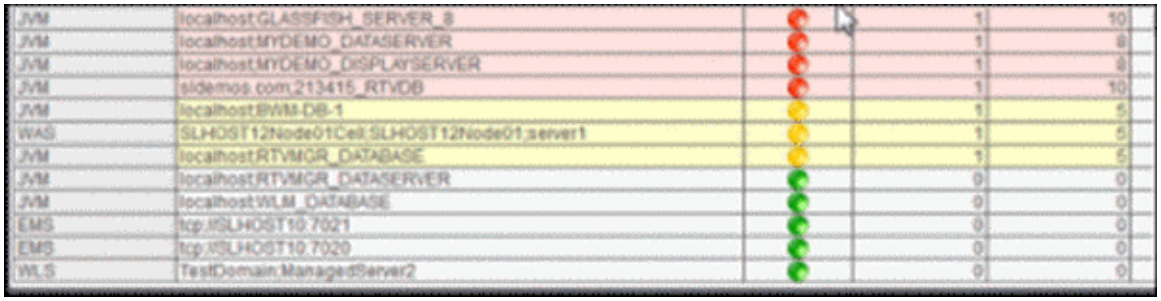
## Row Paging

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



## Row Color Code

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



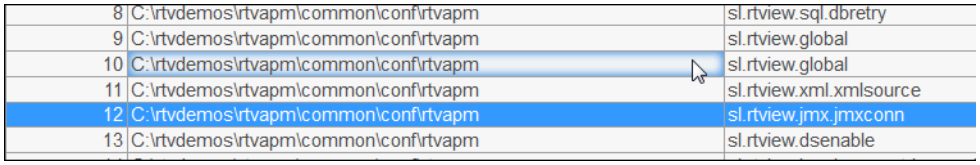
The yellow row color indicates that one or more alerts exceeded their warning threshold for one or more CIs associated with the Service. The red row color indicates that one or more alerts exceeded their critical threshold for the CI associated with the Service (in this case there is a single CI). To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

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

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

## Row Keyboard Selection

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



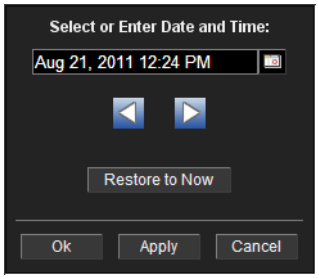

# Trend Graphs

Monitor trend graphs enable you to view and compare performance metrics over time. You can use trend graphs to assess utilization and performance trends.

For example, the following figure illustrates a typical Monitor trend graph.

### Time Range

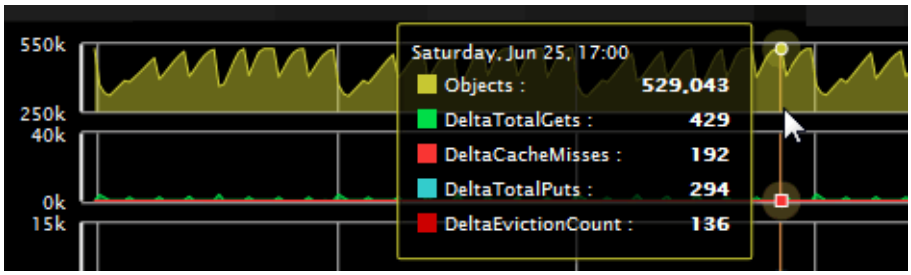
Select a time range from the drop down menu varying from **2 Minutes** to **Last 7 Days**, or display **All Data**. By default, the time range end point is the current time.




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

### Mouse-over

The mouse-over functionality provides additional detailed data in an over imposed pop-up window when you mouse-over trend graphs. The following figure illustrates mouse-over functionality. In this example, when you mouse-over a single dot, or data point, a pop-up window shows data for that data point.



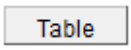

### Log Scale

Typically, trend graphs provide the Log Scale option. Log Scale enables you 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.

## Title Bar Functionality

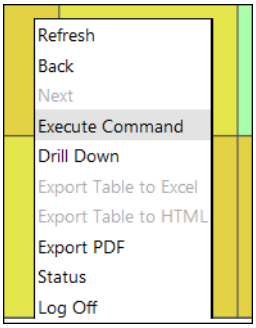
Displays share the same top layer in the title bar, as shown and described below.

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

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

## Context Menu

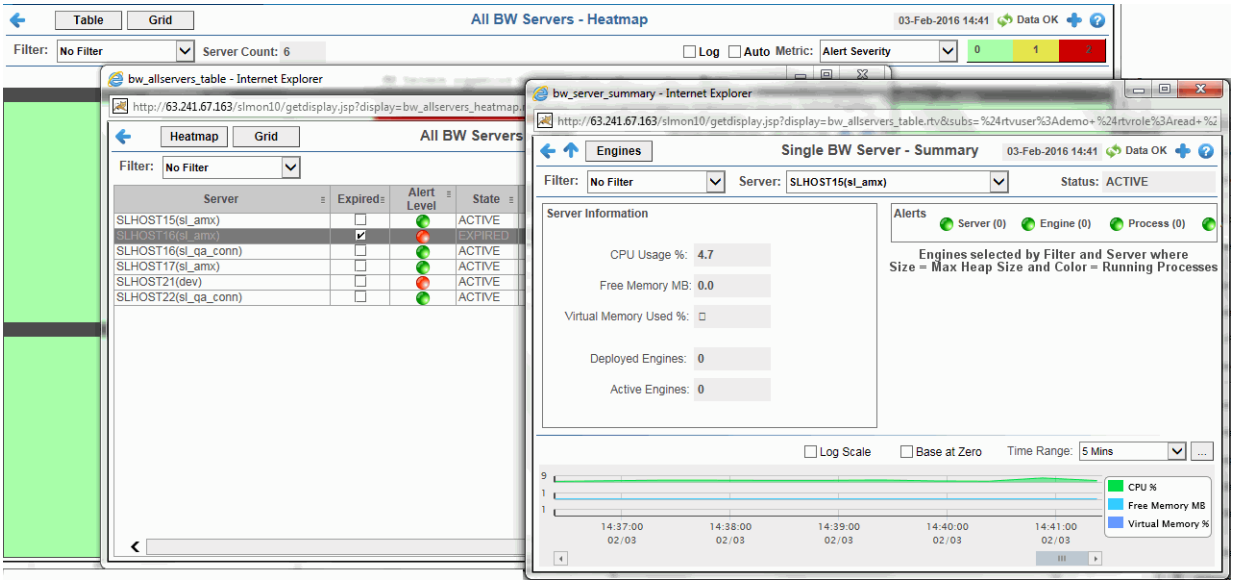
Typically, you can right-click on displays to open a popup menu. By default, options include **Refresh**, **Back**, **Next**, **Execute Command**, **Drill Down**, **Export Table to Excel**, **Export Table to HTML**, **Export PDF**, **Status** and **Log Off**. The following figure illustrates the popup menu in a heatmap.




For details about exporting a PDF report, see “Export Report” on page 62.

## Multiple Windows

The following illustrates the use of Open New Window .

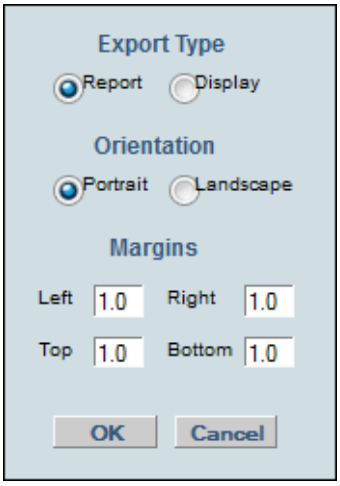



## Export Report

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

**To generate a report for a display:**

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

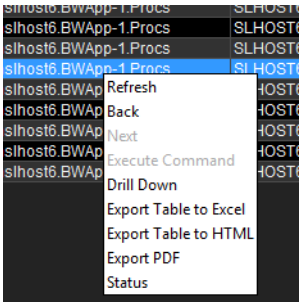



Set the margins and choose the **Export Type**:

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

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

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




# BusinessWorks Monitor Views/Displays

The following Views and their associated displays are in the Monitor:

This section describes Monitor displays. This section includes:

- "BW6 Applications" on page 64: The displays in this View present BusinessWorks 6 application performance metrics.
- "BW6 AppNodes" on page 72: The displays in this View present BusinessWorks 6 AppNode performance metrics.

- "BW6 AppSlices" on page 80: The displays in this View present BusinessWorks 6 AppSlice performance metrics.
- "BW6 Processes" on page 88: The displays in this View present BusinessWorks 6 process performance metrics.
- "BW Engines" on page 102: The displays in this View present BusinessWorks 5.0 engine performance metrics.
- "BW Processes" on page 113: The displays in this View present BusinessWorks 5.0 process performance metrics.
- "BW Activities" on page 121: The displays in this View present BusinessWorks 5.0 activity performance metrics.
- "BW Servers" on page 129: The displays in this View present BusinessWorks 5.0 server performance metrics.
- "Hawk Views" on page 139: Describes displays for TIBCO® BusinessWorks version 5 and 6 Hawk data.
- "Alert Views" on page 151: The display in this View presents the status of all alerts across all BW Servers, and allows you to track, manage and assign alerts.
- "Administration" on page 156: The displays in this View enable you to set global alerts and override alerts. You can also view internal data gathered and stored by RTView (used for troubleshooting with SL Technical Support).
- "RTView Servers" on page 165: The displays in this View enable you to view performance metrics gathered by RTView, and monitor all RTView Servers.

# BW6 Applications

These displays present process performance data for your BusinessWorks 6 applications and AppSpaces across BusinessWorks 6 Domains. Process metrics are totaled by application. Use these displays to monitor critical alerts for all your BusinessWorks 6 applications, and investigate those alerts in lower-level displays. Displays in this View are:

- "BW6 All Applications Heatmap" on page 64: A color-coded heatmap view of selected application performance metrics.
- "BW6 All Applications Table" on page 67: A tabular view of all available application performance data in this BusinessWorks 6 View.
- "BW6 Single Application Summary" on page 70: Current and historical metrics for a single application.

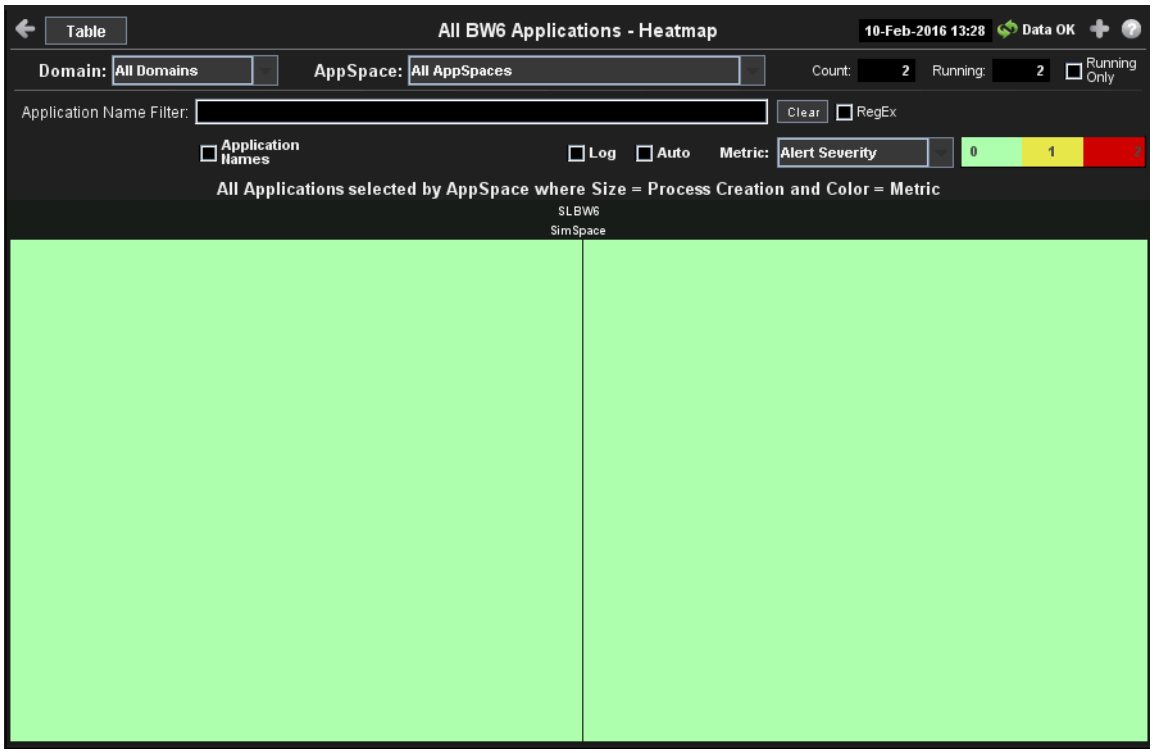
## BW6 All Applications Heatmap

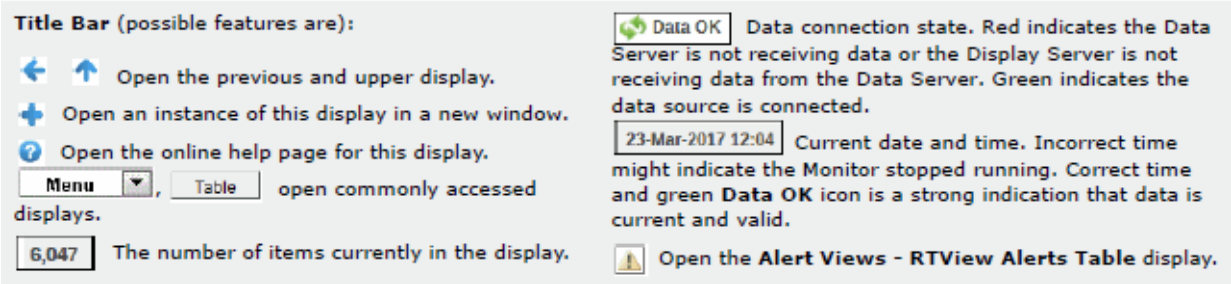
View the most critical BusinessWorks 6 application alert states pertaining to process creation and execution for all nodes on which the applications are deployed. Use this display to quickly identify applications with critical alerts.

Each rectangle in the heatmap represents an application. The rectangle color indicates the most critical alert state associated with the application. The rectangle size represents process creation across applications; a larger size is a larger value.

Choose a domain and AppSpace from the drop-down menus. Choose a different metric to display from the **Metric** drop-down menu. Enter a string in the **Application Name Filter** field to limit data shown in the display. Use the **Application Names** check-box ☑ to include or exclude labels in the heatmap. Mouse over a rectangle to see additional metrics. By default, this display shows **Alert Severity**.

Drill-down and investigate an application by clicking a rectangle in the heatmap to view details in the "BW6 Single Application Summary" display.




**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Domain:** | Choose a domain to show data for in the display. |
| **AppSpace** | Choose an AppSpace to show data for in the display. |
| **Application Name Filter** | Enter a string to show data for in the display. |
| **Clear** | Clears the **Application Name Filter** entries from the display. |
| **RegEx** | Toggles the **Application Name Filter** to accept Regular Expressions for filtering. |
| **Application Names** | Check to include labels in the heatmap. |

**Fields and Data:**

**Count:** The total number of AppSpaces currently shown in the display.

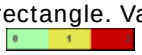
**Running** The total number of AppSpaces currently running in the display.

**Running Only** Select to show only running applications in the display.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

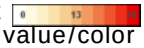
**Metric** Choose a metric to view in the display.

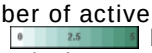
**Alert Severity** The maximum level of alerts in the heatmap rectangle. Values range from **0** - **2**, as indicated in the color gradient  bar, where **2** is the highest Alert Severity:

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

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

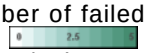
Green indicates that no metrics have exceeded their alert thresholds.

**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.

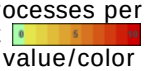
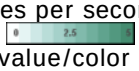
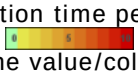
**Active Count** The total number of active processes in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Completed Count** The total number of completed processes 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.

**Suspended Count** The total number of suspended processes 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.

**Failed Count** The total number of failed processes 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.

**Created / sec** The number of processes created 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

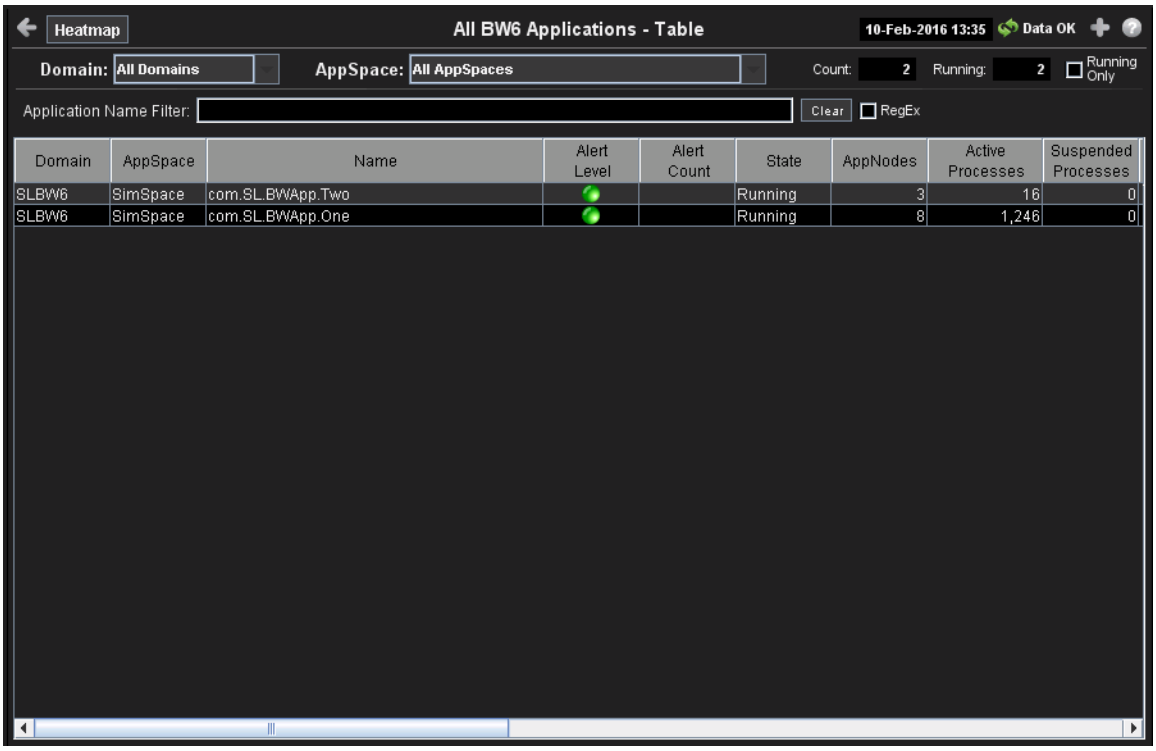
| | |
|---|---|
| **Suspended / sec** | The number of suspended processes per second in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Failed / sec** | The number of failed processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Exec Time / sec** | The process execution time 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Most Recent Exec Time** | The execution time for the most recently executed process 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. |
| **Average Exec Time** | The average execution time for all processes in the heatmap rectangle, calculated by dividing the delta execution time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |
| **Average Elapsed Time** | The average elapsed time for all processes in the heatmap rectangle, calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |

## BW6 All Applications Table

View BusinessWorks 6 data shown in the "BW6 All Applications Heatmap", and additional details, in a tabular format.

Each row in the table is an application. Choose a domain and AppSpace from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order. Enter a string in the **Application Name Filter** field to limit data shown in the display.

Drill-down and investigate by clicking a row to view details for the selected application in the "BW6 Single 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.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**Application Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Application Name Filter** entries from the display.

**RegEx** Toggles the **Application Name Filter** to accept Regular Expressions for filtering.

**Fields and Data:**

**Count:** The total number of applications in the AppSpace.

| | |
|---|---|
| **Running** | The total number of applications currently running in the AppSpace. |
| **Running Only** | Select to show only running applications in the display. |

**Table:**
Each row in the table is a different application.

| | |
|---|---|
| **Domain** | The domain in which the application resides. |
| **AppSpace** | The AppSpace in which the application resides. |
| **Name** | The name of the application. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | The total number of active alerts for the application. |
| **State** | The current status of the application. Valid values are **Running** and **Stopped.** |
| **AppNodes** | The total number of AppNodes associated with the application. |
| **Active Processes** | The number of currently active application processes. |
| **Suspended Processes** | The number of suspended application processes. |
| **Failed Processes** | The number of failed application processes. |
| **Completed Processes** | The number of completed application processes. |
| **Created /sec** | The number of application processes created per second. |
| **Suspended / sec** | The number of application process suspensions per second. |
| **Failed /sec** | The number of application process failures per second. |
| **Exec Time/ sec** | The number of processes executed per second. |
| **Recent Exec Time** | The number of seconds for the most recently executed process. |
| **Average Exec Time** | The average number of seconds for all processes to execute. |
| **Version** | The application version. |
| **Module** | The application module. |
| **Shared Module** | The shared module, if any. |
| **Time Stamp** | The date and time the row data was last updated. |

| | |
|---|---|
| **Source** | Name of RTView Data Server sending this data (or localhost). |
| **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. |

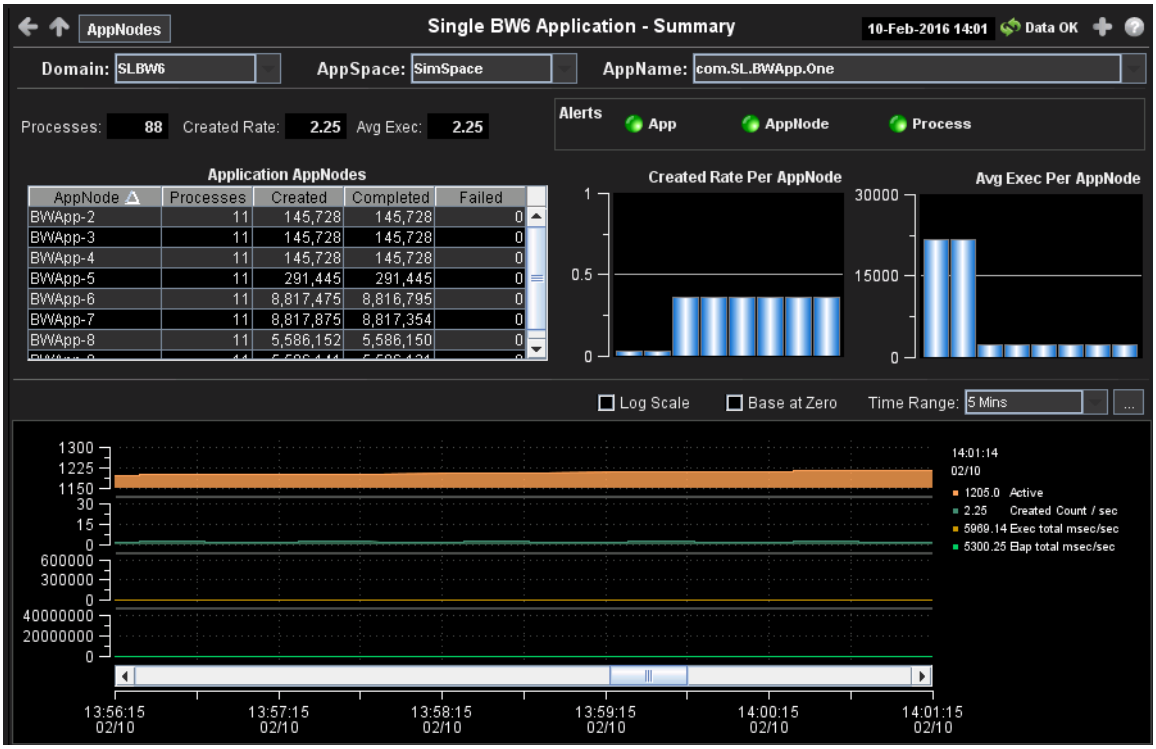
## BW6 Single Application Summary

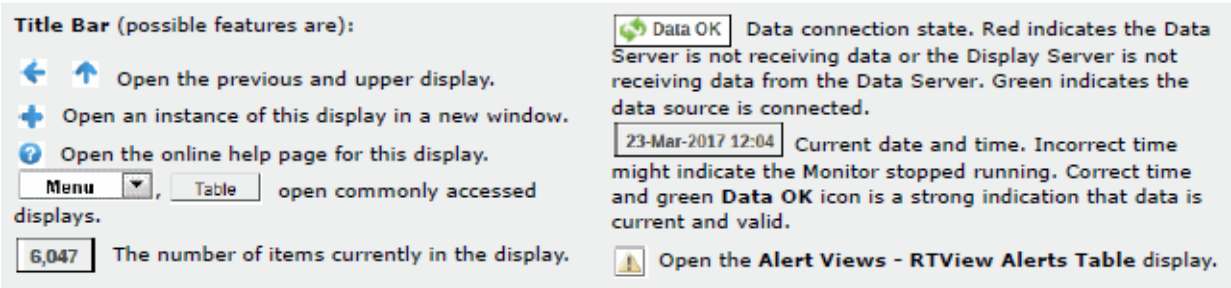
View current and historical metrics for a single BusinessWorks 6 application across multiple nodes. Use this display to investigate performance issues of application AppNodes within an AppSpace. Use this display to view all available data for each AppNode by Domain and AppSpace.

This display includes a list of AppNodes with their host names and memory metrics, bar graphs per AppNode for process creation and execution, and trend graphs of process creation and execution metrics.

The summary display also shows the AppNodes of the deployment and process metrics totaled by AppNode. This is useful to see the deployment and load balancing of the Application in current and historical time.

Choose a domain, AppSpace and Application from the drop-down menus. Drill-down and investigate by clicking an AppNode in the table to view details in the "BW6 Single AppNode Summary" display.






**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppName:** Choose an AppName to show data for in the display.

**Fields and Data:**

**Processes:** The number of processes currently running for the selected application.

**Created Rate:** The number of processes created per second for the selected application.

**Avg Exec:** The average number of seconds for processes to execute for the selected application.

**Alerts**
Indicates the greatest severity level and the number of open **App**, **AppNode** and **Process** alerts for the selected application. Click on the alert indicator to drill down to the "BW6 All Applications Table" display, "BW6 All AppNodes Table" display and "BW6 All Processes Table" display, respectively, to view current alerts for the selected application.

Values range from **0** to **2**, where **2** is the greatest Severity:

- One or more alerts exceeded their ALARM LEVEL threshold.
- One or more alerts exceeded their WARNING LEVEL threshold.
- No alert thresholds have been exceeded.

**Application Appnodes Table**
Each row in the table is a different AppNode. Column values describe processes for the selected application on that AppNode. Click a row to view AppNode details in the "BW6 Single AppNode Summary" display.

**AppNode** The name of the AppNode.

**Processes** The number of processes currently running on the AppNode.

**Created** The total number of processes created on the AppNode.

**Completed** The total number of completed processes on the AppNode.

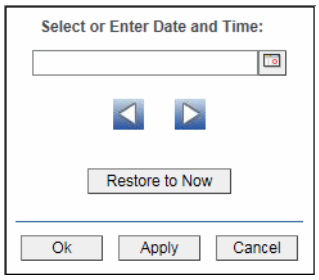
**Failed** The total number of failed processes on the AppNode.

**Created Rate Per AppNode Bar Graph**
The bar graph shows the current process creation rate per AppNode. Click to drill-down and investigate in the "BW6 Single AppSlice Summary" display.

**AvgExec Per AppNode Bar Graph**
The bar graph shows the current average process execution rate per AppNode for the selected application. Click to drill-down and investigate in the "BW6 Single AppSlice Summary" display.

**Trend Graphs**
Traces the sum of process metrics across all processes in all slices of the selected application.

| | |
|---|---|
| **Active** | Traces the number of currently active application processes. |
| **Created Count / sec** | Traces the number of created application processes. |
| **Exec total msec/sec** | Traces the rate at which the application is accumulating process execution time, in milliseconds per second. |
| **Elap total msec/sec** | Traces the rate at which the application accumulates process elapsed time, in milliseconds 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. |
| **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.

# BW6 AppNodes

These displays present internal JVM memory and host CPU utilization for BusinessWorks 6 AppNodes and their resources. This is useful because the AppNode performance is dependent on both internal and external factors and they sometimes interact. Displays in this View are:

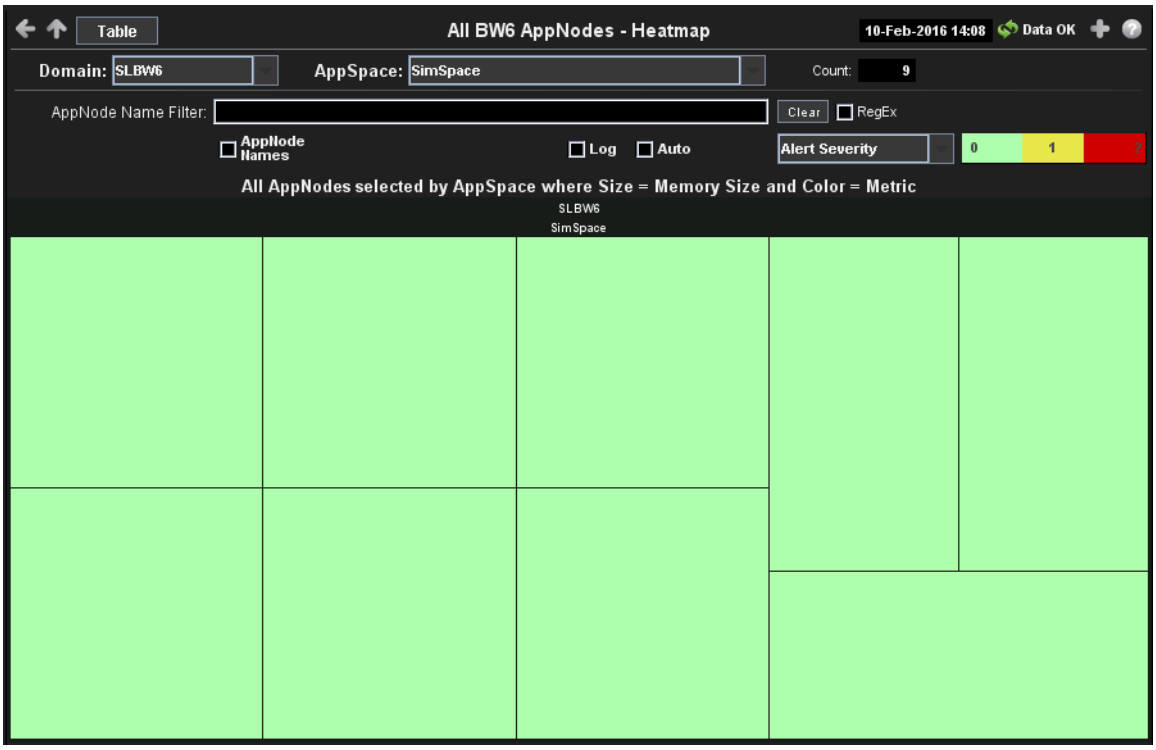
- "BW6 All AppNodes Heatmap" on page 73: A color-coded heatmap view of utilization metrics.
- "BW6 All AppNodes Table" on page 75: A tabular view of all available utilization data in this BusinessWorks 6 View.
- "BW6 Single AppNode Summary" on page 77: Current and historical metrics for a single AppNode.

## BW6 All AppNodes Heatmap

View the most critical JVM memory and host resource utilization for BusinessWorks 6 AppNodes. Use this display to quickly identify AppNodes with critical alerts.

Each rectangle in the heatmap represents an AppNode. The rectangle color indicates the most critical alert state associated with the AppNode. The rectangle size represents the maximum memory used in the rectangle; a larger size is a larger value.

Choose a domain and AppSpace from the drop-down menus. Choose a different metric to display from the **Metric** drop-down menu. Enter a string in the **AppNode Name Filter** field to limit data shown in the display. Use the **AppNode Names** check-box ☑ to include or exclude labels in the heatmap. Mouse over a rectangle to see additional metrics. By default, this display shows **Alert Severity**. Drill-down and investigate by clicking a rectangle in the heatmap to view details for the selected application in the "BW6 Single AppNode 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.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- Open the **Alert Views - RTView Alerts Table** display.

**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**Count:** The total number of AppNodes in the AppSpace.

**Fields and Data:**

**AppNode Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Application Name Filter** entries from the display.

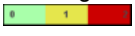
**RegEx** Toggles the **Search Text** field to accept Regular Expressions for filtering.

**AppNode Names** Check to include labels in the heatmap.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

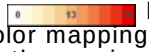
**Metric** Choose a metric to view in the display.

**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:

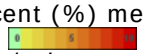
Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.

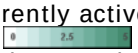
Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

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 Used %** The percent (%) 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 (%) 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.

**Active Processes** The number of currently active processes 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.

| | |
|---|---|
| **Created Processes** | The number of processes created 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. |
| **Created /sec** | The number of processes created 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Error Count** | The total number of process errors 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. |

## BW6 All AppNodes Table

View BusinessWorks 6 data shown in the "BW6 All AppNodes Heatmap" display, and additional details, in a tabular format. Use this display to view all available data for each AppNode by Domain and AppSpace.

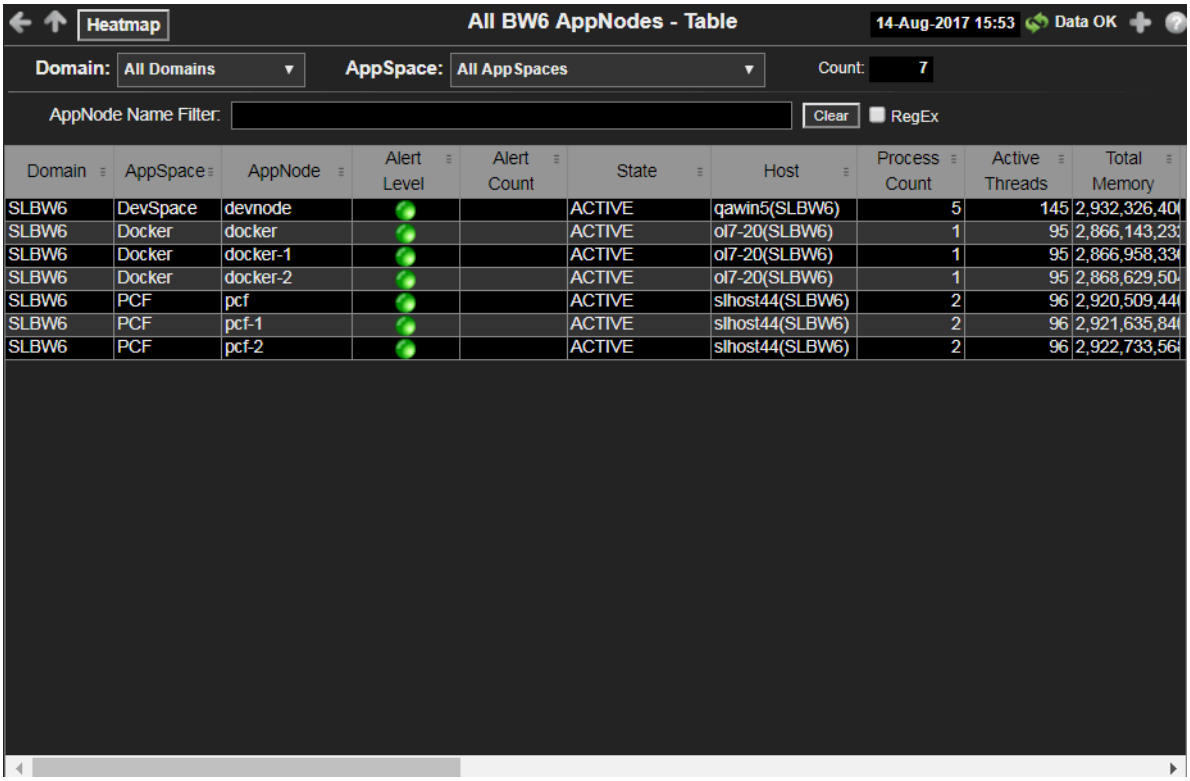
Each row in the table is an AppNode.

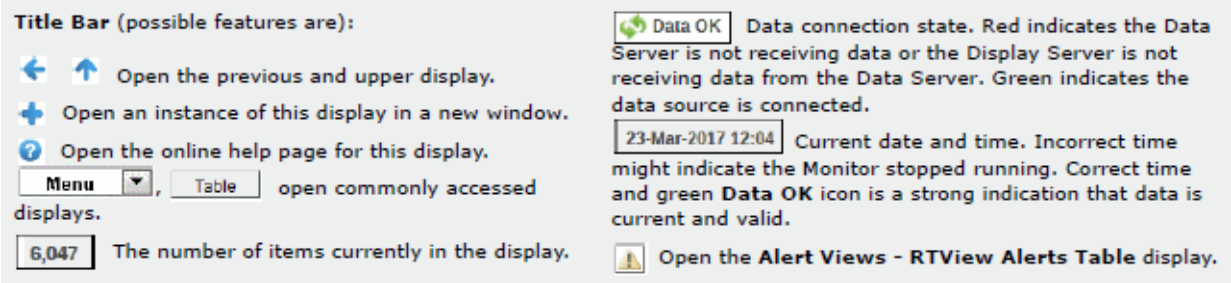
**Row Color Code:**

Light red indicates the AppNode is in a Stopped state (an administrator stopped the AppNode).

Gray indicates the AppNode is in a Unreachable state (the AppNode stopped abnormally).

Drill-down and investigate by clicking a row to view details for the selected AppNode in the "BW6 Single AppNode Summary" display.






**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Domain:** | Choose a domain to show data for in the display. |
| **AppSpace** | Choose an AppSpace to show data for in the display. |

**Fields and Data:**

| | |
|---|---|
| **Count:** | The total number of rows in the table. |
| **AppNode Name Filter** | Enter a string to limit data shown in the display. |
| **Clear** | Clears the **Application Name Filter** entries from the display. |
| **RegEx** | Toggles the **Search Text** field to accept Regular Expressions for filtering. |

**Table:**
Column values describe the AppNode.

| | |
|---|---|
| **Domain** | The domain in which the AppNode resides. |
| **AppSpace** | The AppSpace in which the AppNode resides. |
| **AppNode** | The name of the AppNode. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | The total number of active alerts for the AppNode. |
| **State** | The AppNode state:<br>ACTIVE - The AppNode is functioning normally.<br>STOPPED - The AppNode was purposefully stopped (for example, by an administrator).<br>UNREACHABLE - The AppNode stopped abnormally (for example, the AppNode process crashed). |
| **Host** | The host on which the AppNode resides. |
| **Process Count** | The number of processes running. |
| **Active Threads** | The number of currently active threads. |

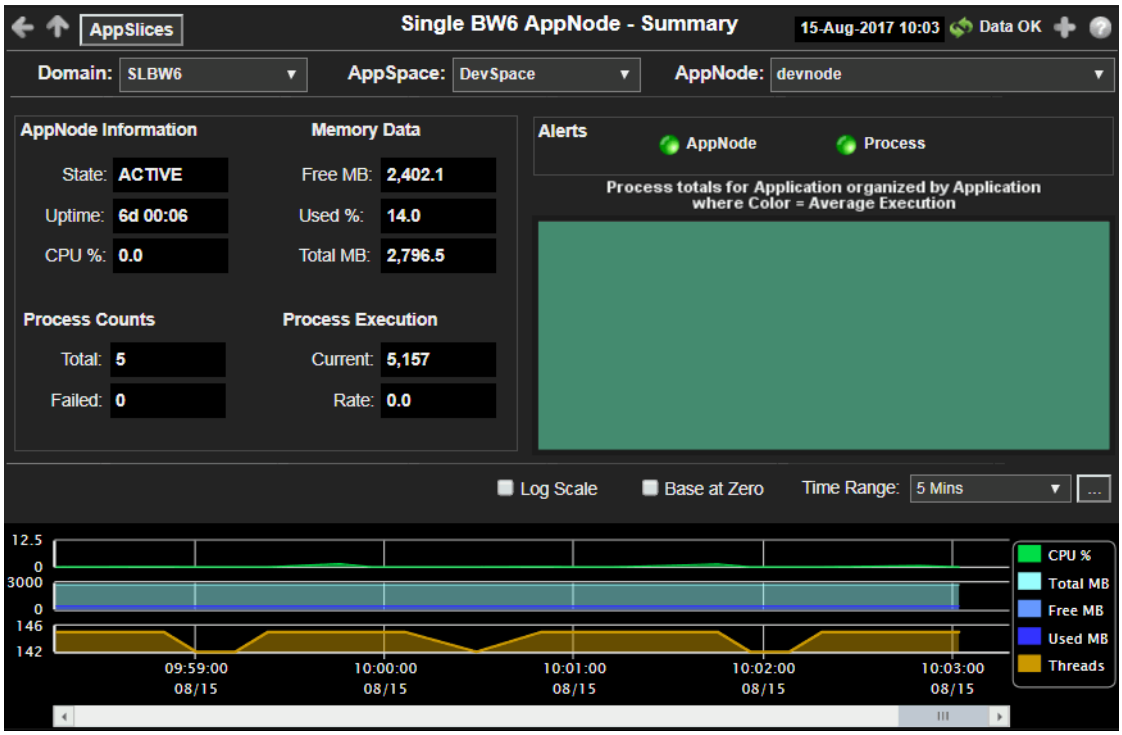
| | |
|---|---|
| **Total Memory** | The total amount of used and free memory, in megabytes. |
| **Used Memory** | The amount of used memory, in megabytes. |
| **Free Memory** | The amount of free memory, in megabytes. |
| **Used Memory%** | The percent (%) used memory. |
| **Used CPU%** | The percent (%) used CPU. |
| **System Process ID** | A unique string identifier for the process. |
| **Up Since** | The date and time the AppNode was last started. |
| **Active Processes** | The number of currently active processes. |
| **Suspended Processes** | The number of suspended application processes. |
| **Failed Processes** | The number of failed application processes. |
| **Completed Processes** | The number of completed application processes. |
| **Created /sec** | The number of application processes created per second. |
| **Suspended / sec** | The number of application processes suspended per second. |
| **Failed /sec** | The number of failed application processes per second. |
| **Exec Time / sec** | The number of application processes executed per second. |
| **Recent Exec Time** | The number of seconds for the most recently executed process. |
| **Average Exec Time** | The average number of seconds for all processes to execute. |
| **Time Stamp** | The date and time the row data was last updated. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |

## BW6 Single AppNode Summary

View current and historical utilization and performance metrics for a single BusinessWorks 6 AppNode. Use this display to investigate performance issues on an AppNode.

This display includes a heatmap showing most critical alerts pertaining to process execution, and trend graphs tracing CPU utilization and thread count.

Choose a domain, AppSpace and AppNode from the drop-down menus. Use the **Time-Range** to “zoom-in” or “zoom-out” on a specific time frame in the trend graph. Drill-down and investigate by clicking an AppNode in the table to view details in the “BW6 Single AppNode 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.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- Open the **Alert Views - RTView Alerts Table** display.

**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode:** Choose an AppNode to show data for in the display.

**Fields and Data:**

**AppNode Information**

**State:** The AppNode state:
ACTIVE - The AppNode is functioning normally.
STOPPED - The AppNode was stopped by an administrator.
UNREACHABLE - The AppNode stopped abnormally (for example, the AppNode process crashed).

| | | |
|---|---|---|
| | **Uptime:** | The number of days, hours and minutes since the AppNode started. |
| | **CPU%** | The percent (%) CPU used on the AppNode. |
| **Memory Data** | **Free:** | The amount of available memory on the AppNode. |
| | **Used%** | The percent (%) memory used on the AppNode. |
| | **Total** | The total amount of memory on the AppNode. |
| **Process Counts** | **Total:** | The number of currently active processes for the AppNode. |
| | **Failed:** | The number of failed processes for the AppNode. |
| **Process Execution** | **Current** | The number of processes executed by the AppNode. |
| | **Rate:** | The number of processes executed per second. |

**Alerts**

Indicates the greatest severity level and the number of open **AppNode** and **Process** alerts for the selected AppNode. Click on the alert indicator to drill down to the "BW6 All AppNodes Table" display and "BW6 All Processes Table" display, respectively, to view current alerts for the selected application.

Values range from **0** to **2**, where **2** is the greatest Severity:

- One or more alerts exceeded their ALARM LEVEL threshold.
- One or more alerts exceeded their WARNING LEVEL threshold.
- No alert thresholds have been exceeded.

**Heatmap**

Each rectangle in the heatmap represents an AppSlice. The rectangle color indicates the most critical **Average Exec Time** alert state associated with the AppSlice. The rectangle size represents the maximum number of processes executed in the rectangle; a larger size is a larger value. Click a rectangle to drill-down and investigate in the "BW6 Single AppSlice Summary" display.

**Trend Graphs**

Traces the sum of process metrics across all processes for all applications on the AppNode.

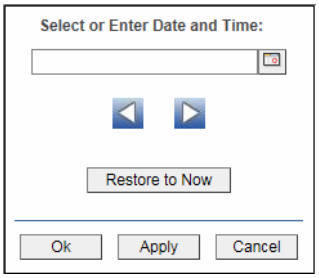
- **CPU%**: The percent (%) CPU used on the AppNode.
- **Total MB**: The amount of memory used.
- **Free MB**: The amount of available memory.
- **Used MB**: The amount of used memory.
- **Threads**: The number of threads.

**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.

# BW6 AppSlices

These displays present process metrics totaled by Application and AppNode for AppSlices. This is useful to see how the application is distributed and how each part of it is performing. The AppSlice is the part of an application running on a specific AppNode when the application is deployed to multiple AppNodes. Displays in this View are:

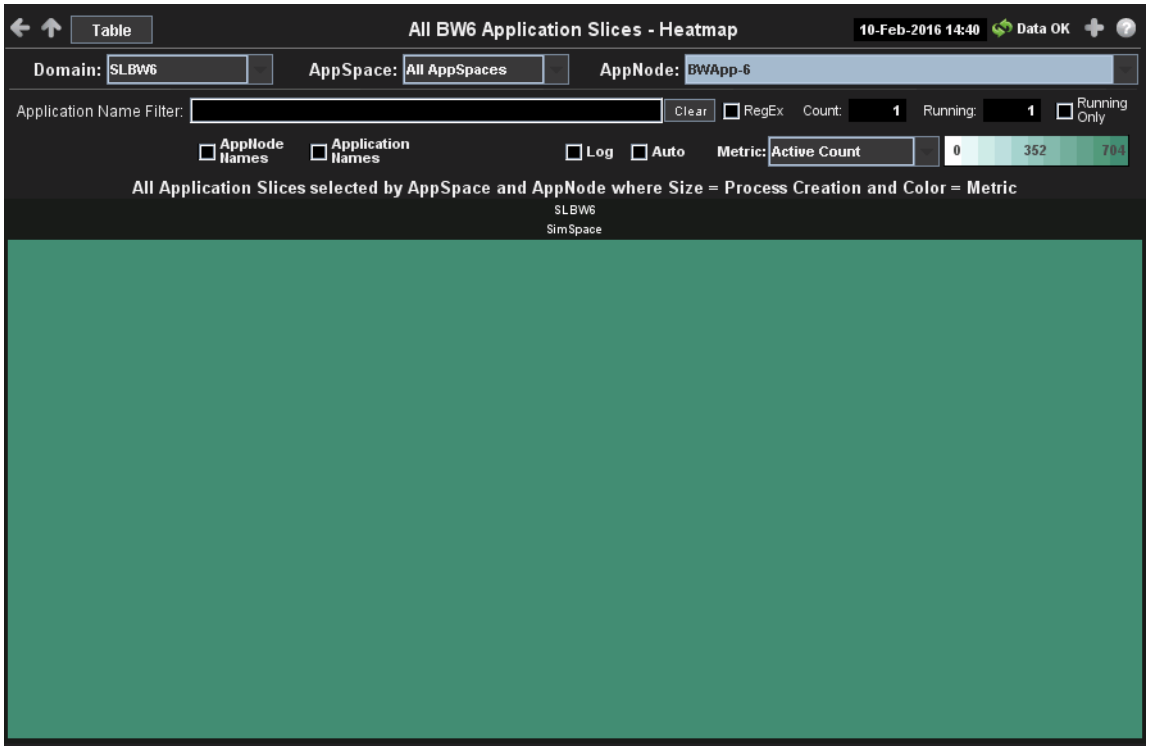
- "BW6 All AppSlices Heatmap" on page 80: A color-coded heatmap view of process creation and execution metrics.
- "BW6 All AppSlices Table" on page 83: A tabular view of all available data in this BusinessWorks 6 View.
- "BW6 Single AppSlice Summary" on page 85: Current and historical metrics for a single AppSlice.

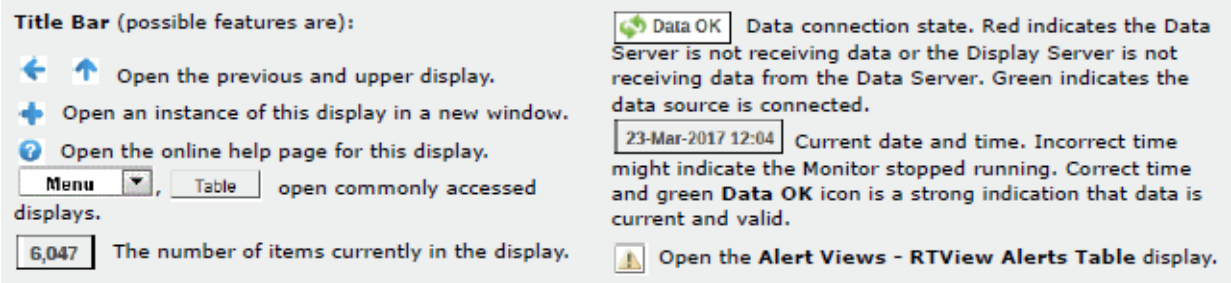
## BW6 All AppSlices Heatmap

View the most critical performance metrics for BusinessWorks 6 AppSlices. Use this display to quickly identify AppSlices with high process execution numbers.

Each rectangle in the heatmap represents an AppSlice. The rectangle color indicates the process execution numbers for the AppSlice. The rectangle size represents the number of processes created in the rectangle; a larger size is a larger value.

Choose a domain, AppSpace and AppNode from the drop-down menus. Choose a different metric to display from the **Metric** drop-down menu. Enter a string in the **Application Name Filter** field to limit data shown in the display. Use the **AppNode Names** and **Application Names** check-boxes ☑ to include or exclude labels in the heatmap. Mouse over a rectangle to see additional metrics. By default, this display shows **Active Count**. Drill-down and investigate by clicking a rectangle in the heatmap to view details for the selected application in the "BW6 Single AppSlice Summary" display.




**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode:** Choose an AppNode to show data for in the display.

**Fields and Data:**

**Application Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Application Name Filter** entries from the display.

**RegEx** Toggles the **Search Text** field to accept Regular Expressions for filtering.

**Count** The number of AppNodes in the display.

**Running** The total number of AppSpaces currently running in the display.

**Running Only** Select to show only running applications in the display.

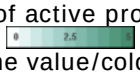
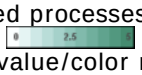
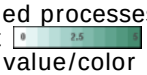
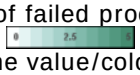
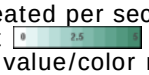
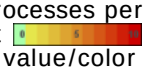
**AppNode Names** Check to include labels in the heatmap.

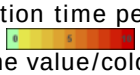
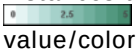
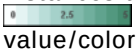
**Application Names** Check to include labels in the heatmap.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

**Metric** Choose a metric to view in the display.

- **Active Count** The total number of active processes 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.
- **Completed Count** The total number of completed processes 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.
- **Suspended Count** The total number of suspended processes 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.
- **Failed Count** The total number of failed processes 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.
- **Created / sec** The number of processes created 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.
- **Suspended / sec** The number of suspended processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

| | |
|---|---|
| **Failed / sec** | The number of failed processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Exec Time / sec** | The process execution time 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Most Recent Exec Time** | The execution time for the most recently executed process 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. |
| **Average Exec Time** | The average execution time for all processes in the heatmap rectangle, calculated by dividing the delta execution time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |
| **Average Elapsed Time** | The average elapsed time for all processes in the heatmap rectangle, calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |

## BW6 All AppSlices Table

View BusinessWorks 6 data shown in the "BW6 All AppSlices Heatmap", and additional details, in a tabular format.

Each row in the table is an AppSlice.

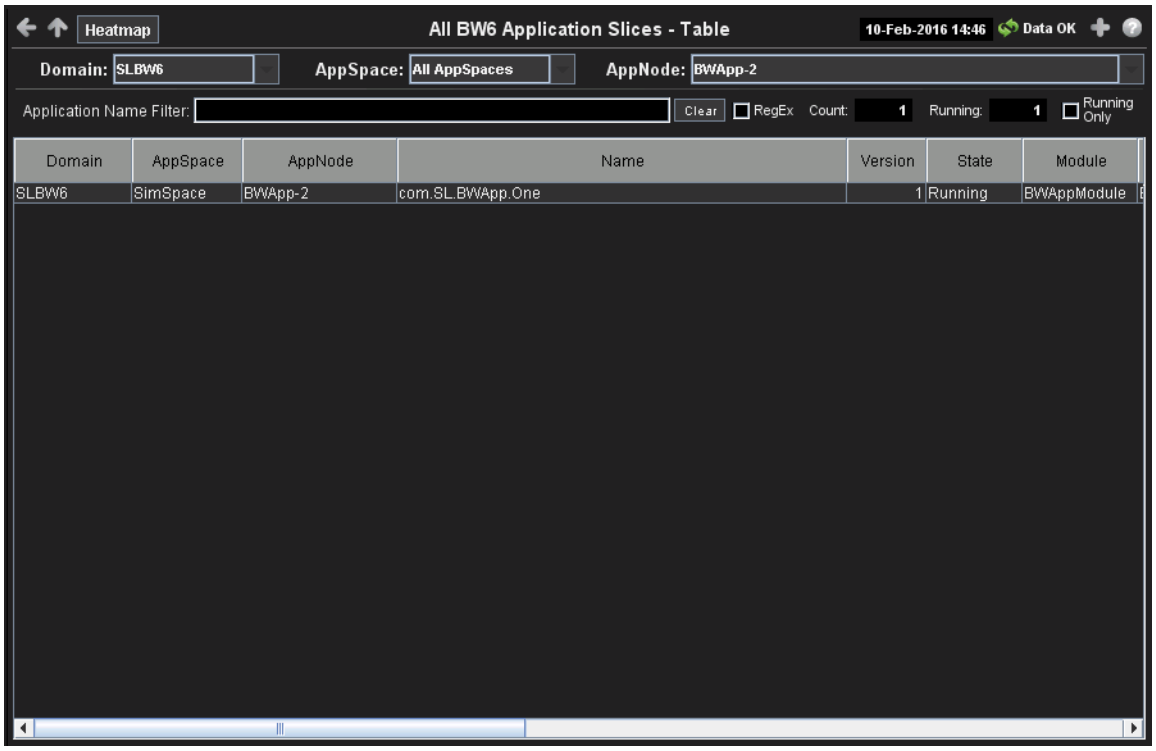
**Row Color Code:**

Light red indicates the associated AppNode is in a Stopped state (an administrator stopped the AppNode).

Gray indicates the associated AppNode is in a Unreachable state (the AppNode stopped abnormally).

Choose a domain (or **All Domains**), an AppSpace (or **All AppSpaces**) and an AppNode (or **All AppNodes**) from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order. Enter a string in the Application Name Filter field to limit data shown in the display.

Drill-down and investigate by clicking a row to view details in the "BW6 Single AppSlice 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.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode** Choose an AppNode to show data for in the display.

**Application Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Application Name Filter** entries from the display.

**RegEx** Toggles the **Application Name Filter** to accept Regular Expressions for filtering.

**Fields and Data:**

| | |
|---|---|
| **Count:** | The total number of rows in the table. |
| **Running** | The total number of applications currently running in the AppSpace. |
| **Running Only** | Select to show only running applications in the display. |

**Table:**
Each row in the table is a different AppNode.

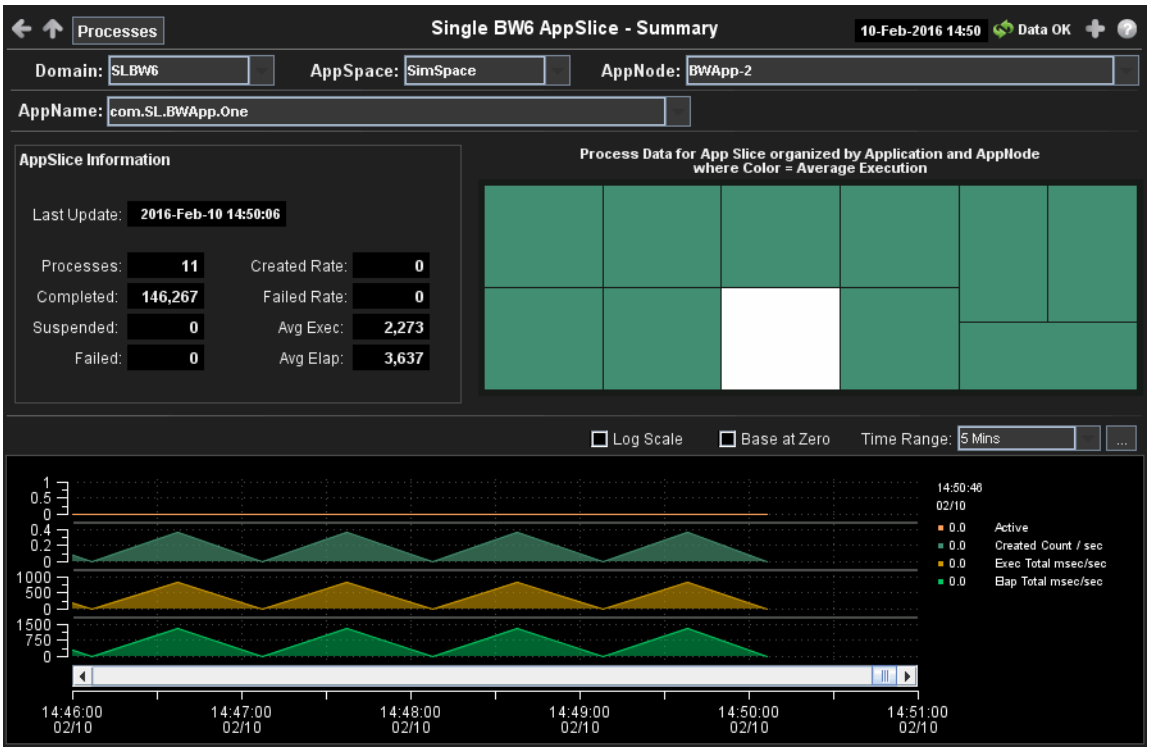
| | |
|---|---|
| **Domain** | The domain in which the AppSpace resides. |
| **AppSpace** | The AppSpace the AppNode is associated with. |
| **AppNode** | The name of the selected AppNode. |
| **Name** | The name of the application. |
| **Version** | The application version. |
| **State** | The current status of the application. Valid values are **Running** and **Stopped**. |
| **Module** | The application module. |
| **Shared Module** | The shared module, if any. |
| **Active Processes** | The number of currently active application processes. |
| **Suspended Processes** | The number of suspended application processes. |
| **Failed Processes** | The number of failed application processes. |
| **Completed Processes** | The number of completed application processes. |
| **Created /sec** | The number of application processes created per second. |
| **Suspended / sec** | The number of application process suspensions per second. |
| **Failed /sec** | The number of application process failures per second. |
| **Exec Time / sec** | The number of processes executed per second. |
| **Recent Exec Time /sec** | The number of seconds for the most recently executed process. |
| **Average Exec Time** | The average number of seconds for all processes to execute. |
| **Time Stamp** | The date and time the row data was last updated. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |

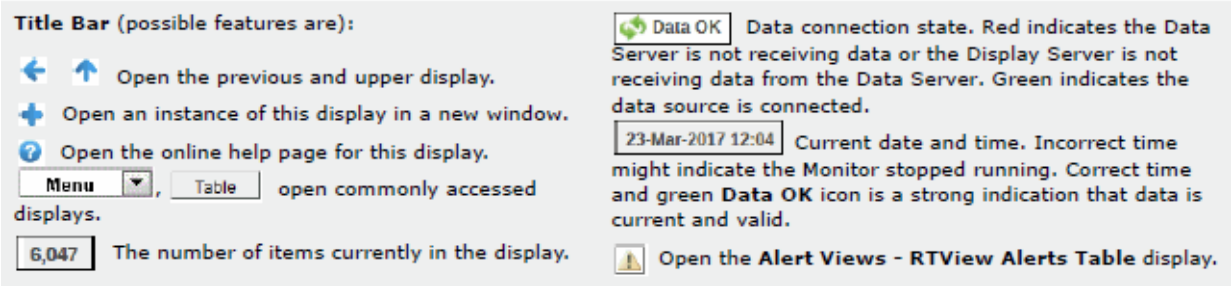
## BW6 Single AppSlice Summary

View current and historical utilization and performance metrics for a single BusinessWorks 6 AppSlice. Use this display to investigate performance issues on an AppSlice level.

This display includes a heatmap showing the most critical process execution alerts for AppSlices on the selected application, and trend graphs tracing process execution times.

Choose a domain, AppSpace, AppNode and AppNode from the drop-down menus. Use the **Time-Range** to "zoom-in" or "zoom-out" on a specific time frame in the trend graph. Drill-down and investigate by clicking a process in the heatmap to view details in the "BW6 Single Process Summary" display.




**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode:** Choose an AppNode to show data for in the display.

**AppName:** Choose an AppName to show data for in the display.

**Fields and Data:**

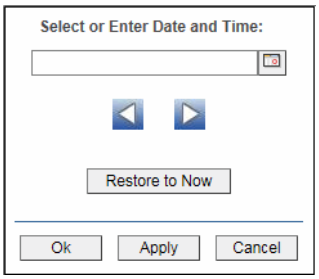
**AppSlice Information** **Last Update:** The date and time the data was last updated.

| | |
|---|---|
| **Processes** | The number of active processes. |
| **Completed:** | The total number of completed processes summed across all processes in one AppSlice of the application. |
| **Suspended:** | The total number of suspended processes |
| **Failed:** | The total number of failed processes |
| **Created Rate:** | The number of application processes created per second. |
| **Failed Rate:** | The number of failed application processes per second. |
| **Avg Exec:** | The average number of seconds for processes to execute. |
| **Avg Elap:** | The average amount of elapsed time for processes, in seconds. |

**Heatmap**
Each rectangle in the heatmap represents one process in an AppSlice. The rectangle color indicates the most critical **Average Exec Time** alert state associated with the AppSlice. The rectangle size represents the processes execution time in the rectangle; a larger size is a larger value. Click a rectangle to drill-down and investigate in the "BW6 Single Process Summary" display.

**Trend Graphs**
Traces the sum across all processes in one AppSlice of the application.
- **Active**: Traces the number of active processes.
- **Created Count**: Traces the number of processes created.
- **Exec Total msec/sec**: Traces the rate at which the application accumulates process execution time, in milliseconds per second.
- **Elap Total msec/sec**: Traces the rate at which the application is accumulating process elapsed time, in milliseconds 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. |
| **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.

# BW6 Processes

These displays present performance data for BusinessWorks 6 processes. Use these displays to verify that individual BusinessWorks 6 processes are executing and using resources as expected. Displays in this View are:

- "BW6 All Processes Heatmap" on page 88: A color-coded heatmap view of selected process performance metrics.
- "BW6 All Processes Table" on page 91: A tabular view of all available process performance data in this BusinessWorks 6 View.
- "BW6 Single Process Summary" on page 94: Current and historical metrics for a single process.

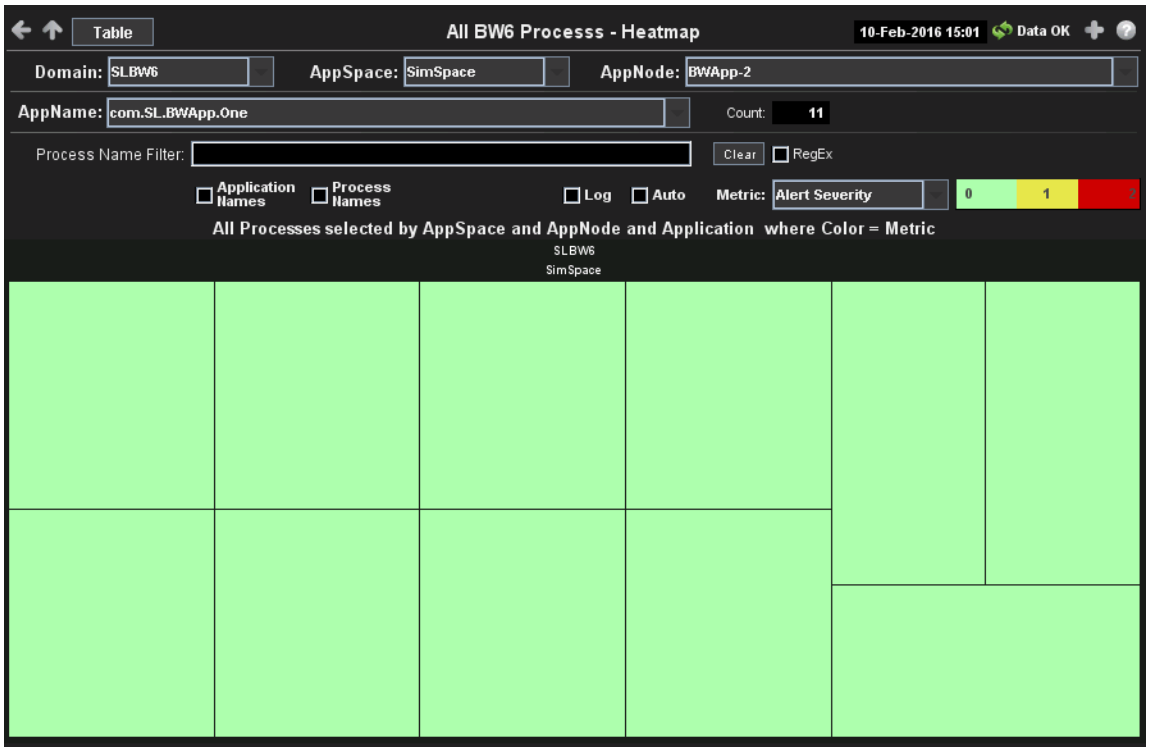
## BW6 All Processes Heatmap

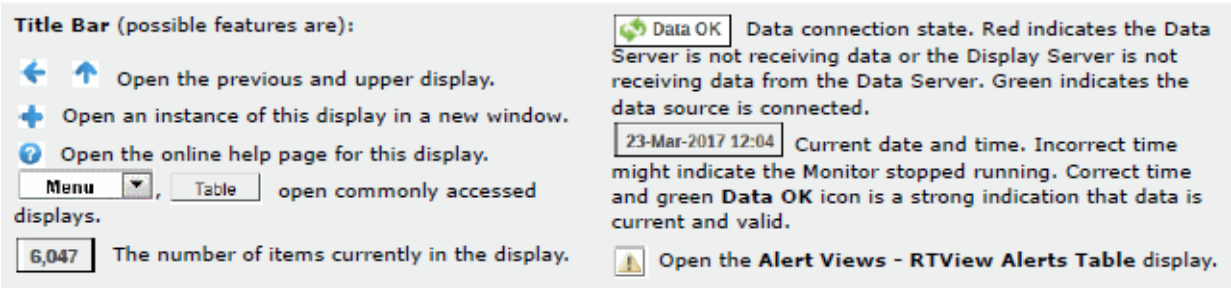
View the most critical BusinessWorks 6 alerts pertaining to process creation and execution. Use this display to quickly identify processes with critical alerts.

Each rectangle in the heatmap represents a process. The rectangle color indicates the most critical alert state associated with the processes (the rectangle size is uniform for all processes.)

Choose a domain, applications, AppNode and AppSpace from the drop-down menus. Choose a different metric to display from the **Metric** drop-down menu. Enter a string in the **Process Name Filter** field to limit data shown in the display. Use the **Application Names** and **Process Names** check-boxes ☑ to include or exclude labels in the heatmap. Mouse over a rectangle to see additional metrics. By default, this display shows **Alert Severity**.

Drill-down and investigate by clicking a rectangle in the heatmap to view details in the "BW6 Single Process Summary" display.






**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode:** Choose an AppNode to show data for in the display.

**AppName** Choose an AppName to show data for in the display.

**Count:** The total number of processes currently shown in the display.

**Fields and Data:**

**Process Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Processes Name Filter** entries from the display.

**RegEx** Toggles the **Processes Name Filter** to accept Regular Expressions for filtering.

**Application Names** Check to include labels in the heatmap.

**Process Names** Check to include labels in the heatmap.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

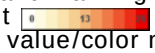
**Metric** Choose a metric to view in the display.

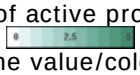
**Alert Severity** The maximum level of alerts in the heatmap rectangle. Values range from **0** - **2**, as indicated in the color gradient bar, where **2** is the highest Alert Severity:

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.

**Active Count** The total number of active processes 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.

**Completed Count** The total number of completed processes 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.

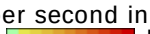
**Suspended Count** The total number of suspended processes in the heatmap rectangle. The color gradient bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Failed Count** The total number of failed processes 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.

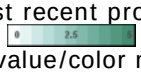
**Created / sec** The number of processes created per second in the heatmap rectangle. The color gradient bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Suspended / sec** The number of suspended processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Failed / sec** The number of failed processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Exec Time / sec** The process execution time 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Most Recent Exec Time** The execution time for the most recently executed process 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.

| | |
|---|---|
| **Average Exec Time** | The average execution time for all processes in the heatmap rectangle, calculated by dividing the delta execution time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |
| **Most Recent Elapsed Time** | The elapsed time for the most recent process 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. |
| **Average Elapsed Time** | The average elapsed time for all processes in the heatmap rectangle, calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |

## BW6 All Processes Table

View BusinessWorks 6 data shown in the "BW6 All Applications Heatmap", and additional details, in a tabular format.

Each row in the table is a process.

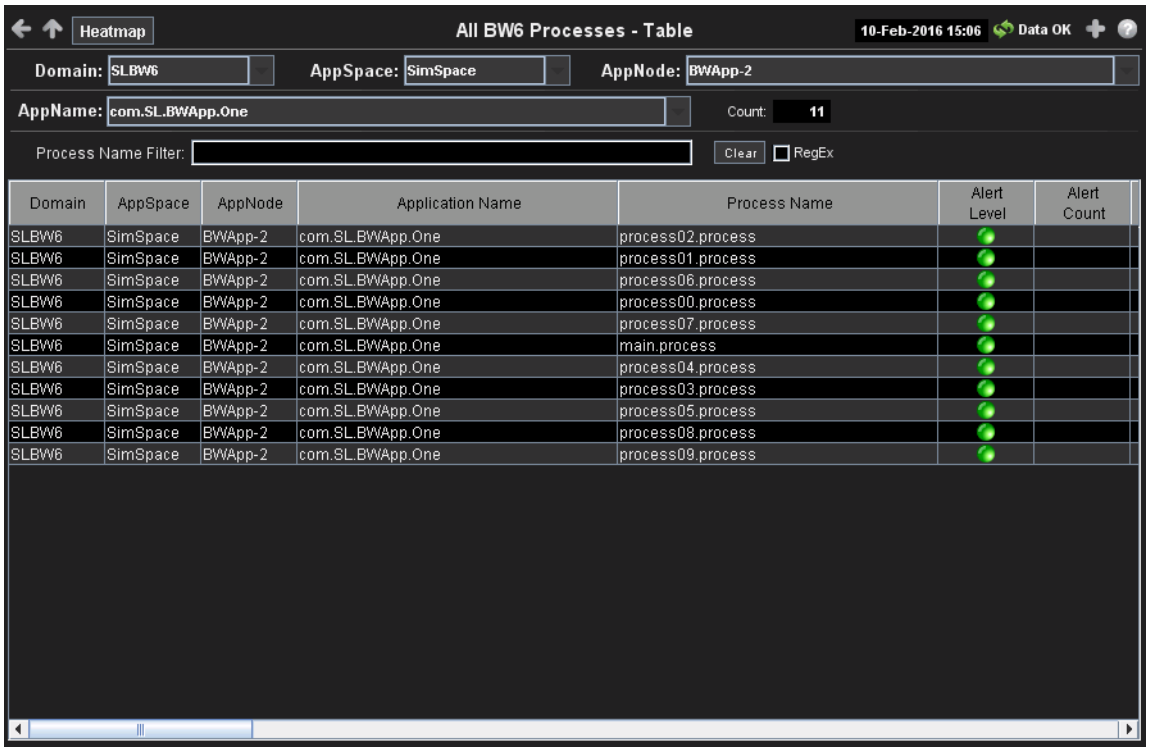
**Row Color Code:**

Light red indicates the associated AppNode is in a Stopped state (an administrator stopped the AppNode).

Gray indicates the associated AppNode is in a Unreachable state (the AppNode stopped abnormally)**.**

Choose a domain, applications, AppNode and AppSpace from the drop-down menus. Click a column header to sort column data in numerical or alphabetical order. Enter a string in the **Process Name Filter** field to limit data shown in the display.

Drill-down and investigate by clicking a row to view details for the selected process in the "BW6 Single Process 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.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Domain:** Choose a domain to show data for in the display.

**AppSpace** Choose an AppSpace to show data for in the display.

**AppNode:** Choose an AppNode to show data for in the display.

**AppName** Choose an AppName to show data for in the display.

**Fields and Data:**

**Count:** The total number of processes in the AppSpace.

**Process Name Filter** Enter a string to limit data shown in the display.

**Clear** Clears the **Application Name Filter** entries from the display.

| | |
|---|---|
| **RegEx** | Toggles the **Application Name Filter** to accept Regular Expressions for filtering. |

**Table:**
Each row in the table is a different AppSlice. Column values are associated with the process.

| | |
|---|---|
| **Domain** | The domain in which the process resides. |
| **AppSpace** | The AppSpace in which the process resides. |
| **AppNode** | The AppSpace in which the process resides. |
| **Application Name** | The name of the application in which the process is running. |
| **Process Name** | The name of the process. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | The total number of active alerts for the process. |
| **Total Exec Time** | Total execution time (in milliseconds) for all successfully completed process instances. |
| **Delta Exec Time** | Execution time accumulated during the current polling period. |
| **Exec Time / sec** | Delta execution time per second. |
| **Recent Exec Time** | Execution time (in milliseconds) of the most recently completed process instance. |
| **Total Elapsed Time** | Total elapsed time (in milliseconds) for all successfully completed process instances. |
| **Delta Elapsed Time** | Elapsed time accumulated during the current polling period. |
| **Elapsed Time / sec** | Delta elapsed time per second. |
| **Recent Elapsed Time** | Elapsed clock time (in milliseconds) of the most recently completed process instance. |
| **Active** | The number of currently active processes |
| **Created** | The number of processes created. |
| **Suspended** | The number of process suspensions. |
| **Failed** | The number of process failures. |
| **Completed** | The number of completed processes. |
| **Delta Active** | The number of active processes since the last data update. |
| **Active / sec** | The number of active processes per second. |
| **Delta Created** | The number of created processes since the last data update. |

| | |
|---|---|
| **Created/sec** | The number of created processes per second. |
| **Delta Suspended** | The number of suspended processes since the last data update. |
| **Suspended/sec** | The number of suspended processes per second. |
| **Delta Completed** | The number of completed processes since the last data update. |
| **Completed/sec** | The number of completed processes per second. |
| **Delta Failed** | The number of failed processes since the last data update. |
| **Failed/sec** | The number of failed processes per second. |
| **Min Exec Time** | Execution time (in milliseconds) of the process instance that has completed in the shortest amount of execution time. |
| **Max Exec Time** | Execution time (in milliseconds) of the process instance that has completed in the longest amount of execution time. |
| **Average Exec Time** | Average execution time (in milliseconds) for all successfully completed process instances. |
| **Min Elapsed Time** | Elapsed clock time (in milliseconds) of the process instance that has completed in the shortest amount of elapsed time. |
| **Max Elapsed Time** | Elapsed clock time (in milliseconds) of the process instance that has completed in the longest amount of elapsed time. |
| **Average Elapsed Time** | Average elapsed clock time (in milliseconds) for all successfully completed process instances. |
| **Count Since Reset** | The number of times the process has executed since statistics were reset. |
| **Main Process** | The name of the main process. |
| **Application Version** | The application version. |
| **Module Name** | The application module. |
| **Module Version** | The module version. |
| **Time Stamp** | The date and time the row data was last updated. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |

## BW6 Single Process Summary

View current and historical execution metrics for a single BusinessWorks 6 process. Use this display to investigate performance issues for a process.

This display includes trend graphs tracing process and activity execution counts and times.

Choose a domain, application, AppNode and AppSpace from the drop-down menus. Use the **Time-Range** to “zoom-in” or “zoom-out” on a specific time frame in the trend graph.

**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Domain:** | Choose a domain to show data for in the display. |
| **AppSpace** | Choose an AppSpace to show data for in the display. |
| **AppNode:** | Choose an AppNode to show data for in the display. |
| **AppName** | Choose an application to show data for in the display. |
| **Process** | Choose a process to show data for in the display. |

**Fields and Data:**

| | |
|---|---|
| **Activity Count:** | The number of activities defined for the process. |

| | | |
|---|---|---|
| **Main Process:** | | The name of the main process. |
| **Active** | | Number of active instances for this process definition. This number is calculated using the Hawk method named GetProcesses. This method returns information about process instances that are active at the time of update. The value here displays the current total count of all active instances discovered for this process definition. The trend below displays the same value over time. |
| **Active/sec** | | The number of currently active application processes per second. |
| **Created** | **Total** | The number of process instances created for this process definition. |
| | **Current** | The number of process instances created this update cycle. |
| | **Rate** | The number of process instances created per second. |
| **Completed** | **Total** | The number of process instances completed for this process definition. |
| | **Current** | The number of process instances completed this update cycle. |
| | **Rate** | The number of process instances completed per second. |
| **Errors** | **Total** | The number of errors accumulated by all process instances. |
| | **Current** | The number of errors accumulated this update cycle. |
| | **Rate** | The number of errors accumulated per second. |
| **Execution** | **Min** | The shortest execution time of any process instance, in milliseconds. |
| | **Max** | The longest execution time of any process instance, in milliseconds. |
| | **Average** | The average execution time for all completed process instances, in milliseconds. |
| | **Current** | The amount of time accumulated this update cycle. |
| | **Rate** | The amount of time accumulated per second. |
| **Elapsed** | **Min** | The shortest elapsed time of any process instance, in milliseconds. |
| | **Max** | The longest elapsed time of any process instance, in milliseconds. |
| | **Average** | The average elapsed time for all completed process instances, in milliseconds. |
| | **Current** | The amount of elapsed time accumulated this update cycle. |
| | **Rate** | The amount of elapsed time accumulated per second. |

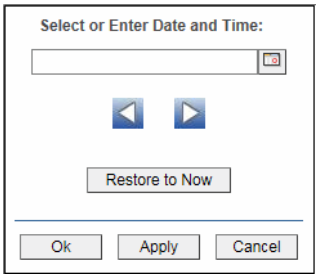
**Trend Graphs**
Traces application process and activity metrics for the selected process.

- **Active Count**: Traces the number of currently active processes.
- **Created Count:** Traces the number of created processes.
- **Process Elapsed Time/sec**: Traces the rate at which the application is accumulating process elapsed time, in milliseconds per second.
- **Process Exec Time/sec**: Traces the rate at which the application is accumulating process execution time, in milliseconds per second.
- **All Activities Exec Count/sec**: Traces the number of executed activities per second.
- **All Activities Exec Time/sec**: Traces the amount of execution time for executed activities 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.

**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.

# BW6 Hosts

These displays the health and history of the host systems supporting BusinessWorks 6 applications and AppNodes. Use these displays to monitor critical alerts for host servers and investigate those alerts in lower-level displays. Displays in this View are:

- "BW6 All Hosts Heatmap" on page 97
- "BW6 All Hosts Table" on page 100

## BW6 All Hosts Heatmap

View the most critical alert states for host servers supporting BusinessWorks 6 applications and resources. Use this display to quickly identify host servers with critical alerts. Drill-down and investigate by clicking a rectangle in the heatmap to view host details in the **Hawk Views - Host Summary** display.

Each rectangle in the heatmap represents a host server. The rectangle color indicates the most critical alert state associated with the host server. The rectangle size represents the number of AppNodes associated with the host; a larger size is a larger value.

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.

Choose a metric to display from the **Metric** drop-down menu. Mouse over a rectangle to see additional metrics. By default, this display shows **Alert Severity**.

**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

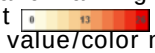
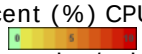
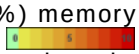
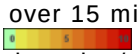
**Host Count:** The total number of hosts in the display.

**Show:**

**Domain** When selected, includes the Domain name in the display

**Host** When selected, includes the Host name in the display

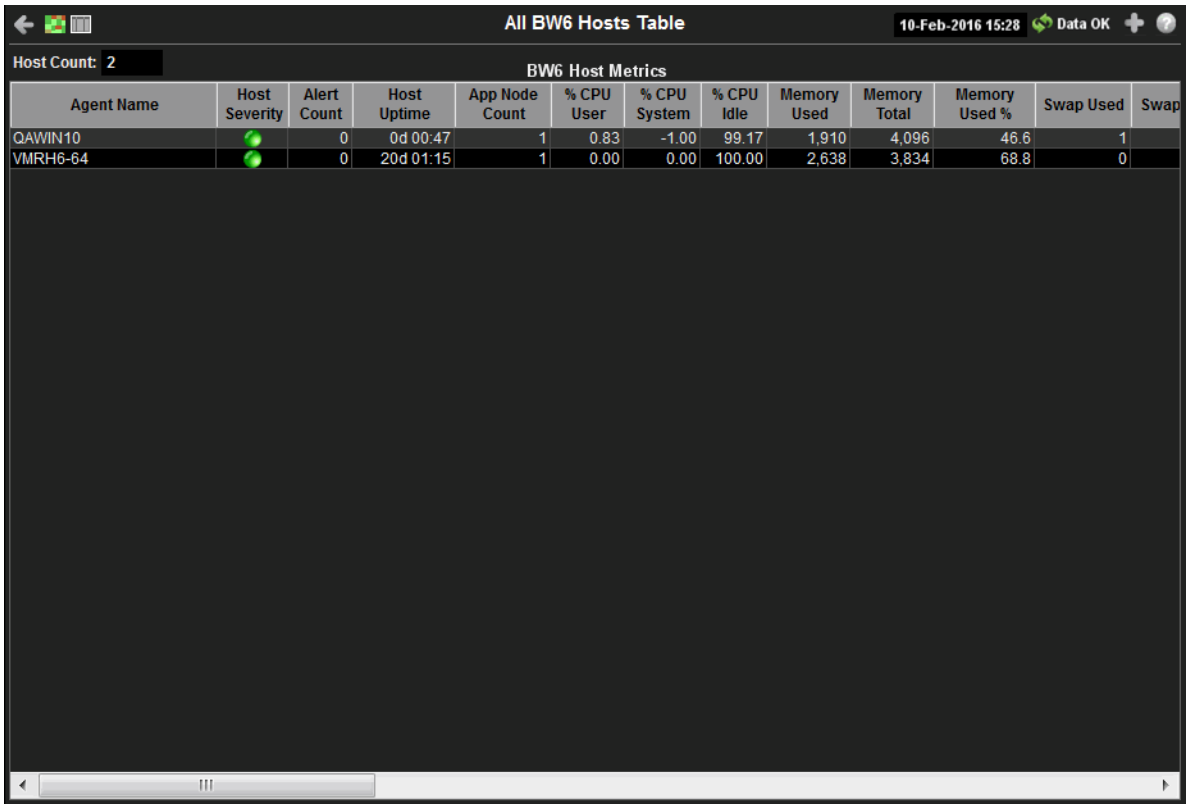
**Metric** Choose a metric to view in the display.

| | |
|---|---|
| **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:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>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 (%) 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 (%) 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 (%) 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** | The average number of processes running over 1 minute 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. |
| **5 Minute Load** | The average number of processes running over 5 minutes 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. |
| **15 Minute Load** | The average number of processes running over 15 minutes 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. |

## BW6 All Hosts Table

View data for host servers supporting BusinessWorks 6 applications and resources in a tabular format. Use this display to see all available data for this View.

Each row in the table is a host. 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 **Hawk Views** - **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.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- Open the **Alert Views - RTView Alerts Table** display.

**Fields and Data:**

**Host Count:** The total number of hosts in the display.

**Table:** Each row in the table is a different host.

**Agent Name** The name of the agent associated with the host.

| | |
|---|---|
| **Host 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:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | The total number of active alerts associated with the host. |
| **Host Uptime** | The amount of time the host has been running, in the following format: **0d 00:00 <days>d <hours>:<minutes>:<seconds>** For example: **10d 08:41:38 App Node Count** The number of BW6 processes running on the host. |
| **% CPU Used** | The amount of CPU used, in percent. |
| **% CPU System** | The amount of system CPU used, in percent. |
| **% CPU Idle** | The amount of CPU not used, in percent. |
| **Memory Used** | The amount of memory, in megabytes, currently used by the application. |
| **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 by the application. |
| **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, in megabytes, currently used by the application. |
| **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 Class** | The specific version of the agent software. |
| **Source** | The name of RTView Data Server sending this data (or localhost). |
| **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. |
| **Time Stamp** | The date and time the data was last updated. |

# BW Engines

These displays present performance metrics for BW5 Engines. Displays in this View are:

- "All Engines Heatmap" on page 102:Performance metrics of CPU and memory utilization for all BW Engines.
- "All Engines Table" on page 105: Available metrics from the Hawk microagent for each BW Engine.
- "All Engines Grid" on page 108: Displays the main health metrics and a single trend graph per engine, summarizing the status of each BW Engine.
- "Single Engine Summary" on page 110: Detailed performance metrics and alert status for a single BW Engine.

## All Engines Heatmap

Quick view of BW5 Engines status for the selected **Filter** and **Server**. Each rectangle in the heatmap represents an engine. Rectangle size represents Max Heap Size and the color represents the most severe value in the heatmap rectangle is shown for the selected Metric. By default, the maximum **Alert Severity** is shown:

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.

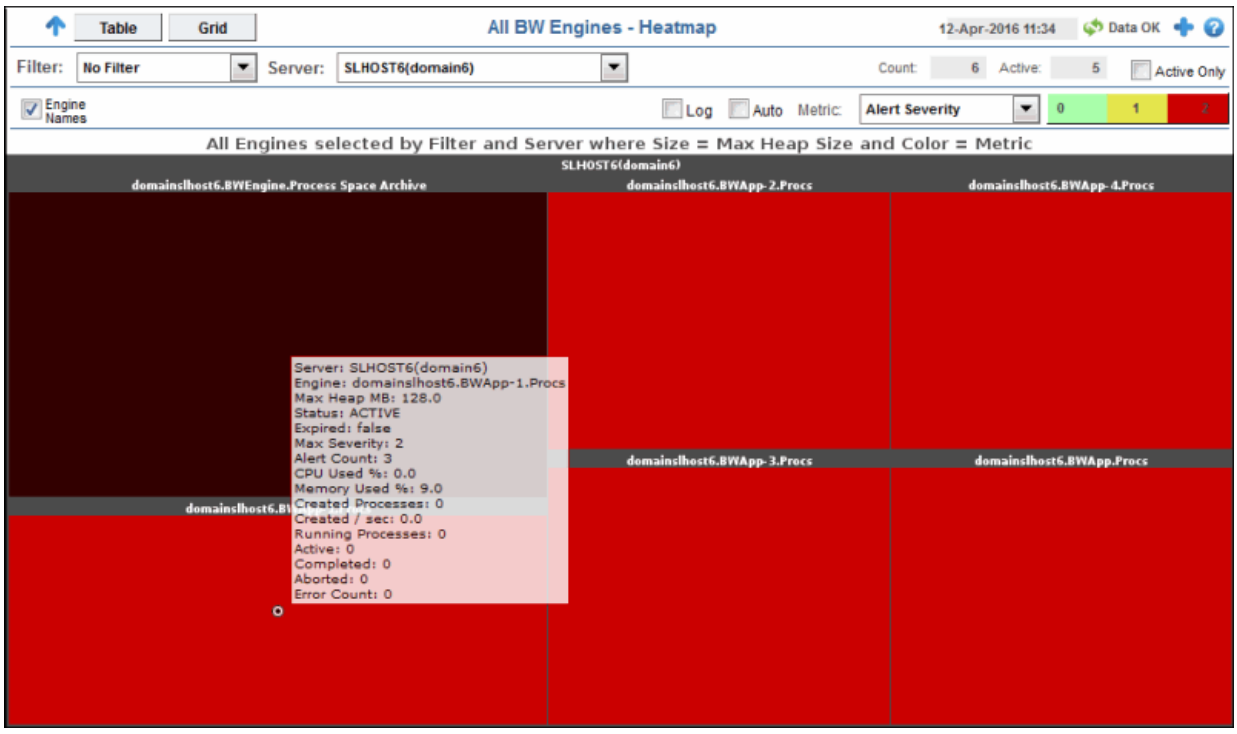
Green indicates that no metrics have exceeded their alert thresholds.

Mouseover to see the following performance metrics:

- **Server**: Server agent name.
- **Engine**: Engine name.
- **Max Heap MB**: Maximum heap allocated to this engine for the JVM.
- **Status**: ACTIVE, STOPPED or LIMITED.
- **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.
- **Alert Count**: Number of current alerts
- **CPU Used %**: Percent of server CPU used by engine.
- **Memory Used %**: Percentage of allocated memory currently consumed by this engine from within the JVM. Equal to the value of: (100*UsedBytes) divided by MaxBytes. NOTE: Percent used is Long.

- **Created Processes**: The total number of processes created.
- **Created / sec**: The number of processes created per second.
- **Running Processes**: The number of currently running processes.
- **Active**: The number of currently active processes.
- **Completed**: The total number of completed processes.
- **Aborted**: The total number of aborted processes.
- **Error Count**: The total number of errors.

Click on a node to drill down to the "Single Engine Summary" display to look at number of processes running, threads, history of memory utilization and other performance metrics for a specific engine. Mouse-over nodes to view details about engine performance and status.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to show data for in the display.

**Count:** The total number of engines in the display.

**Active** Number of engines currently active.

**Active Only** If selected, only engines with a status of ACTIVE are displayed. Otherwise, if deselected, all engines for the given Filter/Server selection are displayed.

**Engine Names** Select this check box to display the names of the engines above their respective rectangles in the heatmap.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

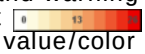
**Metric** Choose a metric to view in the display.

**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.

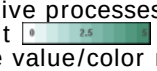
Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

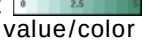
Green indicates that no metrics have exceeded their alert thresholds.

**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 Used %** The percent (%) 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 (%) 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.

**Active Processes** The number of currently active processes 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.

**Running Processes** The number of currently running processes 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.

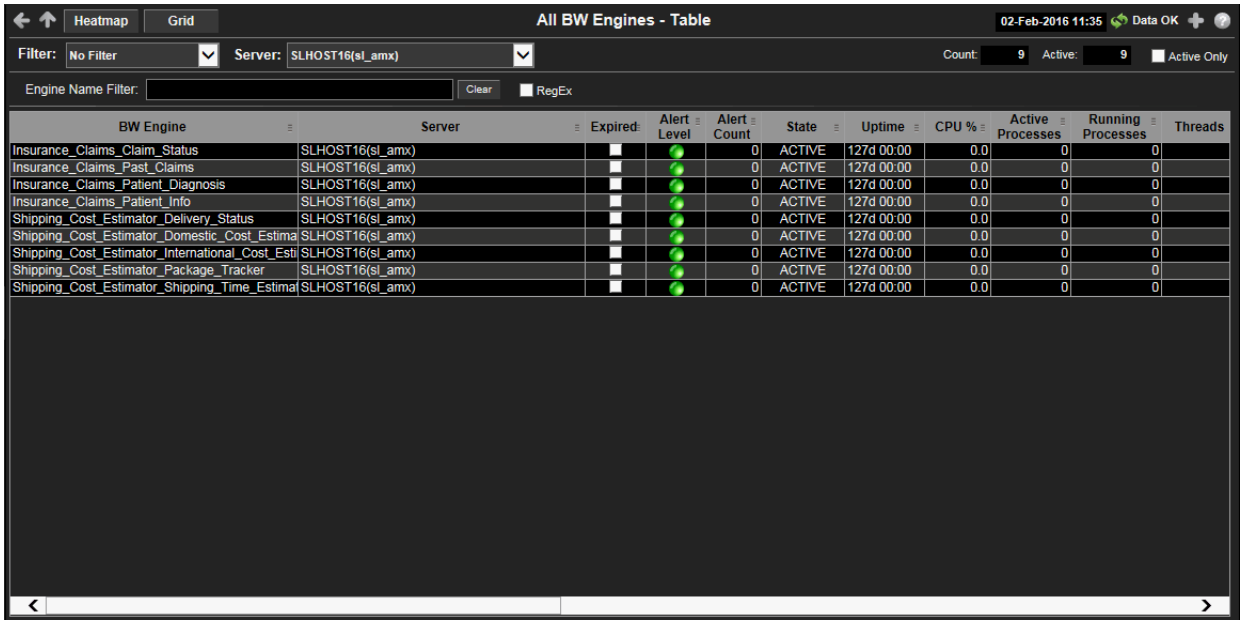
**Created Processes** The number of created processes in the heatmap rectangle. The color gradient bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Created / sec** The number of created processes in the heatmap rectangle, 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Error Count** The total number of errors 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.

## All Engines Table

Each row in the table is an engine. Metrics are made available by the Hawk microagent for the engine (for details, refer to documentation for TIBCO ActiveMatrix Business Works Administration, Appendix A: TIBCO Hawk Microagent Methods). Click on an row to drill down to the "Single Engine 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.

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

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

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

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

**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server:** | Choose a server to show data for in the display. |
| **Count** | Number of engines currently being displayed. |
| **Active** | Number of engines currently active. |
| **Active Only** | If selected, only engines with a status of ACTIVE are displayed. Otherwise, if deselected, all engines for the given Filter/Server selection are displayed. |
| **Engine Name Filter** | Enter all or part of engine name to view specific engines. NOTE: Wild card characters are supported. |
| **Clear** | Removes Engine Name Filter and all engines for the given Filter/ Server selection are displayed. |
| **RegEx** | If selected, the specified Engine Name Filter will be interpreted as a full Regular Expression rather than a simple wildcard. |

**Table:**

| | |
|---|---|
| **BW Engine** | BW Engine name. |
| **Server** | Server agent name. |
| **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. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | Number of current alerts |
| **State** | Engine status: ACTIVE, STOPPED, LIMITED, etc. (See **All Servers Grid**). |
| **Uptime** | Uptime in milliseconds since the engine was started. |
| **CPU %** | Percent of server CPU used by engine. |
| **Active Processes** | Number of active processes calculated each update period using data returned by the Hawk method GetProcesses.<br>**Note:** This column will display **NaN** or **Not Available** for any engine whose status is **STOPPED**. |
| **Running Processes** | Number of running processes. |
| **Threads** | Number of threads used by the engine. |
| **Memory Used%** | Percentage of allocated memory currently consumed by this engine from within the JVM. Equal to the value of: (100*UsedBytes) divided by MaxBytes. NOTE: Percent used is Long. |
| **Max Heap Size** | Maximum heap allocated to this engine for the JVM. |

| | |
|---|---|
| **Total Bytes** | Maximum heap memory this JVM has used. |
| **Used Bytes** | Total bytes of memory within the JVM currently used by the engine. Equal to value of: MaxBytes minus FreeBytes. |
| **Free Bytes** | Amount of available memory from within the JVM. |
| **Mem Usage KBytes** | Server memory in KB used by engine. |
| **Errors** | Total number of errors since the engine was started. |
| **Delta Errors** | Current number of new errors. |
| **Errors/sec** | Error rate per second. |
| **Created Processes** | The total number of processes that were created. |
| **Completed Processes** | The total number of processes that were completed. |
| **Aborted Processes** | The total number of processes that were aborted. |
| **Process ID** | Process ID of engine as recognized by the server. |
| **Micro Agent Instance** | Unique ID of the microagent reporting the metrics. |
| **Deployment** | Name of Deployment. |
| **Domain** | Name of Domain. |
| **BW Version** | The TIBCO BusinessWorks version currently in use on the server. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |
| **Time Stamp** | Time of last update. |
| **Process Name** | Name of the BW Engine process on the server.<br>Note: This information is not displayed in the table but is present in "raw" cache data. |
| **Host** | Host name of server.<br>Note: This information is not displayed in the table but is present in "raw" cache data. |
| **Adapter Name** | Name of adapter.<br>Note: This information is not displayed in the table but is present in "raw" cache data. |
| **Instance ID** | Instance ID name of the engine.<br>Note: This information is not displayed in the table but is present in "raw" cache data. |
| **Version** | Engine project version number.<br>Note: This information is not displayed in the table but is present in "raw" cache data. |

## All Engines Grid

Displays the main health metrics and a single trend graph per engine, summarizing the status of each BW5 Engine. Click on an engine icon to drill down to the "Single Engine 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.

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

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

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

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

**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server:** | Choose a server to show data for in the display. |
| **Count** | Number of engines currently being displayed. |
| **Active** | Number of engines currently active. |
| **Active Only** | Toggle this setting to display active servers or all servers. |
| **Time Range** | Choose a time range. Also sets range for the **Single Engine Summary** display. Options are:<br>**All Data**, **2 Mins**, **5 Mins**, **20 Mins**, **1 Hour, 2 Hours**, **4 Hours**, **8 Hours**, **24 Hours**, **2 Days and 7 Days**. |

**Fields and Data**

**Engine Name** Name of the engine.

**Status** Indicates the current state of the engine:

- **ACTIVE** Indicates the BW microagent is providing live data and the engine is assumed active.
- **SUSPENDED** This state is reported by the BW microagent.
- **STANDBY** This state is reported by the BW microagent.
- **STOPPING** This state is reported by the BW microagent.
- **STOPPED** This state is reported by the BW microagent.
- **LIMITED** Live data has been received from TIBCO, but deployment data from the custom RTView microagent has not been received.
- **EXPIRED** Indicates the server associated with the engine is unavailable or stopped sending data. A server is EXPIRED when the threshold specified by the $bwserverExpirationTime substitution is exceeded. The default is 75 seconds. An EXPIRED engine is deleted from displays when the associated server $bwserverExpirationTimeForDelete substitution exceeds its specified threshold. The default is 3600 seconds. Processes and activities associated with the engine are also deleted from displays.

**CPU Usage%** Percent of server CPU in use.

**Mem Usage%** Available physical memory (MB) remaining.

**Error Rate** Number of errors accumulated per second.

**Total Processes** Number of process definitions for this engine.

**Active Processes** Number of process instances currently active.

**Trend Graphs**
Traces data for the server.

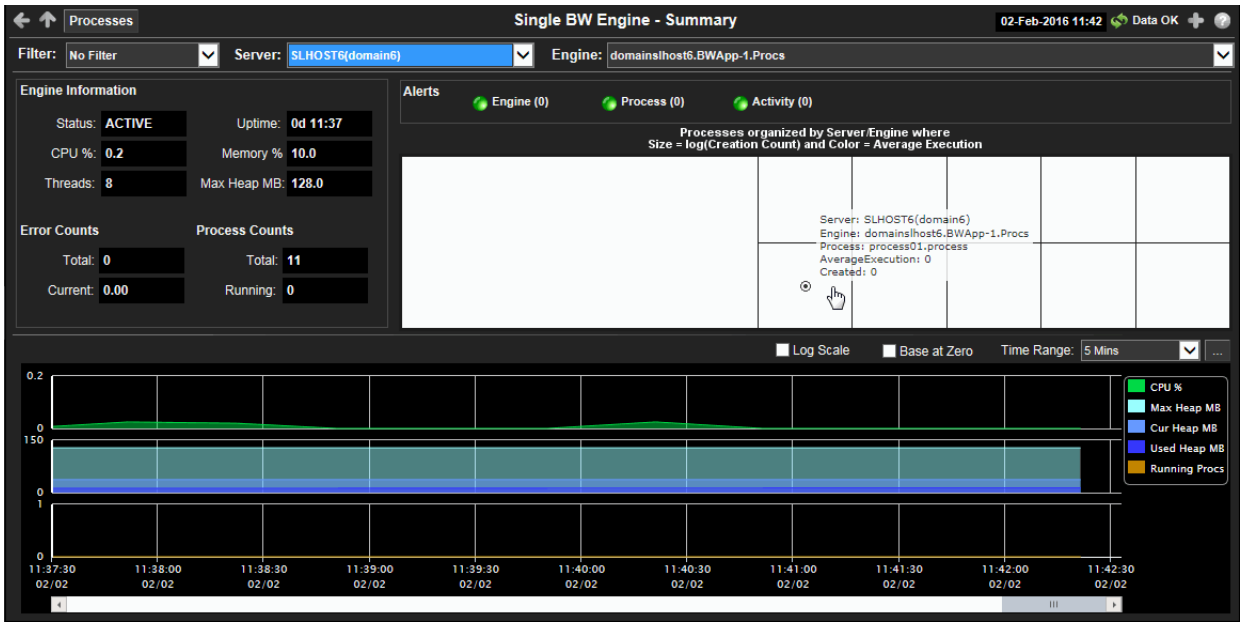
**CPU** Traces percent of server CPU in use.

**MEM** Traces available physical memory remaining.

**PROCS** Traces total number of active processes.

## Single Engine Summary

Several views show historical and current performance metrics for a single engine, including the number of processes running, threads, history of memory utilization, and trend graphs of memory utilization. In this display, when an engine is **Stopped** the engine name is appended with **(X)**, the background color is light red and Uptime is zero.




**Title Bar** (possible features are):

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

---

**Note:** Clicking the **Processes** button in the Title Bar takes you to the "All Processes Heatmap". Clicking the **JVM** button, which is automatically enabled when a JMX connection is defined for the engine, takes you to the **JVM CPU/Mem Summary** display. See **Enable Monitoring Via JMX** for more information on enabling a JMX connection.

---

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to show data for in the display.

**Engine:** Choose an engine to show data for in the display. An engine is not running when the engine name is appended with **(X)**.

### Fields and Data

#### Engine Information

| | | |
|---|---|---|
| **Status** | **ACTIVE** | The BW microagent is providing live data and the engine is assumed active. |
| | **SUSPENDED** | This state is reported by the BW microagent. |
| | **STANDBY** | This state is reported by the BW microagent. |
| | **STOPPING** | This state is reported by the BW microagent. |
| | **STOPPED** | This state is reported by the BW microagent. |
| | **LIMITED** | Live data has been received from TIBCO, but deployment data from the custom RTView MicroAgent has not been received. |
| | **EXPIRED** | The associated server for the engine is currently in an EXPIRED state and is unavailable or stopped sending data.<br>A server is EXPIRED when the threshold specified by the $bwserverExpirationTime substitution is exceeded. The default is 75 seconds.<br>An EXPIRED server is deleted from displays when the threshold specified by the $bwserverExpirationTimeForDelete substitution is exceeded. The default is 3600 seconds. Engines, processes and activities associated with the server are also deleted from displays. |
| **Uptime** | Days hours and minutes since the engine was started. | |
| **CPU %** | Percent of server CPU used by engine. | |
| **Memory %** | Available physical memory remaining (in MB). | |
| **Threads** | Number of threads used by this engine | |
| **Max Heap MB** | Maximum heap allocated to this engine for the JVM. | |

#### Error Counts

| | |
|---|---|
| **Total** | Total errors accumulated by this engine. |
| **Current** | Number of errors accumulated this update cycle. |

#### Process Counts

| | |
|---|---|
| **Total** | A BW Engine runs processes by creating instances of process definitions and making them active. A given process instance has a lifetime during which it may be suspended, swapped, queued, etc. until it is either completed or aborted.<br>The Total value is calculated using the Hawk method named GetProcessDefinitions that returns statistics about the instances of each process definition including cumulative counts of completed, aborted, suspended, etc. |
| **Running** | Total number of running process instances. This number is calculated using the Hawk method named GetProcessCount. It is displayed in the Monitor Engines Table as RunningProcesses. The trend below displays the same value over time as Running Procs. |

**Alerts**
Click on any alert indicator to drill down to the **BW Engine - Tables** display to view current alerts for the selected engine.

**Engine** Number of engine alerts and the most critical alert state for the engine:
- 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.

**Process** Number of process alerts and the most critical alert state for the engine:
- 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.

**Activity** Number of activity alerts and the most critical alert state for the engine:
- 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.

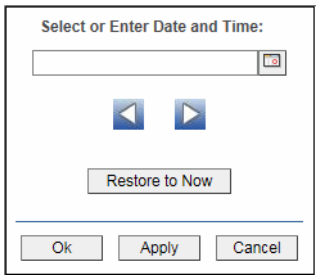
**Heatmap**
Shows processes organized by Server/Engine where Size = Creation Count and Color = Average Execution. Click on a node to drill down to a specific engine.

**Trend Graphs**

**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.

# BW Processes

These displays present performance metrics for BW5 processes. Displays in this View are:

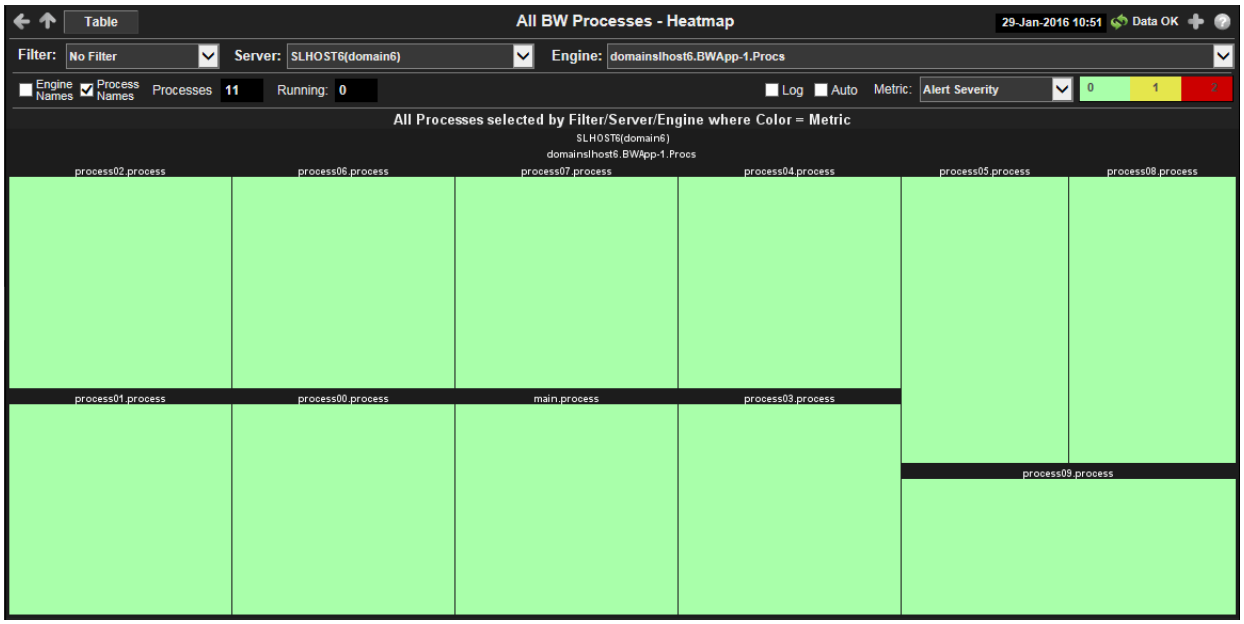
- "All Processes Heatmap" on page 113: Displays process execution metrics for all BW Engines.
- "All Processes Table" on page 116: Each row in the table displays all available metrics from the Hawk microagent for a process.
- "Single Process Summary" on page 119: Several views show historical and current metrics for a single process, including average execution times and execution counts.

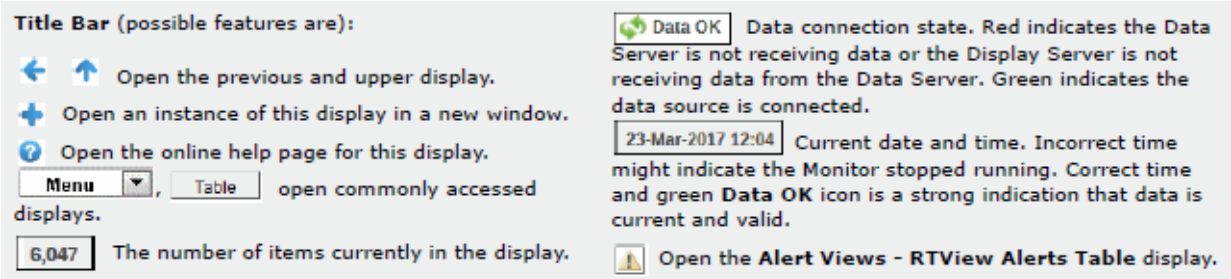
## All Processes Heatmap

Summary view of processes can show the execution times for all processes on all engines or you can filter to look at specific servers or engines. Each rectangle (node) in the heatmap represents a process. Move your mouse over a node to display current metrics. Click on a node to drill-down to the "Single Process Summary" display to view specific metrics about process behavior over a specified period of time and determine which activity in the process may be causing the bottleneck.

An engine is not running when the engine name is appended with **(X)**.

Mouse-over any node to display the current values for the metric selected from the **Metric** drop-down menu.



**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to show data for in the display.

**Engine:** Choose an engine to show data for in the display. An engine is not running when the engine name is appended with **(X)**.

**Engine Names** Select this check box to display the names of the engines above their respective rectangles in the heatmap.

**Process Names** Select this check box to display the names of the processes above their respective rectangles in the heatmap.

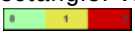
**Processes** The total number of processes in the display.

**Running** Number of processes currently running.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

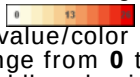
**Metric** Choose a metric to view in the display.

**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.

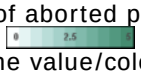
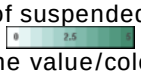
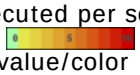
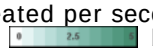
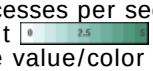
Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

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.

**Completed Count** The total number of completed processes 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.

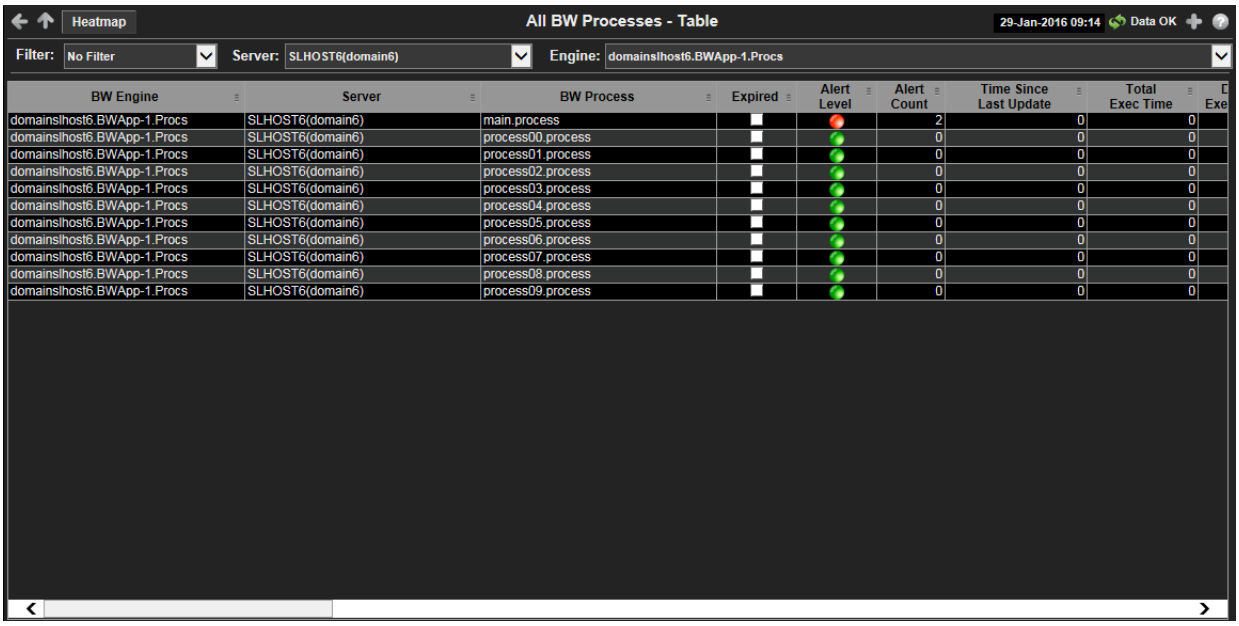
**Active Count** The total number of active processes in the heatmap rectangle. The color gradient bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

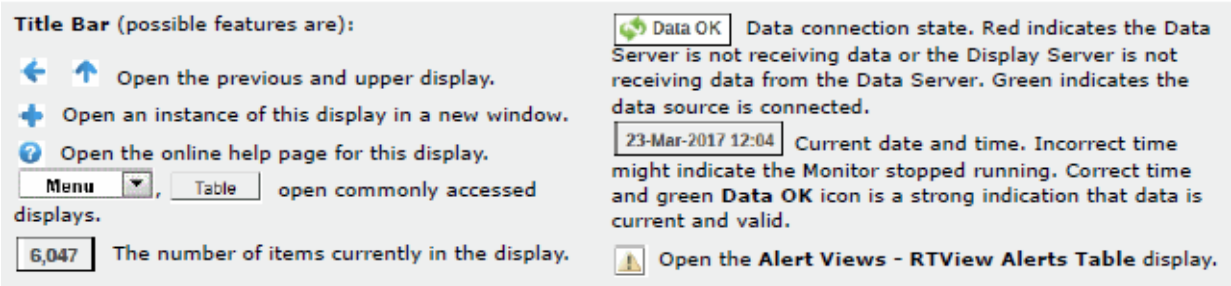
| | |
|---|---|
| **Aborted Count** | The total number of aborted processes in the heatmap rectangle. The color gradient  bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Suspended Count** | The total number of suspended processes 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. |
| **Exec Time / sec** | The number of processes executed 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Created / sec** | The number of processes created 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Aborted / sec** | The number of aborted processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Suspended / sec** | The number of suspended processes 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count. |
| **Most Recent Exec Time** | The execution time for the most recently executed process 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. |
| **Average Exec Time** | The average execution time for all processes in the heatmap rectangle, calculated by dividing the delta execution time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |
| **Most Recent Elapsed Time** | The elapsed time for the most recently executed process 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. |
| **Average Elapsed Time** | The average elapsed time for all processes in the heatmap rectangle, calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval. 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. |

## All Processes Table

Select a server and engine from the drop-down menus. Each row in the table is a different engine. The table displays all metrics available from the Hawk microagent for an engine. (Refer to documentation for TIBCO ActiveMatrix Business Works Administration, see Appendix A: TIBCO Hawk Microagent Methods).

Click on a row in the table to drill down to the "Single Engine Summary" display.




**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Create Customized Filters** for more information. |
| **Server:** | Choose a server to show data for in the display. |
| **Engine:** | Choose an engine to show data for in the display. An engine is not running when the engine name is appended with **(X)**. |

**Table:**

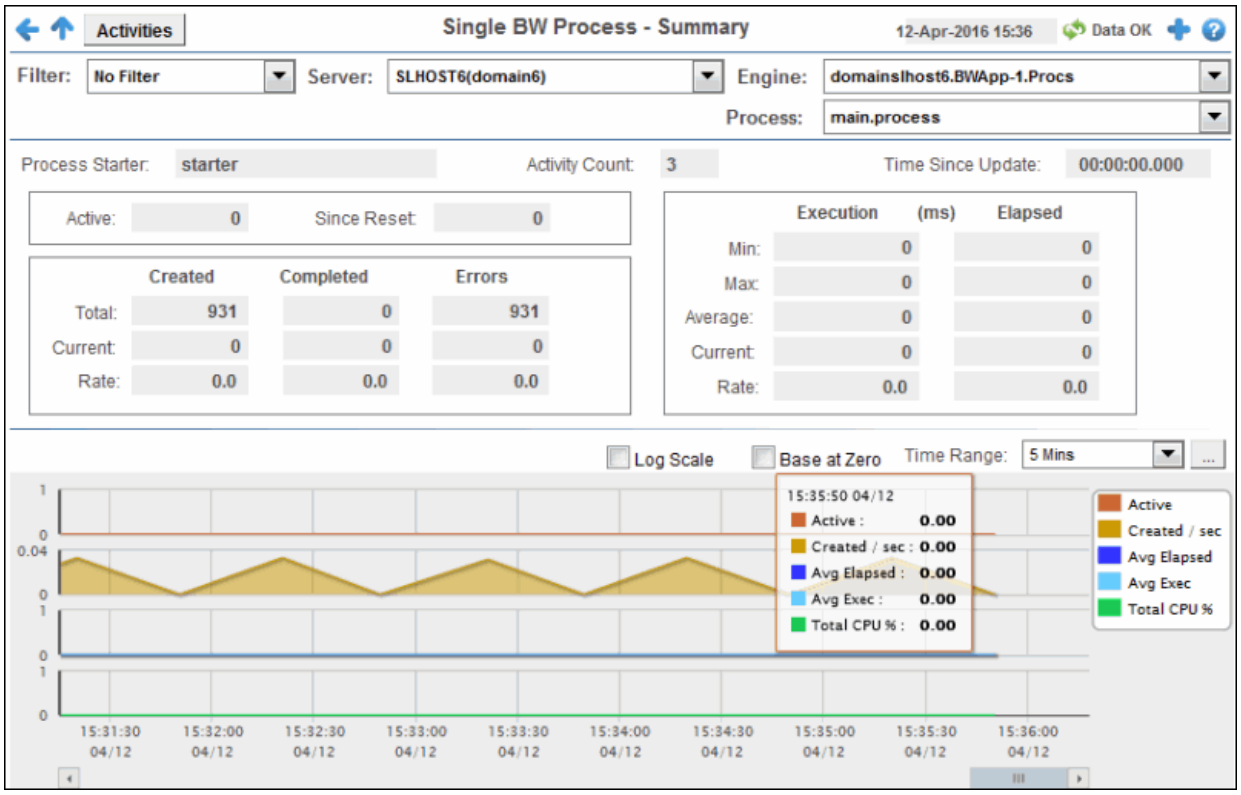
| | |
|---|---|
| **BW Engine** | BW Engine name. |
| **Server** | Server agent name. |

| | |
|---|---|
| **BW Process** | The name of the process. |
| **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. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Alert Count** | Number of current alerts |
| **Active** | Number of active processes. |
| **Total CPU** | Total CPU usage in percent. |
| **Created / sec** | Change in Created per second. |
| **Completed / sec** | Change in Completed per second. |
| **Delta Created** | Change in Created this update. |
| **Delta Completed** | Change in Completed this update. |
| **Created** | Number of process instances created for this process definition. |
| **Completed** | Number of process instances successfully completed. |
| **Total Exec Time** | Total execution time (in milliseconds) for all successfully completed process instances. |
| **Delta Exec Time** | Execution time accumulated during the current polling period. |
| **Exec Time / sec** | Delta execution time per second. |
| **Min Exec Time** | Execution time (in milliseconds) of the process instance that has completed in the shortest amount of execution time. |
| **Max Exec Time** | Execution time (in milliseconds) of the process instance that has completed in the longest amount of execution time. |
| **Average Exec Time** | Average execution time (in milliseconds) for all successfully completed process instances. |
| **Recent Exec Time** | Execution time (in milliseconds) of the most recently completed process instance. |
| **Total Elapsed Time** | Total elapsed time (in milliseconds) for all successfully completed process instances. |
| **Delta Elapsed Time** | Elapsed time accumulated during the current polling period. |
| **Elapsed Time / sec** | Delta elapsed time per second. |
| **Min Elapsed Time** | Elapsed clock time (in milliseconds) of the process instance that has completed in the shortest amount of elapsed time. |
| **Max Elapsed Time** | Elapsed clock time (in milliseconds) of the process instance that has completed in the longest amount of elapsed time. |
| **Average Elapsed Time** | Average elapsed clock time (in milliseconds) for all successfully completed process instances. |

| | |
|---|---|
| **Recent Elapsed Time** | Elapsed clock time (in milliseconds) of the most recently completed process instance. |
| **Aborted** | Number of times process instances have been aborted. |
| **Delta Aborted** | Change in Aborted this update. |
| **Aborted/sec** | Change in Aborted per second. |
| **Queued** | Number of times process instances have been queued for execution. |
| **Delta Queued** | Change in Queued this update. |
| **Queued/sec** | Change in Queued per second. |
| **Suspended** | Number of times process instances have been suspended. |
| **Delta Suspended** | Change in Suspended this update. |
| **Suspended/sec** | Change in Suspended per second. |
| **Checkpointed** | Number of times process instances have executed a checkpoint. |
| **Delta Checkpointed** | Change in Checkpointed this update. |
| **Checkpointed/sec** | Change in Checkpointed per second. |
| **Swapped** | Number of times process instances have been swapped to disk. |
| **Delta Swapped** | Change in Swapped this update. |
| **Swapped/sec** | Change in Swapped per second. |
| **Time Since Last Update** | Time since the last update. |
| **Domain** | Name of TIBCO Domain. |
| **Starter** | Name of the process starter for the process. |
| **MicroAgent Instance** | Unique ID of the microagent reporting the metrics. |
| **CountSince Reset** | Number of process instances that have completed since the last reset of the statistics. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |
| **Time Stamp** | Time of last update. |

## Single Process Summary

Detailed performance metrics and alert status for a single BW process. Select a server, engine and process from the drop-down menus. The background color of the display is light red when the selected engine is stopped.




**Title Bar** (possible features are):

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

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to see metrics for.

**Engine:** Choose a server to see metrics for. An engine is not running when the engine name is appended with **(X)**.

**Process:** Choose a process to see metrics for.

| | |
|---|---|
| **Process Starter** | Name of the process starter for the process. |
| **Activity Count** | Number of activities defined for this process. |
| **Time Since Update** | Time since the last update to file of statistics. |

**Active** Number of active instances for this process definition. This number is calculated using the Hawk method named GetProcesses. This method returns information about process instances that are active at the time of update. The value here displays the current total count of all active instances discovered for this process definition. The trend below displays the same value over time.

**Since Reset** Number of activity executions that have completed since the last reset of the statistics. This is the number retrieved from the Hawk method named GetProcessDefinition which returns ExecutionCountSinceReset.

**Execution Counts**
Most recent execution counts for this process.

| | | |
|---|---|---|
| **Created** | **Total** | Number of process instances created for this process definition. |
| | **Current** | Number of process instances created this update cycle. |
| | **Rate** | Number of process instances created per second. |
| **Completed** | **Total** | Number of process instances successfully completed. |
| | **Current** | Number of process instances successfully completed this update cycle. |
| | **Rate** | Number of process instances successfully completed per second. |
| **Errors** | **Total** | Number of errors accumulated by all process instances. |
| | **Current** | Number of errors accumulated this update cycle. |
| | **Rate** | Number of errors accumulated per second. |

**Execution (ms) Elapsed**
Execution and elapsed times in milliseconds for this process.

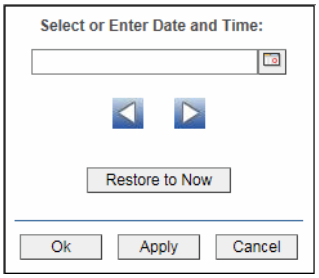
| | |
|---|---|
| **Min** | Shortest time of any process instance. |
| **Max** | Longest time of any process instance. |
| **Average** | Average time across all successfully completed process instances. |
| **Current** | Time accumulated this update cycle. |
| **Rate** | Time accumulated per second. |

**Trend Graphs**
- **Active**: Traces the number of currently active processes.
- **Created / sec**: Traces the number of created processes per second.
- **Avg Elapsed:** Traces the average number of elapsed processes. This value is calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval.
- **Avg Exec**: Traces the average number of executed processes. This value is calculated by dividing the delta executed time for the interval by the delta completed, or the number of process instances that completed in the interval.
- **Total CPU %**: Traces CPU utilization by processes, in percent.

**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.

# BW Activities

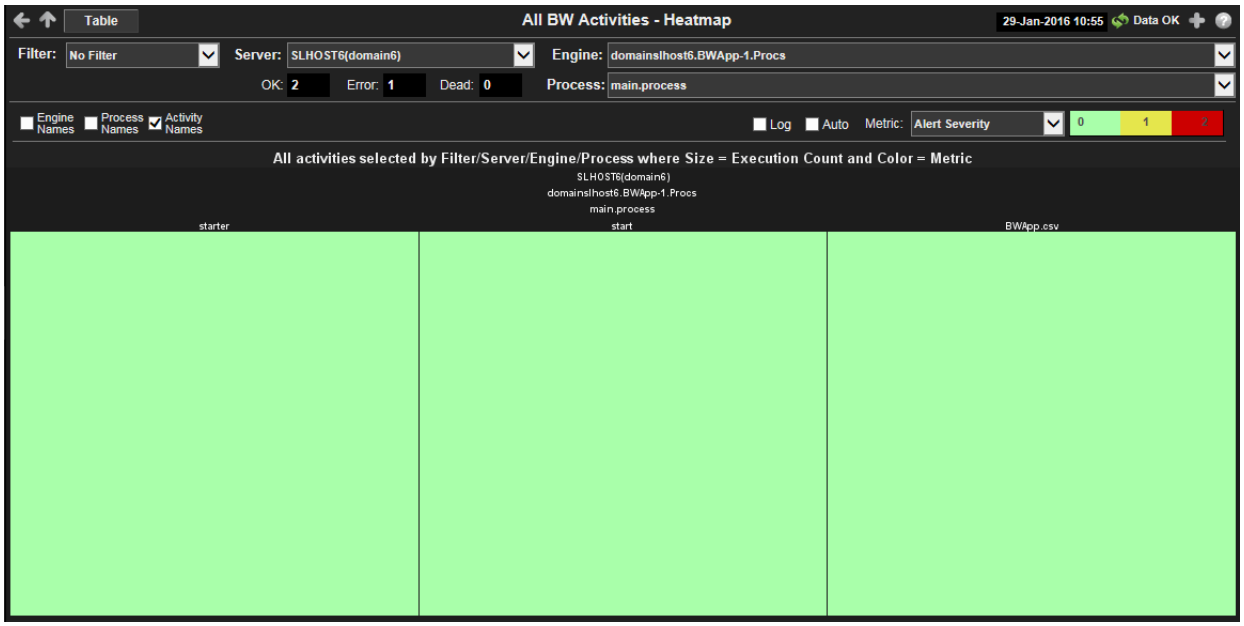
These displays present performance metrics for BW5 activities. Displays in this View are:

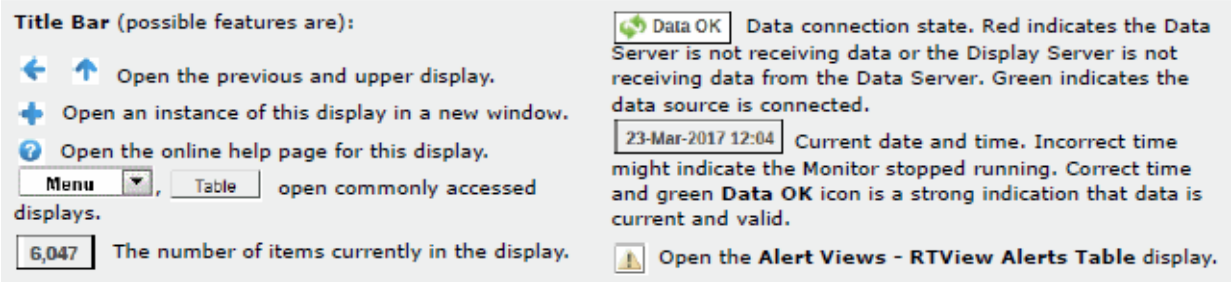
- "All Activities Heatmap" on page 121: Displays execution performance metrics for all BW activities.
- "All Activities Table" on page 124: Each row in the table displays all available metrics from the Hawk microagent for an activity.
- "Single Activity Summary" on page 127: Historical and current performance metrics for a single activity, including average execution times and execution counts.

## All Activities Heatmap

Summary view of activities shows the execution times for all activities on all engines, or you can filter to look at specific servers, engines or processes. An engine is not running when the engine name is appended with **(X)**.

Move your mouse over a node to display current metrics. Click on a node to drill down to the "Single Activity Summary" display to view specific metrics about activity behavior over a specified period of time.




**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server:** | Choose a server to show data for in the display. |
| **Engine:** | Choose an engine to show data for in the display. An engine is not running when the engine name is appended with **(X)**. |
| **Process** | Select from the menu to view activities running on a specific process or all processes. |
| **OK** | Number of activities that reported their Last Return Code as **OK**. |
| **Error** | Number of activities that reported their Last Return Code as **Error**. |
| **Dead** | Number of activities that reported their Last Return Code as **Dead**. |
| **Engine Names** | Select this check box to display the names of the engines above their respective rectangles in the heatmap. |

**Process Names** Select this check box to display the names of the processes above their respective rectangles in the heatmap.

**Activity Names** Select this check box to display the names of the activities above their respective rectangles in the heatmap.

**Log** 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.

**Auto** Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected.

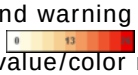
**Metric** Choose a metric to view in the display.

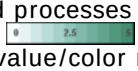
**Alert Severity** The maximum level of alerts in the heatmap rectangle. Values range from **0** - **2**, as indicated in the color gradient bar, where **2** is the highest Alert Severity:

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

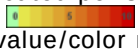
Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

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.

**Exec Count** The total number of executed processes 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.

**Error Count** The total number of errors 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.

**Exec Time / sec** The number of processes executed 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Errors / sec** The number of errors 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 maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

| | |
|---|---|
| **Most Recent Exec Time** | The execution time for the most recently executed process 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. |
| **Max Exec Time** | The maximum execution time for executed processes 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. |

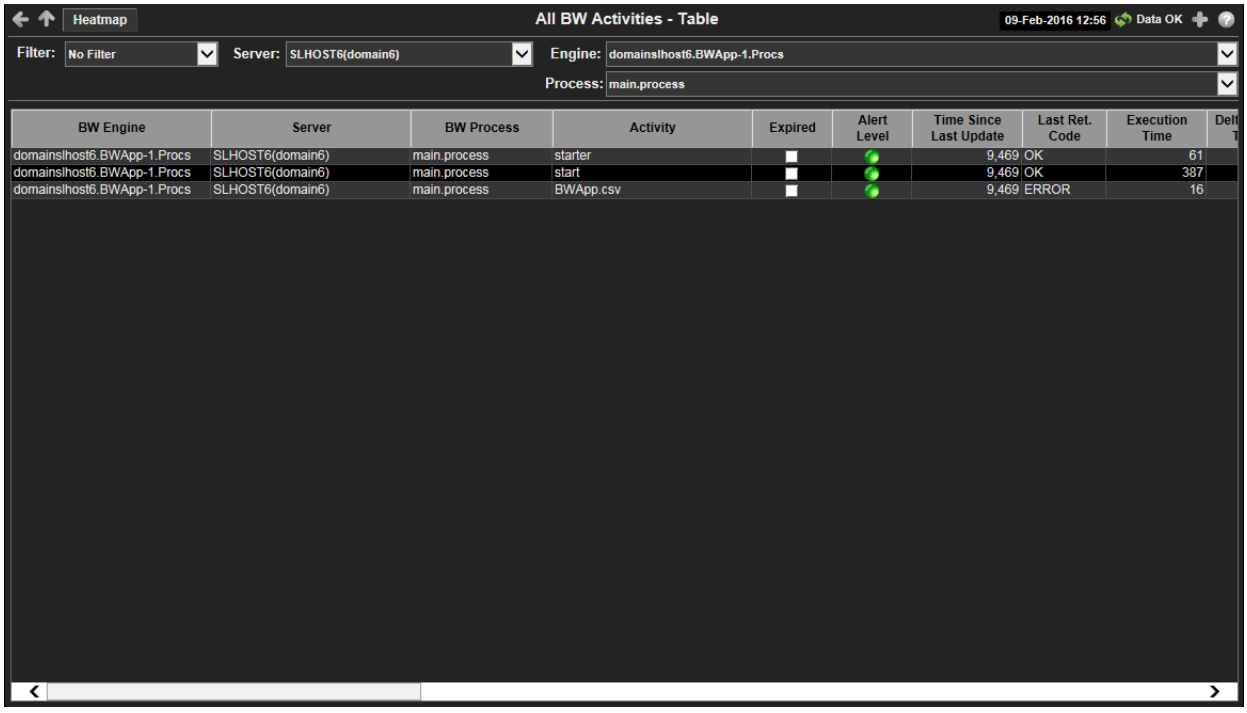
## All Activities Table

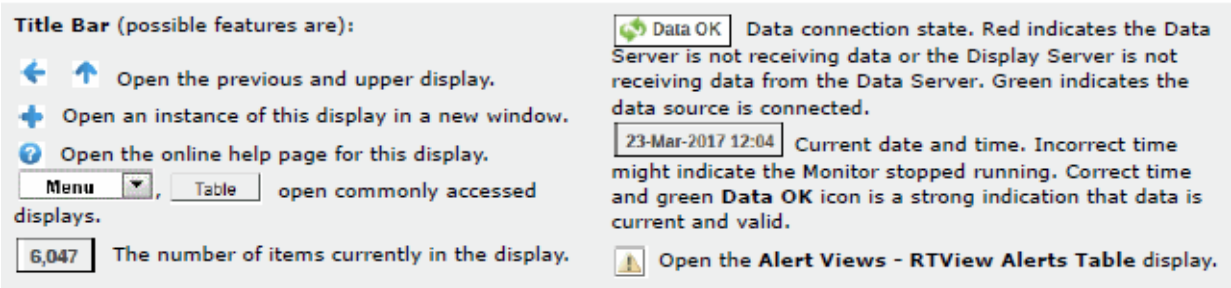
Select a server, engine and process from the drop-down menus. Each row in the table displays all metrics available from the Hawk microagent for an activity. (Refer to documentation for TIBCO ActiveMatrix Business Works Administration, see Appendix A: TIBCO Hawk Microagent Methods).

Click on a row in the table to drill down to the "Single Activity Summary" display to view specific metrics about activity behavior over a specified period of time.

When a row changes color, the associated engine for the activity is in an EXPIRED state. An engine is EXPIRED when the associated server is unavailable or stopped sending data. A server is EXPIRED when the threshold specified by the **$bwserverExpirationTime** substitution is exceeded. The default is **600** seconds.

An EXPIRED activity and the associated engine are deleted from displays when the associated server **$bwserverExpirationTimeForDelete** substitution exceeds its specified threshold. The default is **3600** seconds. Processes associated with the engine are also deleted from displays.






**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server:** | Choose a server to show data for in the display. |
| **Engine:** | Select from the menu to view activities running on a specific engine or all engines. An engine is not running when the engine name is appended with **(X)**. |
| **Process:** | Select from the menu to view activities running on a specific process or all processes. |

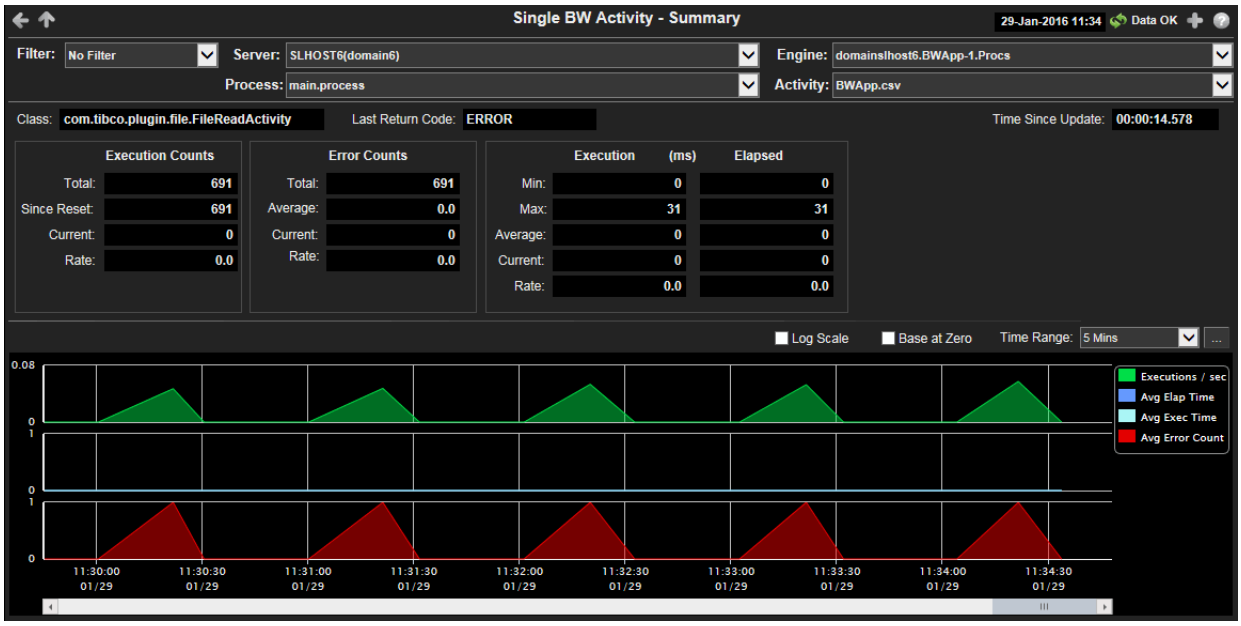
**Table:**

| | |
|---|---|
| **BW Engine** | Name of BW Engine. |
| **Server** | Name of Server agent. |
| **BW Process** | Name of the BW engine Process on the Server. |
| **Activity** | Name of activity. |
| **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. |
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **Time Since Last Update** | Time since the last update. |
| **Last Ret(urn) Code** | Status code (OK DEAD ERROR) returned by most recent execution of this activity. |
| **Execution Time** | Time (in milliseconds) used by all executions of this activity. NOTE: This does not include wait time for Sleep, Call Process, and Wait For... activities. |
| **Delta Exec(ution) Time** | Execution time accumulated this update cycle. |
| **Exec(ution) Time / sec** | Execution time accumulated per second. |

| | |
|---|---|
| **Min Exec(ution) Time** | Time (in milliseconds) of the activity that has the shortest execution time. |
| **Max Exec(ution) Time** | Time (in milliseconds) of the activity that has the longest execution time. |
| **Elapsed Time** | Elapsed clock time (in milliseconds) used by all executions of this activity. NOTE: This does not include wait time for Sleep, Call Process, and Wait For... activities. |
| **Delta Elapsed Time** | Change in ElapsedTime this update. |
| **Elapsed Time/sec** | Change in ElapsedTime per second. |
| **Min Elapsed Time** | Elapsed clock time (in milliseconds) of the activity that has the shortest execution time. |
| **Max Elapsed Time** | Elapsed clock time (in milliseconds) of the activity that has the longest execution time. |
| **Executions** | Number of times the activity has been executed. |
| **Delta Exec(ution)** | Change in ExecutionCount this update. |
| **Executions/sec** | Change in ExecutionCount per second. |
| **Errors** | Total number of executions of the activity that have returned an error. |
| **Delta Errors** | Change in ErrorCount this update. |
| **Errors/sec** | Change in ErrorCount per second. |
| **Domain** | Name of TIBCO Domain. |
| **ActivityClass** | Name of the class that implements the activity. |
| **CalledProcessDefs** | A comma-separated list of definitions called by this activity. |
| **Tracing** | • **true** Tracing is enabled for this activity.<br>• **false** Tracing is disabled for this activity. |
| **MicroAgentInstance** | Unique ID of the microagent reporting the metrics. |
| **ExecutionCountSince Reset** | Number of times the activity has been executed since the last reset of the statistics. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |
| **Time Stamp** | Time of this update. |

## Single Activity Summary

Detailed performance metrics and alert status for a single BW activity. In this display, when an engine associated with the activity is **Stopped** the engine name is appended with **(X)** and the background color is light red .




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server:** | Select from the menu to view processes running on a specific server. |
| **Engine:** | Select from the menu to view processes running on a specific engine. An engine is not running when the engine name is appended with **(X)**. |
| **Process:** | Select from the menu to view summary details for a specific process. |
| **Activity** | Select from the menu to view summary details for a specific activity. |
| **Class** | Name of the activity class. |
| **Last Return Code** | Last return code reported from this activity. |

**Time Since Update** Time since the last update.

**Execution Counts**
Most recent execution counts for this activity.

**Total** Number of times the activity has been executed.

**Since Reset** Number of times the activity has been executed since the last Hawk reset of the statistics.

**Current** Change in ExecutionCount this update.

**Rate** Change in Execution Count per second.

**Error Counts**
Most recent error counts for this activity.

**Total** Number of errors accumulated by all activities.

**Average** Average number of errors accumulated by all activities.

**Current** Number of errors accumulated this update cycle.

**Rate** Number of errors accumulated per second.

**Execution (ms) Elapsed**
Execution and elapsed times in milliseconds for this activity.

**Min** Shortest time of any activity instance.

**Max** Longest time of any activity instance.

**Average** Average time across all successfully completed activity instance.

**Current** Time accumulated this update cycle.

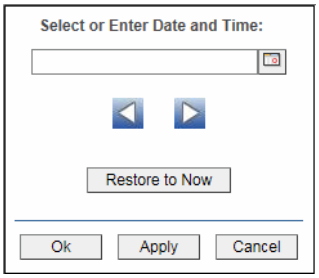
**Rate** Time accumulated per second.

**Trend Graphs**

**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.

# BW Servers

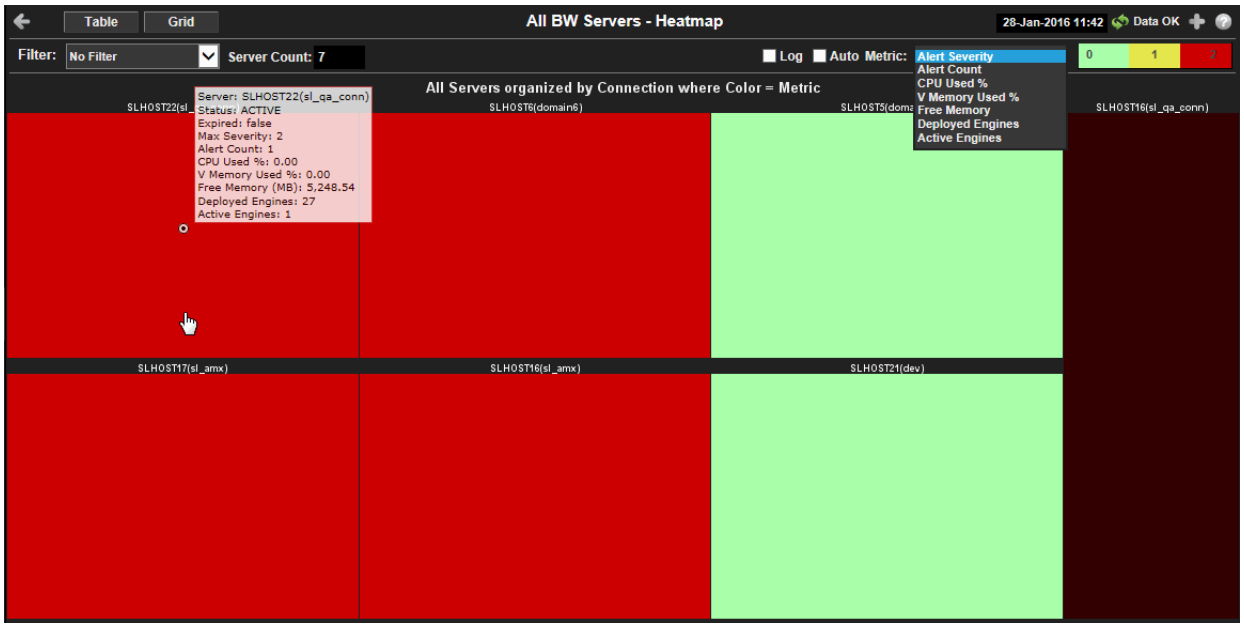
These displays present performance data for your BusinessWorks system. Displays in this View are:

- “All Servers Heatmap” on page 129
- “All Servers Table” on page 132
- “All Servers Grid” on page 133
- “Single Server Summary” on page 135
- “Server Processes” on page 137
- “Single Server Process - Summary” on page 138

## All Servers Heatmap

Quick view of BW Servers status determined by selected Filter, organized by Connection (host) and where color equals the selected Metric. Each rectangle (node) in the heatmap represents a server.

Click on a node to drill down to the "Single Server Summary" display and view metrics for a particular server. Mouse-over any node to display the current values for the metric selected from the Metric drop-down menu.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to limit data shown in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **Server Count:** | The total number of servers in the display. |
| **Log** | 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. |
| **Auto** | Select to enable auto-scaling. When auto-scaling is activated, the color gradient bar's maximum range displays the highest value. NOTE: Some metrics auto-scale automatically, even when **Auto** is not selected. |
| **Metric** | Choose a metric to view in the display. |

**Alert Severity**

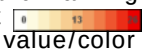
The maximum level of alerts in the heatmap rectangle. Values range from **0** - **2**, as indicated in the color gradient bar, where **2** is the highest Alert Severity:

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

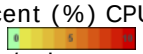
Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.

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.

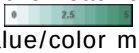
**CPU Used%**

The percent (%) 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.

**V(irtual) Memory Used%**

The percent (%) 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.

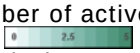
**Free Memory**

The amount of free memory in the heatmap rectangle, in megabytes. 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.

**Deployed Engines**

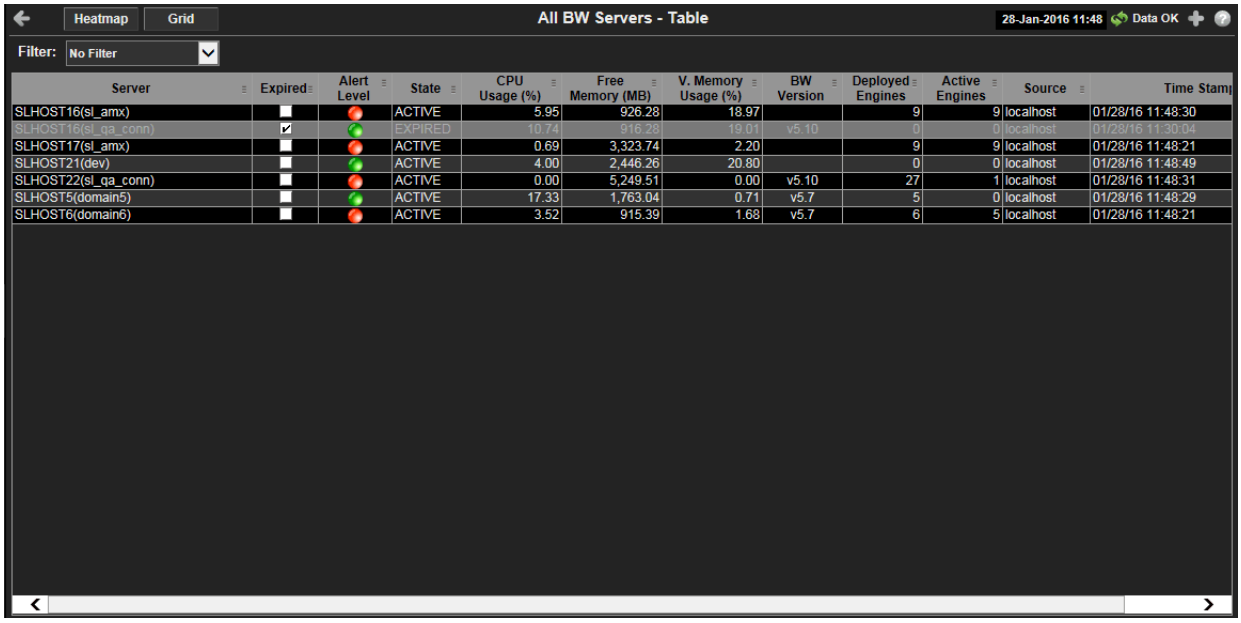
The number of deployed engines in the heatmap rectangle. The color gradient bar, populated by the current heatmap, shows the value/color mapping. The numerical values in the gradient bar range from **0** to the maximum count of alerts in the heatmap. The middle value in the gradient bar indicates the average count.

**Active Engines**

The number of active engines 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.

## All Servers Table

This table provides a list view of utilization metrics for all BW servers (represented in the All Servers Heatmap). Each row in the table contains data for a particular server. Click a column header to sort column data in numerical or alphabetical order. Click on a table row to drill down to the "Single Server Summary" display and view metrics for that particular server.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Table:**

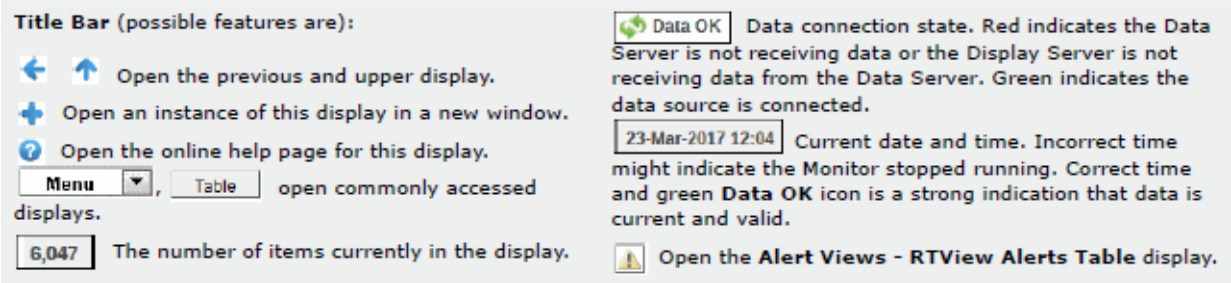
**Server** Name of Server Agent.

**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.

| | |
|---|---|
| **Alert Level** | The most critical alert state for alerts in the row:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics have exceeded their alert thresholds. |
| **State** | The current status of the application. Valid values are **Running** and **Stopped**. |
| **CPU Usage (%)** | Percent of server CPU in use. |
| **Free Memory (MB)** | Available physical memory (MB) remaining. |
| **V. Memory Usage (%)** | Percent of virtual memory used. |
| **BW Version** | The TIBCO BusinessWorks version currently in use on the server. |
| **Deployed Engines** | Total number of engines deployed on the server. |
| **Active Engines** | Number of engines currently active. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |
| **Time Stamp** | Time this data was retrieved. |

## All Servers Grid

This grid provides a list view of utilization metrics for all BW servers (represented in the All Servers Heatmap). Track and view in parallel the general performance of all BW servers. Click on a node to drill down to the "Single Server Summary" display and view detailed metrics for that particular server.




**Filter By:**
The display might include these filtering options:

| | |
|---|---|
| **Filter:** | Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide. |
| **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**. |

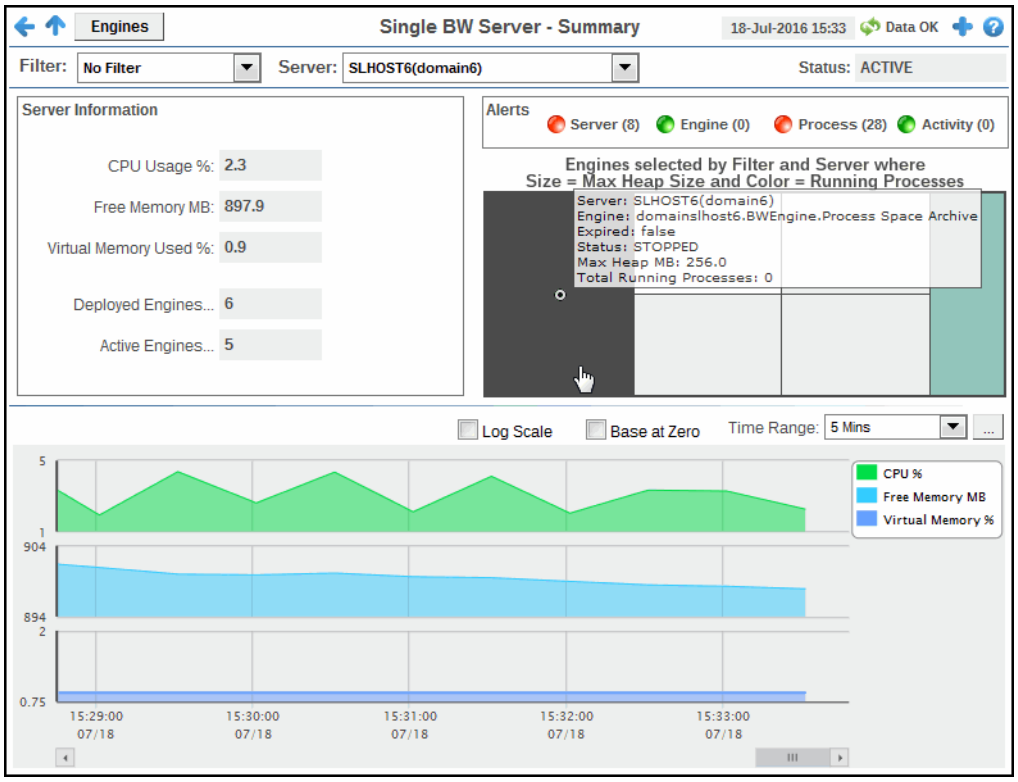
**Fields and Data**

| | |
|---|---|
| **Server Name** | Name of the server. |
| **CPU Usage%** | Percent of server CPU in use. |
| **Free Memory** | Available physical memory (MB) remaining. |
| **Virtual Mem Used%** | Percent of virtual memory used. |
| **State** | Server status: ACTIVE or EXPIRED. |
| **Deployed Engines** | Total number of engines deployed on the server. |
| **Active Engines** | Number of engines currently active. |
| **Trend Graphs** | Shows data for the server. |

| | |
|---|---|
| **CPU** | Traces percent of server CPU in use. |
| **MEM** | Traces available physical memory remaining. |
| **VMEM** | Traces the percent of virtual memory used. |

## Single Server Summary

Detailed performance metrics and alert status for a single BW server. Click on any alert indicator to drill down to the **BW Server - Tables** display to view current alerts for the selected server.




**Title Bar** (possible features are):

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

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to see metrics for.

**Status** Server status: ACTIVE or EXPIRED.

**Server Information**

**CPU Usage (%)** Percent of server CPU in use. Values are traced in trend graph (below).

| | |
|---|---|
| **Free Memory (MB)** | Available physical memory remaining (in MB). Values are traced in trend graph (below). |
| **V. Memory Usage (%)** | Percent of virtual memory used. Values are traced in trend graph (below). |
| **Deployed Engines** | Number of engines currently active. Click to drill-down to details for deployed and active engines in the "All Engines Table" on page 105 display. |
| **Active Engines** | Shows data for the server. Click to drill-down to details for active engines in the "All Engines Table" on page 105 display. |

**Alerts**
The number of alerts on servers, engines, processes and activities and the most critical alert state for each:

- 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.

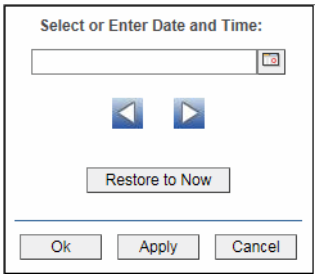
Click on any alert indicator to drill down to the **BW Server - Tables** display to view current alerts for the selected server.

**Heatmap**
Engines selected by Filter and Server, where the heatmap rectangle size = Max Heap Size and the heatmap rectangle color = Running Processes. Dark green is the highest value for the metric shown). Click on a node to drill down to a specific engine:

- Red indicates that the engine is expired.
- Gray indicates that the engine is stopped.

**Trend Graphs**
Traces **CPU %**, **Free Memory MB** and **Virtual Memory %**.

| | |
|---|---|
| **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.

## Server Processes

Detailed information about operating system processes of a single BW Server. The heatmap shows server processes selected by Filter and Server, where the rectangle size equals memory usage and the rectangle color equals CPU percent usage.

NOTE: By default, this display is not enabled. For details, see **Enable BW Servers**.

**Title Bar** (possible features are):

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

**Filter By:**
The display might include these filtering options:

**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to see metrics for.

## Single Server Process - Summary

Detailed information about a single operating system process running on a single BW Server.

NOTE: By default, this display is not enabled. For details, see **Enable BW Servers**.

**Title Bar** (possible features are):

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

**Filter By:**
The display might include these filtering options:

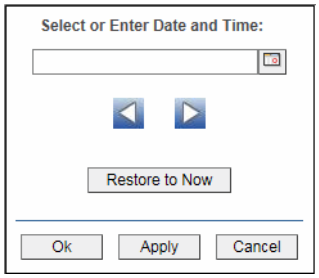
**Filter:** Choose a filter to show data for in the display. By default, the **Filter:** drop-down menu only contains the **No Filter** option. To create your own filtering options, see **Creating Customized Filters** in the User's Guide.

**Server:** Choose a server to see metrics for.

**Process:** Choose a server process.

**PID:** Choose a server PID.

**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.

# Hawk Views

These displays present performance data for your TIBCO BusinessWorks version 5 and 6 Hawk hosts. Use these displays to monitor performance and utilization for all your TIBCO Hawk hosts and agents.

Displays in this View are:


- "All Hosts Heatmap" on page 139
- "All Hosts Table" on page 141
- "All Hosts Grid" on page 144
- "All Processes Table" on page 146
- "Host Summary" on page 147
- "All Hawk Agents Table" on page 150

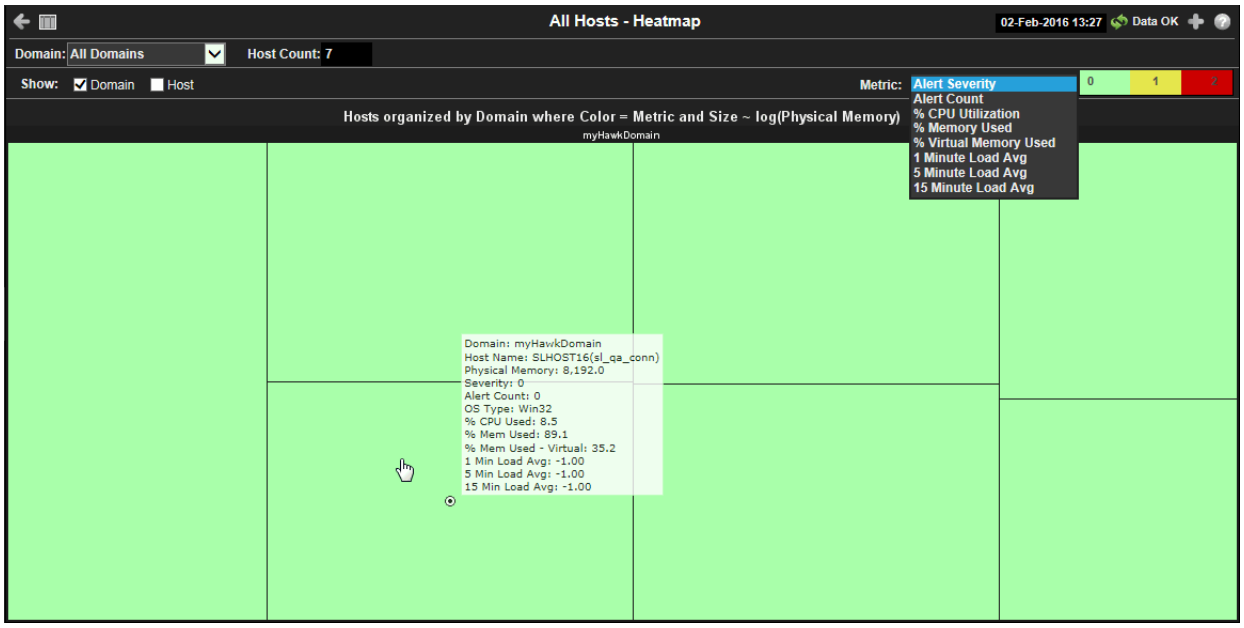

## All Hosts Heatmap

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.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

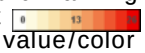
**Domain:** Choose a domain to show data for in the display. Domain names are specified when your administrator configures your Data Server to collect Hawk data, and applies to all host data collected from Hawk by that Data Server.

**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.

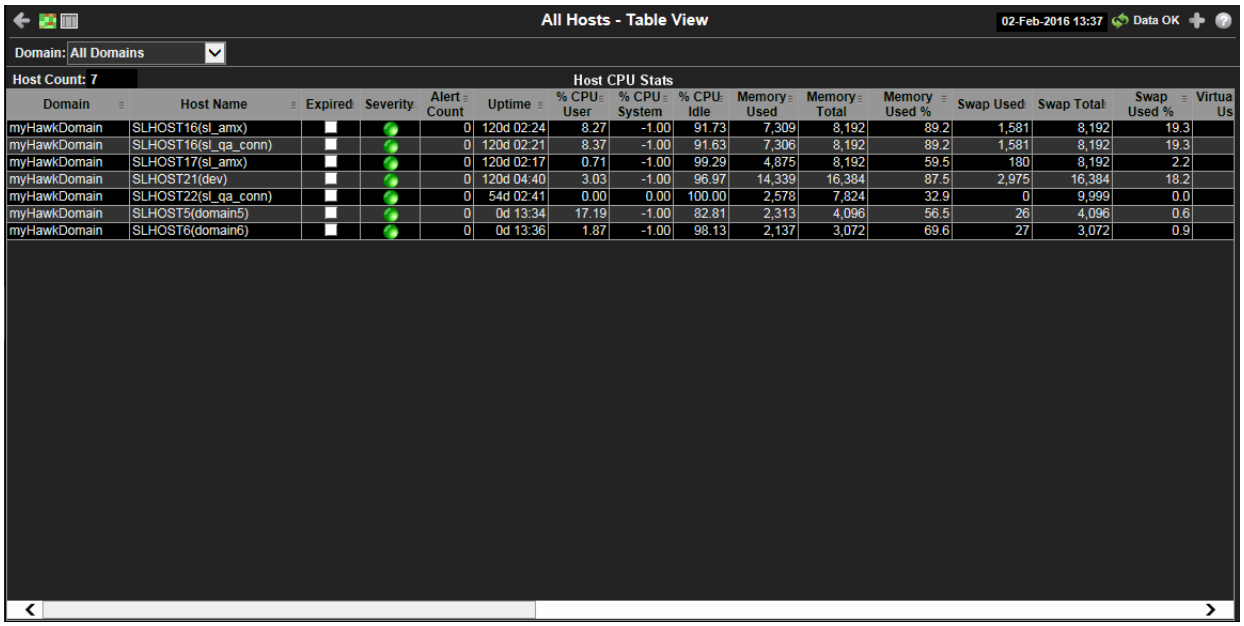
**Metric** Choose a metric to view in the display.

| | |
|---|---|
| **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:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>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.




| 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 % | Virtua 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.

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

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

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

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

**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.

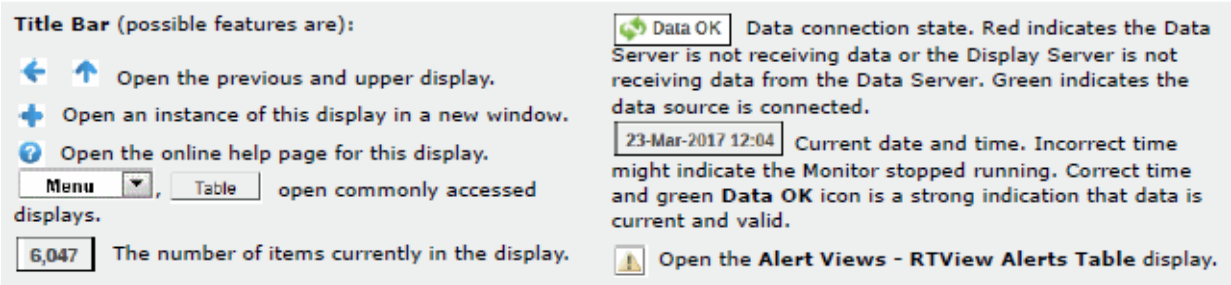
**Expired** When checked, data has not been received from this host in the specified amount of time. The host will be removed from the Monitor in the specified amount of time. The default setting is **60** seconds.

| | |
|---|---|
| **Severity** | 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:<br>Red indicates that one or more metrics exceeded their ALARM LEVEL threshold.<br>Yellow indicates that one or more metrics exceeded their WARNING LEVEL threshold.<br>Green indicates that no metrics exceeded their alert thresholds. |
| **Alert Count** | The total number of active alerts associated with the host. |
| **Uptime** | The amount of time the application has been running, in the following format:<br>**0d 00:00 <days>d <hours>:<minutes>:<seconds>**<br>For example: **10d 08:41:38** |
| **% 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.




**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.

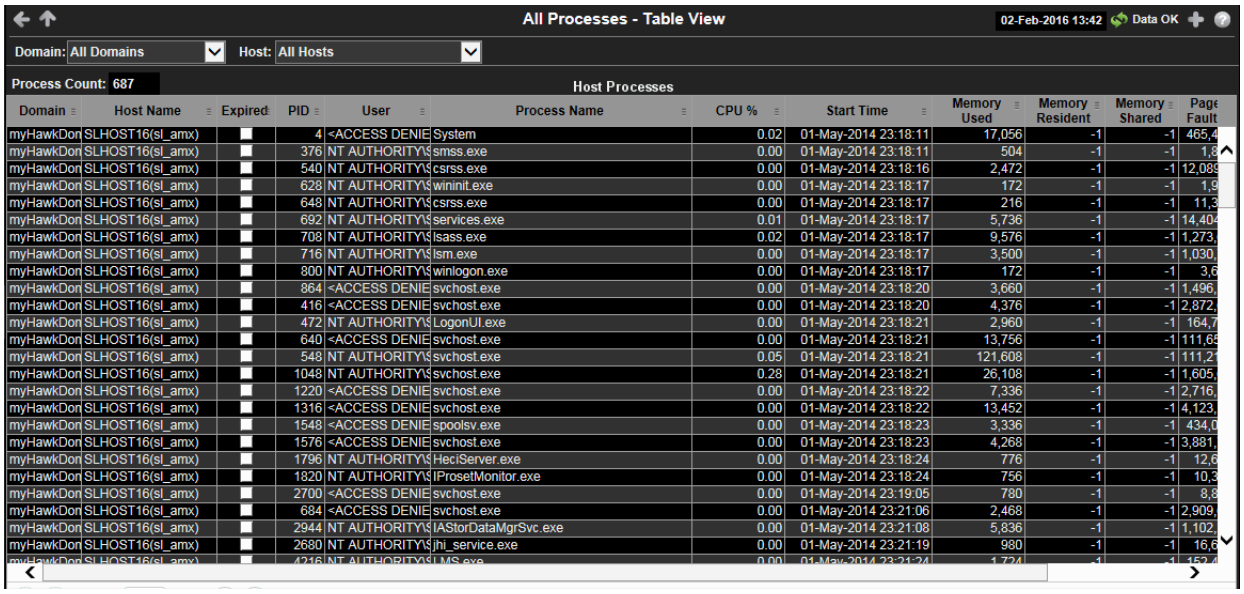
**VMem Usage** The bar graph shows the amount of virtual memory currently used.

**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.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**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.

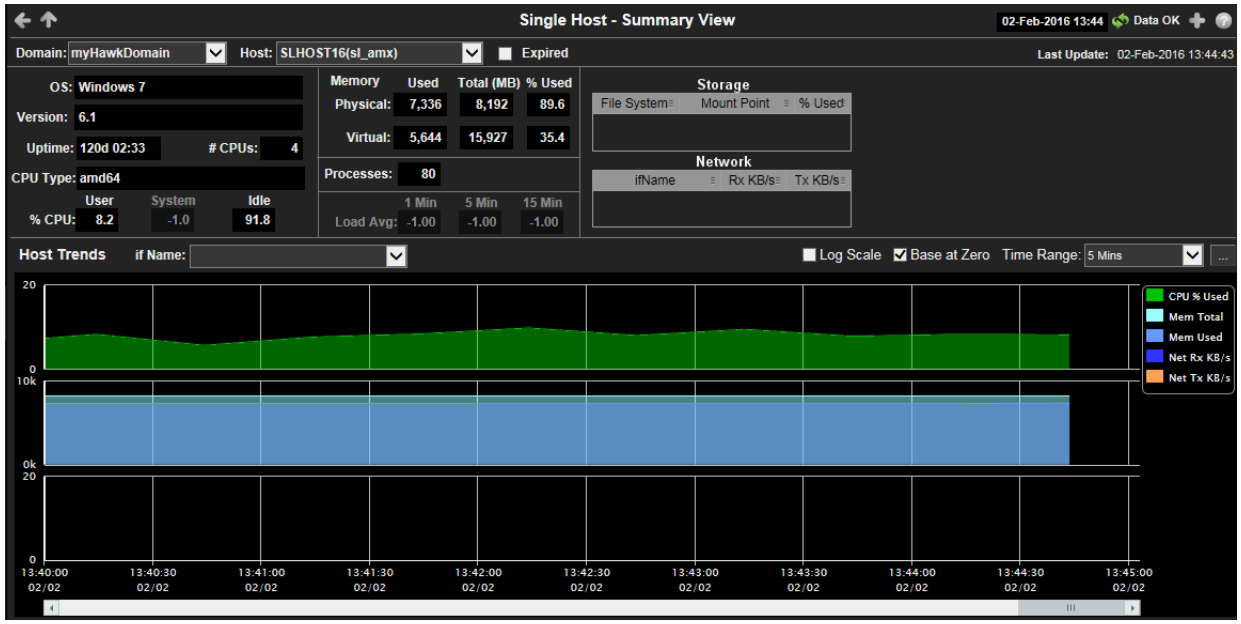
**Table:**
Each row in the table is a different host.

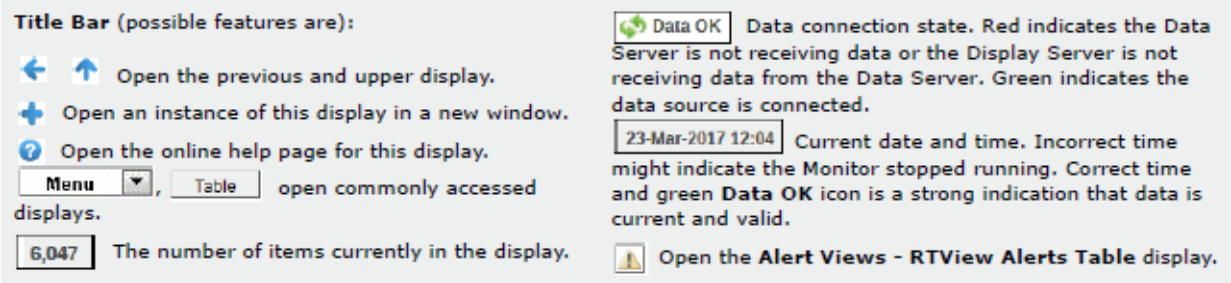
**Domain** The domain in which the host resides.

| | |
|---|---|
| **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:<br>**0d 00:00 <days>d <hours>:<minutes>:<seconds>**<br>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. |

## Host Summary

This display provides a detailed view of utilization metrics for a single server.






**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. |

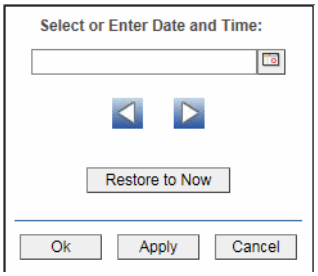
**Trend Graphs**
Traces metrics for the selected host.

- **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 ... .



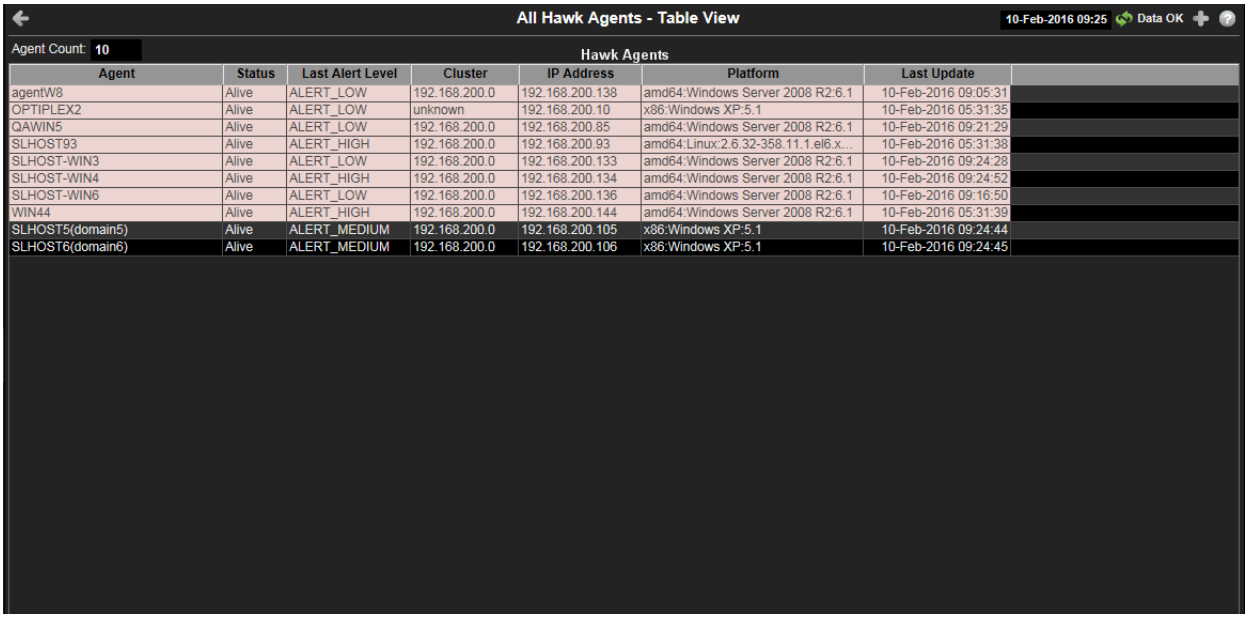

By default, the time range end point is the current time. To change the time range end point, click Calendar ... and select a date and time from the calendar or enter the date and time in the text field using the following format: **MMM dd, YYYY HH:MM**. For example, **Aug 21, 2011 12:24 PM**.

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.

## All Hawk Agents Table

This table provides a list of TIBCO BusinessWorks version 5 and 6 Hawk agents as well as network connectivity details about each agent.




| Agent | Status | Last Alert Level | Cluster | IP Address | Platform | Last Update |
|---|---|---|---|---|---|---|
| agentW8 | Alive | ALERT_LOW | 192.168.200.0 | 192.168.200.138 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 09:05:31 |
| OPTIPLEX2 | Alive | ALERT_LOW | unknown | 192.168.200.10 | x86:Windows XP:5.1 | 10-Feb-2016 05:31:35 |
| QAWIN5 | Alive | ALERT_LOW | 192.168.200.0 | 192.168.200.85 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 09:21:29 |
| SLHOST93 | Alive | ALERT_HIGH | 192.168.200.0 | 192.168.200.93 | amd64:Linux:2.6.32-358.11.1.el6.x... | 10-Feb-2016 05:31:38 |
| SLHOST-WIN3 | Alive | ALERT_LOW | 192.168.200.0 | 192.168.200.133 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 09:24:28 |
| SLHOST-WIN4 | Alive | ALERT_HIGH | 192.168.200.0 | 192.168.200.134 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 09:24:52 |
| SLHOST-WIN6 | Alive | ALERT_LOW | 192.168.200.0 | 192.168.200.136 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 09:16:50 |
| WIN44 | Alive | ALERT_HIGH | 192.168.200.0 | 192.168.200.144 | amd64:Windows Server 2008 R2:6.1 | 10-Feb-2016 05:31:39 |
| SLHOST5(domain5) | Alive | ALERT_MEDIUM | 192.168.200.0 | 192.168.200.105 | x86:Windows XP:5.1 | 10-Feb-2016 09:24:44 |
| SLHOST6(domain6) | Alive | ALERT_MEDIUM | 192.168.200.0 | 192.168.200.106 | x86:Windows XP:5.1 | 10-Feb-2016 09:24:45 |

**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Fields and Data:**

**Agent Count:** The total number of agents in the table.

**Table:**
Each row in the table is a different agent.

| | |
|---|---|
| **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. |
| **Agent** | The name for the agent which is composed of the hostname and Hawk domain (in parenthesis). Agent names which do not contain an explicit Hawk domain are members of the "default" domain. |
| **Status** | The agent status, either **Alive** or **Expired**. |
| **Last Alert Level** | The most recent and most critical alert level. |
| **Cluster** | The IP address of the cluster to which this agent belongs. |

| | |
|---|---|
| **IP Address** | The IP subnet address for the group of machines to which this agent belongs. |
| **Platform** | The physical CPU class and operating system version. |
| **Last Update** | The date and time the row data was last updated. |

# Alert Views

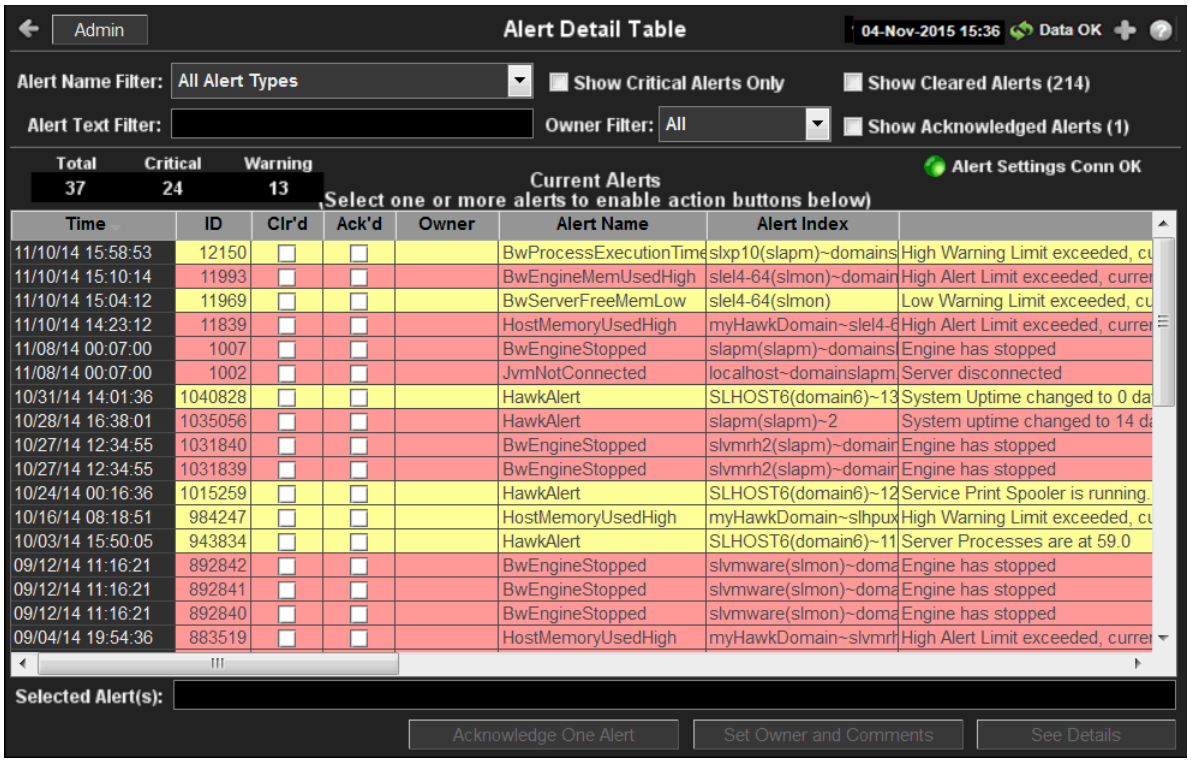
These displays present detailed information about all alerts that have occurred in your system. These displays present performance data for your BusinessWorks system. Displays in this View are:

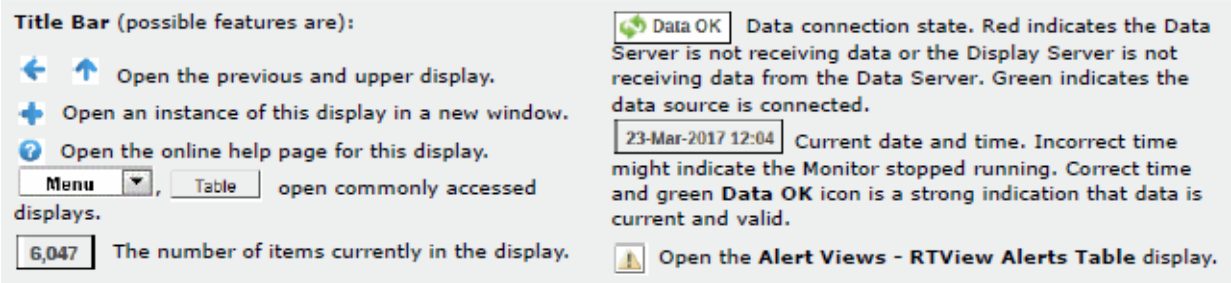
- "Alert Detail Table" on page 151: Time ordered list of all alerts that have occurred in the system.
- "Hawk Alerts Table" on page 154: Summary of alerts delivered to Hawk agent according to its active rulebases.

## Alert Detail Table

Use this display to track and manage all alerts that have occurred in the system, add comments, acknowledge or assign Owners to alerts.

Each row in the table is a different active alert. Select one or more rows, right-click and choose **Alert** to see all actions that you can perform on the selected alert(s). Choose **Alert / Set Filter Field** to apply the selected cell data to the **Field Filter** and **Search Text** fields. Or enter filter criteria directly in the **Field Filter** and **Search Text** fields. Click **Clear** to clear the **Field Filter** and **Search Text** fields. Click Sort to order column data.






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

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

**Fields and Data**
This display includes:

| | |
|---|---|
| **Alert Name Filter** | Select from a list of alert types or select All Alert Types. Filters limit display content and drop down menu selections to only those items that pass through the selected filter's criteria. Therefore if no items match the filter, you may see nothing in a given display and may not have any options available in the drop-down menu(s).<br>**NOTE:** Filter selection is disabled on drill down summary displays. |
| **Show Critical Alerts Only** | If selected, only currently critical alerts are shown in the table. Otherwise, all active alerts are shown in the table. |
| **Show Cleared Alerts** | If selected, cleared alerts are shown in the table. |
| **Alert Text Filter** | Enter all or part of the Alert Text to view specific alerts. For example, High selects and displays all alerts that include High in the Alert Text. **NOTE:** Wild card characters are supported. |
| **Owner Filter** | Select the alert **Owner** to show alerts for in the table. |
| **All** | Shows alerts for all Owners in the table: **Not Owned** and **Owned By Me** alerts. |
| **Not Owned** | Shows only alerts without Owners in the table. |
| **Owned By Me** | Shows only alerts for the current user in the table. |
| **Show Acknowledged Alerts** | If selected, acknowledged alerts are shown in the table. |
| **Total** | Total number of alerts. |
| **Critical** | Number of critical alerts. |

**Warning** Total number of alerts that are currently in a warning state.

**Alert Settings Conn OK** The Alert Server connection state:
- Disconnected.
- Connected.

**Alerts Table**
This table lists all active alerts for the current filters.

| | |
|---|---|
| **Time** | The time (Java format) that the alert was activated. |
| **ID** | A unique string identifier assigned to each activated alert. |
| **Clr'd** | When checked, this typically indicates that the alert has been resolved. An alert is automatically cleared when the value being monitored no longer in the alert threshold. |
| **Ack'd** | When checked, this typically indicates that the alert is being addressed. |
| **Owner** | The named owner assigned by the administrator. |
| **Alert Name** | The name of the alert. For a list of all alerts, see Alert Administration. |
| **Alert Index** | The IP address and port number for the source (application, server, and so forth) associated with the alert. |
| **Alert Text** | Descriptive text about the alert. |
| **Severity** | The severity of the alert:<br>**0 = Normal**<br>**1** = Warning / Yellow<br>**2 = Alarm / Red**<br>The color for the alert severity is shown by the row in the alert table. |
| **Source** | Name of RTView Data Server sending this data (or localhost). |

**Selected Alerts** Lists the alerts selected in the table.

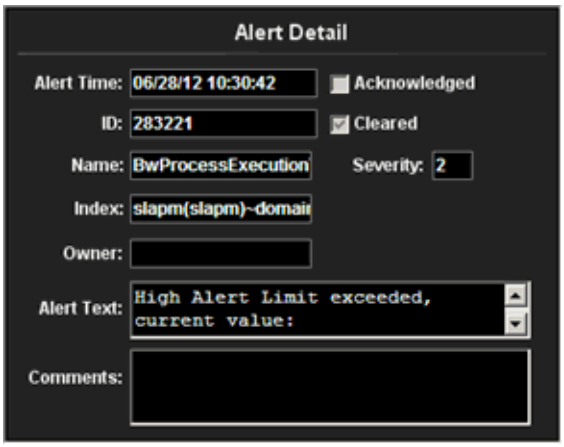
| | |
|---|---|
| **Acknowledge One Alert** | Select one alert from the Current Alerts table and click to acknowledge. |
| **Acknowledge Multiple Alerts** | Select one or more alerts from the Current Alerts table and click to acknowledge. |

**Set Owner and Comments**

Select one or more alerts from the Current Alerts table and click to open the Set Owner and Comments dialog.

**See Details**

Select an alert from the Current Alerts table and click to open the Set Owner and Comments dialog.




## Hawk Alerts Table

If you have designated Hawk Alerts for your BW Engines, you can view a summary of alerts delivered to a Hawk agent according to its active rulebases. To enable Hawk Alerts to be displayed throughout the Monitor, go to the Alert Administration display.

To filter unwanted alerts out of the Hawk cache data, enter the following into the **sample.properties** file (located in the project settings directory you created):

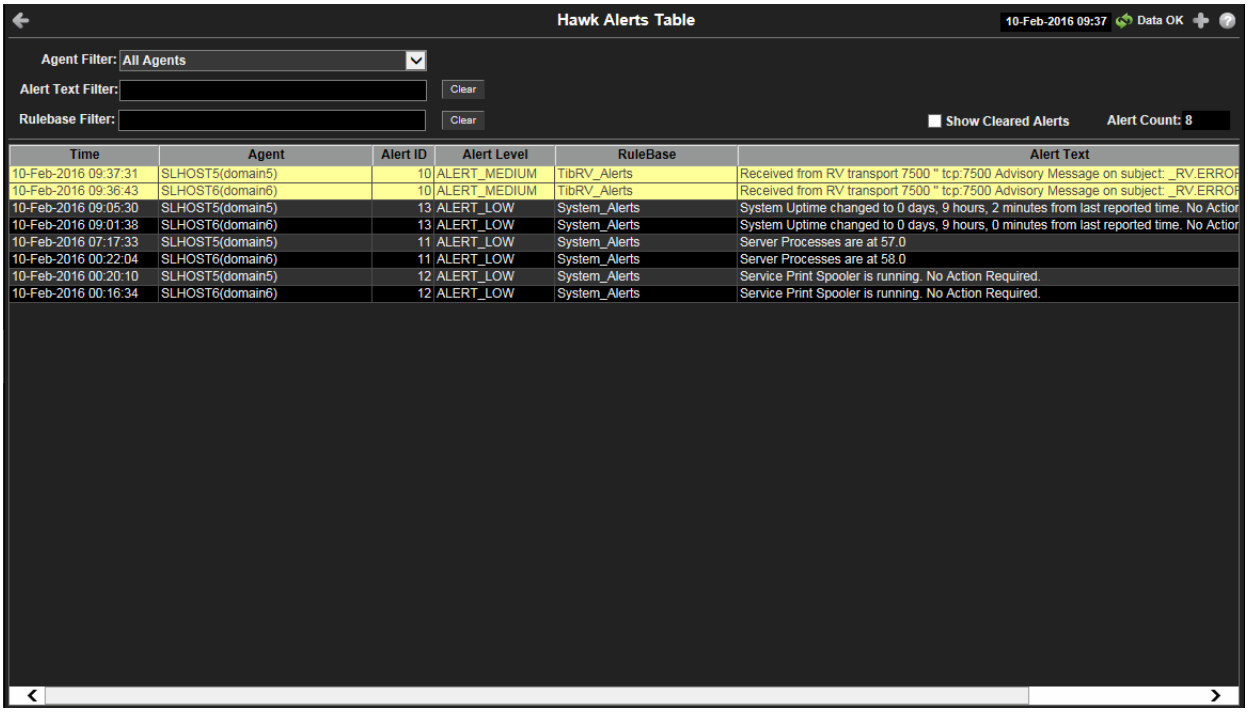
**sl.rtview.sub=$hawkAlertTextFilterOut:AlertText**

For example, to filter out all Hawk Alerts in which the AlertText contains Source you would enter the following:

**sl.rtview.sub=$hawkAlertTextFilterOut:Source**

The default time to remove cleared Hawk Alerts from the table is **3600** seconds. To adjust this setting, edit the following in **sample.properties**:

### sl.rtview.sub=$hawkAlertTextFilterOut:3600




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Filter By:**
The display might include these filtering options:

**Agent Filter:** Select from a list of agents or select All.

This filter limits items in this table to contain only those Hawk Alerts from a particular Agent. Therefore if there are no alerts from the selected Agent, there may be nothing displayed in this table.

**Alert Text Filter:** Enter all or part of the Alert Text to view alerts on specific agents. For example, High selects and displays all alerts that include High in the Alert Text. NOTE: Wild card characters are supported.

**Clear** Removes Alert Text Filter and all agents for the selected **Agent Filter** are displayed.

**Rulebase Filter:** Enter all or part of the Rulebase to view alerts for specific agents. For example, System selects and displays all alerts that include System in the RuleBase column. NOTE: Wild card characters are supported.

**Clear** Removes Rulebase Filter and all agents for the selected **Agent Filter** are displayed.

| | |
|---|---|
| **Show Cleared Alerts** | If selected, both active and cleared alerts are shown in the table. Otherwise, only currently active alerts are shown in the table. |
| **Alert Count:** | Number of alerts currently being displayed. NOTE: Alerts filtered out from this display are not removed from the data and therefore will still be included in other alert counts and displays throughout the Monitor. |

**Hawk Alerts Table:**
Displays last 100 Hawk Alerts received from all BW Engine agents.

| | |
|---|---|
| **Time** | Time (Java format) that the alert was activated. |
| **Agent** | Name of the agent that posted the alert. |
| **AlertID** | A unique string identifier assigned to each activated alert. |
| **Alert Level** | Rulebase state of the alert, where the values ALERT-LOW, ALERT-MEDIUM, ALERT-HIGH correspond to the TIBCO Hawk Console API. |
| **RuleBase** | Rulebase that posted the alert. |
| **AlertText** | Text for the alert. |
| **Cleared** | If selected, the alert has cleared. |

# Administration

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" on page 156: Displays active alerts and provides interface to modify and manage alerts.
- "RTView Cache Tables" on page 162: View cached data that RTView is capturing and maintaining, and use this data use this for debugging with SL Technical Support.
- "RTView Agent Administration" on page 164: Display information about RTView Agent data servers.

## 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

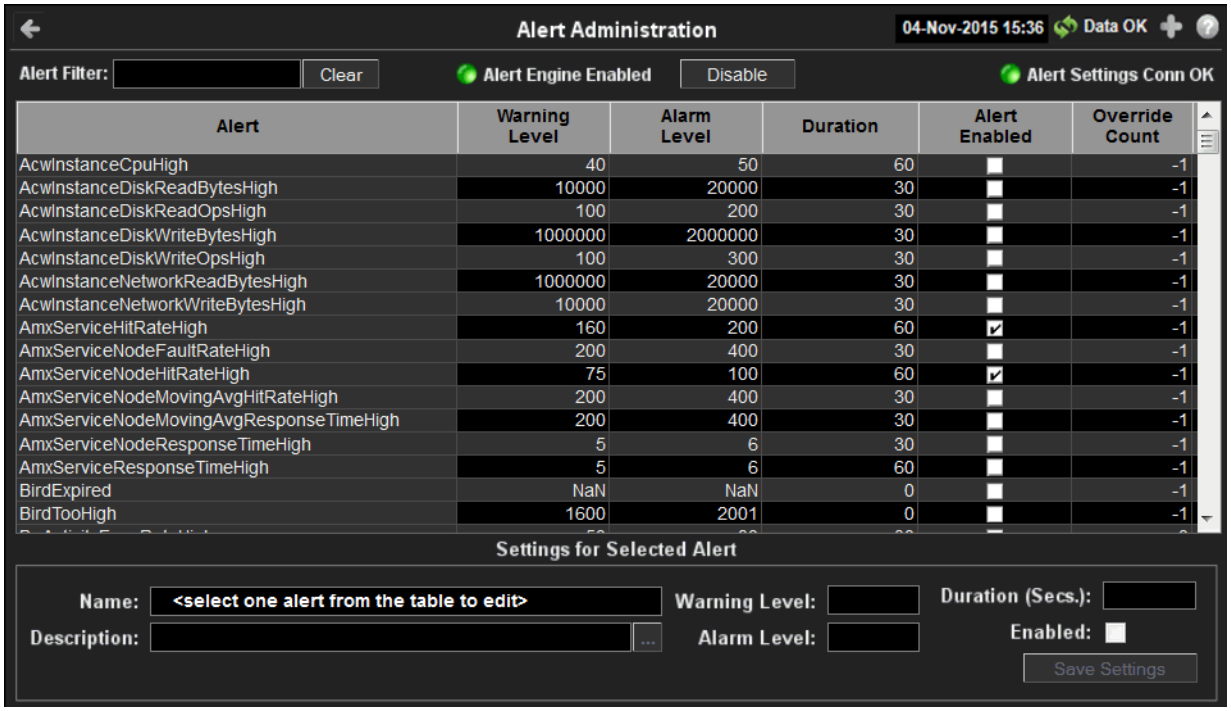
To set a global alert, select an alert from the **Active Alert Table**. The name of the selected alert populates the **Settings for Selected Alert Name** field. Edit the **Settings for Selected Alert** and click **Save Settings** when finished.

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.

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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.

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

**Fields and Data**
This display includes:

| | |
|---|---|
| **Alert Filter** | Enter the (case-sensitive) string to filter the table by the **Alert** table column value. **NOTE:** Partial strings can be used without wildcard characters. Press **<enter>** or click elsewhere in the display to apply the filter. |
| **Clear** | Clears the **Alert Filter** entry. |
| **Alert Engine Enabled** | Alerting is disabled.<br>Alerting is enabled (by default). |
| **Disable** | Suspends all alerting. |
| **Alert Settings Conn OK** | The Alert Server connection state:<br>Disconnected.<br>Connected. |

**Active Alert Table**
This table describes the global settings for all alerts on the system. Select an alert. The name of the selected alert populates the **Settings for Selected Alert Name** field (in the lower panel). Edit **Settings for Selected Alert** fields and click **Save Settings**.

**NOTE:** To filter the alerts shown in the table by Solution Package, use the **$rtvAlertPackageMask** substitution.

| | |
|---|---|
| **Alert** | The name of the alert. |
| **Warning Level** | The global warning threshold for the selected alert. When the specified value is exceeded a warning is executed. |
| **Alarm Level** | The global alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed. |
| **Duration (Secs)** | The amount of time (in seconds) that the value must be above the specified Warning Level or Alarm Level threshold before an alert is executed. **0** is for immediate execution. |
| **Alert Enabled** | When checked, the alert is enabled globally. |
| **Override Count** | The number of times thresholds for this alert have been defined individually in the **Tabular Alert Administration** display. |

**Settings for Selected Alert**
To view or edit global settings, select an alert from the **Active Alert Table**. Edit the **Settings for Selected Alert** fields and click **Save Settings** when finished.

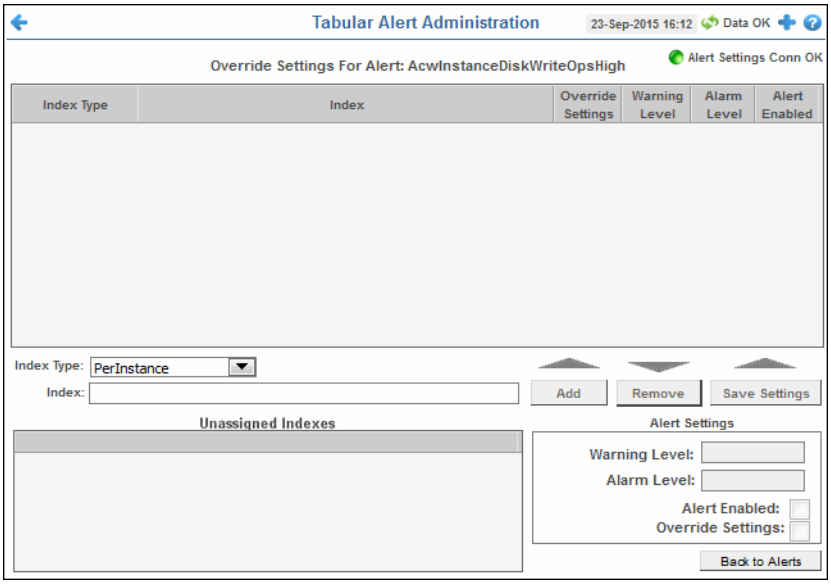
To set override alerts, click on **Override Settings** to open the **Tabular Alert Administration** display.

| | |
|---|---|
| **Name** | The name of the alert selected in the **Active Alert Table**. |
| **Description** | Description of the selected alert. Click Calendar ... for more detail. |
| **Warning Level** | Set the Global warning threshold for the selected alert. When the specified value is exceeded a warning is executed. To set the warning to occur sooner, reduce the Warning Level value. To set the warning to occur later, increase the Warning Level value.<br>**NOTE:** For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the warning to occur sooner, increase the Warning Level value. To set the warning to occur later, reduce the Warning Level value. |
| **Alarm Level** | Set the Global alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed. To set the alarm to occur sooner, reduce the Alarm Level value. To set the warning to occur later, increase the Alarm Level value.<br>**NOTE:** For low value-based alerts (such as **EmsQueuesConsumerCountLow**), to set the alarm to occur sooner, increase the Alarm Level value. To set the alarm to occur later, reduce the Alarm Level value. |
| **Duration** | Set the amount of time (in seconds) that the value must be above the specified Warning Level or Alarm Level threshold before an alert is executed. **0** is for immediate execution. This setting is global. |
| **Enabled** | Check to enable alert globally. |
| **Save Settings** | Click to apply alert settings. |
| **Override Settings** | Click to open the **Tabular Alert Administration** display to set override alerts on the selected alert. |

## Tabular Alert Administration

Set override alerts (override global alert settings). This display opens when you select an alert in the **Alert Administration** display and then select **Override Settings**.

For step-by-step instructions setting thresholds for individual alerts, see **Setting Override Alerts**..



**Fields and Data**
This display includes:

**Alert Settings Conn OK** The connection state.
- No servers are found.
- One or more servers are delivering data.

**Override Settings For Alert:(name)**
This table lists and describes alerts that have override settings for the selected alert. Select a row to edit alert thresholds. The selected item appears in the Index field. Edit settings in the Alert Settings fields, then click Save Settings.

**Index Type** Select the type of alert index to show in the Values table. Options in this drop-down menu are populated by the type of alert selected, which are determined by the Package installed. For example, with the EMS Monitor package the following Index Types are available:
- PerServer: Alert settings are applied to a specific server.
- PerQueue: Alert settings are applied to the queue on each server that has the queue defined.
- PerServerQueue: Alert settings are applied to a single queue on a specific server.
- PerTopic: Alert settings are applied to the topic on each server that has the topic defined.
- PerServerTopic: Alert settings are applied to a single topic on a specific server.

**Index** The value of the index column.

**Override Settings** When checked, the override settings are applied.

**Alert Enabled** When checked, the alert is enabled.

**Index Type** Select the index type. The index type specifies how to apply alert settings. For example, to a queue (topic or JVM, and so forth) across all servers, or to a queue on a single server. NOTE: Options in this drop-down menu are populated by the type of alert selected from the Alert Administration display. Index Types available depend on the Package installed.

**Index** The selected index column to be edited. This field is populated by the selection made in the **Unassigned Indexes** table.

**Unassigned Indexes** This table lists all possible indexes corresponding to the Index Type chosen in the drop-down list. Select a row to apply individual alert thresholds. The selected item appears in the **Index** field. Edit settings in the **Alert Settings** fields, then click **Add**.

**Add** Click to add changes made in **Alert Settings**, then click **OK** to confirm.

**Remove** Click to remove an alert selected in the **Index Alert Settings** table, then click **OK** to confirm.

**Save Settings** Click to save changes made to alert settings.

**Alert Settings**
Select a topic, server or queue from the **Unassigned Indexes** table and edit the following settings.

| | | |
|---|---|---|
| | **Warning Level** | Set the warning threshold for the selected alert. When the specified value is exceeded a warning is executed. To set the warning to occur sooner, reduce the Warning Level value. To set the warning to occur later, increase the Warning Level value.<br>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.<br>**Click Save Settings to save settings.** |
| | **Alarm Level** | Set the alarm threshold for the selected alert. When the specified value is exceeded an alarm is executed. To set the alarm to occur sooner, reduce the Alarm Level value. To set the warning to occur later, increase the Alarm Level value.<br>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.

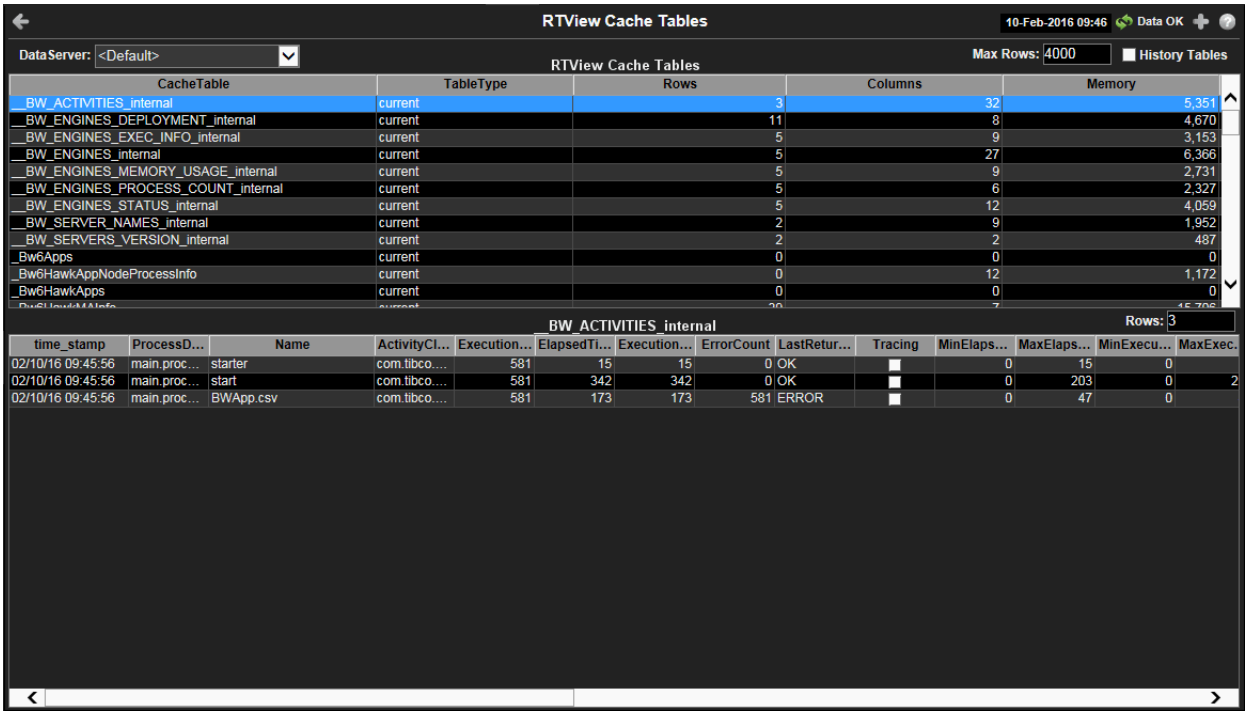
7. Click **Save Settings**. In a few moments the modifications are updated and a new record appears in the **AlertLevels** table. For example, in the following figure, the EmsServerConnectionCountHigh alert has a new override applied. New overrides increment the alert **Override Count** in the **ALERTLEVELS** table.

| Alert | Warning Level | Alarm Level | Duration | Alert Enabled | Override Count |
|---|---|---|---|---|---|
| EmsQueuesProducerCountHigh | 60 | 80 | 30 | ☐ | 0 |
| EmsQueuesProducerCountLow | 15 | 5 | 30 | ☐ | 0 |
| EmsServerAsyncDBSizeHigh | 50 | 100 | 30 | ☐ | 0 |
| EmsServerConnectionCountHigh | 60 | 80 | 30 | ☐ | 1 |
| EmsServerInMsgRateHigh | 60 | 80 | 30 | ☐ | 0 |
| EmsServerMemUsedHigh | 60 | 80 | 30 | ☐ | 0 |

## 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.

Choose a cache table from the upper table to see cached data.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**DataServer** Select a data server from the drop down menu.

**Max Rows** Enter the maximum number of rows to display in RTView Cache Tables.

**History Tables** Select to include all defined history tables in RTView Cache Tables.

**RTView Cache Tables**
This table lists and describes all defined RTView Cache Tables for your system. Cache tables gather Monitor data and are the source that populate the Monitor displays.

**NOTE:** When you click on a row in RTView Cache Tables a supplemental table will appear that gives more detail on the selected Cache Table.

**CacheTable** The name of the cache table.

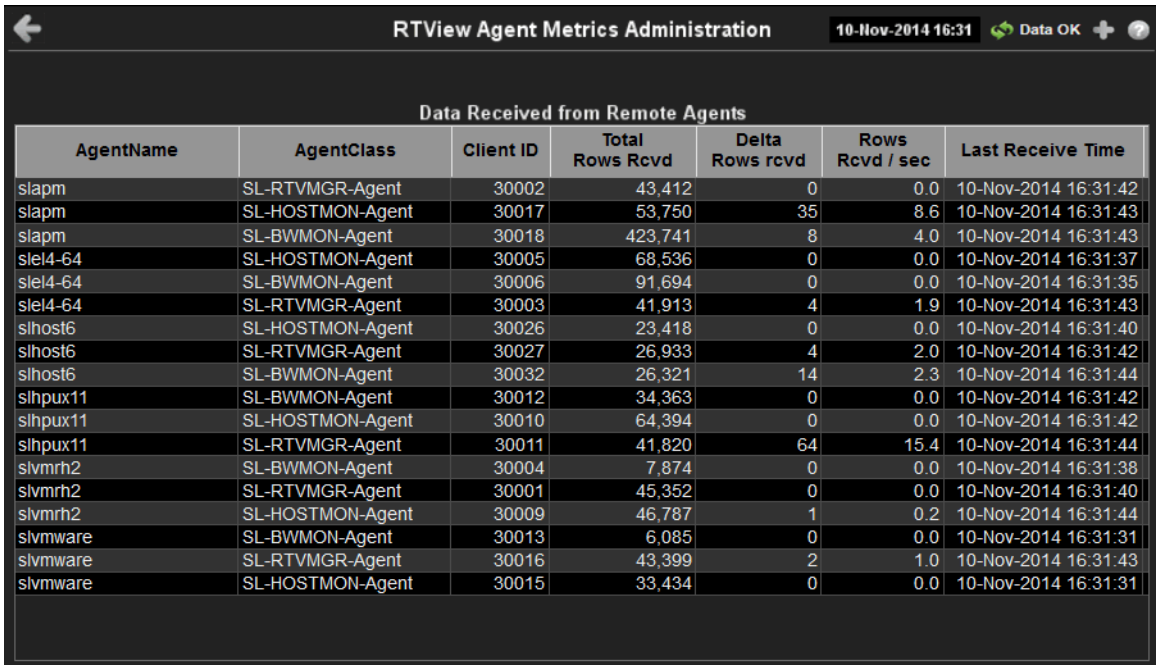
**TableType** The type of cache table:

**current** Current table which shows the current values for each index.

| | | |
|---|---|---|
| | **current_condensed** | Current table with primary compaction configured. |
| | **history** | History table. |
| | **history_condensed** | History table with primary compaction configured. |
| **Rows** | Number of rows currently in the table. | |
| **Columns** | Number of columns currently in the table. | |
| **Memory** | Amount of space, in bytes, used by the table. | |

## RTView Agent Administration

Verify when agent metrics were last queried by the Monitor. The data in this display is predominantly used for debugging by Technical Support.




| AgentName | AgentClass | Client ID | Total Rows Rcvd | Delta Rows rcvd | Rows Rcvd / sec | Last Receive Time |
|---|---|---|---|---|---|---|
| slapm | SL-RTVMGR-Agent | 30002 | 43,412 | 0 | 0.0 | 10-Nov-2014 16:31:42 |
| slapm | SL-HOSTMON-Agent | 30017 | 53,750 | 35 | 8.6 | 10-Nov-2014 16:31:43 |
| slapm | SL-BWMON-Agent | 30018 | 423,741 | 8 | 4.0 | 10-Nov-2014 16:31:43 |
| slel4-64 | SL-HOSTMON-Agent | 30005 | 68,536 | 0 | 0.0 | 10-Nov-2014 16:31:37 |
| slel4-64 | SL-BWMON-Agent | 30006 | 91,694 | 0 | 0.0 | 10-Nov-2014 16:31:35 |
| slel4-64 | SL-RTVMGR-Agent | 30003 | 41,913 | 4 | 1.9 | 10-Nov-2014 16:31:43 |
| slhost6 | SL-HOSTMON-Agent | 30026 | 23,418 | 0 | 0.0 | 10-Nov-2014 16:31:40 |
| slhost6 | SL-RTVMGR-Agent | 30027 | 26,933 | 4 | 2.0 | 10-Nov-2014 16:31:42 |
| slhost6 | SL-BWMON-Agent | 30032 | 26,321 | 14 | 2.3 | 10-Nov-2014 16:31:44 |
| slhpux11 | SL-BWMON-Agent | 30012 | 34,363 | 0 | 0.0 | 10-Nov-2014 16:31:42 |
| slhpux11 | SL-HOSTMON-Agent | 30010 | 64,394 | 0 | 0.0 | 10-Nov-2014 16:31:42 |
| slhpux11 | SL-RTVMGR-Agent | 30011 | 41,820 | 64 | 15.4 | 10-Nov-2014 16:31:44 |
| slvmrh2 | SL-BWMON-Agent | 30004 | 7,874 | 0 | 0.0 | 10-Nov-2014 16:31:38 |
| slvmrh2 | SL-RTVMGR-Agent | 30001 | 45,352 | 0 | 0.0 | 10-Nov-2014 16:31:40 |
| slvmrh2 | SL-HOSTMON-Agent | 30009 | 46,787 | 1 | 0.2 | 10-Nov-2014 16:31:44 |
| slvmware | SL-BWMON-Agent | 30013 | 6,085 | 0 | 0.0 | 10-Nov-2014 16:31:31 |
| slvmware | SL-RTVMGR-Agent | 30016 | 43,399 | 2 | 1.0 | 10-Nov-2014 16:31:43 |
| slvmware | SL-HOSTMON-Agent | 30015 | 33,434 | 0 | 0.0 | 10-Nov-2014 16:31:31 |

**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Data Received from Remote Agents Table**

| | |
|---|---|
| **AgentName** | Name of the agent. |

| | |
|---|---|
| **AgentClass** | Class of the agent. |
| **Client ID** | Unique client identifier. |
| **Total Rows Rcvd** | Total number of rows of data received. |
| **Rows Rcvd/sec** | Number of rows of data received per second. |
| **Last Receive Time** | Last time data was received from the agent. |

## RTView Servers

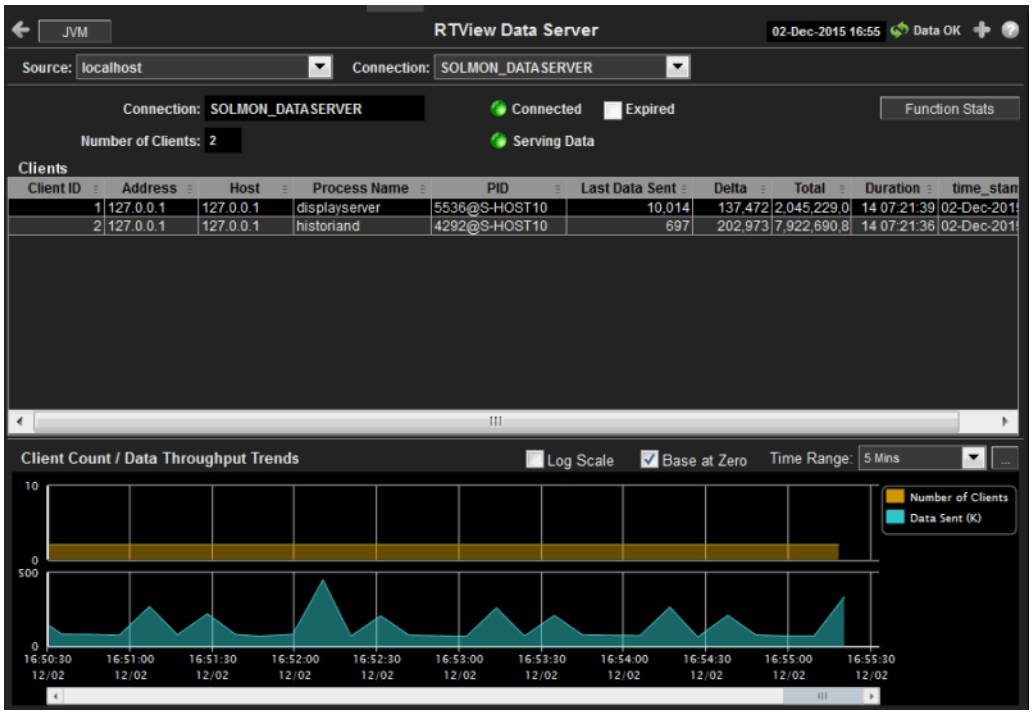
These displays present performance data for all RTView Servers. Displays in this View are:

- "Data Server Metrics" on page 165: Shows metrics for RTView Data Servers.
- "Display Server Metrics" on page 168: Shows metrics for RTView Display Servers.
- "Historian Servers" on page 169: Shows metrics for RTView Historian Servers.
- "Tomcat Server Summary" on page 171: Shows metrics for Tomcat application sessions, including Tomcat hosting and connection details.
- "Tomcat Modules Summary" on page 174: Shows metrics for Tomcat application modules and utilization details.
- "JVM CPU/Mem Summary" on page 177: Shows Java Virtual Machine memory and CPU usage, JVM system information, application performance metrics, and input arguments for a single connection.
- "JVM Mem Pool Trends" on page 181: Shows Java Virtual Machine heap and non-heap memory usage for a single connection.
- "JVM Mem GC Trends" on page 184: Shows Java Virtual Machine garbage collection memory usage for a single connection.
- "JVM System Properties" on page 186: Shows Java Virtual Machine input arguments and system properties for a single connection.
- "Version Info" on page 187: Shows version information for all connected RTView applications.
- "About" on page 189: Shows the Monitor version and all available data sources.

### Data Server Metrics

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.




**Title Bar** (possible features are):

Open the previous and upper display.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

| | |
|---|---|
| **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:<br>Disconnected.<br>Connected. |
| **Serving Data** | The Data Server is not currently serving data.<br>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.

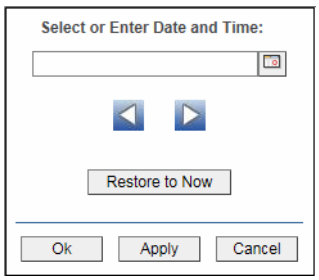
**TIME_STAMP** The date and time this row of data was last updated.

**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.

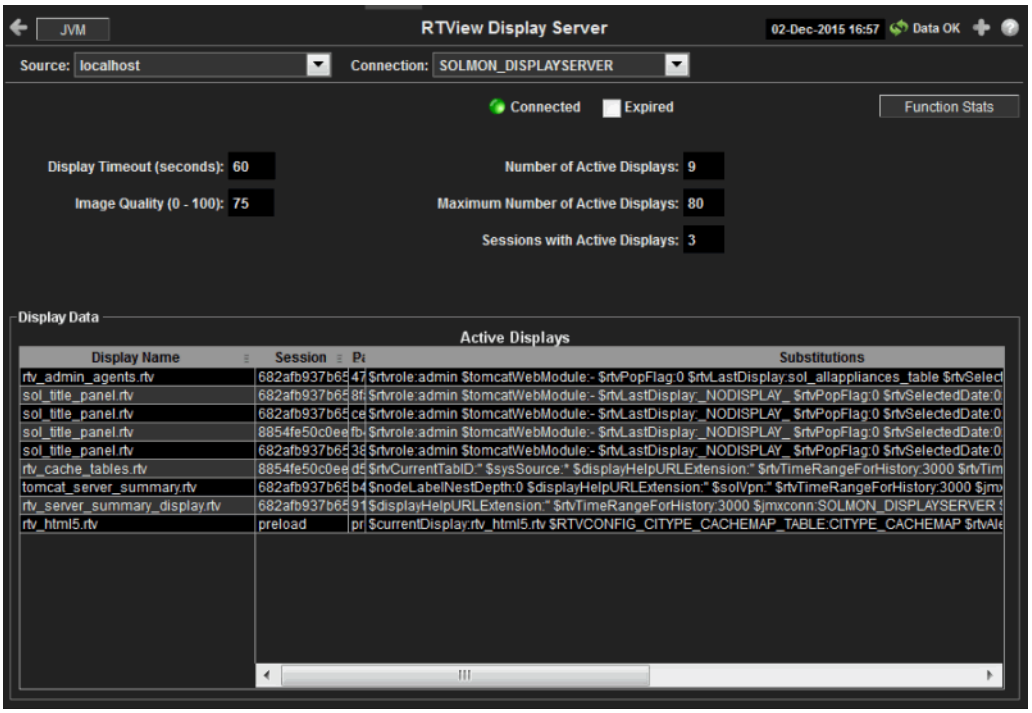
Click **Restore to Now** to reset the time range end point to the current time.

| | |
|---|---|
| **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 Server Metrics

Track display utilization metrics for RTView Display Servers.

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.

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

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

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

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

**Fields and Data**
This display includes:

| | |
|---|---|
| **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.

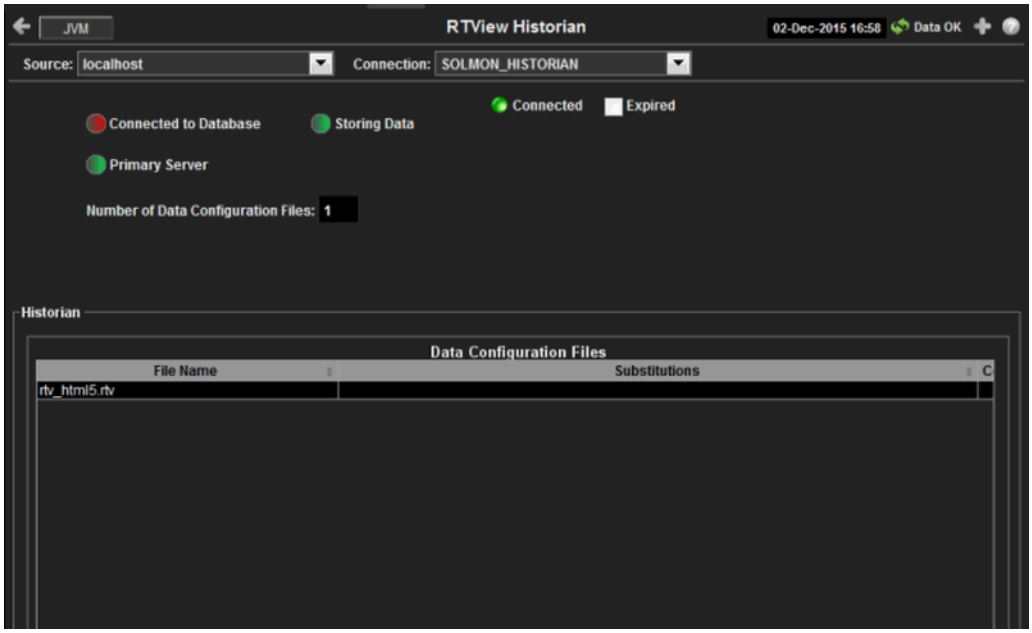
**ID** The client ID.

**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.

Open an instance of this display in a new window.

Open the online help page for this display.

Menu, Table open commonly accessed displays.

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

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

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

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

**Fields and Data**
This display includes:

| | |
|---|---|
| **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:<br>Disconnected.<br>Connected. |
| **Expired** | This server has been marked as expired after no activity. |
| **Connected to Database** | The Historian Server database connection state:<br>Disconnected.<br>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.

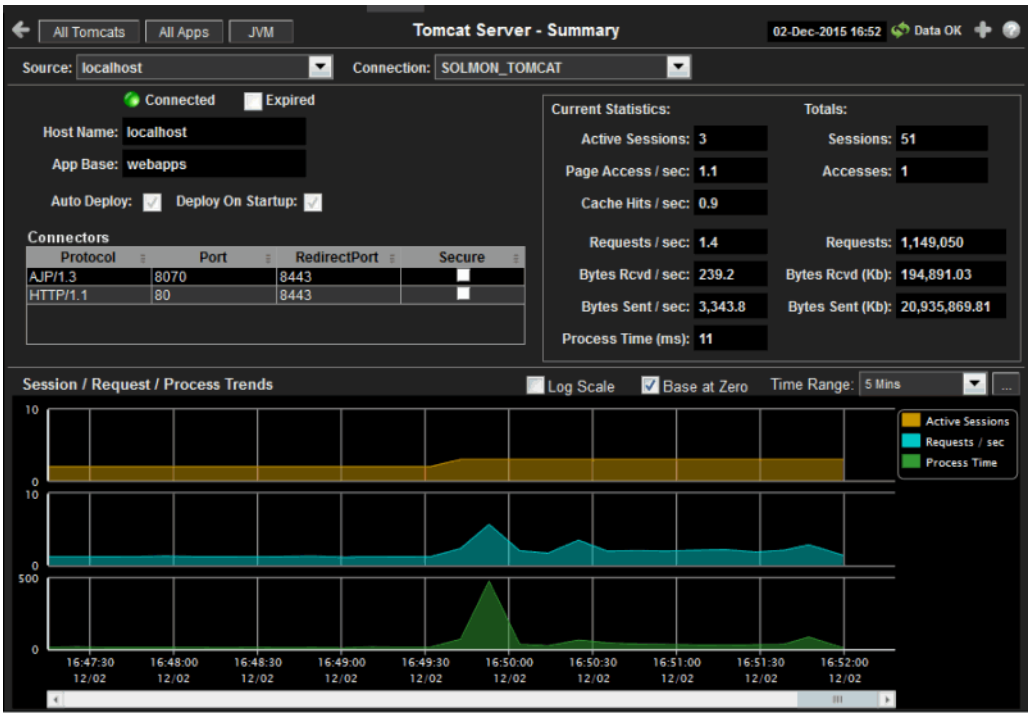
**Historian / Data Configuration Files**

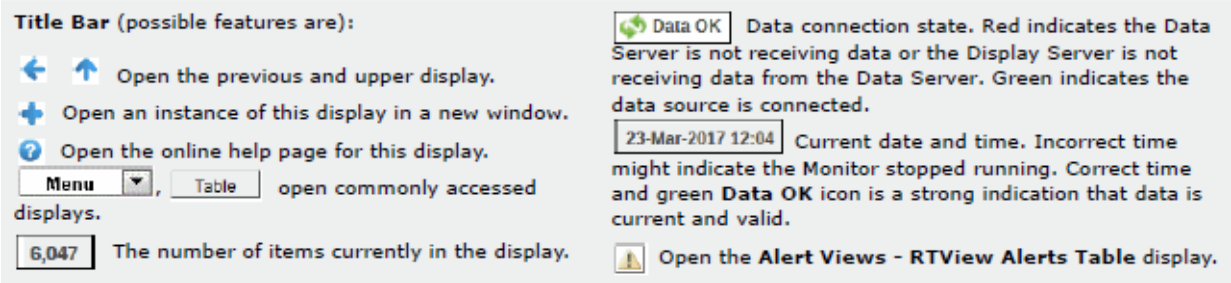
**File Name** The name of the history cache configuration file.

**Substitutions** Lists the substitutions specified in the history cache configuration file.

## 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. he trends include Active Sessions, Requests per Sec, and Process Time.






**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:<br>Disconnected.<br>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.<br>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.<br>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**

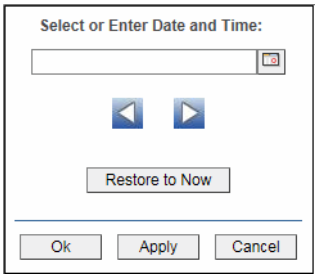
| | |
|---|---|
| **Active Sessions** | The number of clients currently in session with the servlet. |
| **Sessions** | The total number of client sessions since the server was started. |
| **Page Access / sec** | The number of times pages are accessed, per second. |
| **Accesses** | The total number 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.

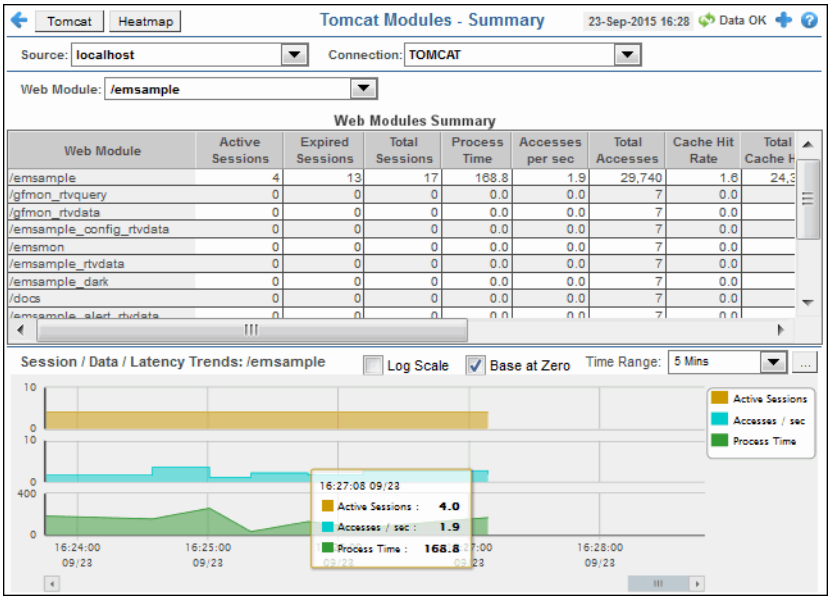
**Process Time** Traces the average amount of time, in milliseconds, to process requests.

## Tomcat Modules 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.

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

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

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

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

**Fields and Data**
This display includes:

**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**

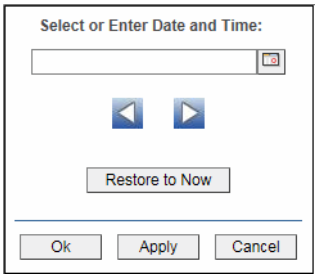
| | |
|---|---|
| **Web Module** | The name of the Web module. |
| **Sessions Active** | The number of currently active client sessions. |
| **Sessions Total** | The total number of client sessions since the application was started. |
| **Sessions Expired** | The total number of client sessions that 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.<br>Format:<br>**MM/DD/YY HH:MM:SS**<br>**<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 .




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.

## JVM CPU / Mem 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.

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

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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.

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

**Fields and Data**
This display includes:

**Source** Select the type of connection to the RTView Server.

**Connection** Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file.

**Operating System**
Displays data pertaining to the operating system running on the host on which the JVM resides.

| | | |
|---|---|---|
| | **Connected** | The data connection state:<br>Disconnected.<br>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:<br>**0d 00:00**<br>**<days>d <hours>:<minutes>:<seconds>**<br>For example:<br>**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.<br>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 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. | |

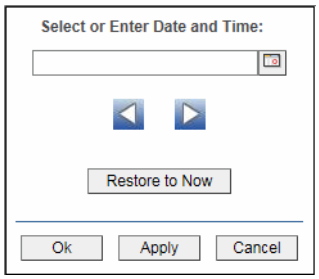
**More Arguments** Additional arguments used to start the application.

**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 Mem 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.
- 6,047 The number of items currently in the display.
- Data OK Data connection state. Red indicates the Data Server is not receiving data or the Display Server is not receiving data from the Data Server. Green indicates the data source is connected.
- 23-Mar-2017 12:04 Current date and time. Incorrect time might indicate the Monitor stopped running. Correct time and green **Data OK** icon is a strong indication that data is current and valid.
- Open the **Alert Views - RTView Alerts Table** display.

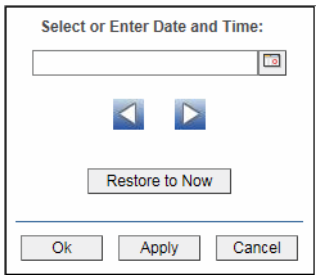
### Fields and Data

This display includes:

| | |
|---|---|
| **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:<br>Disconnected.<br>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** 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.

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** The amount of memory, in megabytes, guaranteed to be available for use by the JVM. The amount of committed memory can be a fixed or variable size. If set to be a variable size, the amount of committed memory can change over time, as the JVM may release memory to the system. This means that the amount allocated for **Committed** memory could be less than the amount initially allocated. **Committed** memory will always be greater than or equal to the amount allocated for **Used** memory.

**Used** The amount of memory, in megabytes, currently used by the application. Memory used includes the memory occupied by all objects including both reachable and unreachable objects.

**Peak Tenured Used** The amount of memory, in megabytes, used by tenured JVM objects in the time range specified. Tenured refers to JVM objects contained in a pool that holds objects that have avoided garbage collection and reside in the survivor space. Peak tenured refers to the maximum value of the tenured memory over a specified period of time.

**Eden Space** Traces the amount of memory used by the JVM eden pool in the time range specified. Eden refers to the JVM eden pool, which is used to initially allocate memory for most objects.

**Survivor Space** Traces the amount of memory used by the JVM survivor pool in the time range specified. The JVM survivor pool holds objects that survive the eden space garbage collection.

**Tenured Gen** Traces the amount of memory used by tenured JVM objects in the time range specified. Tenured refers to JVM objects contained in a pool that holds objects that have avoided garbage collection and reside in the survivor space. Peak tenured refers to the maximum value of the tenured memory over a specified period of time.

**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 Mem 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.

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

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

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

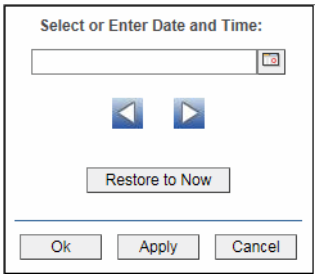
Open the **Alert Views - RTView Alerts Table** display.

**Fields and Data**
This display includes:

| | |
|---|---|
| **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.

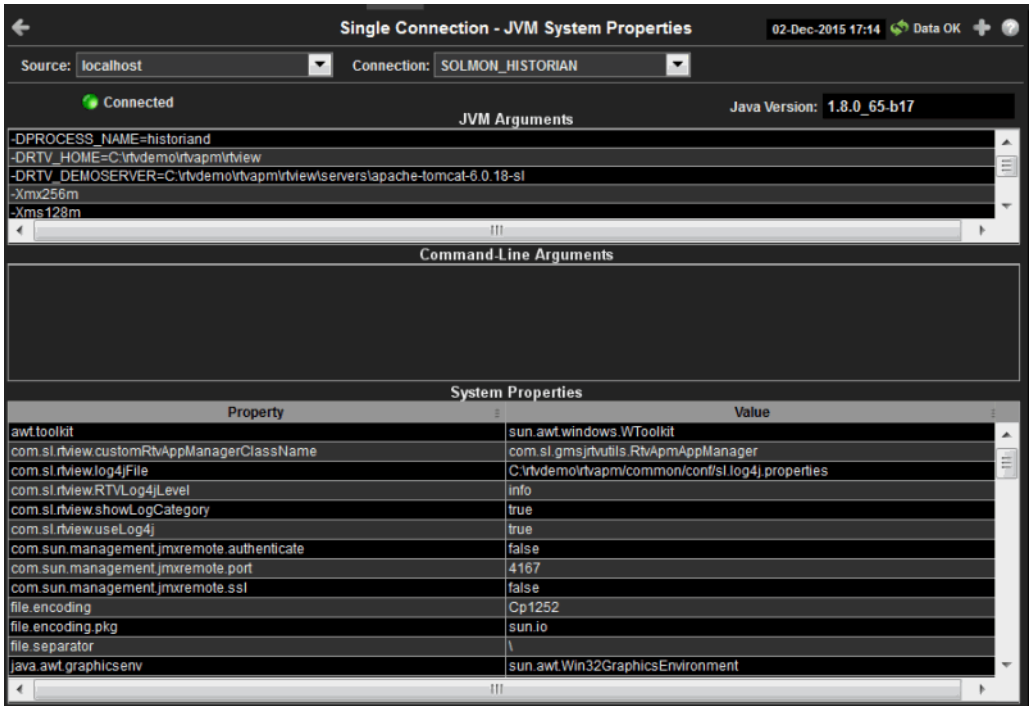
**Used - After** Traces the amount of memory used after the last garbage collection.

**Duration** The duration, in seconds, of garbage collection.

**Duty Cycle** The percentage of time that the application spends in garbage collection.

## 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.

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Menu, Table 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.

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

**Fields and Data**
This display includes:

| | |
|---|---|
| **Source** | Select the type of connection to the RTView Server. |
| **Connection** | Select an RTView Server from the drop-down menu. Names can be modified in the RTView Server configuration properties file. |
| **Connected** | The data connection state:<br>Disconnected.<br>Connected. |
| **Java Version** | The Java version running on the selected server. |
| **JVM Arguments** | The JVM arguments in the **RuntimeMXBean InputArguments** attribute. |

**Command Line Arguments** Arguments used to start the application.

**System Properties**
This table lists and describes system property settings.

**Property** Name of the property.

**Value** Current value of the property.

## Version Info

This display provides detailed version information for all of the connected RTView applications. You can view specific applications by filtering data using the **Source**, **Connection**, **Filter Field**, and **Filter Value** fields at the top of the display. This display provides valuable information about the version of each jar that is used in each connected RTView application that can be used to help Technical Support when issues arise. Rows in the table where the **JarConfiguration** does not match the **ApplicationConfiguration** are highlighted in teal.

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**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.

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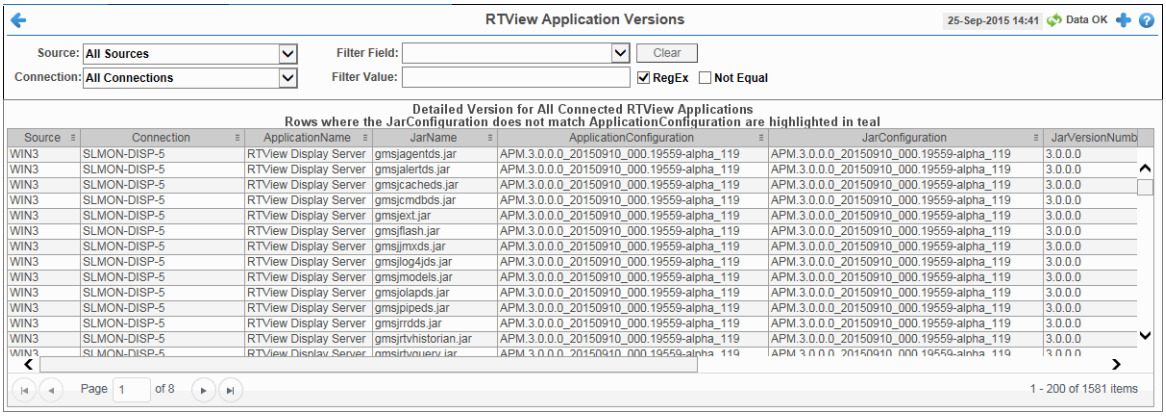
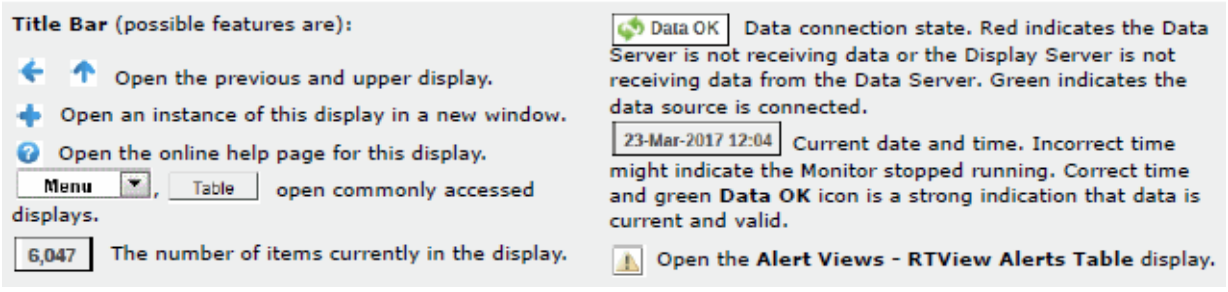


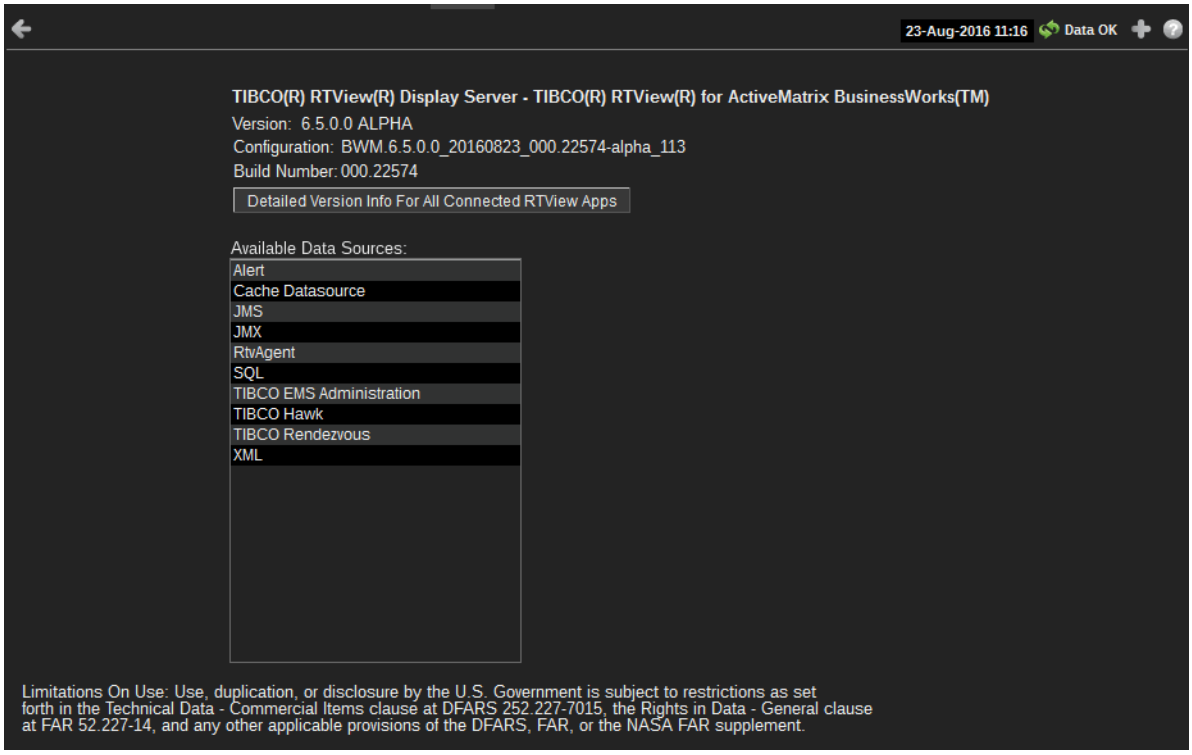



**Fields and Data**
This display includes:

| | |
|---|---|
| **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**.<br>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.<br>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. |

## About

This display shows details about the Monitor version and data sources available to your system.



# CHAPTER 5 Third-Party Reports

This section describes third-party reports for BusinessWorks 6, including system requirements, configuration steps, and the available parameters within each report.

This section includes:


- "TIBCO Spotfire Reports," next


## TIBCO Spotfire Reports

Currently, there is one TIBCO Spotfire report that is provided with the Monitor, the **BusinessWorks Engines Metrics Report**. This section includes:


- "System Requirements" on page 191
- "Configuring Spotfire Reports" on page 191
- "Reports" on page 204


### System Requirements

This section describes the minimum system requirements necessary to use these reports.

- **TIBCO BusinessWorks 6**
- **TIBCO Spotfire**

  Version 7.0 for Oracle and MySQL reports
- **Clients**

  Microsoft Windows 64-bit
- **Databases Supported**

  Oracle (version 11G) and MySQL (version 5.6)

### Configuring Spotfire Reports

You can configure the **BusinessWorks Engines Metrics Report** using Oracle or MySQL:

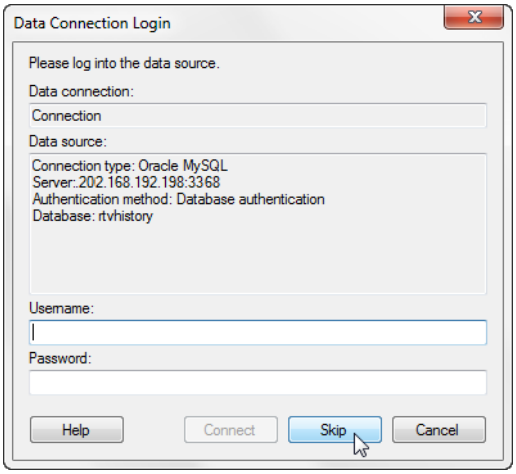

- "MySQL Report Configuration" on page 191
- "Oracle Report Configuration" on page 198


#### MySQL Report Configuration

This section describes how to configure the **BusinessWorks Engines Metrics Report** using MySQL.

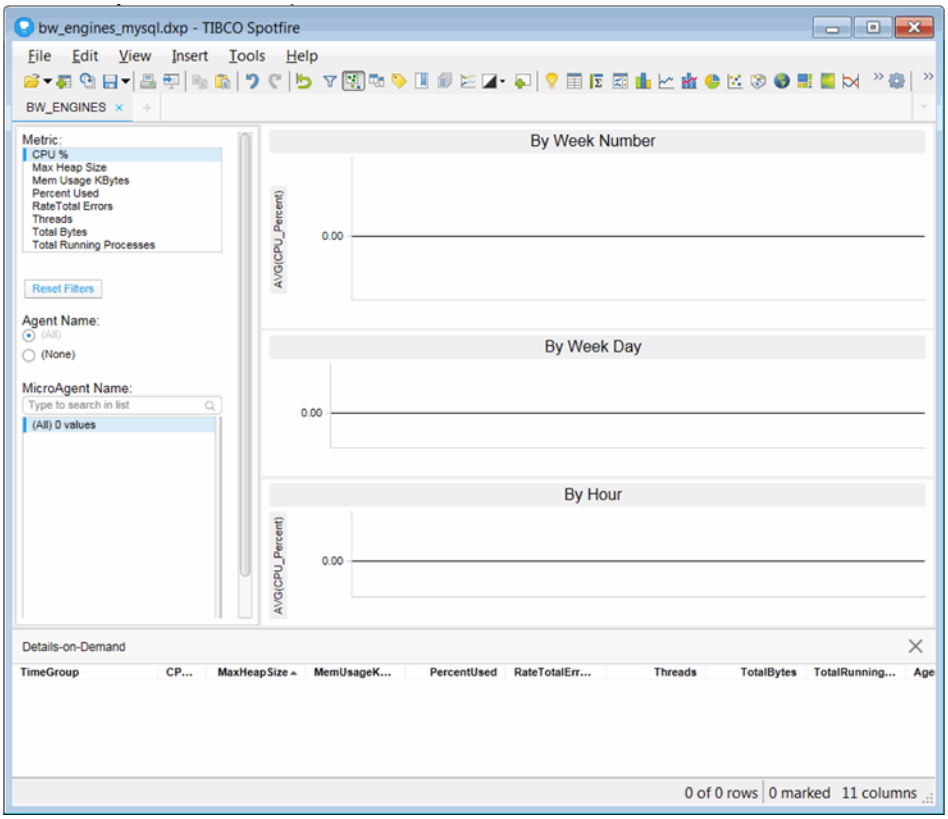
1. Open the **bw_engines_mysql.dxp** Spotfire Analysis file in the **rtvapm/bwmon/projects/reports/Spotfire** directory that was created during the Monitor installation.

   The **Data Connection Login** window opens.



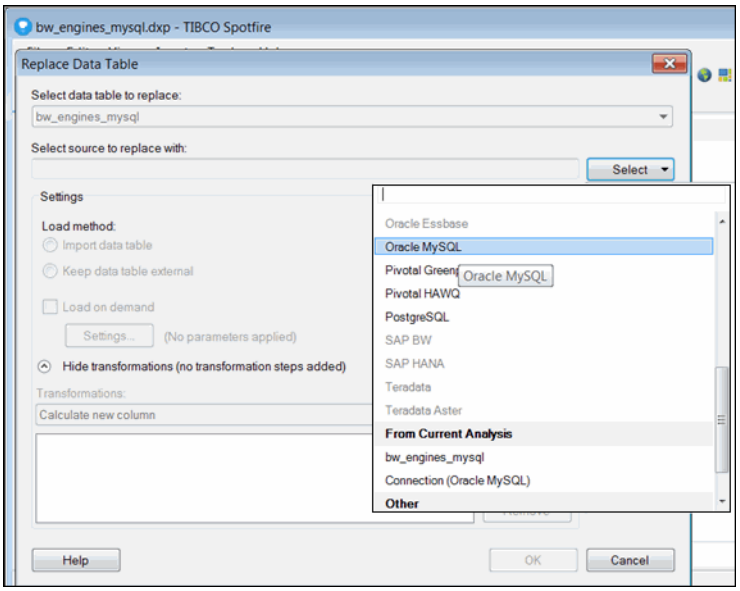

2. Click **Skip** (there is no need to log in at this point). Because there is no data, Spotfire might display a "Missing Data" dialog. Click **OK** to dismiss it.

   The **TIBCO Spotfire** dashboard opens.



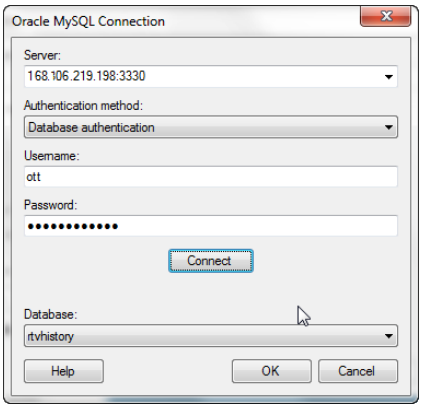

3. Click **File/Replace Data Table**.

The **Replace Data Table** window opens.




4. Click **Select** (associated with the **Select source to replace with** field) and choose **Oracle MySQL**.

   The **Oracle MySQL Connection** window opens.

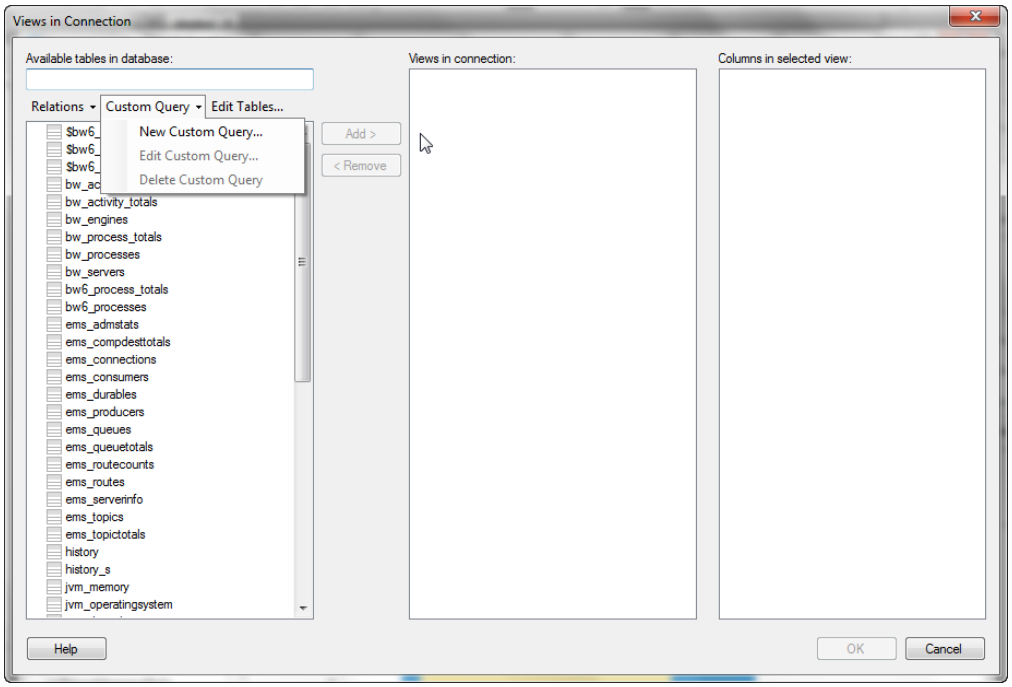



5. Enter the **Server**, **Username** and **Password**, select **Database authentication** as the **Authentication Method**, and click **Connect**.

   The **Database** drop down menu should populate.

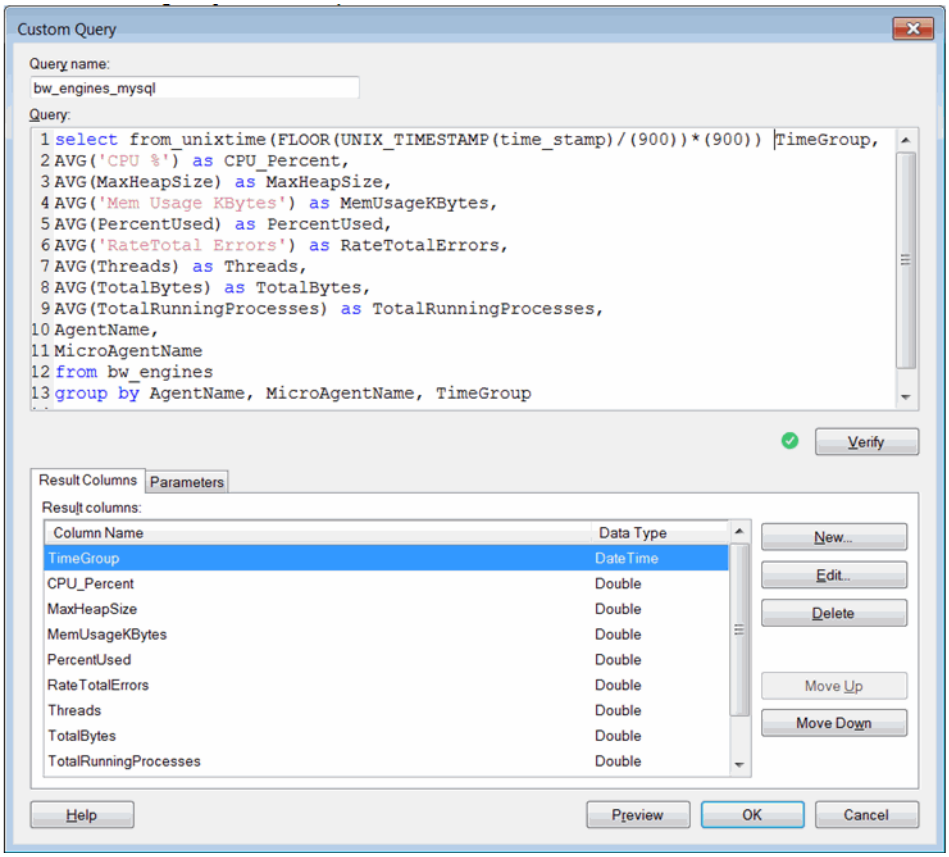
6. Select **rtvhistory** from the **Database** drop down menu and click **OK**.

The **Views in Connection** window opens.




**7.** Select the **Custom Query** drop down list and choose **New Custom Query**.

The **Custom Query** window opens.




**8.** Enter the desired name (a name that is meaningful for you) in the **Query_name** field.

**9.** Open **bw_engines_mysql.txt** file and copy/paste the SQL code from the file into the **Custom Query** window **Query** field. Click **Verify**.

---

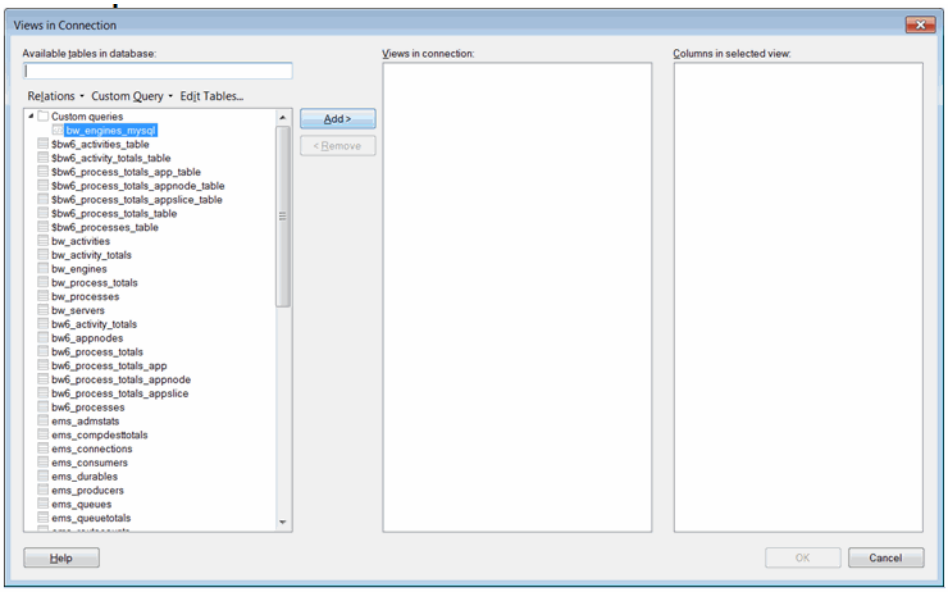
**Note:** This step is required because the database contains data that has been compacted as well as data that has not yet been compacted. The SQL code compacts the data that has not been compacted and adds the newly compacted data to the already compacted data so that all the "bucket" values are the same. For example, let's say the compacted data is compacted so that the oldest data is contained in 15 minute buckets, but the more recent data is contained in 5 or 10 minute buckets. The SQL code takes the data contained in the 5 and 10 minute buckets and compacts it into 15 minute buckets so that all the data is consistently bucketed.

---

After the SQL is verified, the column names display in the **Result Columns** tab.

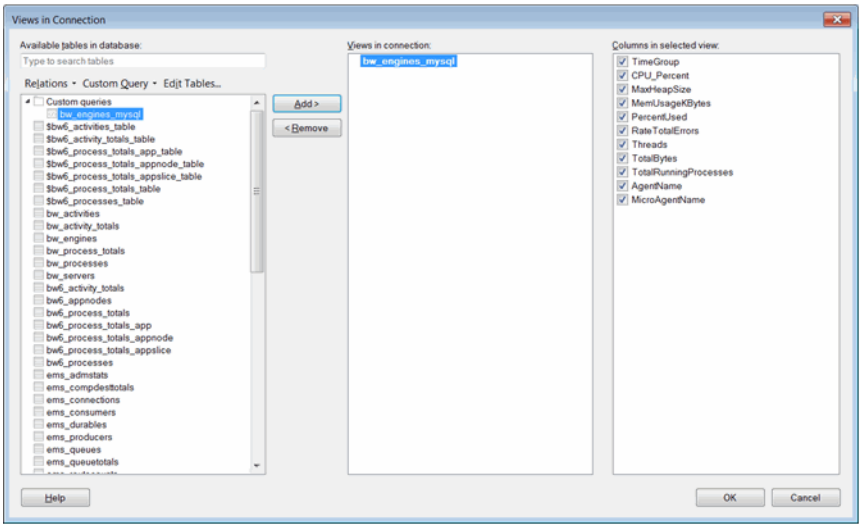
**10.** Click **OK** on the **Custom Query** window.

The new query (for example, **BW_engines_mysql)** should display in the list of **Custom queries** on the **Views in Connection** window.



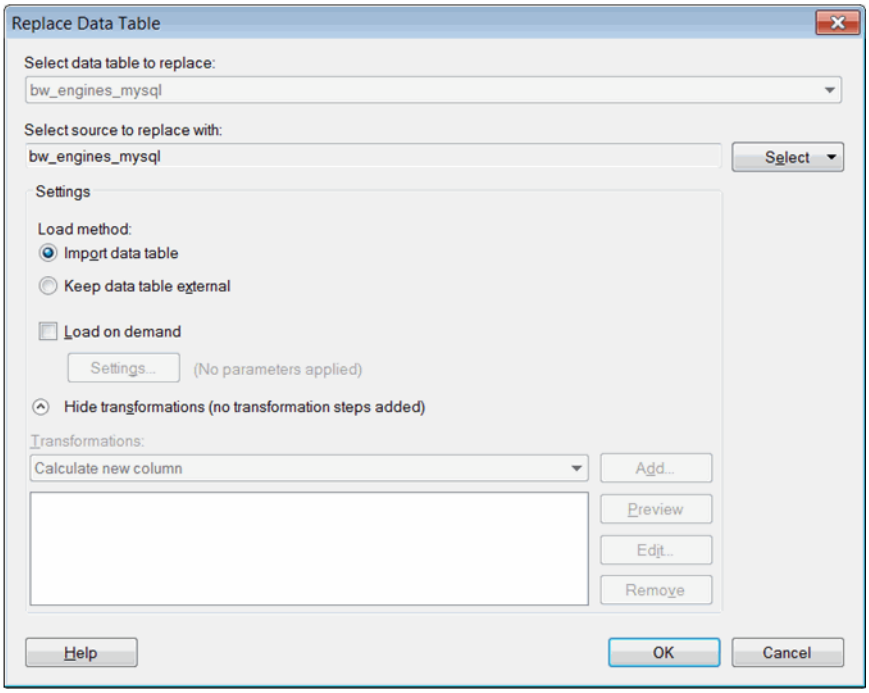

**11.** Select your new custom query and click **Add**.

Your new custom query should display in the **Views in connection** region and the query's associated columns should display in the **Columns in selected view** region.



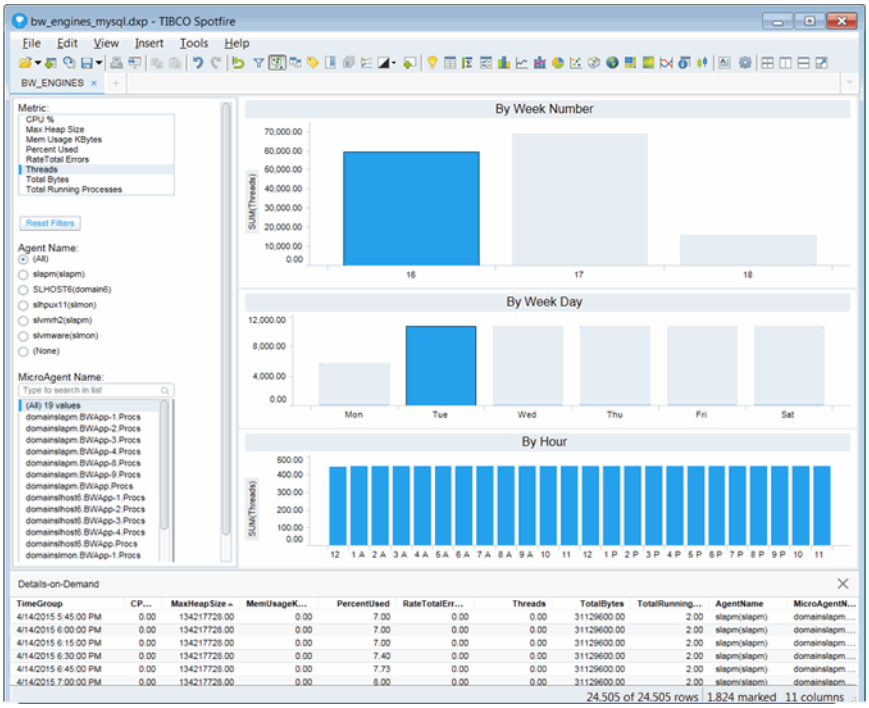

**12.** Click **OK** on the **Views in Connection** window.

The **Replace Data Table** window displays.




**13.** Select the **Import data table** radio button and click **OK**.

Your data should display in TIBCO Spotfire.

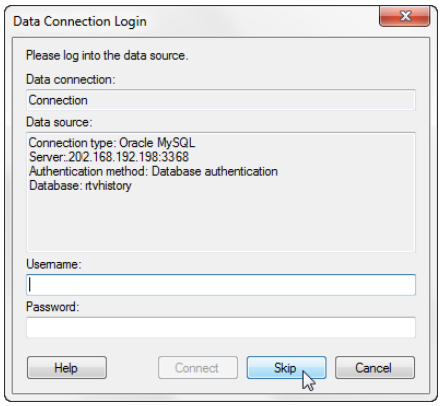


## Oracle Report Configuration

This section describes how to configure the **BusinessWorks Engines Metrics Report** using Oracle.

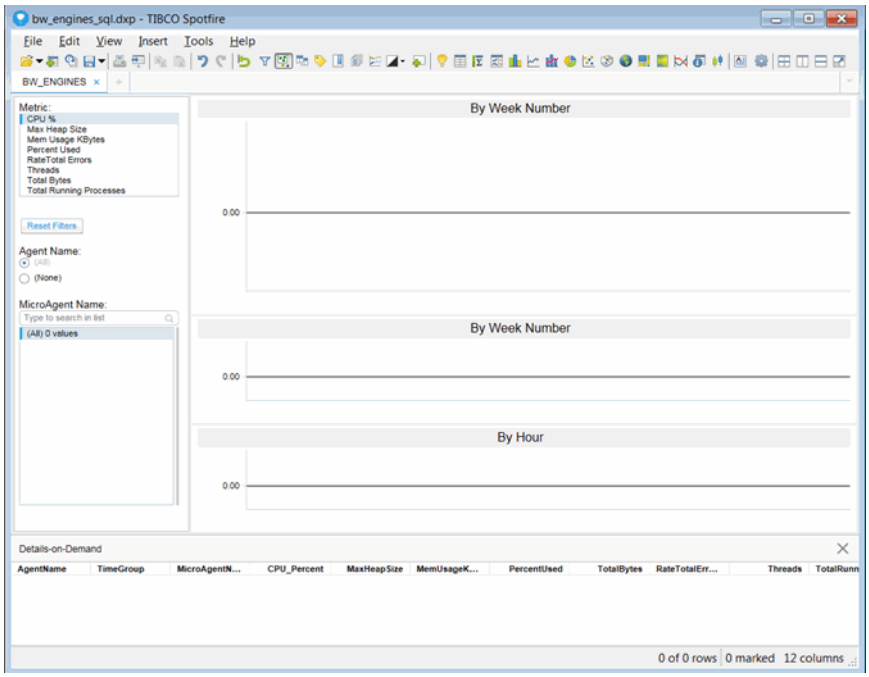
1. Open the **bw_engines_sql.dxp** Spotfire Analysis file in the **rtvapm/bwmon/projects/reports/Spotfire** directory that was created during the Monitor installation.

   The **Data Connection Login** window displays.



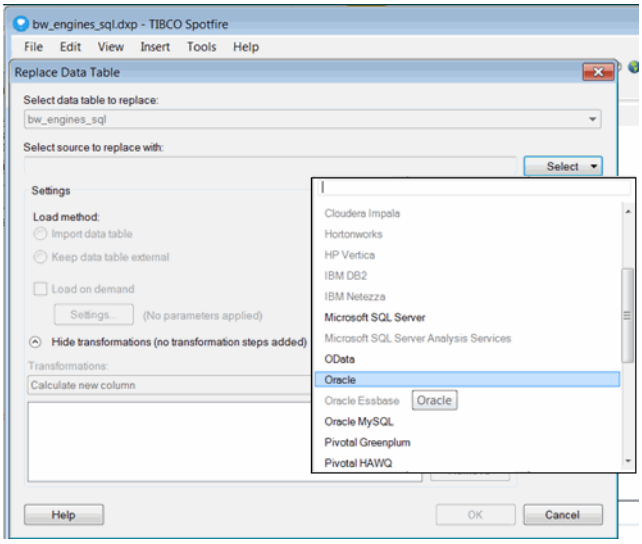

2. Click **Skip** (there is no need to log in at this point). Because there is no data, Spotfire might display a "Missing Data" dialog. Click **OK** to dismiss it.

   The **TIBCO Spotfire** dashboard opens.



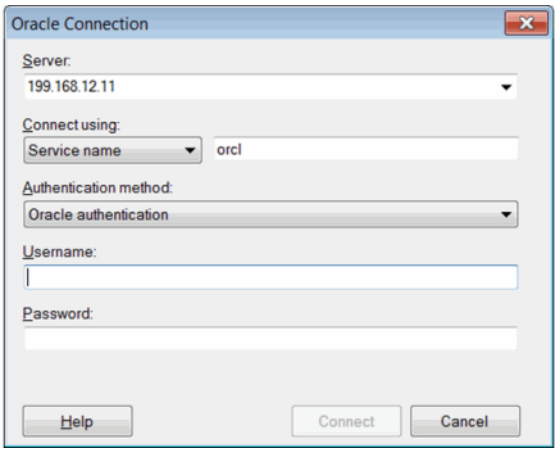

3. Click **File> Replace Data Table**.

The **Replace Data Table** window opens.



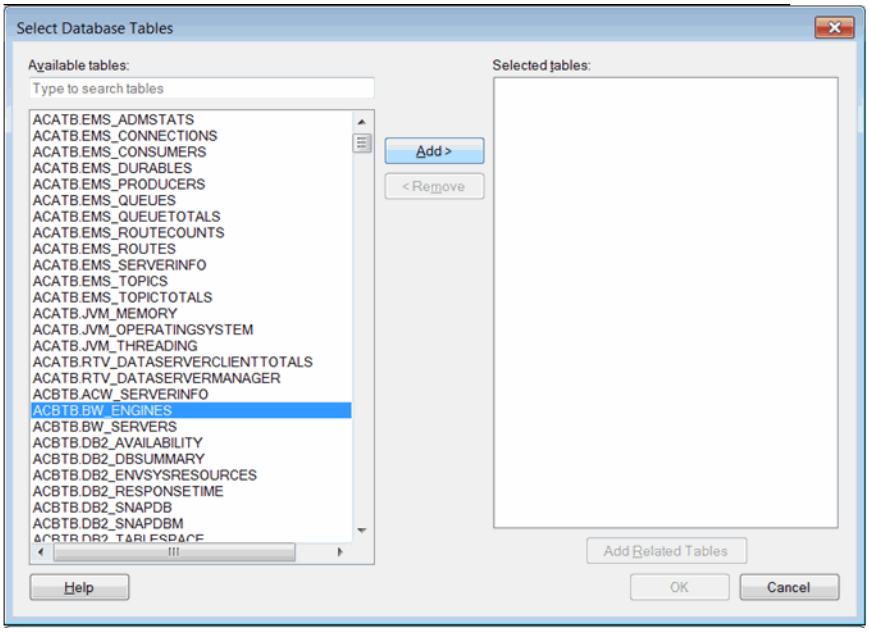

4. Click **Select** (associated with the **Select source to replace with** field) and select **Oracle**.

   The **Oracle Connection** window opens.

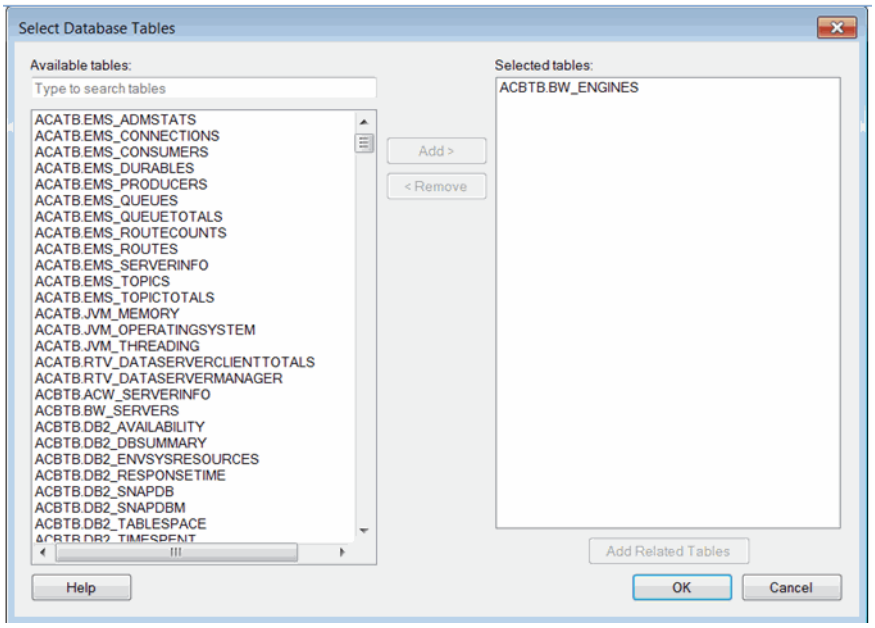



5. Enter the **Server**, select **SID** in the **Connect using** drop down (and enter **orcl** in the associated field if not defaulted), select **Oracle authentication** as the **Authentication Method**, enter the **Username** and **Password**, and click **Connect**.

The **Select Database Tables** window opens.

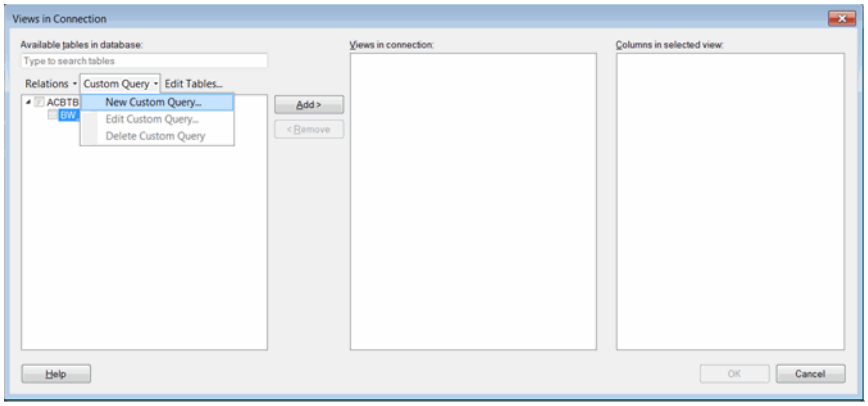



**6.** Select **BW_ENGINES** from the **Available Tables** list and click **Add**.
The table displays in the **Selected tables** region.

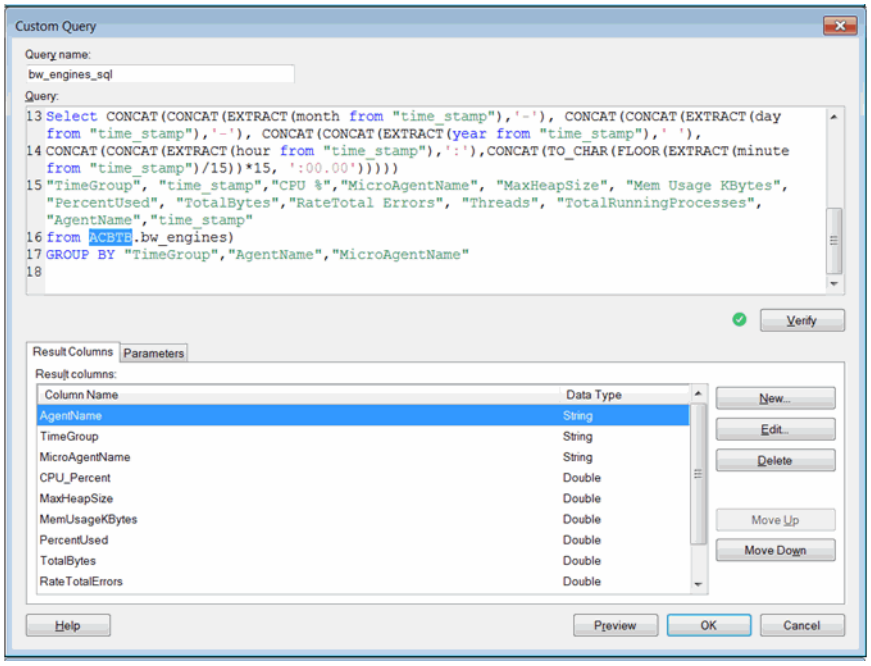



**7.** Click **OK**.

The **Views in Connection** window displays with the selected table listed in the **Available tables in the database** region.




**8.** Select the **BW_ENGINES** table from the list and click **Custom Query / New Query**. The **Custom Query** window opens.




**9.** Enter the desired name (a name that is meaningful for you) into the **Query_name** field.

**10.**, Open the **bw_engines_sql.txt** file and copy/paste the SQL code from the file into the **Custom Query** window **Query** field.

**11.**Click **Verify**.

---

**Note:** Depending on your environment, you might need to add your server name prefix in front of the **bw_engines** table name, as shown in the screen shot, above.

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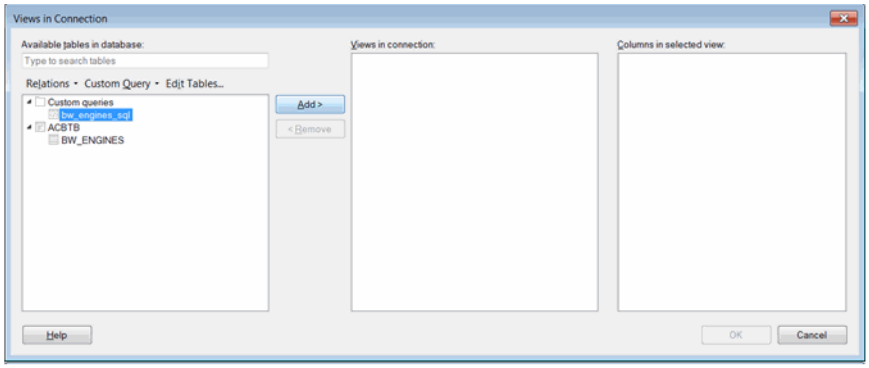
**Note:** This step is required because the database contains data that has been compacted as well as data that has not yet been compacted. The SQL code compacts the data that has not been compacted and adds the newly compacted data to the already compacted data so that all the "bucket" values are the same. For example, let's say the compacted data is compacted so that the oldest data is contained in 15 minute buckets, but the more recent data is contained in 5 or 10 minute buckets. The SQL code takes the data contained in the 5 and 10 minute buckets and compacts it into 15 minute buckets so that all the data is consistently bucketed.

---

After the SQL script is verified, the column names display in the **Result Columns** tab.

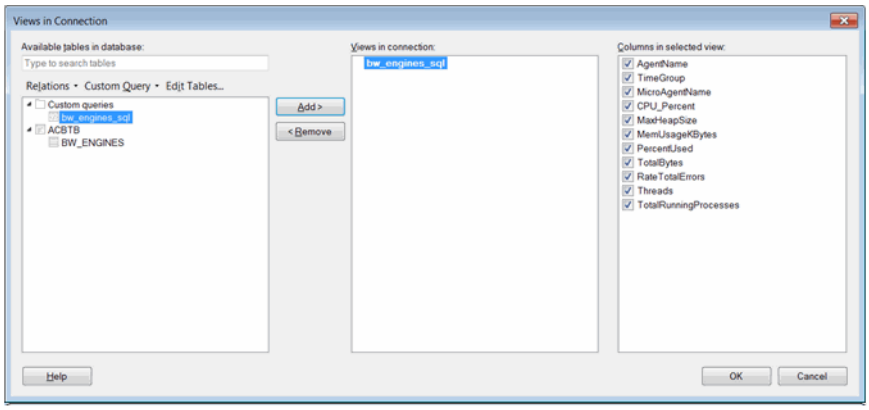
**12.**Click **OK**.

The new query displays under **Custom queries** in the **Available tables in database** list on the **Views in Connection** window.



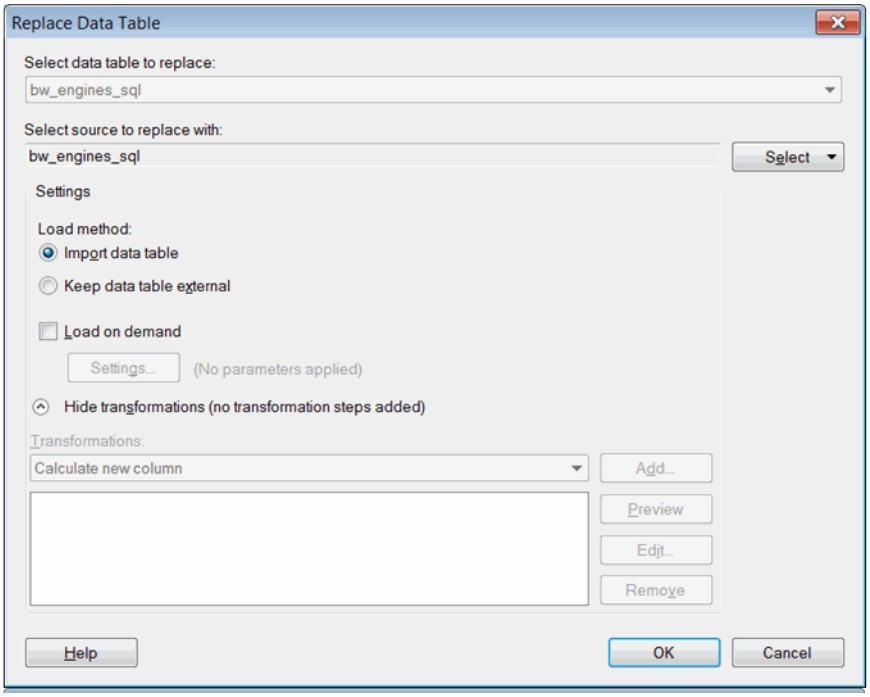

**13.**Select your newly added query/view and click **Add**.

The new query displays in the **Views in connection** list and the associated columns display in the **Columns in selected view** region.



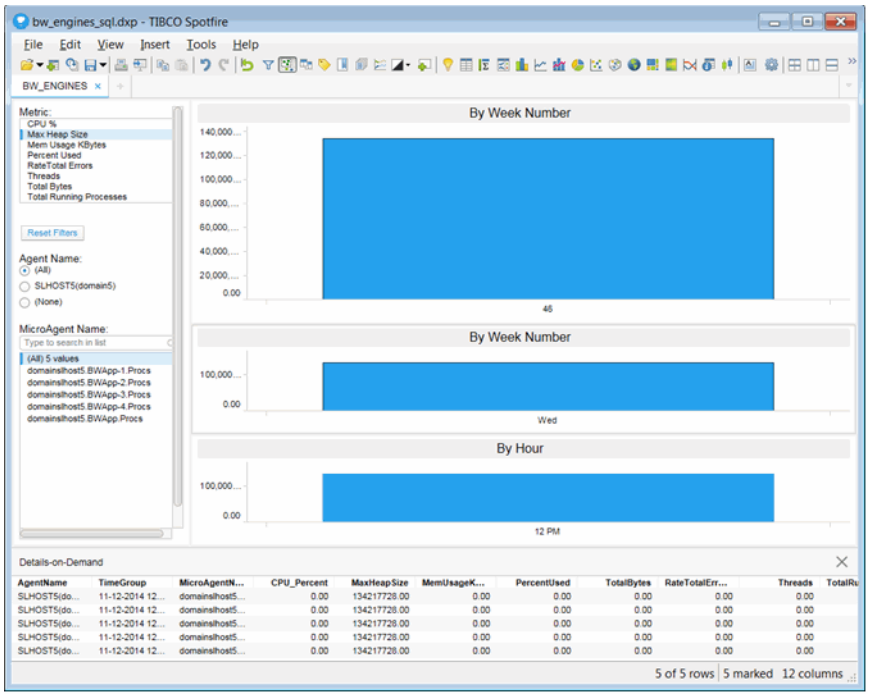
**14.**Click **OK**.

The **Replace Data Table** window opens.




**15.**Select **Import data table** as the **Load Method** and click **OK**.

Your report should display in the TIBCO Spotfire dashboard.



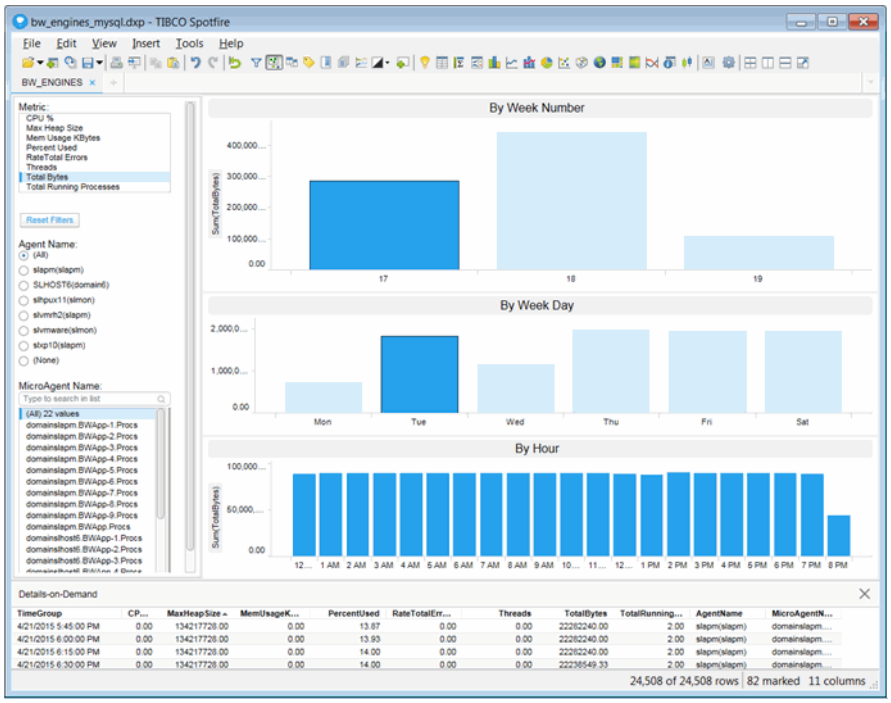
# Reports

The following reports are available:

- "BusinessWorks Engines Metrics Report" on page 204

## BusinessWorks Engines Metrics Report

The **BusinessWorks Engines Message Metrics Report** allows you to details for various metrics for one or more selected servers.




**Metrics and Data**
This report includes:

**Metric** Lists the metrics available for the report.

| | |
|---|---|
| **CPU %** | The percent (%) of server CPU used by the engine. |
| **Max Heap Size** | The maximum amount of heap memory allocated to this engine for the JVM. |
| **Mem Usage Kbytes** | The amount of server memory, in kilobytes, used by the engine. |
| **Percent Used** | The percent (%) of allocated memory currently consumed by this engine from within the JVM. Equal to the value of: (**100*UsedBytes**) divided by **MaxBytes**. |
| **Rate Total Errors** | The number of errors per second. |
| **Threads** | The number of threads used by this engine. |

| | | |
|---|---|---|
| | **Total Bytes** | The total bytes of memory within the JVM currently used by the engine. |
| | **Total Running Processes** | The number of running processes. |
| **Reset All Filters** | Resets the Agent Name and MicroAgent Name filters. | |
| **Agent Name** | The name of the TIBCO Hawk agent. | |
| **MicroAgent Name** | The name of the TIBCO Hawk MicroAgent. | |
| **By Week Number** | Displays the averages (for the Rate metrics) or sums (for the Count metrics) for the selected server(s) for each week. You can hover over each week to view the exact counts or rates for that week. Clicking on a particular week displays data for each day for that particular week in the **By Week Day** region. | |
| **By Week Day** | Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each day in the selected week. Hovering over a particular day displays the exact sum or average for that day. Clicking on a particular day populates data for each hour in the **By Hour** region. | |
| **By Hour** | Displays the averages (for the Rate metrics) or sums (for the Count metrics) for each hour in the selected day. Hovering over a particular hour displays the exact sum or average for that hour. Clicking on a particular hour updates the **TimeBucket** information in the **Details-on-Demand** window. | |

# APPENDIX A Monitor Scripts

This section describes Monitor scripts and the **rtvservers.dat** configuration file. This section includes:


- "Scripts" on page 207
- "rtvservers.dat" on page 213


## Scripts

The following scripts are available when used from an initialized command window. The scripts can be executed from a Windows command prompt or UNIX terminal window. On Windows, you can type the commands as described in the following section without the **.bat** suffix; on UNIX systems you must replace the **.bat** suffix with **.sh** for each command. For example, **rundata.sh**.

| Name | Description |
|---|---|
| **dos2unix.sh** | Replaces Windows line termination to Unix format. This script is not available as a **.bat** script.<br>**Location:**<br>**rtvapm/common/bin** |
| **my_alert_actions.bat** | Sample script to define actions for alerts.<br>**Location:**<br>**rtvapm/common/bin** |
| **rtvapm_init.bat** | Initializes a command window.<br>**Format:**<br>**rtvapm_init.bat**<br>**Location:**<br>**rtvapm** (execute from the Monitor installation root directory)<br>**Note:** In UNIX, the script used to initialize a terminal window depends on whether you are in csh or rsh (e.g. Linux, Mac OS X). With a Bourne shell, open a terminal window, go to your Monitor installation directory and type:<br>**./rtvapm_init.sh** |
| **runa.bat** | Executes RTView Analyzer to extract the function chain of the chosen **.rtv** file. It returns a **.pdf** file with a graph of all the function chains in the file.<br>**Format:**<br>**runa.bat [rtvFileName].rtv**<br>**rtvFileName** - Any RTView file with function chains of relative complexity.<br>**Location:**<br>**rtvapm/common/bin** |

| Name | Description |
|---|---|
| **runb.bat** | Starts the Display Builder. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv builder**<br>**start_rtv builder_ds**<br>**Format:**<br>**runb.bat [-ds] [-bg]**<br>**-ds** - To use the currently running Data Server.<br>**-bg** - Runs the Display Builder as a background process.<br>**Location:**<br>**rtvapm/common/bin** |
| **rundata.bat** | Starts the Data Server. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv default dataserver-properties:sample**<br>**Format:**<br>**rundata [-properties:Property File Name] [-propfilter:Property Filter]**<br>**-properties -** flag used to apply a specific property file.<br>**Property File Name** - the name of the properties file to apply.<br>**-propfilter** - flag used to apply a property filter.<br>**Property** - the name of the property to apply.<br>**Location:**<br>**rtvapm/common/bin**<br>**Example:**<br>**rundata -properties:mycustom.properties** |
| **rundb.bat** | Starts the HSQLDB database. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv default database**<br>**Location:**<br>**rtvapm/common/bin** |
| **rundisp.bat** | Starts the Display Server. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv default displayserver-properties:sample**<br>**Location:**<br>**rtvapm/common/bin** |
| **runhist.bat** | Starts the Historian. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv default historian-properties:sample**<br>**Location:**<br>**rtvapm/common/bin** |
| **runv.bat** | Starts the Display Viewer. We recommend that you use the **start_rtv.bat** script with the appropriate configuration and server. For example:<br>**start_rtv default viewer**<br>**Location:**<br>**rtvapm/common/bin** |

| Name | Description |
|---|---|
| **start_rtv.bat** | Starts processes of a named configuration as specified in the **rtvservers.dat** configuration file. A named configuration should include a Data Server, a Display Server or Viewer, an Historian and a Database. The **start_rtv** script only attempts to start processes if it detects they are not running. The action of starting processes can be applied to all named configurations, a single named configuration or a single process in a named configuration.<br>**Note:** The Display Viewer can be started using the **start_rtv** script, but cannot be stopped using the **stop_rtv** script. Stop the Viewer by closing its window.<br>To use additional arguments you should either specify a named configuration (to apply the argument to all processes in that configuration) or specify **all** (to apply the argument to all configurations).<br>**–console** (or **–c**) - Start the processes with a command window (which is useful for debugging and testing).<br>When used without arguments, this script returns usage information and a list of available configurations. For example, **start_rtv** returns:<br>`Usage: start_rtv config or 'all' [server or 'all'] [args...]`<br>`Available configs:`<br>`default`<br>`database`<br>`dataserver`<br>`historian`<br>`displayserver`<br>Location:<br>**rtvapm/common/bin** |
| | **all**<br>Starts all named configurations specified in the **rtvservers.dat** file. The **all** argument applies the action to named configurations specified in the **rtvservers.dat** file.<br>**Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next).<br>**Example:**<br>**start_rtv.bat all** |
| | **[Configuration Name]**<br>To start a single Monitor configuration specified in the **rtvservers.dat** file:<br>**start_rtv.bat [Configuration Name]**<br>**Configuration Name** is the named configuration specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.<br>**Example:**<br>**start_rtv.bat web_deployment** |

| Name | Description |
|---|---|
| | **[Process Name]**<br>To start a single process in a Monitor configuration specified in the **rtvservers.dat** file:<br>**start_rtv.bat [Configuration Name] [Process Name]**<br>**Process Name** is the name of a process defined in the **rtvservers.dat** configuration file. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that specific process in the configuration.<br>**Example:**<br>**start_rtv.bat default dataserver** |
| **status_rtv.bat** | Returns the status all Monitor configurations specified in the **rtvservers.dat** configuration file. This action uses defined JMX ports for monitoring the status of the process. A named configuration should include a Data Server, a Display Server or Viewer, an Historian and a Database. The action can be applied to all named configurations, a single named configuration or a single process in a named configuration.<br>To use additional arguments you must either specify a configuration (to apply the argument to all servers in a configuration) or **all** (to apply the argument to each of the configurations).<br>This command returns status information upon execution. For example:<br>**status_rtv default** returns:<br>`dataserver: Running PID 4696 Uptime 000:00:01:47 CPU 00:00:02 Heap 0.7% Clients 2`<br>`displayserver: Running PID 6340 Uptime 000:00:01:45 CPU 00:00:01 Heap 1.0% Displays 0`<br>`historian: Running PID 6108 Uptime 000:00:01:42 CPU 00:00:01 Heap 1.3% Connected true`<br>`database: Running PID 6848 Uptime 000:00:01:39 CPU 00:00:00 Heap 0.4%`<br>In the above example, note that the Data Server reports two clients, the Display Server and the Historian. Both the Display Server and the Historian were started with the **–ds** argument, which connects them to the Data Server. Note also that the Historian reports that it is connected to the database.<br>In the following example, **status_rtv default** reports that a configured port is in use but the process using the port does not appear to belong to named configuration:<br>`dataserver: Data port xxx in use by PID yyy`<br>`displayserver: JMX port xxx in use by PID yyy`<br>When **status_rtv** is used without arguments, it returns usage information and a list of available configurations:<br>`Usage: status_rtv config [server] or 'all'`<br>`Available configs:`<br>`default`<br>**Location:**<br>**rtvapm/common/bin** |

| Name | Description |
|---|---|
| | **all**<br>Returns the status of all named configurations specified in the **rtvservers.dat** configuration file. The **all** argument applies the action to all named configurations specified in the **rtvservers.dat** configuration file.<br>**Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next).<br>**Example:**<br>**status_rtv.bat all** |
| | **[Configuration Name]**<br>Returns the status of a single named configuration specified in the **rtvservers.dat** configuration file:<br>**status_rtv.bat [Configuration Name]**<br>**Configuration Name** is the named configuration specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.<br>Example:<br>**status_rtv.bat web_deployment** |
| | **[Process Name]**<br>Returns the status of a single process in a named configuration specified in the **rtvservers.dat** configuration file:<br>**status_rtv.bat [Configuration Name] [Process Name]**<br>**Process Name** is the name of a process defined in the **rtvservers.dat** configuration file. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that specific process in the configuration.<br>**Example:**<br>**status_rtv.bat default dataserver** |

| Name | Description |
|---|---|
| **stop_rtv.bat** | Stops processes in a named configuration as specified in the **rtvservers.dat** configuration file. This action uses defined JMX ports for monitoring. A named configuration might include a Data Server, a Display Server or Viewer, an Historian and a Database. The action can be applied to all named configurations, a single named configuration or a single process in a named configuration.<br>To use additional arguments you must either specify a named configuration (to apply the argument to all processes in that configuration) or **all** (to apply the argument to all named configurations). If the Display Viewer is started using the **start_rtv** script, the Viewer cannot be stopped using the **stop_rtv** script. Stop the Viewer by closing its window.<br>**Note:** The HSQLDB server (if used) runs with a command window on Windows and cannot be stopped using the **stop_rtv** command. Stop the HSQLDB server by typing **Ctrl-C** in its command window.<br>This command returns status information upon execution. For example, stop_rtv.bat default returns:<br>`dataserver: Stopped PID 4696 via JMX port 3368`<br>If no JMX port is configured the **stop_rtv** command reports the following:<br>`dataserver: No JMX port configured; must kill PID xxx by system command.`<br>If the port is in use but the PID is not available (this might happen on HP-UX and some Linux systems) then the **stop_rtv** and **status_rtv** command will report the PID as "???", for example:<br>`dataserver: Running PID ??? Uptime 000:00:00:37 CPU 00:00:01 Heap 1.3% Clients 1`<br>`dataserver: Stopped PID ??? via JMX port 3368`<br>When used without arguments, returns usage information and a list of available configurations. For example, **stop_rtv** returns:<br>`Usage: stop_rtv [ConfigurationName] [ProcessName] or 'all'`<br>Location:<br>**rtvapm/common/bin** |
| | **all**<br>Stops all named configurations specified in the **rtvservers.dat** configuration file. The **all** argument applies the action to all named configurations specified in the **rtvservers.dat** configuration file.<br>**Note:** When multiple configurations are specified in the **rtvservers.dat** configuration file and they have different project directory locations, the **all** argument processes all of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. For details, see the **rtvservers.dat** section (next).<br>**Example:**<br>**stop_rtv.bat all** |
| | **[Configuration Name]**<br>Stops a single named configuration specified in the **rtvservers.dat** configuration file:<br>**stop_rtv.bat [Configuration Name]**<br>**Configuration Name** is the named configuration specified in the **rtvservers.dat** configuration file. The action applies to all processes specified in the configuration.<br>Example:<br>**stop_rtv.bat default** |

| Name | Description |
|---|---|
| | **[Process Name]**<br>Stops a single process in a named configuration specified in the **rtvservers.dat** configuration file:<br>**stop_rtv.bat [Configuration Name] [Process Name]**<br>Process Name is the name of a process in the named configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to the process chosen from the named configuration.<br>**Example:**<br>**stop_rtv.bat default dataserver** |
| **update_wars.bat** | Script to regenerate war files when the configuration of the Solution Package has changed.<br>**Location:**<br>**rtvapm/*mon/projects/sample** |

# rtvservers.dat

The **rtvservers.dat** text file, located in the ***mon/projects/mysample** directory, is used to manage your Monitor deployment and processes.

The **rtvservers.dat** configuration file contains one or more named configurations. A named configuration should include any of the following: Data Server, Historian, HSQLDB database, and either a Display Server (for a Web Deployment) or a Display Viewer (for a Desktop Deployment). The **rtvservers.dat** configuration file is used when the following scripts are executed:

- **start_rtv** Starts Monitor processes specified in the **rtvservers.dat** configuration file.
- **stop_rtv** Stops the Monitor processes specified in the **rtvservers.dat** configuration file.
- **status_rtv** Returns status information for processes specified in the **rtvservers.dat** configuration file.

**NOTE:** You can write the paths in the **rtvservers.dat** configuration file by exclusively using the forward-slash (**/**) notation for both Windows and UNIX systems. For example, if your project settings directory is located in a subdirectory below the location of your **rtvservers.dat** file, you write the path as **./**subdirectory on both Windows and UNIX.

## Single Configuration File

The following **rtvservers.dat** configuration file contains a single named configuration, which is called *default*, for a Web deployment:

default . database rundb

default . dataserver rundata

default . historian runhist -ds

default . displayserver rundisp -ds

**NOTE:** The **rtvservers.dat** configuration file must end with a new line.

In this example, to start the default configuration type: **start_rtv defaultor start_rtv all**. To start a single process from the configuration, type **start_rtv[ConfigurationName] [ProcessName]**. For example: **start_rtv default displayserver**. Each line has the following format consisting of four fields:

**<Configuration Name> <Project Directory Location> <Process Filter> <Command>**

| | |
|---|---|
| **<Configuration Name>** | The name of the configuration ("default" in this example). |
| **<Project Directory Location>** | The project directory location, relative to the location of the **rtvservers.dat** configuration file (".", the current directory, in this example). |
| **<Process Filter>** | The filter that identifies the process, which is the property filter under which the JMX port for monitoring is defined. By default, this is the server name, such as **dataserver**, **displayserver** and **historian**. |
| **<Command>** | The script used to start the process. Valid values are:<br>**rundata**: Starts the Data Server.<br>**runhist**: Starts the Historian.<br>**rundisp**: Starts the Display Server.<br>**rundb**: Starts the HSQLDB Database.<br>**runv**: Starts the Display Viewer.<br>**runb**: Starts the Builder. |

## Multiple Configuration File

When multiple configurations are specified in the rtvservers.dat configuration file and they have different project directory locations, the **all** argument processes each of the configurations. However, if the configurations have the same project directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations. Alternative configurations allow you to alternate among several configurations for the same Monitor deployment.

For example, the following rtvservers.dat configuration file contains two configurations, *system1* and *system2*. Note that the project directory locations differ (**../system1** and **../system2**, respectively).

```
system1 ../system1 dataserver rundata
system1 ../system1 historian runhist -ds
system1 ../system1 displayserver rundisp -ds

system2 ../system2 dataserver rundata
system2 ../system2 historian runhist -ds
system2 ../system2 displayserver rundisp –ds
```

Because the project directory locations differ, you can type **start_rtv all** to start both configurations. To start only the system1 configuration, type: **start_rtv system1**. To start a single process of the system1 configuration, type **start_rtv <Configuration Name> <Process Name>**. For example: **start_rtv system1 displayserver**.

The following illustrates an **rtvservers.dat** configuration file with two configurations: *desktop*, which is for a Desktop Deployment and *browser*, which is for a Browser Deployment. Note that the project settings directory locations are the same (**../system1** for both). The following **rtvservers.dat** configuration file allows you to switch between a Web Browser and a Desktop Deployment:

desktop ../system1 dataserver rundata–properties:desktop

desktop ../system1 historian runhist -ds–properties:desktop

desktop ../system1 viewer runv -ds–properties:desktop

browser ../system1 dataserver rundata–properties:browser

browser ../system1 historian runhist -ds–properties:browser

browser ../system1 displayserver rundisp -ds–properties:browser

where **desktop.properties** and **browser.properties** files reside in the system1 project directory containing all necessary settings for each deployment.

When the **rtvservers.dat** file contains several alternate configurations as this example does, the **all** argument processes only the first defined configuration, in this case, the desktop configuration. To execute the second configuration you type: **start_rtv browser**.

# APPENDIX B Properties

This section describes properties that are available for the Monitor and how to configure them. This section includes:


- "Overview" on page 217
- "Property Format" on page 218: Describes property format, filters and naming conventions.
- "Properties" on page 219: Describes properties for modifying display behavior, such as drill-down targets.
- "Substitutions" on page 219: Describes substitutions available for modifying display behavior.


## Overview

Monitor configuration is specified using a series of properties. Properties can be specified in the command line, in properties files, or in a properties database. However, the most convenient way from a maintenance perspective is to create your own properties files. You can override certain Monitor default settings by editing properties. There are several property files that you might edit to configure or optimize your Monitor deployment.

Modify properties in the **sample.properties** file. These instructions assume you have a project directory, as described in "Create a Project Directory" on page 6. The **sample.properties** file is located in your project directory.

Set properties using command line options in an initialized command window. For details about initializing a command window, see "Initializing a Command Prompt or Terminal Window" on page 12.

Options specified on the command line are applied last, therefore command line arguments override values saved in configuration files (such as **.properties** files). Also, in many cases the command-line option cannot be used as a property, or vice versa. For these reasons, we recommend that you use properties rather than command line options. To specify a property in the command line:

- Add a dash (-) at the beginning.
- Remove the prefix (sl.rtview.).
- Remove the "Property Filters" prefix if present (for example, displayserver.). For details, see "Property Filters" on page 218.
- Replace the colon (**:**) with an equals sign (**=**).

For example, the property **myprefix.sl.rtview.someflag=true** is **-someflag:true** as a command line option. If a command line argument contains a space or a semicolon, the entire argument must be enclosed in quotes (e.g.: **"-sub:$data:my Data"**).

# Property Format

This section describes the format for Monitor properties in the **sample.properties** file. These instructions assume you have a project directory, as described in "Create a Project Directory" on page 6. The **sample.properties** file is located in your project directory. properties. All properties have the prefix **sl.rtview** which is followed by a property name = value pair: **sl.rtview.<property_name>=:<value>**. For example, to specify the Data Server port number globally: **sl.rtview.dataserver.port=3278**

## Property Filters

Filters are available to apply limit the scope to which a property is applied. Filters precede the **sl.rtview** property prefix followed by a period (**.**): **<property_filter>.sl.rtview.<property_name>=:<value>**.

For example, to specify the Data Server port number to only proxy clients, we use the **proxyclient** filter: **proxyclient.sl.rtview.dataserver.port=3278**

The following Monitor property filters are predefined and apply automatically depending on what tool is being executed:

| Filter | Description |
|---|---|
| **builder** | Applies the property to the Display Builder. For example: **builder.sl.rtview.stylesheet** |
| **collector** | Applies the property to the Data Collection Server. For example: **collector.sl.rtview.jmx.jmx_metrics_period=15000** |
| **dataserver** | Applies the property to the Data Server. For example: **dataserver.sl.rtview.dataserver.socket=true** |
| **displayserver** | Applies the property to the Display Server. For example: **displayserver.sl.rtview.displayserver.port=3079** |
| **historian** | Applies the property to the Historian. For example: **historian.sl.rtview.historian.driver=org.hsqldb.jdbcDriver** |
| **maincollector** | This property filter applies to RTView EM installations. Applies the property to the main Data Collection Server. For example: maincollector.sl.rtview.alert.persistAlerts=true |
| **mainreceiver** | This property filter applies to RTView EM installations. Applies the property to the Agent main receiver Data Server. For example: mainreceiver.sl.rtview.jmxport=8911 |
| **proxyclient** | Applies the property to the proxy client. For example: **proxyclient.sl.rtview.dataserver.port=2078** |
| **receiver** | Applies the property to any process which receives data. receiver.sl.rtvapm.bwmon.jmxsampleperiod=10000 |
| **rtvanalyzer** | Applies the property to the RTView Analyzer. For example: **rtvanalyzer.sl.rtview.stylesheet=rtv_default,rtv_flat** |

| | |
|---|---|
| **sender** | Applies the property to the sender Data Server. For example:<br>sender.sl.rtview.dataserver.port=3351 |
| **viewer** | Applies the property to the Display Viewer. For example:<br>**viewer.sl.rtview.panelconfig=custom_panels.xml** |

You can define your own property filters and use them as prefixes in your properties files. To select a property filter on the command line use the **-propfilter** argument. For example, to apply the **historian** filter: **-propfilter:historian**

# Properties

The following properties are available for the Monitor.

| Name | Description |
|---|---|
| **sl.rtview.sub** | Specifies to use a substitution. For details, see “Substitutions”.<br>Example:<br>**sl.rtview.sub=$rtvAlertMaxNumberOfHistoryRows:50000** |

# Substitutions

The following substitutions can be set to modify your Monitor configuration and display behavior. There are different ways you can set a substitution, but the preferred way is to use the sl.rtview.sub property.

| Substitution | Description |
|---|---|
| **$bw6AppExpirationTime** | Specifies the time interval to wait for a response before an application is expired. The default is 600 seconds.<br>Example:<br>**sl.rtview.sub=$bw6AppExpirationTime:600** |
| **$bw6AppExpirationTimeForDelete** | Specifies the time interval to wait for a response before deleting an application. The default is 86400 seconds.<br>Example:<br>**sl.rtview.sub=$bw6AppExpirationTimeForDelete:86400** |
| **$bw6ActivityPollInterval** | Specifies the time interval to use when subscribing to Hawk for Activity-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bw6ActivityPollInterval:30** |
| **$bw6AppNodePollInterval** | Specifies the time interval to use when subscribing to Hawk for AppNode-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bw6AppNodePollInterval:30** |
| **$bw6AppPollInterval** | Specifies the time interval to use when subscribing to Hawk for application-related data. The default is 300 seconds.<br>Example:<br>**sl.rtview.sub=$bw6AppPollInterval:300** |

| | |
|---|---|
| **$bw6ProcessPollInterval** | Specifies the time interval to use when subscribing to Hawk for process-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bw6ProcessPollInterval:30** |
| **$bw6ExpirationTime** | Specifies the time interval to wait for a response before a table is expired. The default is 75 seconds.<br>Example:<br>**sl.rtview.sub=$bw6ExpirationTime:75** |
| **$bw6ExpirationTimeForDelete** | Specifies the time interval to wait for a response before a table is deleted. The default is 3600 seconds.<br>Example:<br>**sl.rtview.sub=$bw6ExpirationTimeForDelete:3600** |
| **$bwactivityPollInterval** | Specifies the time interval to use when subscribing to Hawk for activity-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bwactivityPollInterval:45** |
| **$bwenginePollInterval** | Specifies the time interval to use when subscribing to Hawk for engine-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bwprocessPollInterval:45** |
| **$bwprocessFilterPattern**<br>**$bwprocessFilterPattern2** | Specifies BW5 process data to include in cache storage and displays. By default, all process data is included.<br>Use one or both of the following properties in the **sample.properties** file to include or exclude processes by name:<br>**collector.sl.rtview.sub=$bwprocessFilterPattern:''**<br>**collector.sl.rtview.sub=$bwprocessFilterPattern2:''**<br>Each property specifies a regular expression which is applied to a process name. If the name matches the pattern the process is included. To exclude processes, start the filter pattern with **^** (negation).<br>For example, if you have the following processes:<br>**process01.process, process02.process, process03.process, process04.process, process05.process, process06.process, process07.process**<br>and you set the first property as follows:<br>**collector.sl.rtview.sub=$bwprocessFilterPattern:'0[3-5]'**<br>data for **process03** to **process05** are stored and displayed.<br>If you set the second property as follows:<br>**collector.sl.rtview.sub=$bwprocessFilterPattern:'0[^4]'**<br>data from **process04** is excluded and you continue getting data from **process03** and **process05**.<br>The Data Server must be restarted for changes to take effect. |
| **$bwprocessPollInterval** | Specifies the time interval to use when subscribing to Hawk for process-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bwenginePollInterval:45** |

| | |
|---|---|
| **$bwserverPollInterval** | Specifies the time interval to use when subscribing to Hawk for server-related data. The default is 30 seconds.<br>Example:<br>**sl.rtview.sub=$bwserverPollInterval:45** |
| **$bwserverExpirationTime** | Specifies the amount of time that data updates are not received from a BW Server, in seconds, after which the server is considered expired. The default value is 75.<br>When a BW Server expires, data relating to the BW Server reflects the expired state (heatmap area and table row change color, servers and engines are labeled EXPIRED) in Monitor displays. Expired BW Servers and their associated engines are removed from displays when the relevant Monitor Data Servers are restarted.<br>Example:<br>**sl.rtview.sub=$bwserverExpirationTime:75** |

# APPENDIX C Alert Definitions

This section describes alerts for TIBCO ActiveMatrix BusinessWorks and their default settings.

| Alert | Warning Level | Alarm Level | Duration | Enabled |
|---|---|---|---|---|
| **BW6AppErrorState**<br>BW6 application status is not Running or Stopped (status is Impaired, AppError or StartFailed)<br>Index Type: PerApp<br>Metric: State | NaN | NaN | 30 | FALSE |
| **Bw6AppExpired**<br>BW6 application expired due to application inactivity.<br>Index Type: PerApp<br>Metric: Stopped | NaN | NaN | 30 | FALSE |
| **Bw6AppNodeCpuUsedHigh**<br>BW6 AppNode CPU usage exceeded limit.<br>Index Type: PerAppNode<br>Metric: CPU Usage% | 50 | 80 | 30 | FALSE |
| **Bw6AppNodeMemUsedHigh**<br>BW6 AppNode memory usage exceeded limit.<br>Index Type: PerAppNode<br>Metric: Memory Usage% | 50 | 80 | 30 | FALSE |
| **Bw6AppNodeStopped**<br>BW6 AppNode stopped purposefully (for example, an administrator stopped the AppNode process).<br>Index Type: PerAppNode<br>Metric: State | NaN | NaN | 10 | FALSE |
| **Bw6AppNodeUnreachable**<br>BW6 AppNode stopped abnormally (for example, the AppNode process crashed).<br>Index Type: PerAppNode<br>Metric: State | NaN | NaN | 10 | FALSE |
| **Bw6AppProcessCreatedRateHigh**<br>BW6 Process created rate for application exceeded limit.<br>Index Type: PerApp<br>Metric: App Created Rate | 50 | 80 | 30 | FALSE |

| | | | | |
|---|---|---|---|---|
| **Bw6AppProcessElapsedTimeHigh**<br>BW6 Process delta elapsed time rate of increase for application exceeded limit.<br>Index Type: PerApp<br>Metric: App Elapsed Rate | 200 | 400 | 30 | FALSE |
| **Bw6AppProcessExecutionTimeHigh**<br>BW6 Process delta execution time rate of increase for application exceeded limit.<br>Index Type: PerApp<br>Metric: App Execution Rate | 200 | 400 | 30 | FALSE |
| **Bw6AppProcessFailedRateHigh**<br>BW6 Process failed rate for application exceeded limit.<br>Index Type: PerApp<br>Metric: App Failed Rate | 50 | 80 | 30 | FALSE |
| **Bw6AppStopped**<br>BW6 application stopped.<br>Index Type: PerApp<br>Metric: Stopped | NaN | NaN | 30 | FALSE |
| **Bw6ProcessActivityErrorRateHigh**<br>BW6 Process error rate exceeded limit.<br>Index Type: PerProcess<br>Metric: Process Failed Rate | 50 | 80 | 30 | FALSE |
| **Bw6ProcessCreatedRateHigh**<br>BW6 Process error rate exceeded limit.<br>Index Type: PerProcess<br>Metric: Process Failed Rate | 50 | 80 | 30 | FALSE |
| **Bw6ProcessElapsedTimeHigh**<br>BW6 Process delta elapsed time rate of increase exceeded limit.<br>Index Type: PerProcess<br>Metric: Delta Exec Rate | 200 | 400 | 30 | FALSE |
| **Bw6ProcessExecutionTimeHigh**<br>BW6 Process delta execution time rate of increase exceeded limit.<br>Index Type: PerProcess<br>Metric: Delta Time Rate | 200 | 400 | 30 | FALSE |
| **Bw6ProcessFailedRateHigh**<br>BW6 Process suspended rate exceeded limit.<br>Index Type: PerProcess<br>Metric: Suspended Rate | 50 | 80 | 30 | FALSE |
| **Bw6ProcessSuspendRateHigh**<br>BW6 Process failed rate exceeded limit.<br>Index Type: PerProcess<br>Metric: Failed Rate | 50 | 80 | 30 | FALSE |

| | | | | |
|---|---|---|---|---|
| **BwActivityErrorRateHigh**<br>BW5 Activity error rate exceeded limit. The rate is calculated by taking the delta of total error returns in this update period and dividing by the length of the period.<br>Index Type: PerActivity<br>Metric: RateErrorCount | 50 | 80 | 30 | FALSE |
| **BwActivityExecutionTimeHigh**<br>BW5 Activity execution time rate of increase exceeded limit The rate is calculated by taking the delta of total execution time in this update period and dividing by the length of the period.<br>Index Type: PerActivity<br>Metric: RateExecutionTime | 200 | 400 | 30 | FALSE |
| **BwEngineCpuUsedHigh**<br>BW Engine CPU usage exceeded limit. CPU Usage is the CPU time used by the BW engine expressed as a percentage of the total CPU time available.<br>Index Type: PerEngine<br>Metric: CPU Usage% | 50 | 80 | 30 | FALSE |
| **BwEngineMemUsedHigh**<br>BW Engine memory usage exceeded limit. Memory usage is taken from Memory Used% in the BW Engine table, which is “Percentage of allocated memory currently consumed by this engine from within the JVM.”<br>Index Type: PerEngine<br>Metric: PercentUsed | 50 | 80 | 30 | FALSE |
| **BwEngineStopped**<br>BW Engine has stopped running.<br>Index Type: PerEngine<br>Metric: Stopped | NaN | NaN | 30 | FALSE |
| **BwEngineUnreachable**<br>BW engine stopped abnormally.<br>Index Type: PerEngine<br>Metric: State | NaN | NaN | 30 | FALSE |
| **BwProcessAbortRateHigh**<br>BW Process aborted rate exceeded limit. The rate is calculated by taking the delta of total aborts in this update period and dividing by the length of the period.<br>Index Type: PerProcess<br>Metric: RateAborted | 50 | 80 | 30 | FALSE |
| **BwProcessAvgElapsedTimeHigh**<br>BW Process Average Elapsed Time exceeded limit. Value is calculated by dividing the delta elapsed time for the interval by the delta completed, or the number of process instances that completed in the interval.<br>Index Type: PerProcess<br>Metric: Process Avg Elapsed Time | 100 | 200 | 30 | FALSE |
| **BwProcessAvgExecutionTimeHigh**<br>BW Process average execution time exceeded limit.<br>Index Type: PerProcess<br>Metric: AverageExecution | 0 | 0 | 0 | FALSE |

| | | | | |
|---|---|---|---|---|
| **BwProcessCreatedRateHigh**<br>BW Process creation rate exceeded limit. The rate is calculated by taking the number of process instances created in the interval and dividing by the length of the interval in seconds.<br>Index Type: PerProcess<br>Metric: Processes Created/sec | 100 | 200 | 30 | FALSE |
| **BwProcessCreatedRateLow**<br>BW Process creation rate per second went below limit.<br>Index Type: PerProcess<br>Metric: App Created Rate | 0 | 0 | 0 | FALSE |
| **BwProcessElapsedTimeHigh**<br>BW Process elapsed time rate of increase exceeded limit. The rate is calculated by taking the delta of total elapsed time in this update period and dividing by the length of the period.<br>Index Type: PerProcess<br>Metric: RateTotalElapsed | 50 | 80 | 30 | FALSE |
| **BwProcessExecutionTimeHigh**<br>BW Process execution time rate of increase exceeded limit. The rate is calculated by taking the delta of total execution time in this update period and dividing by the length of the period.<br>Index Type: PerProcess<br>Metric: RateTotalExecution | 50 | 80 | 30 | FALSE |
| **BwProcessSuspendRateHigh**<br>BW Process suspended rate exceeded limit. The rate is calculated by taking the delta of total suspends in this update period and dividing by the length of the period.<br>Index Type: PerProcess<br>Metric: RateSuspended | 50 | 80 | 30 | FALSE |
| **BwProcessTotalCpuPercentHigh**<br>BW Process CPU percent utilization exceeded limit. This is the percent CPU used by all process instances executing over the interval.<br>Index Type: PerProcess<br>Metric: Process Total CPU Percent | 50 | 75 | 30 | FALSE |
| **BwServerCpuUsedHigh**<br>BW Server CPU usage exceeded limit. CPU Usage is the CPU time in use by all processes expressed as a percentage of the total CPU time available.<br>Index Type: PerServer<br>Metric: CPU Usage% | 60 | 85 | 30 | FALSE |
| **BwServerFreeMemLow**<br>BW Server free memory available is below limit. Free memory means available physical (RAM) memory.<br>Index Type: PerServer<br>Metric: Memory Free Mbytes | 15 | 5 | 30 | FALSE |

| | | | | |
|---|---|---|---|---|
| **BwServerInactive**<br>BW Server has become inactive. The period of time specified by the substitution variable $bwserverExpirationTime has passed since data was last received from the server.<br>Index Type: PerServer<br>Metric: Expired | NaN | NaN | 30 | FALSE |
| **BwServerMemUsedHigh**<br>BW Server memory usage exceeded limit. Memory usage is the virtual memory in use expressed as a percentage of the available virtual memory. The meaning of available virtual memory is system-dependent: on Windows it refers to pagefile space; on Unix systems it refers to swap space.<br>Index Type: PerServer<br>Metric: Virtual Memory Used% | 50 | 80 | 30 | FALSE |
| **HawkAlert**<br>Display Hawk alerts throughout the Monitor.<br>To enable Hawk Alerts to be included in alert counts and displayed throughout the Monitor, scroll down to **HawkAlert** in the **Active Alert Table** and select the **Alert Enabled** checkbox. It is possible to filter unwanted alerts from the cache data so that those alerts are not included throughout the Monitor.<br>To filter unwanted alerts out of the Hawk cache data, enter the following into the **sample.properties** file (located in the project directory you created). NOTE: Unwanted alerts are filtered out according to the AlertText.<br>**sl.rtview.sub=$hawkAlertTextFilterOut:AlertText**<br>For example, to filter out all Hawk Alerts in which the AlertText contains **Source** you would enter the following:<br>**sl.rtview.sub=$hawkAlertTextFilterOut:Source**<br>The default time to remove cleared Hawk Alerts from the table is **3600** seconds. To adjust this setting, edit the following in **sample.properties**:<br>**sl.rtview.sub=$hawkAlertTextFilterOut:3600**<br>Index Type: PerServer<br>Metric: Hawk | NaN | NaN | -1 | TRUE |
| **JvmCpuPercentHigh**<br>The percentage of CPU that has been reached by the JVM is above the limit.<br>Index Type: PerJVM<br>Metric: CpuPercent | 50 | 75 | 30 | FALSE |
| **JvmGcDutyCycleHigh**<br>The duty cycle is out the upper limit.<br>Index Type: PerGC<br>Metric: DutyCycle | 50 | 75 | 30 | FALSE |
| **JvmMemoryUsedHigh**<br>The memory used out the upper limit<br>Index Type: PerJVM<br>Metric: MemoryUsedPercent | 50 | 75 | 30 | FALSE |

| | | | | |
|---|---|---|---|---|
| **JvmNotConnected**<br>The JVM in not connected.<br>Index Type: PerJVM<br>Metric: Connected | NaN | NaN | 30 | FALSE |
| **JvmStaleData**<br>Cut in reception from that JVM.<br>Index Type: PerJVM<br>Metric: Expired | NaN | NaN | 30 | FALSE |

# APPENDIX D Limitations

This section includes:


- "iPad Safari Limitations"
- "TIBCO ActiveMatrix BusinessWorks"


## 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 **Execute 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 ands pasted into an email.
-

# TIBCO ActiveMatrix BusinessWorks

## Servers

### AIX

- Status will be **LIMITED**.
- CPU Usage, Free Memory and Virtual Memory Usage will not be available.

## Business Works 5.7.1 Engine Status

The BW Engine microagent has a method **GetExecInfo** that includes a field called **Status**, which may have the following values:

- ACTIVE
- SUSPENDED
- STANDBY
- STOPPING
- STOPPED

In Business Works 5.7.1 (but not earlier or later versions) this method fails to return any data and, in some cases when the Monitor starts, it may not know an engine's exact status. For example, if an engine is deployed but not active it could be SUSPENDED or STOPPED, or else it could be ACTIVE or STOPPING. In these cases the Monitor sets the status to UNKNOWN. An UNKNOWN status will be resolved once the engine is stopped and restarted; henceforth the status will display as STOPPED or ACTIVE.

## BWSE Components

- JVM memory metrics are available for BWSE components running in AMX 3.x environments only.
- The BW Version column in the All Engines Table display is blank for BWSE components.

- The Deployment column in the All Engines Table display is UNKNOWN for BWSE components. This is because the AMX environment controls in which node or nodes a BWSE component is running, therefore the concept of "deployment" in traditional BusinessWorks does not apply.
- BWSE components only appear in the All Engines Table display when they are running in a node.

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Version 2.0, January 2004

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