# RTView Enterprise Monitor®
# Configuration Guide

Version 5.0

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# Preface

Welcome to the *RTView Enterprise Monitor Configuration Guide*. Read this preface for an overview of the information provided in this guide and the documentation conventions used throughout, additional reading, and contact information. This preface includes the following sections:



## About This Guide

The *RTView Enterprise Monitor Configuration Guide* describes how to install and configure RTView Enterprise.

### Audience

This guide is written for database and network administrators who are familiar with administering and managing servers and network connections.

### 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”
- “SL Documentation”

## 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/.

Examine the online release notes before you begin the installation and configuration process. They contain important information about this release of RTView Enterprise Monitor.

## SL Documentation

For a complete list and the most current version of SL documentation, visit the SL Support Web site located at http://www.sl.com/services/support_rtviewdocs.shtml.

# 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 Configuring RTView Enterprise Monitor

This section provides an overview of how to deploy RTView Enterprise Monitor, main components, architecture and upgrade instructions.

This section contains:



For details about using RTView Enterprise Monitor (also referred to as the *Monitor*), see the *RTView Enterprise Monitor User's Guide*.

## How to Setup the Monitor

There are two main Monitor components that you install and setup: "RTViewCentral" and one or more "RTView DataServers". Detailed instructions to configure RTViewCentral are contained in this Guide. This Guide provides links to instructions for configuring RTView DataServers.

The following figure illustrates the basic topology of the main components and the data flow from your monitored resources.


**To Setup the Monitor:**

Do the following in the order provided to setup the Monitor. The first two steps are required. For detailed steps, see the links provided.

- "Download, Install and Start RTViewCentral" so that RTViewCentral is ready to connect to your RTView DataServer(s) and visualize your data.
- "Download, Install and Setup RTView DataServer" so that you can start collecting performance data from your system.

After you setup one or more RTView DataServers you can:

- "Configure RTViewCentral" so that you can extend, enhance or optimize your Monitor deployment with features such as the service model, the central database, user and role management, high availability, alert notifications, and modify the Monitor user interface.

## Download, Install and Start RTViewCentral

Go to the SL Download Center at **https://sl.flexnetoperations.com/**, download and extract the **RTViewCentral_<version>.zip** file. Read the following download information and then "Start RTViewCentral".

If you currently have any version of RTView installed, you must install RTView Enterprise Monitor into a directory separate from any existing RTView installations. The same zip archives provided in the download can be used on any supported platform.

See "Upgrading the Monitor" if you are upgrading from an earlier version of RTView Enterprise Monitor.

#### Windows

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 **RTViewCentral** top-level directory. This extra directory should be removed before you click **Next** to perform the final decompression.

#### UNIX/Linux

The installation directory path cannot contain spaces.

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

**../rtvapm_init.sh**

#### Application Server

RTViewCentral includes a pre-configured Apache Tomcat installation which hosts all of the servlets necessary to run the Monitor on port **8068**. However, it does not run by default. Instead, the CentralServer hosts all necessary servlets.

## Start RTViewCentral

- Set the JAVA_HOME environment variable to the location of your Java installation.
- Execute the **start_servers.bat/sh** script, located in the **RTViewCentral/bin** directory, to start RTView Enterprise Monitor.

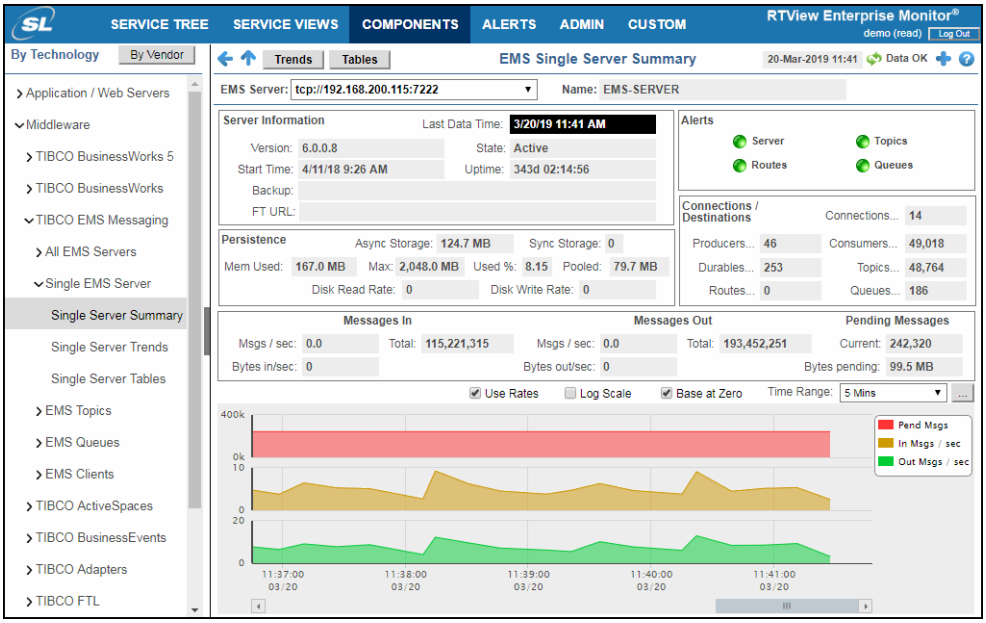
**Tip:** If you encounter error messages, execute the **validate_install.bat/sh** script in the RTViewCentral/rtvapm directory. For details, see "RTView EM Scripts".

- Point a browser to **http://localhost:10070/rtview-central-classic** and login:

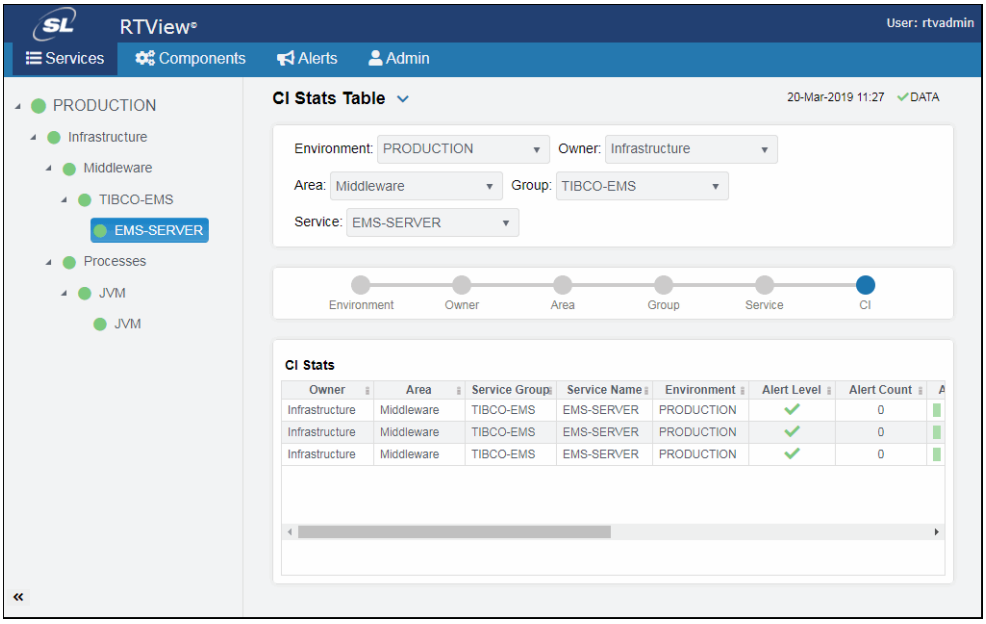
User: **admin**
Password: **admin**

The RTView Enterprise Monitor opens to the **SERVICE TREE** tab **All Areas by Owner** display, by default.

**Note:** The first time you open the Monitor displays are visible but not yet populated with monitoring data. After you download and configure one or more RTView DataServers, configure data collection *and also* integrate with RTView Enterprise Monitor, the displays populate with your monitoring data.




**Note:** Alternatively, you can open the Beta version of the new HTML interface for RTView Enterprise at: **http://localhost:11070/rtview-central** (login as rtvadmin/rtvadmin or rtvuser/rtvuser).




**Note**: Not all features described here are available in the BETA version of the user interface.

Proceed to "Download, Install and Setup RTView DataServer".

## Download, Install and Setup RTView DataServer

Use the following links to download, install, connect and setup EM Integration on one or more RTView DataServers:

**Tip:** If you plan to configure the Service Model, configure all the RTView DataServers you intend to deploy first.

- RTView DataServer for IBM
- RTView DataServer for Infrastructure
- RTView DataServer for Kafka
- RTView DataServer for Oracle
- RTView DataServer for TIBCO
- RTView DataServer for Solace

Proceed to "Verify Your RTView DataServer Setup".

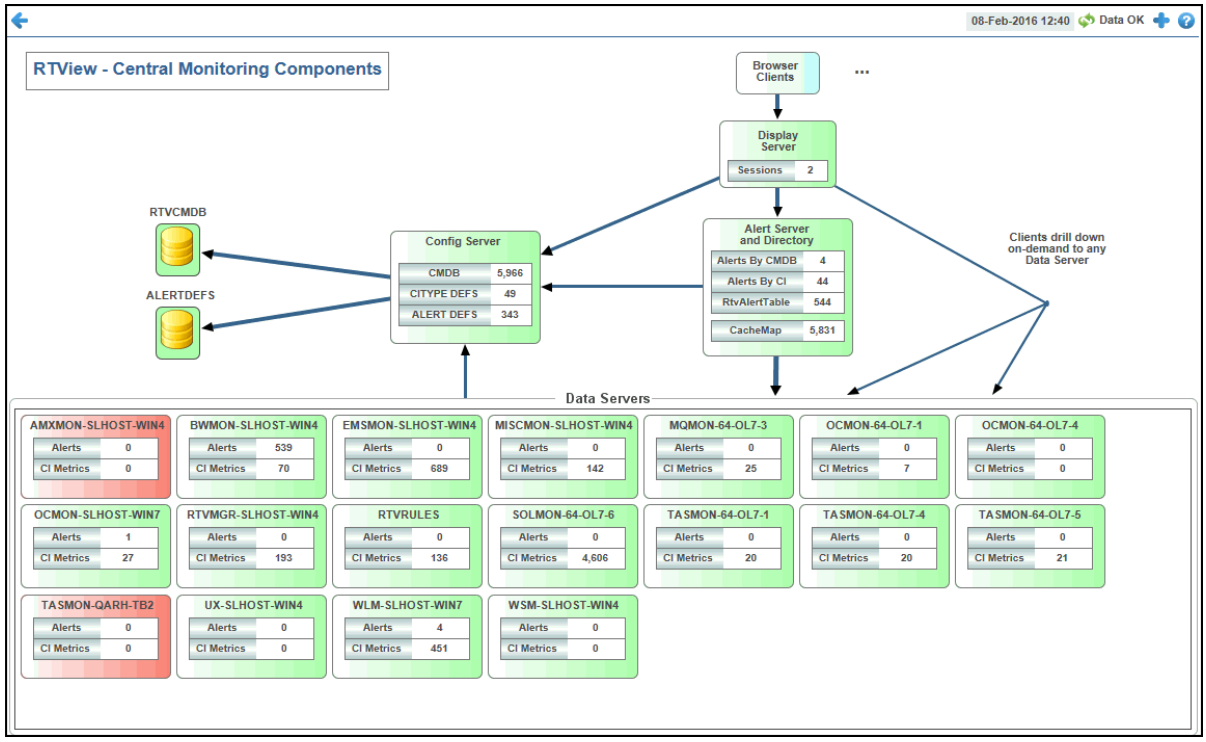
## Verify Your RTView DataServer Setup

Open the Monitor (**http://localhost:10070/rtview-central-classic**, login/password is admin/admin) and verify that you see:

- the RTView DataServer you configured in the **ADMIN tab/Architecture/System Overview** display.
- data from the RTView DataServer you configured in the SERVICE TREE, SERVICE VIEWS and COMPONENTS tab.

The **System Overview** display (illustrated below) shows the of the central RTView Enterprise Monitor topology and connection state of each component. A red component indicates it is not running. Green indicates the component is running.

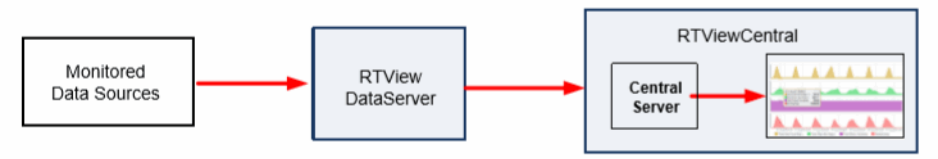
**Note:** Each rectangle is a Java server process running in a JVM which can be configured to run on the same host or on separate hosts. The boxes are green when the process is running and red when stopped. Each server process can be configured for high availability by providing a backup server with failover and failback options.




Congrats! You have setup RTView. You can read on for a description of the Monitor architecture or skip to "Configure RTViewCentral".

# Architecture

RTView Enterprise Monitor is comprised of one or more RTView DataServers and a single RTViewCentral. The following figure illustrates the basic RTView Enterprise Monitor topology. The gray areas indicate the components currently being discussed.




The RTView DataServers collect and store metric data. RTViewCentral allows you to view the metric data from the RTView DataServers, manage alerts against that metric data and integrate that metric data into a Service Model.

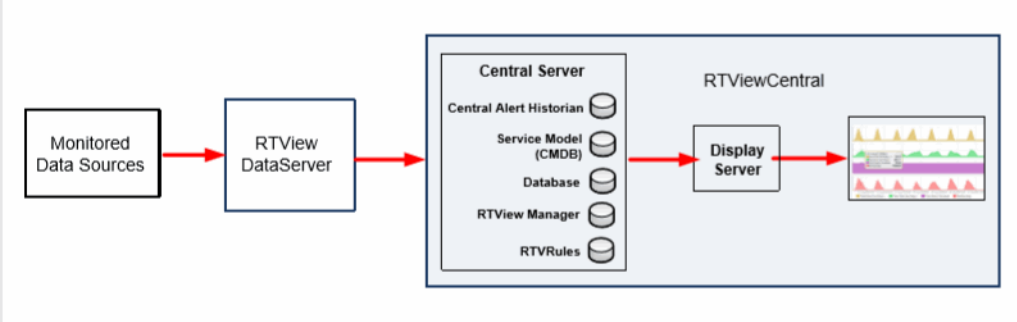
This section contains:



## RTViewCentral

RTViewCentral is where the metric data collected by the RTView DataServer is analyzed, correlated and transformed; historical data is aggregated; alert rules and actions are defined; and where the "master" mapping of everything monitored in your system resides.

The following figure illustrates RTViewCentral features and processes described in this section.




RTViewCentral is where you configure optional features that extend, enhance or optimize your RTView Enterprise Monitor deployment. For example, you can configure the central databases, the service model, user and role management, high availability, alert features such as alert notification, and modify the Monitor user interface.

RTViewCentral is comprised of a Display Server, the Central Server, the Central Alert Historian and a database. RTViewCentral also has the RTView Manager and RTVRules data servers.

This section contains:



### Display Server

The Display Server is a Java process which must be running to support browser-based access. The Display Server receives requests from the browser and accesses the Central Server and RTView DataServers for the data. The Display Server is then responsible for the generation of the Web pages which display the real-time information.

The Display Server is also responsible for user and role-based entitlements.

## Central Server

This server process acts as the proxy for all database connections to the Alert Threshold Database and maintains information relevant to the *Service Data Model*, System Configuration information, and alert configuration. The Service Data Model consists of a list of all CI's (Configuration Items relevant to the performance of a Service) and the Services which they affect. It also contains the four-level structure of the organization: Owners, Areas, Groups, and Services. All this information can be in one or more databases, or be generated dynamically from the data.

This server process also maintains an internal cache of aggregated alerts and their current state. It performs the correlation and propagation of alerts to the items in the Service Data Model which are affected by an alert. It also serves as a directory map and directs requests from clients to the appropriate RTView DataServer when a user requests detailed performance metrics.

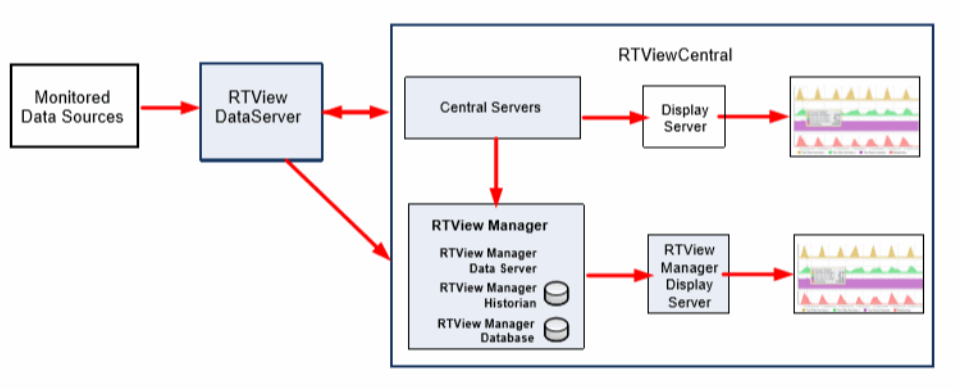
## Central Alert Historian

This optional process manages the storage of all alerts from the CentralServer into a relational database.

## RTView Manager

Use RTView Manager to monitor RTView Enterprise Monitor. That is, to monitor the performance of RTView processes and applications on RTViewCentral as well as any RTView DataServers to which RTViewCentral is connected.

RTView Manager resides on RTViewCentral, runs as a separate process from RTView Enterprise Monitor, and has its own data server, database, Display Server and Historian.




RTView Manager requires minimal setup as required connections are auto-discovered from RTViewCentral. You access RTView Manager via browser at **http://localhost:3070/rtview-manager-classic**.

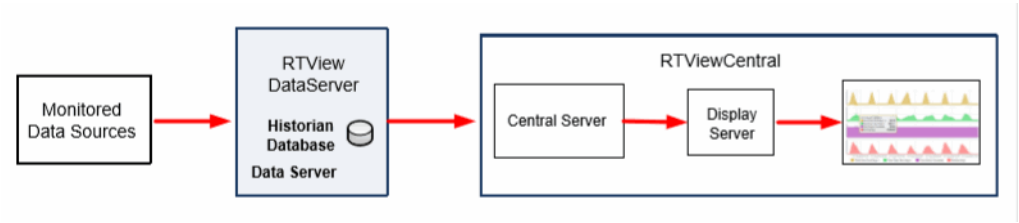
## RTVRules

RTVRules is a data server you can optionally use to generate service-level alerts. RTVRules is designed to reduce the number of escalated, low-level alerts to upper management tiers. This enables you to, for example, set a time frame for IT to resolve an alert before the alert is escalated.

## RTView DataServers

RTView DataServers collect data from your data sources and make them available for display and alerting. For details about displays that come with each RTView DataServer, see the *RTView Enterprise Monitor User's Guide*.

The following figure illustrates RTView DataServer features and applications described in this section.




"Solution Packages" are bundled into RTView DataServers. For example, the RTView DataServer for TIBCO, which includes the Solution Packages for TIBCO EMS, BusinessWorks, and many other TIBCO applications.

RTView DataServers are also available for IBM, Infrastructure, Kafka, Oracle, Solace and RTView Manager. Performance data collected for these technologies are correlated with the displays that come with RTView Enterprise Monitor.

## Solution Packages

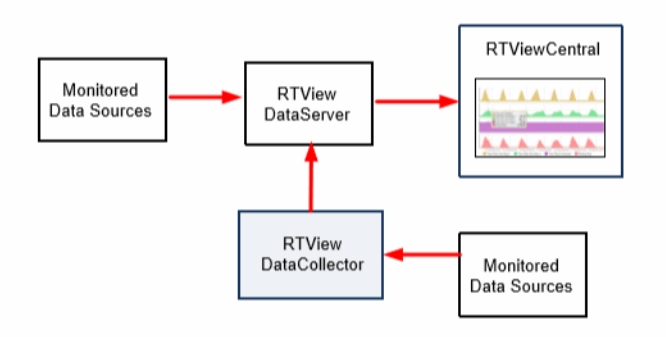
Solution packages gather metrics from infrastructure, middleware, instrumented applications, JVMs, log files, and third party monitoring products. RTView Enterprise Monitor also provides a means for creating custom solution packages to gather most any piece of performance information with a wide array of built-in data adapters. These custom solution packages can be configured without programming. SL Support has many templates for custom solution packages that can be delivered to users or customized as a service.

A solution package provides these main pieces of functionality to RTView Enterprise Monitor:

- **Data Access**: The solution package gathers the performance metrics relevant to the technology being monitored. The data may be gathered by either synchronous or asynchronous direct connections to a technology, or by receiving information from RTView agents deployed on the hosts of the monitored technology.
- **Data Caching**: Performance metrics are stored in in-memory data caches to supply quick access to the most current performance metrics.
- **Data History**: Long-term performance metrics can be stored in a JDBC-enabled relational database. The solution package allows for the configuration of the rules for data compaction and management of long-term data persistence.
- **Alert Event Access:** If the solution package is connecting to another monitoring system, it can gather alert events from that system, bring those events into RTViewCentral and allow alert management to be performed in RTViewCentral. Optionally, the solution package can be configured to synchronize alert states between the two systems.
- **Alert Rules Engine**: The solution packages are configured with alert rule definitions which are processed real-time in the RTView DataServers. Dynamic updates to these alert rule definitions, such as changing alert rule thresholds or policies, can be managed through the RTViewCentral **Alert Administration** interface. When alerts are activated by these alert rule definitions, they are sent to RTViewCentral to be aggregated with other solution package alerts.
- **Data Viewing**: Each solution package comes with designated displays which can be accessed by RTView Enterprise Monitor to show the performance metrics in summary and drill-down views.
- **Data Server**: This Java process is run to begin accessing the data, storing data to internal memory caches, running the alert rules and optionally providing data to the Historian process.
- **Data Historian**: The process manages the storage of information into a relational database and runs the rules relevant to managing this persisted data.

## Distributed Deployments & RTView DataCollectors

Each RTView DataServer has a corresponding *RTView DataCollector*. The RTView DataCollector is useful for distributed deployments as they can be deployed to collect data from otherwise unreachable data sources and send the data to its RTView DataServer pair. The following figure illustrates RTView DataCollector deployment.




Use these links to configure:

- RTView DataCollector for IBM
- RTView DataCollector for Infrastructure
- RTView DataCollector for Kafka
- RTView DataCollector for Oracle
- RTView DataCollector for TIBCO
- RTView DataCollector for Solace

# System Requirements

For browser support, hardware requirements, JVM support and other system requirement information, please refer to the **README_sysreq.txt** file from your product installation. A copy of this file is also available on the product download page.

# Upgrading the Monitor

This section describes the steps necessary to upgrade existing RTView Enterprise Monitor applications. It is organized by version. To upgrade your application, follow the steps for each version between the version you are upgrading from and the version you are upgrading to. Note that this section does not include upgrade information for solution packages. This section includes:

- “EM 5.0”
- “EM 4.2”
- “EM 4.1”
- “EM 4.0”
- “EM 3.8”

# EM 5.0

## New Deployment Architecture

Enterprise Monitor has been enhanced to support a new deployment architecture. Instead of a single RTViewEnterpriseMonitor deliverable containing both the RTView Central servers and the RTView Data Servers, there is now an RTViewCentral deliverable and several RTViewDataServer deliverables. The project in the RTViewCentral deliverable is similar to the central servers in the emsample project that was included in previous releases and is described in this document. The RTViewDataServer deliverables are similar to the solution package-specific servers in the emsample project that was included in previous releases. To make it easy to connect one or more RTViewDataServers with RTViewCentral, an **Integrate with EM** tab has been added to the RTView Configuration Application. See "How to Setup the Monitor" for information on how to install and set up RTViewCentral and one or more RTViewDataServers to work together.

## Upgrading Existing Projects

Existing emsample projects created with previous releases of RTView can be run with no changes against the new RTViewCentral deliverable. To do this, extract the RTViewCentral deliverable and do the following:

1. In your old deliverable, rename the **RTViewEnterpriseMonitor/rtvapm** directory to **rtvapm_old**.
2. Copy **RTViewCentral/rtvapm** to RTViewEnterpriseMonitor
3. Open a command prompt or terminal window, navigate to **RTViewEnterpriseMonitor/rtvapm**, and run **rtvapm_init**.
4. In your command prompt or terminal window, navigate to **RTViewEnterpriseMonitor/emsample/servers**.
5. In each directory you are using under RTViewEnterpriseMonitor/emsample/servers, run **update_wars.sh/.bat** and copy the generated war files to **RTViewEnterpriseMonitor/apache-tomcat-8.5.24-sl**.
6. Run RTViewEnterpiseMonitor as you did previously (for example, run **bin/start_servers.sh/.bat**).

The emsample application will run as before, but there are a few limitations when using the RTView Configuration Application with your old emsample project.

## RTView Central Servers Section Changes and Limitations

1. The **General**->**COMMON** tab has been removed as the new RTViewCentral project does not support common properties files. When running the RTView Configuration Application in an emsample project from a previous release, properties from **conf\project-common.properties** are merged into the properties for the server being edited and are saved to that servers' properties files.
2. The **General**->**About** tab has a new field named Central Server URL. This field is for reference purposes only to store the url that RTView DataServers should use to connect to the Central Server and defaults to **localhost:10018**. When running the RTView Configu-

ration Application in an emsample project from a previous release the Config Server URL from **conf\project-common.properties** is copied into this field.

3. A new **Databases** entry has been added to the navigation bar, which contains all of the Database connection fields: The Alert Threshold and Historian database fields were moved here from the **General**->**COMMON** tab. The **Diagram Generator**, **Metric Explorer**, and **CMDB** databases were moved here from the **Central Config Server**->**CONFIGURATION**, and **CMDB** tabs. The **Access the Alert Threshold Database via the Central Config Server Instead of Connecting Directly** field has been removed as the new deployment architecture has merged the Central Config Server and Central Alert Server into a single server. When running the RTView Configuration Application in an emsample project from a previous release, the Alert Threshold and Historian databases properties from **conf\project-common.properties** are copied to this tab and saved locally. If the **Access the Alert Threshold Database via the Central Config Server Instead of Connecting Directly** setting is enabled, it will be maintained but the RTView Configuration Application does not provide a way to disable it.
4. The Central Config Server section has been removed. The new RTViewCentral deliverable has merged the Central Config and Central Alert Servers into a single Central Server that serves both functions. The database fields on the **Central Config Server**->**CONFIGURATION SERVER** and **CMDB** tabs have moved to the **Databases** section. The other fields on the **CMDB** tab have moved to the new Service Model navigation bar entry. When running the RTView Configuration Application in an emsample project from a previous release where the Memory and/or Log settings for the Central Config Server were overridden, those values are copied to the **General**->**CUSTOM PROPERTIES** tab.
5. The **Central Alert Server** section has been removed. The new RTViewCentral deliverable has merged the Central Config and Central Alert Servers into a single Central Server that serves both functions. The **ALERTS** and **DATA STORAGE** tabs have moved to the new **Alerts** navigation bar entry. When running the RTView Configuration Application in an emsample project from a previous release where the Memory and/or Log settings for the Central Alert Server were overridden, those values are copied to the **General**->**CUSTOM PROPERTIES** tab.
6. The Data Servers navigation bar entry has been removed and the **Data Servers**->**CONNECTIONS** tab has been moved to the new Central Server section. The Select Mode for Including Solution Packages on the **COMPONENTS** tab field has been removed. The **COMPONENTS** tab in the new RTViewCentral project has been enhanced to only include displays for the solution packages in all enabled connections. When running in an emsample project from a previous release where the tree was customized, this filter will be applied in addition to any customization.
7. The new Central Server entry in the navigation bar lets you set memory and log file options for the Central Server. These settings will not apply to an emsample project from a previous release.

## RTView Data Server Configuration Section Changes and Limitations

1. The **General**->**ALERTS** tab has moved to the **Alerts** navigation bar entry. The **Alert Threshold Database Connection** entry has moved to the new **Databases** navigation bar entry. When running the RTView Configuration Application in an emsample project from a previous release, the **Alert Threshold** database property from **conf\project-common.properties** (previously set on the **COMMON** tab under RTView Central Servers) is copied to this tab unless it was previously overwritten locally. If the **Access the Alert Threshold Database via the Central Config Server Instead of Connecting Directly** setting was enabled, it will be maintained but the RTView Configuration Application does not provide a way to disable it. The **Configure notifications for this server in addition to central notifications** option has been removed but will be maintained

when running in an emsample project created with a previous release. To disable local notifications, turn off **Enabled Notifications**.

2. The **Historian**->**HISTORIAN** Historian Database Connection entry has moved to the new **Databases** navigation bar entry. When running the RTView Configuration Application in an emsample project from a previous release, the Historian database property from **conf\project-common.properties** (previously set on the **COMMON** tab under RTView Central Servers) is copied to this tab and saved locally unless it was previously overwritten locally.
3. A new **EM Integration** navigation bar entry allows you to integrate the RTViewDataServer with the RTViewCentral. This feature is not compatible with emsample projects created with a previous version.

### High Availability

The method for configuring and enabling High Availability has been enhanced and simplified. Projects created with a previous version of Enteprise Monitor that were configured for HA will continue to work with no changes.

## EM 4.2

### Components Tab Auto-Populates Available Displays

The tree for the COMPONENTS tab has been enhanced to filter the available displays based on the solution packages hosted by the enabled RTView DataServer connections. When running in an emsample project from a previous release where the tree was customized, this filter will be applied in addition to any customization.

### RTView DataServer Integration with EM

RTView DataServers have been enhanced to make it easier to integrate with EM. Previously, to integrate an RTView DataServer with Enterprise Monitor, you had to go into the Central Server configuration, add a connection to the RTView DataServer and then copy over the common properties. With this enhancement, all configuration can be done in the RTView DataServer configuration and reasonable defaults are provided. To simplify deploying via container, all values on the EM Integration tab can be set via environment variable instead of in the Configuration Application. All fields on the EM Integration tab show the Source of the value to the right of the field if the value wasn't specified in the Configuration Application.

**Note:** This feature is not supported by central servers running in an emsample project created with a previous release. It requires the new RTViewCentral project.

To configure this feature, select the RTView DataServer in the Configuration Application and click on the EM Integration item in the navigation tree. Fill in the following options:

- Integrate with Enterprise Monitor - If enabled, connect to the Central Server in the RTViewCentral deliverable using the url in the Central Server URL field, disable local alert notifications (notifications will be handled by the Central server) and get alert thresholds from the Central Server. Note that in order to see your data and alerts in RTViewCentral, you must also add a connection from RTViewCentral to this RTView DataServer either by enabling the "Announce this RTView DataServer to the Central Server" option and filling in the fields below or by going into the RTViewCentral Configuration Application and adding a connection on the RTViewCentral->CONNECTIONS tab. The default for this field is false (0). It can be enabled via this environment variable: RTVDS_INTEGRATEENABLED. For example, RTVDS_INTEGRATEENABLED=1.
- Central Server URL - The URL to use when connecting to the Central Server in the RTViewCentral installation when Integrate with Enterprise Monitor is enabled. The default is localhost:10018. You can set the value via this environment variable: RTVDS_CENTRALURL. For example, RTVDS_CENTRALURL=http://localhost:10070/rtvdata.
- Announce this RTView DataServer to the Central Server - If enabled, the Central Server will make a connection to the RTView DataServer in order to display data and alerts from this server. The Central Server will use the values from the RTView DataServer Name, RTView DataServer URL, RTView Query URL, RTView DataServer Host and CITypes to Exclude fields described below when making it's connection to this RTView DataServer. The default is false. You can enable this via this environment variable: RTVDS_ANNUNCIATEENABLED. For example RTVDS_ANNUNCIATEENABLED=1.

- RTView DataServer Name - The name that the Central Server should use for its connection to this RTView DataServer. This name must be unique within the connections on the Central Server. The default is the Project ID from the General tab. You can set the value via this environment variable: RTVDS_NAME. For example, RTVDS_NAME=EMSMON_LOCAL.
- RTView DataServer URL - The URL that the Central Server should use for its connection to this RTView DataServer. The default depends on the HTML Server Enabled option on the Data Server tab. If the HTML Server is enabled, the default is http://hostname:3270/rtvdata, otherwise it is hostname:3278 where 32 is the Port Prefix for this project and hostname is the RTView Server Host. You can set the value via this environment variable: RTVDS_URL. For example, RTVDS_URL=http://myhost:8068/rtvdata.
- RTView Query URL - The URL that html clients should use to query this RTView DataServer. The default depends on the HTML Server Enabled option on the Data Server tab. If the HTML Server is enabled, the default is http://hostname:3270/rtvquery where 32 is the Port Prefix for this project and hostname is the RTView Server Host, otherwise it is blank. You can set the value via this environment variable: RTVDS_QUERYURL. For example, RTVDS_QUERYURL=http://myhost:8068/rtvquery.
- RTView DataServer Host - The Host name or ip address that the Central Server and html clients should use for connections to this RTView DataServer. The default the ip address for the host. You can set the value via this environment variable: RTVDS_HOST. For example, RTVDS_HOST=localhost
- CITypes to Exclude - The CI Types to exclude from the Service Model in the Central Server. The defualt is blank which means all CI Types for the configured solution packages are included in the Service Model. You can set the value via this environment variable: RTVDS_CITYPESTOEXCLUDE. For example, RTVDS_CITYPESTOEXCLUDE=BW-ACTIVITIES,BW-PROCESSES.

## EM 4.1

There are no upgrade steps required for EM 4.1.

## EM 4.0

### Solution Package for TIBCO ActiveMatrix and the Solution Package for TIBCO BusinessWorks version 6

The ports used by the sample projects for the Solution Package for TIBCO ActiveMaxtrix and the Solution Package for TIBCO BusinessWorks version 6 have changed. Projects created in previous releases will continue to use the old ports. Users of these solution packages should just be aware the ports have been changed in the new sample projects as follows:

- For BusinessWorks Monitor the new port prefix is **45**. This results in the following default port assignments:

dataserver data port 4578

dataserver JMX port 4568

datserver SC port 4570

dataserver rtvhttp port 4575

dataserver rtvagent port 4572

dataserver sender data port 4576

dataserver sender JMX port 4566

displayserver data port 4579

displayserver JMX port 4569

historian JMX port 4567

database (hsqldb) JMX port 4561

- For ActiveMatrix Monitor the new port prefix is **44**. This results in the following default port assignments:

dataserver data port 4478

dataserver JMX port 4468

datserver SC port 4470

dataserver rtvhttp port 4475

dataserver rtvagent port 4472

dataserver sender data port 4476

dataserver sender JMX port 4466

displayserver data port 4479

displayserver JMX port 4469

historian JMX port 4467

database (hsqldb) JMX port 4461

## Custom Solution Package

The custom solution package example has been removed from EM. Contact SL technical support for information on creating custom solution packages.

Existing custom solution packages will continue to work as they did before. It is recommended, but not required that existing custom solution packages make the following changes. These changes are needed in order to be compatibe with the new Configuration Application. Custom solution packages will continue to work as before without these changes, but data servers containing custom solution packages without these changes should not be configured via the Configuration Application:

1. Move the following server level properties from **conf\rtvapm.sp.properties** to **conf\rtvapm.sp.compat.properties**:

- all ports
- all proctag properties
- sender.sl.rtview.sub=$rtvAgentName
- sl.rtview.alert.persistAlertEngineName
- sl.rtview.sub=$domainName

2. Put the custom solution package directory under **RTVAPM_HOME** or **RTVAPM_USER_HOME**. If under **RTVAPM_HOME**, the solution pacakge name must end in **mon** for the "RTView Configuration Application" to detect it.

This will add the custom solution package to the list of available solution packages in the Configuration Application.

3. Add **rtvadmin\sp.meta.json** under **lib** with the following - the "RTView Configuration Application" will use this as the display name for your solution package:

```
{
  "displayname": "The Display Name for your SP"
}
```

4. Copy **src\rtfiles\rtvconfig.sp.xml** to **lib\rtvadmin** so the "RTView Configuration Application" can read its CI Types.

## Property File Handling and Configuration Application

Property file handling has been modified in order to support the Configuration Application. Existing applications will continue to work as before with no changes. However, customers should be aware of the following if they want to merge their old properties into the new version of emsample.

In previous releases, each solution package defined its own ports, sender target and server identification properties. These properties have been removed from the solution package properties and should be defined in the project properties instead. The emsample project been updated to include these properties which have been set to the same values that they inherited from the solution package properties in previous releases (except for TIBCO ActiveMatrix and TIBCO Businessworks version - see note above). Upward compatibility support is included for projects created previous to EM 4.0. In EM 4.0, the **rtview.properties** files in all sample projects were replaced with **project.properties** files. Any project with an **rtview.properties** file is recognized as a project created with a previous release. In that case, RTView will automatically read in the old ports, sender target and server identification properties for all solution packages in the **rtview.properties** file. Therefore, projects created with previous of EM will continue to run with no modifications. However, projects containing an **rtview.properties** file cannot be configured using the new "RTView Configuration Application". The **emsample\conf\emcommon.properties** file has been replaced by **emsample\conf\project-common.properties** which is read just before **project.properties** at the end of the property file list. The **emcommon.properties** file will still be read, but the properties in it will be overridden by the properties in **project-common**.

Merging properties from an old version of emsample to the new release has 2 parts. First there are the central and common settings. Second there are the solution package server setting.

There are two options for merging old central server and common properties from a previous release into the new version of emsample.

The first option for applying central server settings from a previous version is to use the "RTView Configuration Application" to reapply the settings. This is more work, but has the benefit of allowing you to use the Configuration Application moving forward. If you haven't done much to customize emsample Central Server, this won't be a big effort. To do this, run the new version of emsample, bring up the Configuration Application and apply all configurations that were part of your previous emsample project. See "Configure RTViewCentral" for more information on how to configure your Central Server using the "RTView Configuration Application".

The second option for applying central server settings from a previous version is to use your old properties files. This has the downside that you will not be able to use the Configuration Application to configure your common properties or Central Server. To use this option, do the following:

1. Start with the new emsample.

2. Copy the old **conf\emcommon.properties** into the new **emsample\conf** directory.

3. In the new emsample, delete **conf\project.properties** and **conf\project.properties.json**.

4. Copy the old **servers\central\central.properties** and the old **servers\central\rtview.properties** into the new **emsample\servers\central** directory.

5. In the new emsample, delete **servers\central\project.properties** and **servers\central\project.properties.json**.

There are three options for merging old solution package server properties from a previous release into the new version of emsample.

The first option for applying solution package server settings from a previous version is to use the "RTView Configuration Application" to reapply the settings. If you have a lot of connections, this isn't really practical, but if you only have a few, it could be worthwhile since you'll be able to use the Configuration Application for everything moving forward. To do this, run the new version of emsample, bring up the Configuration Application and apply all configurations that were part of your previous emsample project. See "Configure RTViewCentral" for more information on how to configure your solution package servers using the "RTView Configuration Application".

The second option for applying solution package server settings from a previous version is to use your old properties files instead of the Configuration Application. This has the downside that you cannot use the Configuration Application moving forward. To do this, do the following in each solution package project directory under **emsample\servers**:

1. Start with the new emsample

2. Copy the properties files from the old solution package server directory into the new solution package server directory including the old **rtview.properties**.

3. Remove the **project.properties** and **project.properties.json** from the new solution package project directory.

4. Add your properties files to the appropriate lines in **servers\rtvservers.dat**.

The third option for applying solution package server settings from a previous version is a combination of the above. This has the benefit of allowing you to use the "RTView Configuration Application" without having to re-enter all of your connections.

1. Start with the new emsample.

2. Copy the properties files from the old solution package server directory into the new solution package project directory. Do NOT copy the old **rtview.properties** into the new solution package project directory.

3. Edit the properties file you just copied over to comment out or remove all non-connection properties.

4. Run emsample and use the Configuration Application to apply all settings from your previous project except connections. See "Configure RTViewCentral" for more information on how to configure your solution package servers using the Configuration Application.

5. Add your properties files from step 2 to the appropriate lines in **servers\rtvservers.dat**.

6. Moving forward, new connections can be added via the Configuration Application or by hand editing the properties file from step 2, whichever is more convenient. However, only connections added via the Configuration Application will be editable in the Configuration Application.

NOTE: The following files are read and written by the Configuration Application and should never be manually edited: **project.properties**, **project.properties.json**, **conf\project-common.properties** and **conf\project-common.properties.json**.

## EM 3.8

Refer to the following instructions as appropriate. If:

- "Your project contains a project.properties file"
- "You are upgrading from RTView Enterprise Monitor 3.7"

### Your project contains a project.properties file

If you are upgrading from versions previous to RTView Enterprise Monitor 3.8, and your project contains a **project.properties** file, be aware that this file will be used even if it is not specified on the command line. To avoid this, rename or remove your **project.properties** file.

### You are upgrading from RTView Enterprise Monitor 3.7

Users of v3.7 might need to update your three existing database table names to the new names. If you used the Historian auto-creation you will already have the correct table names. The following are examples:

- Oracle

```
alter table MYSQL_BYTES_TABLE rename to MYSQL_BYTES;
alter table MYSQL_CRUD_TABLE rename to MYSQL_CRUD;
alter table MYSQL_QUERIES_TABLE rename to MYSQL_QUERIES;
```

- DB2

```
RENAME TABLE MYSQL_BYTES_TABLE TO MYSQL_BYTES;
RENAME TABLE MYSQL_CRUD_TABLE TO MYSQL_CRUD;
RENAME TABLE MYSQL_QUERIES_TABLE TO MYSQL_QUERIES;
```

- MySQL

```
RENAME TABLE MYSQL_BYTES_TABLE TO MYSQL_BYTES;
RENAME TABLE MYSQL_CRUD_TABLE TO MYSQL_CRUD;
RENAME TABLE MYSQL_QUERIES_TABLE TO MYSQL_QUERIES;
```

- SQL Server

(replace "database_name" with the name of your database)

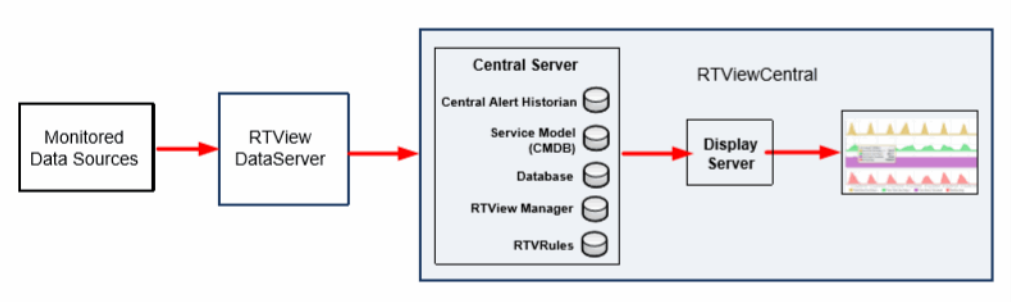
```
use database_name
go
exec sp_rename '[MYSQL_BYTES_TABLE]', '[MYSQL_BYTES]'
exec sp_rename '[MYSQL_CRUD_TABLE]', '[MYSQL_CRUD]'
exec sp_rename '[MYSQL_QUERIES_TABLE]', '[MYSQL_QUERIES]'
go
```

- Sybase

```
sp_rename 'MYSQL_BYTES_TABLE', 'MYSQL_BYTES';
sp_rename 'MYSQL_CRUD_TABLE', 'MYSQL_CRUD';
sp_rename 'MYSQL_QUERIES_TABLE', 'MYSQL_QUERIES';
```

# CHAPTER 2 Configure RTViewCentral

This section describes how to configure optional features on RTViewCentral.




These instructions assume that you have:

- Downloaded and installed RTViewCentral. If not, see "Download, Install and Start RTViewCentral".
- Configured one or more RTView DataServers. If not, see "Download, Install and Setup RTView DataServer".
- Verified your RTView DataServer setup. If not, see "Verify Your RTView DataServer Setup".

Optionally, Configure Application Server: If you want to use the included Apache Tomcat installation, instructions are provided to include it in the startup scripts. If you want to host the servlets on your application server instead of included Apache Tomcat installation, instructions are provided to install the necessary servlets to your Application Server. Note that running the RTView Configuration Application on your Application Server requires extra configuration.

## Get Started

To configure RTViewCentral you "Open the Monitor" and "Open the RTView Configuration Application". Then you can optionally:

Now you can configure any of the following:

- "Configure RTViewCentral Databases": Replace the default HSQLDB database with a production database. This is recommended.
- "Configure Service Model": Setup the RTView Enterprise Monitor Service Model so that all performance data collected by your RTView DataServer(s) are incuded in all relevant displays. This is optional.
- "Configure User and Role Management": Setup user access control for RTView Enterprise Monitor. This is optional.
- "Configure RTViewCentral High Availability": Setup HA to prevent the loss of data and alerts in the event of a failure. This is optional.
- "Configure Alerts": "Enable Alerts and Set Thresholds", "Configure Alert Notification", "Configure Dual Write for Distributed Alert Server", "Configure Alert Groups" and "Configure Alert Filters". These are optional.
- "Modify User Interface": Modify the RTView Enterprise Monitor user interface. This is optional.

## Open the Monitor

- Set the JAVA_HOME environment variable to the location of your Java installation.
- Execute the **start_servers** script, located in the **RTViewCentral/bin** directory, to start RTView Enterprise Monitor.

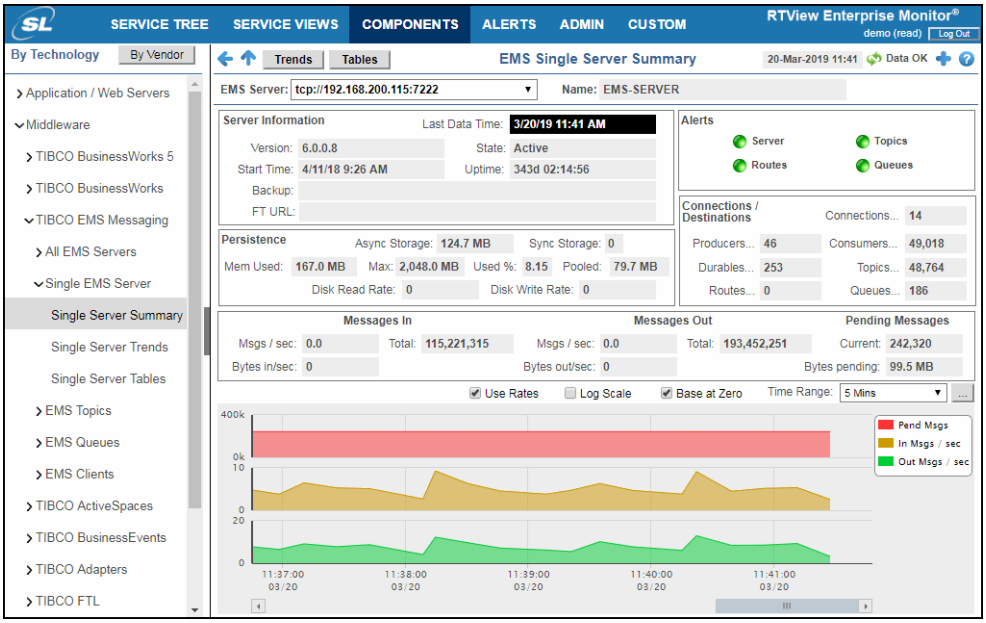
**Tip:** If you encounter error messages, execute the **validate_install.bat/sh** script. For details, see "RTView EM Scripts".

- Point a browser to **http://localhost:10070/rtview-central-classic** and login:

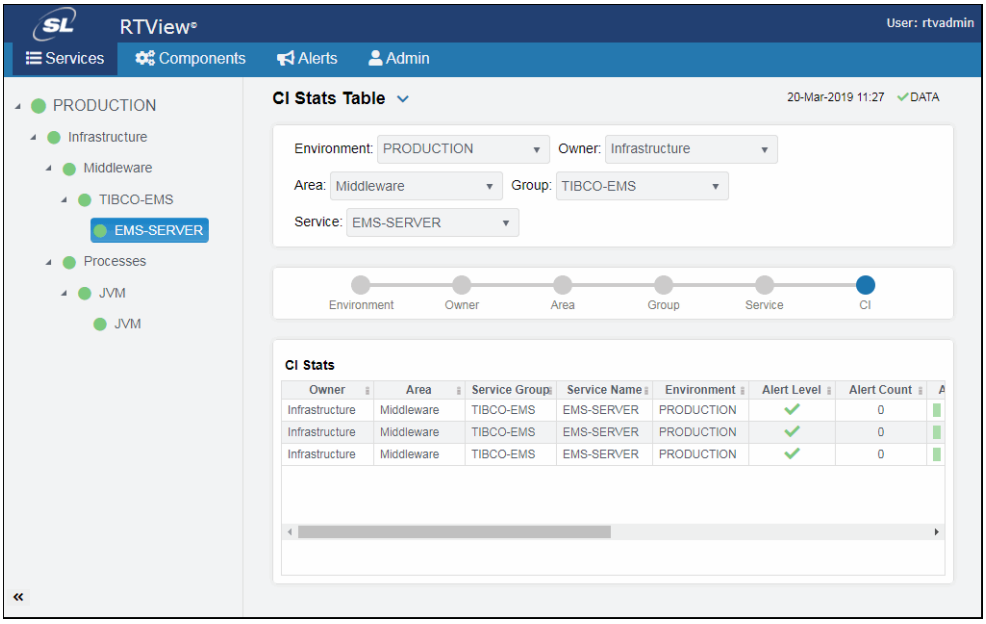
User: **admin**
Password: **admin**

The RTView Enterprise Monitor opens to the **SERVICE TREE** tab **All Areas by Owner** display, by default.

**Note:** The first time you open the Monitor displays are visible but not yet populated with monitoring data. After you download and configure one or more RTView DataServers, configure data collection *and also* integrate with RTView Enterprise Monitor, the displays populate with your monitoring data.




**Note:** Alternatively, you can open the Beta version of the new HTML interface for RTView Enterprise at: **http://localhost:11070/rtview-central** (login as rtvadmin/rtvadmin or rtvuser/rtvuser).




**Note**: Not all features described here are available in the BETA version of the user interface.

Proceed to "Open the RTView Configuration Application," next.

## Open the RTView Configuration Application

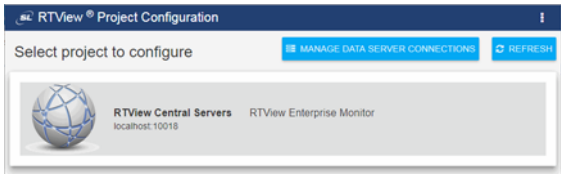
**To open the RTViewCentral project in the RTView Configuration Application:**

- In the RTView Enterprise Monitor, click the cogwheel (title bar, right corner) to open the RTView Configuration Application (login as rtvadmin/rtvadmin).

**Note:** The cogwheel is only visible if you are logged in as an administrator. Also, you might need to disable your browser popup blocker. If you are not logged in as an administrator or cannot disable your popup blocker, browse to the following URL:

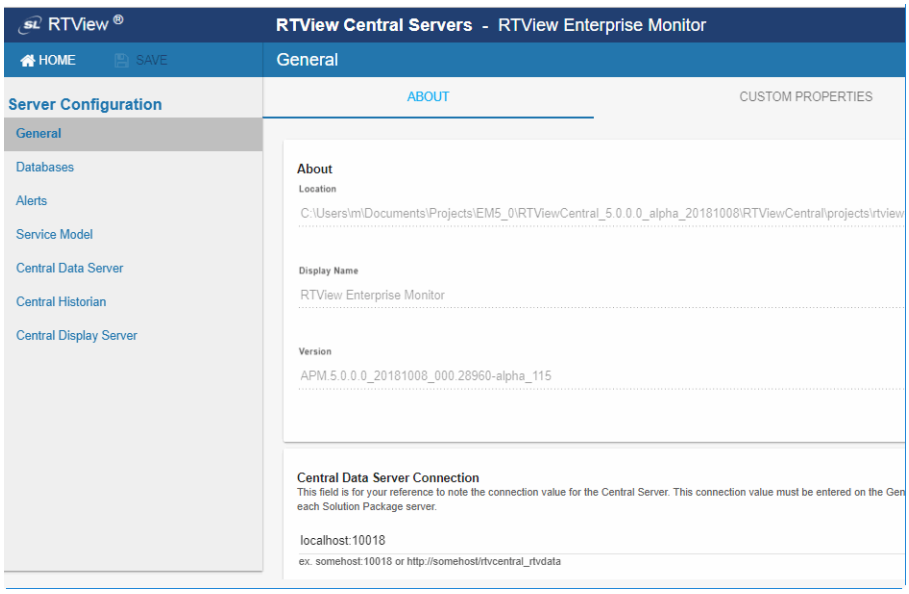
**http://localhost:10070/rtview-central-rtvadmin**

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




**Note:** The **HOME** page is where you select the project you wish to configure. To return here from subsequent pages, click HOME (in the title bar, shown in the following figure).

- Select **RTView Central Server** to open the RTViewCentral project. By default, the **Server Configuration/General>ABOUT** tab opens (shown below).




Now you can optionally configure any of the following features on RTViewCentral: "Configure RTViewCentral Databases", "Configure Service Model","Configure User and Role Management", "Configure RTViewCentral High Availability" and "Configure Alerts".

# Configure RTViewCentral Databases

This section describes how to configure the use of a production database for the Alert Threshold Database Connection, the Historian Database Connection, the CMDB Database Connection, the Diagram Generator Connection and the Metric Explorer Connection.

RTViewCentral requires the following databases: ALERTDEFS, RTVCMDB and RTVHISTORY, each of which contain several tables. RTView Enterprise Monitor is delivered with a default memory resident HSQLDB database, which is suitable for evaluation purposes. However in production deployments, it is recommended that a supported database engine be used that is accessible via JDBC. This section describes how to setup an alternate database and, if needed, how to manually create the database tables (which requires table-creation permission in your database engine).

**To configure RTViewCentral databases:**

1. Select and install a database of your choice. Supported databases are Oracle, Sybase, DB2, Microsoft SQL Server and MySQL.

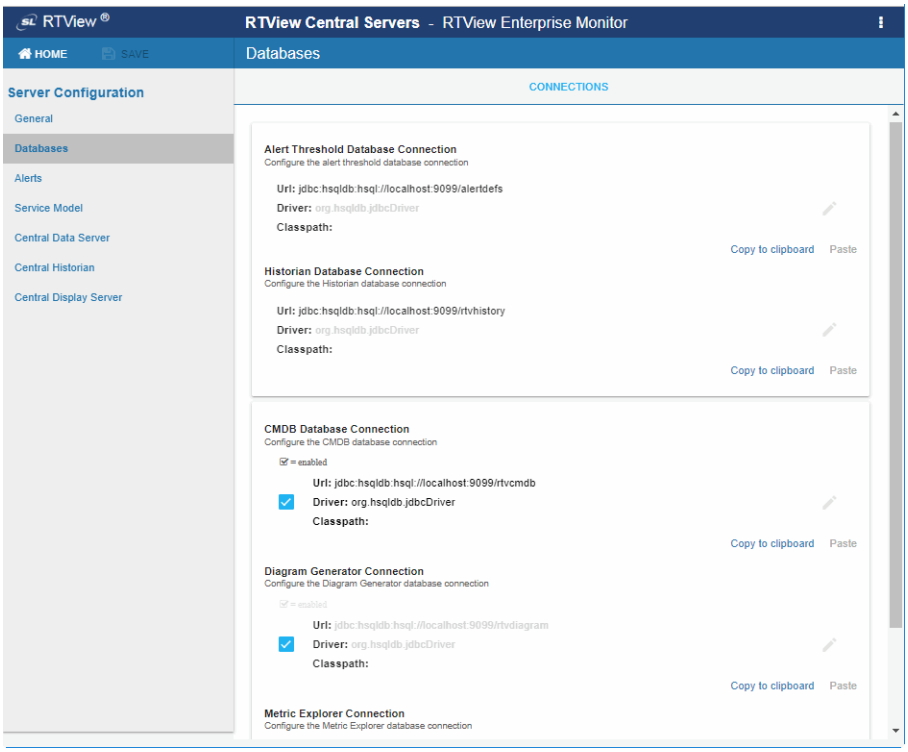
   **Note:** Users of the Docker platform have access to an image of MySQL 5.7 configured for use with RTView, on Docker hub at **slcorp/mysql-rtview**. For more information refer to **rtvapm/containers/docker/mysql-rtview/README.txt**.

2. Gather the following information for each database you wish to connect:

- **URL**: Full URL to use when connecting to this database using the specified JDBC driver.
- **Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.
- **Classpath**: The classpath to the jar containing the driver class.
- **Username**: (optional) User name to enter into this database when making a connection.
- **Password**: (optional) Password to enter into this database when making a connection.
- **Run Queries Concurrently**: If set to true, each query on the connection is run on its own execution thread.
- **Enabled**: (CMDB, Diagram Generator and Metric Explorer Databases only). Set each to false to disable the connection if you will not be using the feature.

  **Note:** The **Run Queries Concurrently** option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.

3. "Open the RTView Configuration Application" and go to **Server Configuration / Databases**:




4. Enter your gathered information for each database you wish to connect:

   **Tip**: Click **Copy to clipboard** to copy/paste a database connection details into another database connection.

   - To configure the Historian Database, select **Historian Database Connection**, fill in the connection fields and SAVE to close the dialog.
   - To configure the Alert Threshold Database, select **Alert Threshold Database Connection**, fill in the connection fields and SAVE to close the dialog.
   - To configure the CMDB Database, select **CMDB Database Connection**, fill in the connection fields and SAVE to close the dialog.
   - If you wish to use the Diagram Generator, select **Diagram Generator Connection**, fill in the connection fields and SAVE to close the dialog.
   - If you wish to use the Metric Explorer, select **Metric Explorer Database Connection**, fill in the connection fields and SAVE to close the dialog.

5. Click SAVE (in title bar) to save your changes, then click RESTART SERVERS to apply them.

   **Note:** RESTART SERVERS appears in the title bar when a project has changes not yet applied.

6. Manually create the tables needed for each database connection. To create tables for your database, use the **.sql** template files provided for each supported database platform, located in the **RTVAPM_HOME/common/dbconfig** directory:

ALERTDEFS

**create_common_alertdefs_tables_<db>.sql**

RTVCMDB

**create_rtvcmdb_tables_<db>.sql**

RTVHISTORY

Templates for the central RTVHISTORY tables are located in **RTVAPM_HOME/common/dbconfig**:

**create_rtvhistory_tables_<db>.sql**

Templates for solution package-specific RTVHISTORY tables are located in the **dbconfig** subdirectory of each solution package under **RTVAPM_HOME**. For example, the .sql templates file for the Solution Package for TIBCO Enterprise Message Service™ are located in **/rtvapm/emsmon/dbconfig** (**%RTVAPM_HOME%\emsmon\dbconfig** on Windows (or **$RTVAPM_HOME/ emsmon /dbconfig** on Linux). Use the schemas for the solution packages that you plan to use.

The following is the file naming format for the **dbconfig** directory:

**create_<package>_history_tables_<db>.sql**

where **<package>** ={emsmon, bwmon, ocmon, wlm, etc.} and **<db>**={db2, hsqldb, mysql, oracle, sqlserver, sybase}

**RTVMX**

Templates for RTVMX tables are located in the **RTVAPM_HOME/mx/dbconfig** directory:

**create_rtvmx_tables_<db>.sql**

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

**Note:** For details about improving database performance and Historian response time, see the **- charlimit** property and the **-index_history_tables** property.

You have finished configuring RTViewCentral databases.

**Note:** RTView DataServers that are configured to integrate with EM will access the Alert Threshold Database via the Central Server. However, each RTView DataServer is configured with a separate Historian database by default. If you want to use the central Historian database for your RTView DataServer, copy the connection information entered here to the Historian database field in your RTView DataServer Configuration Application.

# Configure Service Model

This section describes the Service Model and how to configure it. Configuration of the Service Data Model is optional.

**Note:** Before you configure the Service Model you must configure all the RTView DataServers you wish to include in your RTView Enterprise Monitor deployment.

After you configure the Service Model you can revise your settings in the RTView Enterprise Monitor **Administration - CMDB Admin** display.

To configure the CMDB you associate each CI in your system with a Service, Group, Area and Owner. These associations form the map that enables aggregation of data in RTView Enterprise Monitor Service displays. There are several ways to create the CMDB:

- Manually, using the RTView Configuration Application and the **Administration - CMDB Admin** display. See "Configuration Steps".
- Import an existing structure from a spreadsheet or database.
- If the data is available to the Configuration Server, you can read it dynamically by populating the structure from the raw data.
- Any combination of the above.

This section contains:

- "Introduction to the CMDB": Describes the CMDB structure, and provides examples of how an organization's established structure can be applied to the CMDB.
- "Configuration Steps": Step-by-step CMDB configuration instructions.

## Introduction to the CMDB

This section describes the RTView Enterprise Monitor Service Model (also referred to as the CMDB), and its configuration. Before the CMDB is configured, your solution package data is only visible in displays that are specifically for that solution package (such as the displays in the **Components** tab).

After you configure the CMDB, you gain a "single-pane-of-glass" view. That is, your solution package data is visible and incorporated into the displays and performance metrics of all relevant displays (such as displays under the **SERVICES** tab).

The CMDB is a database containing the master hierarchical map of associations between all *Configuration Items* (CIs), Services, Groups, Areas and Owners in your system. A CI is an item in your system that is being monitored by RTView Enterprise Monitor. The item could be an application, a cache, a server, a router, a NIC card, a server partition, a connection and so forth.

The CMDB contains four hierarchical levels that should suit the monitoring needs of most organizations. The four levels are, from the highest level (Owner) to the lowest level (Service):

- Owner
- Area
- Group
- Service

The names of the CMDB levels cannot be modified.

When you configure your CMDB you associate each CI in your system with a Service, each Service with a Group, each Group with an Area and each Area with an Owner. These associations form the map that enables aggregation of data in RTViewCentral displays. There is no limit on the number of associations a level can have. A Service can be associated with multiple Groups and Environments.

When you make any changes to Owners, Areas, Groups or Services the associated levels are automatically updated. For example, when you move a Group from one Area to another, all Services associated with that Group move with it, and the RTViewCentral displays are updated.

By default, the CMDB contains a single Owner named **Infrastructure** which organizes the CI's by Solution Package. Infrastructure cannot be modified, but it can be disabled in the "Service Model Page" of the RTView Configuration Application.

### Defining the CMDB

When you configure the Service Data Model you use the existing structure of your organization to do so. If your organization does not have an established structure, you need to define one relevant to your system. The manner in which you adapt your system hierarchy to the CMDB levels depends on the monitoring needs of your organization. You design the CMDB by identifying the four hierarchical levels in your organization that coincide with the four-level hierarchy in the CMDB. For example, you might:

1. Determine the Owners: Note the person or persons responsible for alerts in your organization. You might have only one Owner.

2. Determine the Areas for each Owner: The Areas are relevant to the Owner accountable for resources in the Areas. Areas might be based on departments in the organization (such as Development, Sales, HR, and so forth).

3. Determine the Groups for each Area: Groups might be comprised of, for example, the types of resources used in the Areas (such as Servers, Middleware and Processes).

4. Determine the Services for each Group: Services might be comprised of a variety of applications that are used by a given Group.

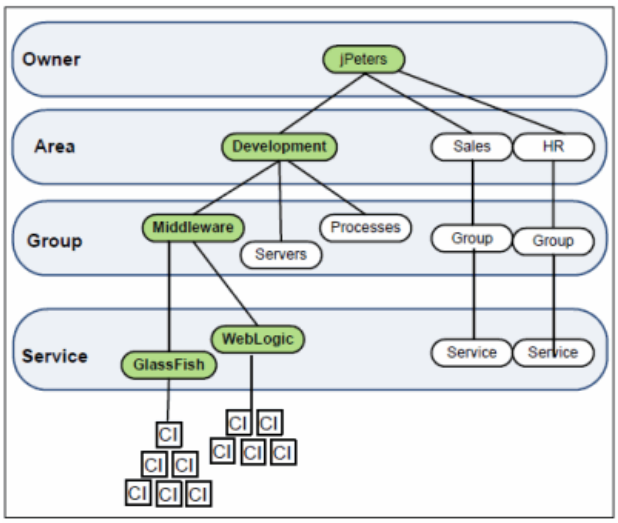
After you determine how to adapt your organization to the four levels of the CMDB, use the **Administration - CMDB Admin** display to map each CI to a Service, Group, Area and Owner. The name of the CI can indicate which Service you want to associate the CI with.

The CMDB automatically classifies the CIs in your system into CI Types. This classification is based on a preconfigured schema that is internal to RTView Enterprise Monitor. CI Types are determined by the role of a given CI, and the name of the CI Type describes the role. For example, a BusinessWorks application process is a BW-PROCESS CI Type, a BusinessWorks server is a BW-SERVER CI Type and an Oracle database is an ORACLE CI Type.

After you configure a Service Data Model, the automatically generated Infrastructure Service Data Model looks for matching CI's in your Service Data Model in order to set the Environment. For each CI in the automatically generated Infrastructure Service Data Model, if a matching CI is found in your Service Data Model, the Environment from your Service Data Model is used for the Infrastructure CI. If the CI is found in your Service Data Model multiple times with multiple Environments, it is added multiple times to the Infrastructure CMDB--once for each Environment in your Service Data Model for that CI. If no matching CI is found in your Service Data Model, the Environment in the Infrastructure Service Data Model is set to PRODUCTION by default. You can override the default Environment by specifying a different environment in the "Service Model Page" **/ Default Environment Filter** field.

### Small Company Example

Typically, small companies have a single Owner. The following figure illustrates a portion of a CMDB structure in which a single Owner is accountable for three Areas (Development, Sales and HR). The Development Area has three Groups associated with it (Servers, Middleware and Processes). The items in green indicate the parts of the branch (jPeters / Development / Middleware) we use as an example in “Configuration Steps”.




To prepare for configuration we list our hierarchical associations as follows:

| Owner | Area | Group | Service |
|---|---|---|---|
| jPeters | | | |
| | Development | | |
| | | Middleware | WebLogic |
| | | | GlassFish |

We use this list to associate each CI in our system with a Service, Group, Area and Owner.

To see a large company example, see “Large Company Example”.

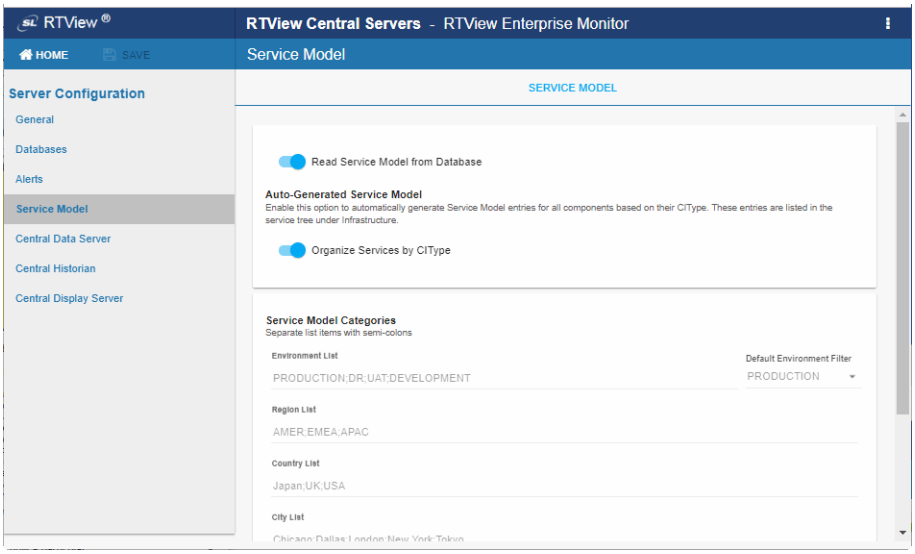
## Configuration Steps

This section describes how to configure the Service Model using the RTView Configuration Application and the RTView Enterprise Monitor **CMDB Admin** display.

This section assumes you configured the CMDB database connection. If not, see “Configure RTViewCentral Databases”.

1. "Open the RTView Configuration Application", go to **Server Configuration / Service Model** and:

- Toggle on **Read Service Model from Database** to organize CIs in COMPONENTS displays.
- Toggle on **Organize Services by CIType** if you want to include CIs in **Infrastructure** Owner displays (recommended).



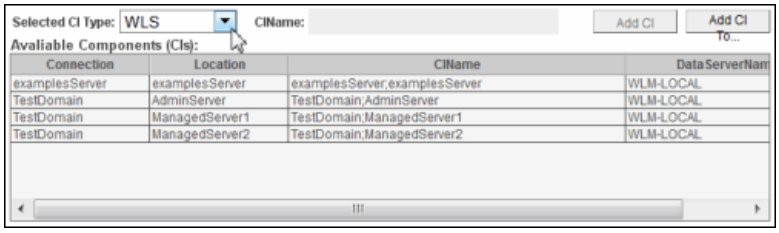

2. Under **Service Model Categories**, enter category names in a semi-colon separated list format for each field. Optionally, change the **Default Environment Filter**.

3. Click SAVE to save your changes, then click RESTART SERVERS to apply them.

4. "Open the Monitor" and go to the **CMDB Administration** / **CMDB Admin** display.

5. Select a CI Type to configure from the **Selected CI Type** drop-down menu, located above the lower table. (The **Selected CI Type** drop-down menu is populated with installed and configured solution packages in your system.)

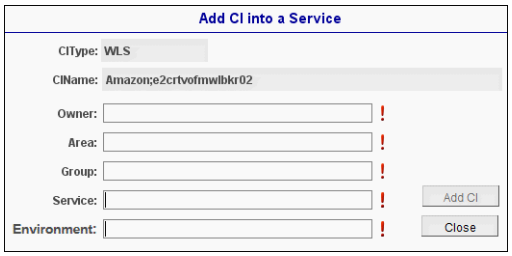
   For example, to configure the **jPeters / Development / Middleware / WebLogic** branch as an example from the "Small Company Example" we select **WLS**.




The **Available Components** table populates with CIs for WebLogic.

6. Select one or more CIs from the **Available Components** table and click **Add CI To....**

**Note:** To determine which CIs to associate with a Service, refer to the **CIName** column. The **CIName** column contains descriptive information entered by your administrator about the CI.

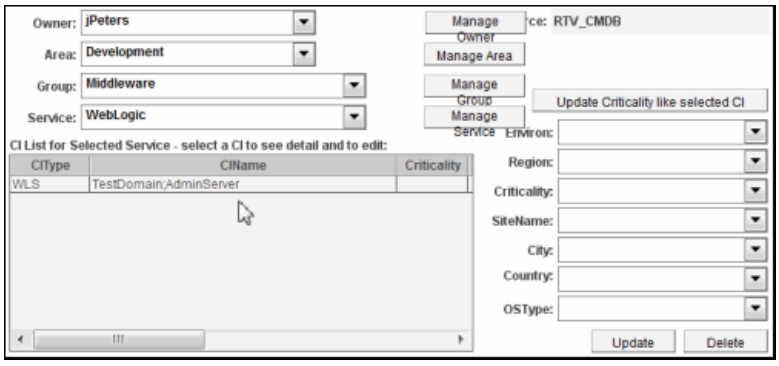



The **Add CI into a Service** dialog opens.

**7.** Associate your selected CIs with a Service by entering the Owner, Area, Group and Service. Refer to your defined CMDB structure to determine appropriate entries. For example, to configure the **jPeters / Development / Middleware / WebLogic** branch from our "Small Company Example", we enter:

| | |
|---|---|
| **Owner:** | jPeters |
| **Area:** | Development |
| **Group:** | Middleware |
| **Service:** | WebLogic |
| **Environment:** | PRODUCTION |

**8.** Click **Add CI** and **OK**.




The CIs appear in the **CI List for Selected Service** table and are now associated with the new Service. The four levels are saved in the CMDB and populate the **Owner**, **Area**, **Group** and **Service** drop-down menus in the **Administration - CMDB Admin** display, as well as other displays.

**9.** Specify the rank of importance for a CI using the **Criticality** drop-down menu, where **A** is the highest importance and **E** is the lowest. Criticality is used to calculate the value for Alert Impact. For our "Small Company Example", we set the WebLogic Criticality to **E**.

**10.** Optionally, enter the following for a CI using the remaining drop-down menus:

**Region**: Optionally, enter a geographic region in which the CI resides.

**SiteName**: Optionally, enter a site name in which the CI resides.

**City**: Optionally, enter a city in which the CI resides.

**Country**: Optionally, enter country in which the CI resides.

**OSType**: Optionally, enter the operating system on the CI.

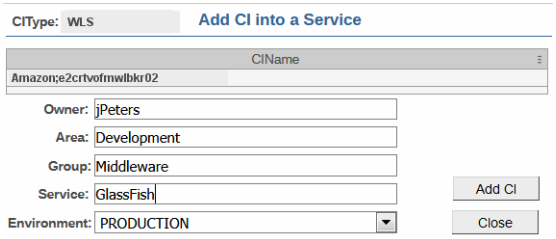
Click **Update** to save the entries.

**11.** Associate more CIs to this Service by selecting them and clicking **Add CI**. The CIs appear in the **CI List for Selected Service** table and the CIs are now associated with the Service. Use the **Selected CI Type** drop-down menu to associate a different CI Type.

**Note:** To modify settings (Criticality, Environ, etc.) for a CI, select the CI, change the settings and click **Update**. To remove a CI from a Service, select the CI and click **Delete**.

**12.** Add a new Service by selecting a CI and clicking **Add CI To....** Use the **Selected CI Type** drop-down menu to locate the relevant list of CIs. For example, for our "Small Company Example" to add the GlassFish Service and associate GFS CIs, we select **GFS** from the **Selected CI Type** drop-down menu, select a CI from the **Available Components** table and click **Add CI To...**.

The **Add CI into a Service** dialog opens.




**13.** Make the appropriate entries and click **Add CI** and **OK**. For example, for our "Small Company Example" we make the following entries for the **jPeters / Development / Middleware / GlassFish** branch.

**Owner:** jPeters

**Area:** Development

**Group:** Middleware

**Service:** GlassFish

**Environment:** PRODUCTION

The CI appears in the **CI List for Selected Service** table and the GlassFish Service is in the CMDB.

**14.** Specify the rank of importance for the CI using the **Criticality** drop-down menu, where **A** is the highest importance and **E** is the lowest. For our "Small Company Example", we set the GlassFish Criticality to **A**.

**15.** Optionally, enter the following for the CI using the remaining drop-down menus:

**Region:** Optionally, enter a geographic region in which the CI resides.

**SiteName:** Optionally, enter a site name in which the CI resides.

**City:** Optionally, enter a city in which the CI resides.

**Country:** Optionally, enter country in which the CI resides.

**OSType:** Optionally, enter the operating system on the CI.

Click **Update** to save the entries.

**16.** Add more CIs to this Service by selecting a CI and clicking **Add CI**. The CIs appear in the **CI List for Selected Service** table and the CI is now associated with the Service. Modify settings (Criticality, etc.) for a CI as needed and click **Update**.

**17.** Click **Close** to close the **Add CI into a Service** dialog.

**18.** Open a display, such as the **Group / Service Heatmap**, to view your entries integrated into the RTView Enterprise Monitor display.


Continuing with our "Small Company Example", we see the **jPeters** branch we configured in the display which has two Services in the Middleware Group:

**Owner:** jPeters

**Area:** Development

**Group:** Middleware

**Service:** WebLogic
GlassFish

**Note:** There are two rectangles in the heatmap, one for each Service. Part of the heatmap is red, indicating the **WlsThreadsTotalHigh** alert state, which is the alert we adjusted thresholds for and enabled in the previous instructions. Recall that we set the **Criticality** level for a CI associated with the GlassFish Service to **A** (the highest rank of importance). For this reason the rectangle representing the GlassFish Service is red. The WebLogic rectangle is not red because we set the **Criticality** to **E** (the lowest rank of importance).

**19.** Repeat previous steps as needed until all CIs are associated with a Service.

This completes your Service Data Model configuration. Solution package data is visible in all relevant displays. You now have a "single-pane-of-glass" view in which data for all solution packages are visible in all RTView Enterprise Monitor displays. For additional details about using the CMDB display, see the *RTView Enterprise Monitor User's Guide*.

### Large Company Example

Typically, large companies have several owners that are in charge of several Areas. This example illustrates a single branch of the CMDB--the branch belonging to the IT manager: jSmith. For that branch of the CMDB, the company defines the following structure:

| | | |
|---|---|---|
| **Owners:** | jSmith<br>rJones<br>tSchmidt<br>bRoberts | There are four managers in the company and they are the members of the CMDB Owner level. The IT manager is jSmith. |
| **Area:** | IT Core<br>IT SVCS | There are two CMDB Areas associated with jSmith. The two Areas are based on expertise-based subdivisions of personnel in the company: IT Core and IT SVCS. |
| **Group:** | Core Apps SMS<br>Core Apps WEB<br>Core Oracle | There are three CMDB Groups associated with the IT Core branch. The three Groups are based on the three subdivisions of personnel in the IT Core Department: Core Apps SMS, Core Oracle and Core Apps WEB.<br>The other Areas in the company might have different Groups.<br>This example continues with the Core Oracle branch belonging to jSmith. This example does not describe the Core Apps SMS and Core Apps WEB branches belonging to jSmith. |
| **Service:** | R&D<br>Production<br>Web Stores | There are three CMDB Services associated with the Core Oracle Group. The three Services are based on the infrastructure Services that the company provides to its customers: R&D, Production and Web Stores.<br>The other Groups in the company might have different Services. |

**Note:** This example does not illustrate CIs associated with Services.

Proceed to "Configure User and Role Management".

# Configure User and Role Management

This section describes how to configure RTView Enterprise Monitor user and role Management. Use Role Management to permit and deny access to displays as well as some functionality in certain displays based on the logged in user or role. The alert, CMDB administration and other administration views check the role of the logged in user to prevent users that are not the admin or super role from saving settings. The RTView Alert Table checks the role of the logged in user to hide buttons based on the role of the logged in user. You can also set substitutions on your users and roles to filter what portion of the CMDB is visible in the **Service Tree**, **Service Views** and **Alerts** tabs as well as the **CMDB Administration** view.

The following figure illustrates the RTView Enterprise Monitor components that are the subject of this section.

To configure Role Management you define your users and user roles by editing the **users.xml** and **roles.xml** files, located in the **RTViewCentral/projects/rtview-server** directory. In the **users.xml** file you specify each user name, the associated encrypted password, role and optional substitutions to filter what portion of the CMDB is visible for that user. In the **roles.xml** file you specify, per role, the included and excluded displays, and optional substitutions to define what portion of the CMDB is visible for that role. There is no limit to the number of roles and users you can add to the files. By default, all substitutions are set to ***** (asterisk), which specifies no role restrictions under the **RTViewCentral/projects/rtview-server** directory.

For details on **users.xml** and **roles.xml** syntax, see Role Based Security/Configuration in the *RTView Core® User's Guide* at http://www.sl.com/support/documentation/. If you want to integrate RTView Enterprise Monitor with LDAP or other user and security management systems, see Custom Security Managers in the *RTView Core® User's Guide*.

## Substitutions for User and Role Management

The following substitutions can be set per user or per role and will limit the CMDB entries shown in the Service Tree, Service Views and Alerts tabs. For example, if your application has three Owners: Owner 1, Owner 2, and Owner 3, and you specify **$rtvOwnerMask=Owner 1** for a role, users that login with that role will only see the services under Owner 1 in the **SERVICE TREE**, **SERVICE VIEWS** and **ALERTS** tabs, and only see alerts related to services under Owner 1 in the **ALERTS** tab. If a substitution is set for both the user and role, the role value will take precident. To specify multiple values, separate them with commas. To specify all values, use ***** or just do not include the substitution in your user and role settings.

| | |
|---|---|
| **$rtvOwnerMask:** | Set this to filter the Owners a user or role will see in the Service Tree, Service Views and Alerts tabs. For example,<br>**<sub name="$rtvOwnerMask" value="Owner 1,Owner 2" />** |
| **$rtvAreaMask:** | Set this to filter the Areas a user or role will see in the Service Tree, Service Views and Alerts tabs. For example,<br>**<sub name="$rtvAreaMask" value="*" />** |
| **$rtvGroupMask:** | Set this to filter the Groups a user or role will see in the Service Tree, Service Views and Alerts tabs. For example,<br>**<sub name="$rtvGroupMask" value="Group 1,Group 2" />** |

| | |
|---|---|
| **$rtvServiceMask:** | Set this to filter the Services a user or role will see in the Service Tree, Service Views and Alerts tabs. For example,<br>**<sub name="$rtvServiceMask" value="MyService" />** |
| **$rtvManageableCompID:** | Set this to limit the alerts that can be closed by a user or role to alerts where the Primary Service value matches one of the items in the list. |

Also by default, there are five defined and implemented roles: **read**, **event**, **full**, **admin** and **super**. Only the **admin** and **super** roles have access to all features in all displays. The following table summarizes the functionality that is accessible per role:

| Role | Permission |
|---|---|
| **read** | Access to all displays and functionality except administrator functions. |
| **admin / super** | Access to all displays and functionality including all actions on the **Alerts Table** display, write access in the **Alert Administration** display, and write access in the **CMDB Admin** displays. |
| **full / event** | Access to all displays. Access to all actions in the **Alerts Table** display. |

## Configuration Steps

This section assumes you completed the "Configure Service Model" instructions, and that you also have configured RTViewCentral database for your production environment (if not, see "Configure RTViewCentral Databases".

**To configure role management:**

1. Open the **roles.xml** file, located in your **RTViewCentral / projects / rtview-server** directory, in a text editor. By default, the **read**, **admin** and **super** roles are defined as follows:

```
<?xml version="1.0"?>
<roles xmlns="www.sl.com" >
	<role>
		<name>read</name>
		<displays>
			<include>ALL</include>
		</displays>
	</role>
	<role>
		<name>admin</name>
		<displays>
			<include>ALL</include>
		</displays>
	</role>
	<role>
		<name>super</name>
		<displays>
			<include>ALL</include>
		</displays>
	</role>
</roles>
```

2. Create new roles. For each role, optionally specify the included and excluded displays, as well as the values for the substitutions that define the visible part of the CMDB and actionable alerts (as described above). For example, the following illustrates a role named

**ITmanager** that has no administrator permissions and *does* have access to all owners within the two IT areas of the company:

```
<role>
	<name>ITmanager</name>
	<displays>
		<include>ALL</include>
	</displays>
	<sub name="$rtvrole" value="read" />
	<sub name="$rtvOwnerMask" value="*" />
	<sub name="$rtvAreaMask" value="IT Servers,IT Central" />
</role>
```

3. **Save** the file.

4. Open the **users.xml** file, located in the your **RTViewCentral/projects/rtview-server** directory, in a text editor. By default, there are three users defined, **super**, **admin** and **demo**:

```
<?xml version="1.0"?>
<users xmlns="www.sl.com" >
	<user>
		<name>super</name>
		<password>013340135101346013350134 8</password>
		<role>super</role>
	</user>
	<user>
		<name>admin</name>
		<password>013310133401343013390134 4</password>
		<role>admin</role>
	</user>
	<user>
		<name>demo</name>
		<password>013340133501343013451</password>
		<role>read</role>
	</user>
</users>
```

5. Add the new role you just created to this file and optionally add values for the substitutions that define the visible part of the CMDB and actionable alerts (as described above). For example:

```
<?xml version="1.0"?>
<users xmlns="www.sl.com" >
	<user>
		<name>super</name>
		<password>013340135101346013350134 8</password>
		<role>super</role>
	</user>
	<user>
		<name>admin</name>
		<password>013310133401343013390134 4</password>
		<role>admin</role>
	</user>
	<user>
		<name>demo</name>
		<password>013340133501343013451</password>
		<role>read</role>
	</user>
```

```
        <user>
                <name>Johnson</name>
                <password>013380133501342013420134201345</password>
                <role>ITmanager</role>
        </user>
</users>
```

**6.** Add as many users to the **users.xml** file as needed.

**7.** **Save** the file.

**8.** Restart the Display Server if you have installations that are working locally.

You have finished configuring RTView Enterprise Monitor Role Management.

# Configure RTViewCentral High Availability

This section describes High Availability (HA) for RTViewCentral, the setup options available and how to configure them. HA prevents the loss of data and alerts in the event of a failover.

To setup HA for RTViewCentral you configure a pair of RTViewCentral installations on two different host machines, one as the primary host and the other as the backup host. The HA configuration includes the CentralServer, Display Server and Historian. If one of these processes on the primary host stops, the corresponding process on the backup host takes over. When the primary comes back on line it takes over again and the backup process returns to standby mode. Client connections move between the two servers accordingly.

This section contains:



## Requirements

- Two host machines, a Primary Host and a Backup Host.
- RTViewCentral is installed and running on the primary host.
- Both hosts must be configured such that the RTView processes on each host can connect to each other via socket.
- Tomcat or other application server.
- Both hosts must be able to access the same Historian, Alert Threshold, CMDB, Diagram Generator and Metric Expolorer databases.
- Both hosts must be able to access the same RTViewDataServers which must also be able to access both the Primary and Backup host for RTViewCentral.

## CentralServer HA

In CentralServer HA deployments, the primary and backup CentralServer connect to each other via socket. If the primary CentralServer stops, the backup takes over, if the primary then comes back up, the primary takes back over and the backup goes back to standby. Only the active CentralServer handles data requests.

Data clients for the HA CentralServer have the following options for connecting:

- via HA configured rtvdata servlet running on an application server other than the internal Jetty server. This option requires extra configuration of the rtvdata war files. High availability access to the servlets must be configured in the application server.
- rtvquery data clients for CentralServer HA must connect via servlet running on an application server other than the internal Jetty server. This option requires extra configuration of the rtvquery war files. High availability access to the servlets must be configured in the application server.
- via socket using a fault tolerant URL (//PRIMARYHOST:3278,//BACKUPHOST:3278).

## Display Server HA

In Display Server HA deployments, the primary and backup Display Server do not connect to each other. The rtvdisplay servlet is configured to connect to the primary Display Server first and if that connection fails, the servlet tries to connect to the backup Display Server. Likewise, when the backup Display Server connection fails, the servlet tries to connect to the primary Display Server.

If the **DisplayServerConnectionFailback** property is set to **true**, the rtvdisplay servlet reconnects to the primary server when it comes back on line. If set to **false**, it does not reconnect to the primary server unless the backup server becomes unavailable.

The Display Server is a client of the CentralServer and connects to it via fault tolerant URL (socket). This means that the data servers and historians can fail over separately or together.

## Historian HA

In Historian HA deployments, the primary and backup Historian connect to each other via socket. If the primary Historian stops, the backup takes over. If the primary then comes back on line, the primary takes over and the backup goes back into standby mode. Only the active Historian writes to the database.

The Historian is a client of the CentralServer and connects to it via fault tolerant URL (socket). This means that the CentralServer and Historians can fail over separately or together.

## Configuration Steps

To configure HA for RTViewCentral you setup the Primary and Backup Hosts, verify your setup, test the failover process to the Backup Host and verify the Primary Host is restored to the primary server for the pair.

**To Configure RTViewCentral HA:**

1. Install and configure RTViewCentral on the primary host, including:
   - configure all server options

- configure databases
- enable and configure alert persistence

**Note:** Jetty does not have to be disabled, but data clients will not be able to make high availability connections to these servers using the Jetty URL - they can still use the Jetty URL to configure their application.

2. Copy the configured RTViewCentral installation from the primary host to the backup host.

3. Configure the Display Server **rtview-central-classic.war** file for HA (a socket connection for the display server is not an option) by doing the following, then install it to your application server:
   - Execute **update_wars** to generate the war file
   - **jar -xf rtview-central-classic.war WEB-INF/classes/gmsjsp/rtvdisplay.properties**
   - Edit the **WEB-INF/classes/gmsjsp/rtvdisplay.properties** file to uncomment and fill in the **DisplayServerBackup** line:

     **DisplayServerBackup=BackupHost:3278**

     where **BackupHost** is the name or IP address of the BACKUPHOST and the port number is the same port as in the **DisplayServerPort** property
   - **jar -uf rtview-central-classic.war WEB-INF/classes/gmsjsp/rtvdisplay.properties**

4. Configure the CentralServer rtvquery servlet for HA access by doing the following, then install it to your application server:
   - Execute **update_wars** to generate the war file
   - **jar -xf rtview-central-rtvquery.war WEB-INF/classes/com/sl/rtvquery/rtvquery.properties**
   - Edit the **WEB-INF/classes/com/sl/rtvquery/rtvquery.properties** file to uncomment and fill in the DataServerBackup line:

     **DataServerBackup=BackupHost:3278**

     where **BackupHost** is the name or IP address of the BACKUPHOST and the port number is the same port as in the **DataServerPort** property.
   - **jar -uf rtview-central-rtvquery.war WEB-INF/classes/com/sl/rtvquery/rtvquery.properties**

5. This step is optional. It is only needed if you want clients to connect to the CentralServer via servlet instead of a fault tolerant socket. Configure the CentralServer rtvdata servlet for HA access by doing the following, then install it to your application server:
   - Execute **update_wars** to generate the war file
   - **jar -xf rtview-central-rtvdata.war WEB-INF/classes/com/sl/gmsjcs/servlet.properties**
   - Edit the **WEB-INF/classes/com/sl/gmsjcs/servlet.properties** file to uncomment and fill in the DataServerBackup line:

     **DataServerBackup=BackupHost:3278**

     where **BackupHost** is the name or IP address of the BACKUPHOST and the port number is the same port as in the **DataServerPort** property

- **jar -uf rtview-central-rtvquery.war WEB-INF/classes/com/sl/gmsjcs/servlet.properties**

6. On both the primary and backup hosts, define PRIMARYSERVER and BACKUPSERVER environment variables:

   **PRIMARYHOST** - the IP address or hostname of the host running the primary servers (ex set PRIMARYHOST=MyHost)

   **BACKUPHOST** - the IP address or hostname of the host running the backup servers (ex. set BACKUPHOST=OtherHost)

7. On the primary host, open a Windows command line (or a terminal window for UNIX) and execute the following script, located in the **RTViewCentral/bin** directory, to start the servers: **start_servers -haprimary** (or **start_servers.sh -haprimary** for UNIX).

8. On the backup host, open a Windows command line (or a terminal window for UNIX) and execute the following script, located in the **RTViewCentral/bin** directory, to start the servers: **start_servers -habackup** (or **start_servers.sh -haprimary** for UNIX).

9. Verify failover and failback of RTViewCentral.
   - Open a browser to **http://host:port/rtview-central-classic**, login as admin/admin and verify that you see services, solution package data and alerts as expected.
   - On the primary host, stop the servers by executing the following script, located in the **RTViewCentral/bin** directory: **stop_servers** (or **stop_servers.sh** for UNIX).

     It might take a few seconds to fail over.
   - Return to the browser and verify the monitor is still available and you still see services, solution package data and alerts as expected.
   - On the primary host, restart the servers by executing the following script, located in the **RTViewCentral/bin** directory: **start_servers -haprimary** (or **start_servers.sh -haprimary** for UNIX).

   **Note:** The RTView Configuration Application is disabled for servers that are running in HA mode. To configure HA servers, you need to run them in stand-alone (not HA) mode. After you save your configuration changes, start them back up in HA mode. The configuration of the primary and backup servers must be kept in sync.

10. If you encounter issues, look at the following in the log files.

    This error indicates that you didn't set the PRIMARYHOST or BACKUPHOST environment variable:

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

You have finished configuring High Availability.

# CHAPTER 3 Configure Alerts

This section describes how to enable and configure alert notification as well as other optional alert behavior and features. If you have not connected an alert database, see "Configure RTViewCentral Databases".

This section includes:

- "Enable Alerts and Set Thresholds": This section describes how to enable alerts.
- "Configure Alert Notification": This section describes how to configure alerts to execute an automated action.
- "Configure RTVRules": This section describes how to configure RTVRules.
- "Configure Dual Write for Distributed Alert Server": This configuration mitigates the delays with Alerts Table updates which occur in distributed deployments.
- "Configure Alert Groups": Create groups of alerts that you can then use to filter the displays in the following views: **All Mangaement Areas**, **Multi Area Service Views**, **Single Area Service Views** and **Component Views**.
- "Configure Alert Filters": Create custom filters and a **Custom Filter** drop-down menu for the **Alert Views - RTView Alerts Table** display.

These configurations are optional.

## Enable Alerts and Set Thresholds

1. "Open the Monitor", go to the **Administration** - **Alert Administration** display and locate alerts for your installed solution packages.
2. Select the alerts you wish to enable for the solution packages, optionally modify the alert **Warning Level** and **Alarm Level**, then select **Enable**.
3. Click **Save Settings** and **Yes**.

## Configure Alert Notification

This section describes how to configure alert notification on RTViewCentral. There are two main steps to configure alert notification.

**To configure central alert notifications you:**

- "Configure Notifications in the RTView Configuration Application" to specify when to execute the notification and the action to perform.
- "Configure Notification Action" using either the script or Java command handler.

RTView Enterprise Monitor provides alerts concerning conditions in your solution packages through RTView alerts. This section describes how to configure the alerts to execute an automated action (such as sending an email alert). These actions are generated on the Central Alert Server.

You can configure alerts to notify on the following events:

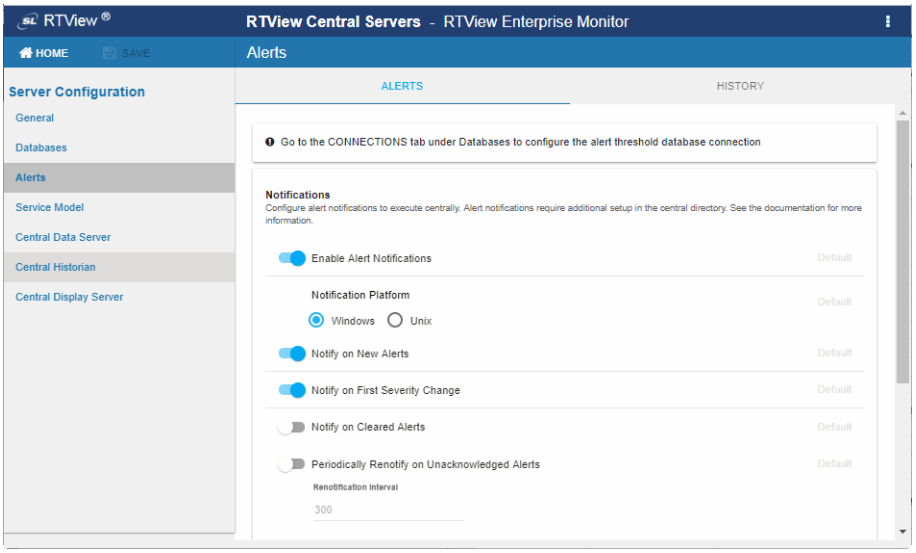
- when a new alert is created
- the first time the Severity field on an alert changes
- when an alert is cleared
- periodically renotify for unacknowledged alerts

By default, a **.bat** script is executed for new alerts and on the first severity change for an alert. The script, by default, is not configured to execute an automated action. However, you can uncomment a line in the script that prints alert data to standard output. Or, you can modify the script to execute an automated action (such as sending an email alert). The following is a sample output from the alert command script:

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

## Configure Notifications in the RTView Configuration Application

1. "Open the RTView Configuration Application" and go to **Alerts**.




2. In the **Notifications** region, verify that the **Enable Alert Notfications** toggle is enabled.

3. If you will be executing a script for your alert notifications, set the **Notification platform** to the platform where this project is running.

4. Select the events on which you want to notify:

- **Notify on New Alerts** - your action will be executed every time a new alert is created
- **Nofity on First Severity Change** - your action will be executed the first time the Severity changes for each alert
- **Nofity on Cleared Alerts** - your action will be executed every time an alert is cleared
- **Periodically Renotify on Unacknowledged Alerts** - your action will be executed on the Renotification Interval (seconds) for each unacknowledged alert

5. If you will be executing a script for your alert notifications, skip to step 6. If not, go to the **General>CUSTOM PROPERTIES** tab and do the following as appropriate:

- If you plan to execute the java command, create two properties using the following parameters:

  name=sl.rtview.cp
  value=../../custom/lib/rtvapm_custom.jar
  filter=dataserver

  name=sl.rtvapm.customcommandhandler
  value=com.sl.rtvapm.custom.RtvApmCommandHandler
  filter=dataserver

- If you selected **Notify on New Alerts**, create a property using the following parameters:

  name=sl.rtview.alert.notifiercommandnew
  value=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable
  filter=dataserver

- If you selected **Notify on First Severity Change**, create a property using the following parameters:

  name=sl.rtview.alert.notifiercommandfirstsevchange
  value=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable
  filter=dataserver

- If you selected **Notify on Cleared Alerts**, create a property using the following parameters:

  name=sl.rtview.alert.notifiercommandcleared
  value=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable
  filter=dataserver

- If you selected **Periodically Renotify on Unacknowledged Alerts**, create a property using the following parameters:

  name=sl.rtview.alert.notifiercommandrenot
  value=system cust 'my_alert_notification.$domainName.$alertNotifyType.$alertNotifyCol' $alertNotifyTable
  filter=dataserver

6. Click SAVE to save your changes.

**Note:** You must restart your project to apply these changes after you complete the "Using a Batch File or Shell Script" instructions or the "Using the Java Command Handler" instructions.

# Configure Notification Action

You can configure the alert notification action either:

- "Using a Batch File or Shell Script": 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": The Java source for the Monitor Java command handler is provided to facilitate customization.

## 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 **rtvapm/common/bin** directory, are provided as templates that you can modify as needed. Use the appropriate file for the platform that hosts the Central Alert Server. 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, see:

- "Windows Batch File," next
- "Unix Shell Script"

### Windows Batch File

1. Copy the **my_alert_actions.bat** file, located in the **RTViewCentral/rtvapm/common/bin** directory, into **RTViewCentral/projects/rtview-server**.

2. Open the **my_alert_actions.bat** file, located in the **RTViewCentral/projects/rtview-server** 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). This script will be executed for new alerts and on first severity change.

3. If you selected **Notify on Cleared Alerts** in the "RTView Configuration Application", copy **my_alert_actions.bat** from step 2 to **my_alert_actions.cleared.bat**. Optionally modify the script to execute a different action for cleared alerts. This script will execute when an alert is cleared.

4. If you selected **Periodically Renotify on Unacknowledged Alerts** in the RTView Configuration Application, copy **my_alert_actions.bat** from step 2 to **my_alert_actions.renotify.bat**. Optionally modify the script to execute a different action for renotifications. This script will execute periodically for unacknowledged alerts.

5. In the RTView Configuration Application, click 

to apply changes.

### Unix Shell Script

---

**Tip:** See the commented out example of how to send an email in the **my_alert_actions.sh** alert notification script.

---

1. Copy the **my_alert_actions.sh** file, located in the common/bin directory, into your **RTViewCentral/projects/rtview-server** directory.

2. Open the **my_alert_actions.sh** file, located in the **RTViewCentral/projects/rtview-server** 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). This script will be executed for new alerts and on first severity change.

3. If you selected Notify on Cleared Alerts in the RTView Configuration Application, copy **my_alert_actions.sh** from step 2 to **my_alert_actions.cleared.sh**. Optionally modify the script to execute a different action for cleared alerts. This script will execute when an alert is cleared.

4. If you selected Periodically Renotify on Unacknowledged Alerts in the Configuration Application, copy **my_alert_actions.sh** from step 2 to **my_alert_actions.renotify.sh**. Optionally modify the script to execute a different action for renotifications. This script will execute periodically for unacknowledged alerts.

5. In the RTView Configuration Application, click 

to apply changes.

### Batch File or Shell Script Substitutions

The default **my_alert_actions** scripts use the substitutions described in the table below.

| Substitution | 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 |

## Using the Java Command Handler

1. Verify that the **rtvapm_custom.jar** file is built per Step 4 in the "Customizing the Java Command Handler" instructions.

2. In the RTView Configuration Application, click 

to apply changes.

### Customizing the Java Command Handler

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

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

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

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

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

5. Execute the **stop_servers** script, located in the **RTViewCentral/bin** directory, then the **start_servers** script to restart RTViewCentral.

### 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. |

### Alert Notification Persistence

To prevent duplication and missed notifications after restart or failover, you must configure the Central Alert Server for alert persistence and also add the following tables to your ALERTDEFS database:

- ALERT_PERSIST_TABLE_CENTRAL
- ALERT_NOTIF_PERSIST_TABLE: Notification information is persisted to this table.

The schemas for both tables are in **RTVAPM_HOME\common\dbconfig**. For ALERT_PERSIST_TABLE_CENTRAL, use the same schema as ALERT_PERSIST_TABLE. To enable notification persistence, in the RTView Configuration Application, click on RTView Central Servers and go to **Alerts** in the navigation tree and turn on the Persist Alerts toggle.

The notification for **Notify on First Severity Change** is not persisted and executes the first time the severity changes on an unacknowledged alert each time the Central Alert Server starts. This means that a notification is executed the first time it changes on a new alert, and again the first time it changes after the Central Alert Server is restarted or fails over.

# Configure RTVRules

This section describes how to configure the RTVRules data server, located in your **RTViewCentral/projects/rtview-rtvrules** directory.

RTVRules reduces the number of escalated, low-level alerts to upper management tiers. This enables you to, for example, set a time frame for IT to resolve an alert before the alert is escalated.

To configure this behavior, you use the **EM-SERVICE** CI Type in the **Administration** - **CMDB Admin** display to establish dependencies among Services, then use the **Duration** attribute in the **Administration - Alert Administration** display to delay the execution of the following alerts:

- **RtvEmServiceAlert**: This discrete alert is generated when a Service has one or more alerts on any associated CIs.
- **RtvEmServiceAlertImpactHigh**: This limits alert is generated when a Service has an Alert Impact value that exceeds the specified threshold on any associated CI.

  **Note:** Unexpected behavior can arise if loops in the relationships among Services are created.

**To configure RTVRules:**

1. If relationships are not yet established among Services, define these relationships using the new CI Type in the **Administration** - "CMDB Admin" display. For details, see Configure the Service Data Model, "EM-SERVICE CI Type".

2. Edit the **RTViewCentral/bin/start_servers.bat/sh** file and **RTViewCentral/bin/stop_servers.bat/sh** file to uncomment the RTVRules section near the end of the scripts.

3. Execute the **stop_servers** script, located in the **RTViewCentral/bin** directory, then the **start_servers** script (or **start_servers.sh** for UNIX) to restart the Central Servers.

   **Note:** This starts the databases, Central Server, Display Server, RTView Manager and RTVRules.

4. In the Monitor, open the **Administration** -"Alert Administration" display and enable the **RtvEmServiceAlert** and **RtvEmServiceAlertImpactHigh** alerts.

You have finished configuring the RTVRules.

# Configure Dual Write for Distributed Alert Server

Dual write is for distributed Alert Server deployments in which the Data Server hosting alerts is on a different system from the Central Alert Server and client. This configuration mitigates the delays with **Alert Table** updates which occur in this type of deployment. However, this setup also causes the data in the **Alert Table** to be temporarily out of sync with the master alert data. Consider the limitations of this feature before using it.

By default, this feature is disabled.

**Default Behavior**
When a user clicks the **Own**, **Suppress**, **Unsuppress** or **Close** button in the **Alert Table**, the associated command executes on the selected alert in the Data Server that is hosting the alert. The hosting Data Server updates the alerts and pushes the updated alert data to the Central Alert Server. The Central Alert Server then pushes the updated alert data to the client hosting the display and the **Alert Table** gets updated.

**Dual Write Enabled Behavior**
When dual write is enabled, the command is applied directly to the Central Alert Server alert cache--before the action is executed on the Data Server that is hosting the alert. This reduces the delay between executing the action and seeing the result in the **Alert Table**.

**To Enable Dual Write:**

1. "Open the RTView Configuration Application" and go to the **General>CUSTOM PROPERTIES** tab.

2. Add a property using the following for the **Name** and **Value** fields:

**name=sl.rtview.sub**
**value=$rtvUserEnableAlertDualWrite:1**

3. Click SAVE to close the **Add Property** dialog and SAVE (in title bar) to save your changes.

4. Click RESTART SERVERS to apply changes.

**Limitations**
The following limitations apply when dual write is enabled:

1. If an alert is cleared, clicking on **Suppress** or **Unsuppress** updates the Central Alert Server cache, but not the actual alert. The suppressed state of an alert cannot change after the alert is cleared.
2. Clicking on the **Close** button immediately updates the **Cleared** value in the **Alert Table**, but the **Cleared Reason** value does not update until the server hosting the alert closes the alert and sends an update.
3. If the server hosting the alert sends an update between the time you click on one of the buttons listed and the time that server processes the associated action, the value in the table toggles between the new value and the old value. For example, you select an alert and **Suppress** it. At the same time, the alert severity changes in the back-end server. The table initially updates with old severity with **SUP** set to **true**, then updates with the new severity with **Sup** set to **false**, and then updates with the new severity with **Sup** set to **true**. If your Central Alert Server is configured to notify when the **Sup** column changes, you receive notifications for all three of these changes (**true**, **false**, **true**).
4. If the server hosting the selected alert is not connected or not enabled when you click **Own**, **Suppress**, **Unsuppress** or **Close**, the value in the **Alert Table** updates but that value is not applied to the real alert. When the server hosting the alert connects again, the value reverts to the previous value. This is not likely to occur because the **Own**, **Suppress**, **Unsuppress** or **Close** buttons are disabled with the server hosting the selected alert is not connected or is not enabled. However, it is possible that you perform the action just as the server hosting the alert is exiting before the buttons are disabled.

# Configure Alert Groups

This section describes how to configure Alert Groups. The Alert Group configuration is optional. This feature allows you to associate your alerts with Alert Groups that can then be used to filter the alerts included in the displays under the following navigation tree Views:

- **All Management Area**s
- **Multi Area Service View**s
- **Single Area Service Views**
- **Component Views**
- **Alert Views** (the **RTView Alerts Table** and the **Alert History Table** only)

The filter can also be applied to the navigation tree when RTView Enterprise Monitor is run in alert-viewer mode. If you have configured Alert Groups, the following Alert Group filter drop-down menu appears at the top of each display that supports Alert Group filtering:


This drop-down menu contains the defined Alert Groups as well as two pre-defined options:

- **All** - Removes the Alert Group filter and includes all alerts.
- **None** - Filters to all alerts that are not included in any Alert Group.

Select an item in the **Alert Group** filter drop-down menu to filter the alerts displayed by that Alert Group. You can set the default Alert Group on an application, per-user or per-role basis. For example, you can organize your alerts into **Infrastructure**, **Performance** and **Availability** and then assign the default Alert Group based on the type of alerts the user is responsible for, enabling them to focus on and prioritize only those alerts.

An Alert Group can contain as many alerts as needed. A single alert can belong to multiple Alert Groups. Since alerts that are not members of an Alert Group are added to the **None** Alert Group, you cannot define an Alert Group named **None**.

**To configure Alert Groups**

1. Determine your Alert Groups.

2. Define an Alert Group by adding a row to the CITYPE_ALERTMAP table in the RTVCONFIG database, where the **CITYPE** value is **GROUP-AlertGroupName** and the **ALERTNAME** value is the name of the alert to include in the Alert Group. The schema for this table is included in **dbconfig\create_rtvconfig_*.sql**. For example, to define an Alert Group named **Availability** and add the **JvmNotConnected** alert to it, you add the following row:

   **GROUP-Availability -- JvmNotConnected**

3. To add additional alert names to the Alert Group, add a row for each alert name. For example, to set three alerts in the **Availability** Alert Group you add the following rows:

   **GROUP-Availability -- JvmNotConnected**

   **GROUP-Availability -- xyzAlertName**

   **GROUP-Availability -- 123AlertName**

   **Note:** A single alert name can belong to multiple Alert Groups.

4. "Open the Central Servers Project", go to the **General>CUSTOM PROPERTIES** tab and add two properties using the following values for the Name, Value and Filter fields:

**name=sl.rtview.cache.config**
**value=rtv_config_cache_source_db.rtv**
**filter=ConfigCollector**

**name=sl.rtview.sql.sqldb**
**value=RTVCONFIG <username> <password> <url> <driver> - false true**
**filter=ConfigCollector**

Where:

**username** is the user name to enter into this database when making a connection. Enter - if blank.

**password** is the password to enter into this database when making a connection. Enter - if blank.

**url** is the full URL to use when connecting to this database using the specified JDBC driver.

**driver** is the fully qualified name of the driver class to use when connection to this database via JDBC.

5. Click SAVE to close the **Add Property** dialog and SAVE (in title bar) to save your changes.

6. Click RESTART SERVERS to apply changes.

7. Open the **All Management Areas** - **Area Heatmap** display and verify that the **Alert Group** drop-down menu appears at the top.

8. Select an Alert Group from the **Alert Group** drop-down menu and verify that only alerts for the selected Alert Group are included in the heatmap.

9. Open the **Architecture** - **RTView Cache Tables** display, select **CONFIG-SERVER** from the **Data Server** drop-down menu, then select the **RtvAlertGroupMap** cache table from the upper table. This cache lists all defined Alert Groups.

10. Verify the list of defined Alert Groups and their alert name members in the **RtvAlertGroupMap** table.

    **Note:** The table includes the **None** Alert Group, which is defined, by default, to include all alerts that are not members of a user-defined Alert Group.

11. Optionally, specify the default Alert Group filter. To add an application default, set the $rtvAlertGroupFilter substitution to the name your default Alert Group filter in the RTView Configuration Application. In the Configuration Application, click on RTView Central Servers and go to the **General->CUSTOM PROPERTIES** tab and add the following:

**name=sl.rtview.sub**
**value=$rtvAlertGroupFilter:Availability**
**filter=uiprocess**

- Replace **Availablity** with the name of your default Alert Group filter.
- To add a per-role or per-user default, set the $rtvAlertGroupFilter substitution value in your **users.xml** or **roles.xml** file. For example, to set the default Alert Group filter to **Availability**, enter:

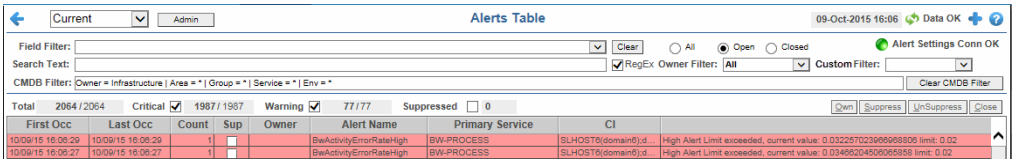
  **sub name="$rtvAlertGroupFilter" value="Availability"**

For details about the **users.xml** or **roles.xml** files, see “Configure User and Role Management”.

# Configure Alert Filters

This section describes how to configure the **Custom Filter** drop-down menu which is used for creating custom, user-defined filters in the **Alert Views** - **RTView Alerts Table** display. This configuration is optional.

When custom filters are defined for the logged in user, a **Custom Filter** drop-down menu is added to the **Alert Views** - **RTView Cache Table** display (in the upper right portion of the display).




The **Custom Filter** drop-down menu is a predefined list of standard filters that are applied to the **Alert Views** - **RTView Alerts Table**. All filters that are supported by the controls at the top of the **Alert Views** - **RTView Alerts Table** display can be used to define the **Custom Filter** drop-down menu.

When you select a custom filter, the filter controls at the top of the display then reflect that custom filter's settings, as well as the data in the table. For example, let us say you define a custom filter named **All Suppressed Jvm Critical Alerts** that filters the table to show only **Suppressed** and **Critical** alerts with **Jvm** in the **Alert Name** field. When you select this custom filter the **Field Filter** is then set to **Alert Name**, the **Search Text** field is then set to **Jvm**, the **Warning** check-box is then deselected and the **Suppressed** check-boxes is selected, and the table is then filtered accordingly. If the filter fields change such that the filter no longer matches the selected custom filter, the custom filter selection is cleared.

The **Custom Filter** drop-down menu contains all filter options that are specified for the logged in user. The **Custom Filter** drop-down menu only appears in the **Alert Views** - **RTView Alerts Table** display if at least one custom filter is defined for that user.

You configure the **Custom Filter** drop-down menu by creating one or more custom filters. To create the filter you add a table row to the CUSTOM_ALERT_FILTERS table in the ALERTDEFS database. You define the custom filter per user with match criteria for each of the filter controls in the **Alert Views** - **RTView Alerts Table** display. See the schemas in the **RTVAPM_HOME\common\dbconfig** directory for the correct schema to use for your database.

> **Note:** The CUSTOM_ALERT_FILTERS table was added to the ALERTDEFS database in version 1.3.0. Users upgrading from previous versions must add this table to the ALERTDEFS database.

### To configure Alert Filters

Add a row for each custom filter to the CUSTOM_ALERT_FILTERS table, located in the ALERTDEFS database. The following are the available table columns you can define, all of which are of type String.

| Column Name | Value |
|---|---|
| **User** | Specifies the name of the user who can use this filter. This must correspond to the value specified for the **User** in the RTView Enterprise Monitor login. |
| **Key** | Specifies the name of the filter. This value is used in the **Custom Filter** drop-down menu. |

| | |
|---|---|
| **rtvAlertDynFilter** | Specifies the name of the column in the **Alerts Table** to filter on. This corresponds to the value in the **Field Filter** drop-down menu in the display. This must be the actual column name, which is sometimes different than the displayed column name. Valid values are blank, **Time**, **Last Update Time**, **Count**, **ID**, **Cleared**, **Acknowledged**, **Owner**, **Alert Name**, **Primary Service**, **CIName**, **CIType**, **Alert Index**, **Alert Text**, **Severity**, **Source**, **Cleared Reason**, **AlertClass**, **CompID**, **TicketID**, **TicketGroup** and any other custom columns you added to the **RTView Alerts Table**. A <blank> value indicates this filter should not be used. **Note:** If you specified an **RTView Alerts Table** columns list, you can use any values from the **RTView Alerts Table** columns list. |
| **rtvAlertDynTextFilter** | Specifies the value in the **rtvAlertDynFilter** column must equal. This corresponds to the **Search Text** field in the display. |
| **rtvAlertDynTextFilterRegEx** | Specifies whether to use Regex for the **rtvAlertDynFilter** and **rtvAlertDynTextFilter** filters, where **1** is use to Regex and **0** is NOT to use Regex. This corresponds to the **RegEx** check-box in the display. |
| **rtvClearedFilter** | Specifies to filter on the **Cleared** column. This corresponds to the **All**/**Open**/**Closed** radio buttons in the display. Valid values are:<br>• **false** shows only open alerts<br>• **true** shows only closed alerts<br>• ***** (asterisk) shows both |
| **rtvAckFilter** | Specifies to filter on the **Suppressed** column. This corresponds to the **Suppressed** check-box in the display. Valid values are:<br>• **false** shows only unsuppressed alerts<br>• **true** shows only suppressed alerts<br>• ***** (asterisk) shows both |
| **ownerFilter** | Specifies to filter on the **Owner** column. This corresponds to the **Owner Filter** drop-down menu in the display. Valid values are:<br>• <blank**>** shows alerts that are not owned as well as the logged in user name (which corresponds to the **Owned by Me** drop-down menu selection)<br>• ***** (asterisk) shows owned and not owned alerts |
| **rtvWarningFilter** | Specifies to filter on warning alerts. That is, where the alert **Severity** is equal to **1**. Valid values are:<br>• **1** shows warning alerts<br>• <blank> does NOT show warning alerts |
| **rtvCriticalFilter** | Specifies to filter on critical alerts. That is, where the alert **Severity** is equal to **2** or **3**. Valid values are:<br>• **2** shows critical alerts<br>• **3** shows critical alerts<br>• <blank> does NOT show critical alerts |
| **rtvOwnerLoc** | Specifies to filter on the CMDB owner. This corresponds to the **Owner** value in the **CMDB Filter** field. Valid values are:<br>• the name of an owner from your CMDB which shows only alerts for that owner<br>• ***** (asterisk) which does NOT filter by CMDB owner<br>• <blank> shows only alerts without an owner |

| | |
|---|---|
| **rtvAreaLoc** | Specifies to filter on the CMDB area. This corresponds to the area value in the **CMDB Filter** field. Valid values are:<br>• the name of an area from your CMDB which shows only alerts for that area<br>• ***** (asterisk) which does NOT filter by CMDB area |
| **rtvGroupLoc** | Specifies to filter on the CMDB group. This corresponds to the **Group** value in the **CMDB Filter** field. Valid values are:<br>• the name of a group from your CMDB which shows only alerts for that group<br>• ***** (asterisk) which does NOT filter by CMDB group |
| **rtvServiceLoc** | Specifies to filter on the CMDB service. This corresponds to the **Service** value in the **CMDB Filter** field. Valid values are:<br>• the name of a service from your CMDB which shows only alerts for that service<br>• ***** (asterisk) which does NOT filter by CMDB service |
| **rtvEnvironmentLoc** | Specifies to filter on the CMDB environment. This corresponds to the **Environment** value in the **CMDB Filter** field. Valid values are:<br>• the name of an environment from your CMDB which shows only alerts for that environment<br>• ***** (asterisk) which does NOT filter by CMDB environment |

# CHAPTER 4 Modify User Interface

This section describes how to configure the RTView Enterprise Monitor user interface. These configurations are optional. This section includes:

- "Change Order of Navigation Tabs": Modify order of Monitor tabs and hide globally or per-role.
- "Modify the CUSTOM Tab": Modify, add or remove Monitor tabs and add or remove custom views.
- "Configure RTView Alerts Table Columns": Change which columns are shown in the **Alerts Table**, which column to sort on and whether to sort a column by ascending or descending order.
- "Add Owned By Me to RTView Alerts Table": Add a table that only shows alerts for the logged in user to the RTView Alerts Table.

## Change Order of Navigation Tabs

This section describes how to change the order and visibility of the navigation tabs (**SERVICE TREE**, **SERVICE VIEWS**, **COMPONENTS**, **ALERTS** and **ADMIN**). You can modify navigation tabs and apply the changes globally or per user role.


This section contains:

- "Default Navigation Tabs"
- "Apply Globally"
- "Apply Per Role"

For details about modifying user-defined tabs (such as **CUSTOM**), see "Modify the CUSTOM Tab".

### Default Navigation Tabs

By default, RTView Enterprise Monitor has the following tabs in this order: **SERVICE TREE**, **SERVICE VIEWS**, **COMPONENTS**, **ALERTS** and **ADMIN**, followed by all user-defined tabs from the **rtv_custom.xml** file.

Use the **$rtvNavTabList** substitution to modify the order and visibility of these tabs either globally or on a per-role basis. The **$rtvNavTabList** substitution supports a comma separated list of Tab ID's which overrides the default tab list. The initial display is set to the first item in the navigation tree for the first tab in the list. For example, the following property limits and reorders the tabs to **CUSTOM**, **SERVICE TREE** and **ADMIN**:

**uiprocess.sl.rtview.sub=$rtvNavTabList:Custom,CMDB,Admin**

These are the Tab IDs for the standard RTView Enterprise Monitor tabs:

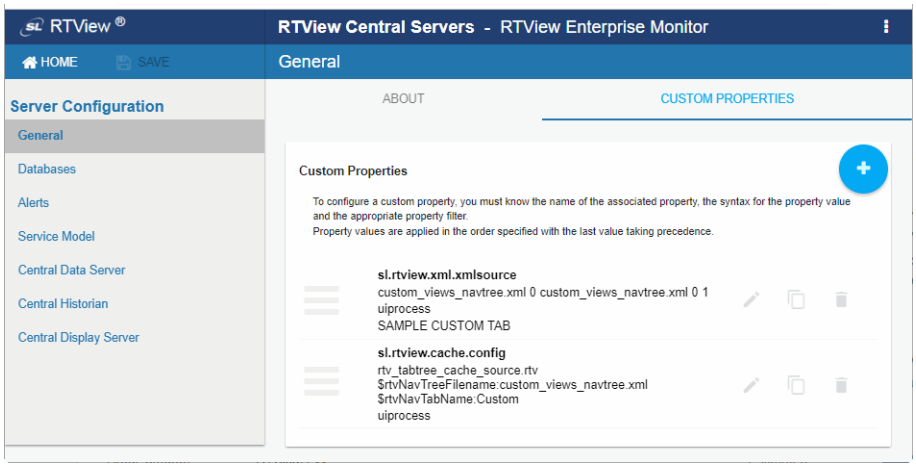
- **Tab ID** - Tab Label
- **CMDB** - SERVICE TREE
- **Service** - SERVICE VIEWS
- **Components** - COMPONENTS
- **Alerts** - ALERTS
- **Admin** - ADMIN

For user-defined tabs, use the value in the **TabID** column of the **TabTreeSelection** table in the **rtv_custom.xml** file.

## Apply Globally

**To apply a modification of your navigation tabs globally:**

1. "Open the RTView Configuration Application" and go to the **General>CUSTOM PROPERTIES** tab.




2. Click  and enter the following parameters to create a new property, replacing **Custom,CMDB,ALERTS** with your comma separated list of tab id's:

   **name=sl.rtview.sub**

   **value=$rtvNavTabList:Custom,CMDB,ALERTS**

   **filter=uiprocess**

3. Click SAVE to close the **Add Property** dialog and SAVE (in title bar) to save your changes.

4. Click RESTART SERVERS to apply changes.

## Apply Per Role

**To apply per role:**

To specify different tabs per role, add the **$rtvNavTabList** substitution to your **roles.xml** file and list the tabs for that role. For example, the following limits and reorders the tabs for the **admin** role to **ADMIN**, **SERVICE TREE, ALERTS**:

```
<role>
<name>admin</name>
<displays>
<include>ALL</include>
</displays>
<sub name="$rtvNavTabList" value="Admin,CMDB,Alerts"/>
</role>
```

Roles that set **$rtvNavTabList** to blank get the default tabs (see "Default Navigation Tabs").

Roles that do not set **$rtvNavTabList** get the global value set in the **CUSTOM PROPERTIES** tab of the RTView Configuration Application, and if no value is set in the **CUSTOM PROPERTIES** tab of the Configuration Application it gets the default tabs (for RTView Configuration Application example, see step 2 in "Apply Globally").

# Modify the CUSTOM Tab

The **CUSTOM** tab is provided as a location for adding user-defined views. The **CUSTOM** tab can be removed or renamed. You can also add additional custom tabs. This section includes:

- "Replace Tab Content"
- "Rename the CUSTOM Tab"
- "Remove the CUSTOM Tab"
- "Add Tabs"

## Replace Tab Content

To replace the contents of the **CUSTOM** tab with your custom views:

Copy your custom view (**.rtv**) files to the **RTViewCentral/projects/rtview-server** directory. Then modify **custom_views_navtree.xml** to replace the tree contents with your custom views.

## Rename the CUSTOM Tab

To rename the **CUSTOM** tab:

Modify **rtv_custom.xml TabTable** to change the **CUSTOM** label in the **TabLabel** column to your custom tab label. Do NOT change the **Custom** value in the **Group** column.

## Remove the CUSTOM Tab

To remove the **CUSTOM** tab:

Modify **rtv_custom.xml** to remove the Custom row from the **TabTable** and **TabTreeSelection** tables.

## Add Tabs

1. Choose a Tab ID for your **CUSTOM** tab. This is not the label, but a unique ID that will be used internally to identify your tab. For this example, we will use **MyCustomTab** for the Tab ID. You cannot use the following for the Tab ID:

- Custom
- CMDB
- Service
- Alerts
- Components

2. Create a navigation accordion view for your tab in the **RTViewCentral/projects/rtview-server** directory:

- Copy **custom_views_acc.rtv** to a new file name. In this example, we copy it to **mycustomtab_acc.rtv**.
- Open **mycustomtab_acc.rtv** in the Display Builder:
    1. **runb -propfilter:ConfigClient -propfilter:AlertClient mycustomtab_acc.rtv**.
    2. Modify the **Custom Views** label above the navigation accordion.
    3. Select the navigation accordion and edit the **selectedValue** property. Change the **Filter** value to your Tab ID (**MyCustomTab** in this example).
    4. Open the data attachment in the **navOptionsForFilter** function and change the **Filter** value to your Tab ID (**MyCustomTab** in this example).
    5. Save your display and exit the Display Builder.

3. Create a navigation tree for your tab. Note that each node in the tree must be a unique display/substitution value.

- Copy **custom_views_navtree.xml** to a new filename, **mycustomtab_navtree.xml**.
- Replace the nodes in **mycustomtab_navtree.xml** with your nodes.

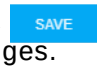
4. "Open the RTView Configuration Application", go to the **General>CUSTOM PROPERTIES** tab and add the two properties using the following values:

- Click  and enter the following parameters to create a new property:

  **name=sl.rtview.xml.xmlsource**
  **value=mycustomtab_navtree.xml 0 mycustomtab_navtree.xml 0 1**
  **filter=uiprocess**

  Click 
  
  to close the **Add Property** dialog
- Click  and enter the following parameters to create a new property:

  **name=sl.rtview.cache.config**
  **value=rtv_tabtree_cache_source.rtv**
  **$rtvNavTreeFilename:mycustomtab_navtree.xml**
  **$rtvNavTabName:MyCustomTab**
  **filter=uiprocess**

5. Click 

to close the **Add Property** dialog and 

(in title bar) to save your changes.

6. Click RESTART SERVERS to apply changes.

7. Add your new tab to **rtv_custom.xml**. In a text file editor, open **rtv_custom.xml** and edit the following:

- Add a new row to the **TabTable** with the label, Tab ID and navigation view you created previously:

```
<tr>
<td>MyCustomTabLabel</td>
<td>MyCustomTab</td>
<td>mycustomtab_acc</td>
</tr>
```

- Add a new row to the **TabTreeSelection** table with the Tab ID:

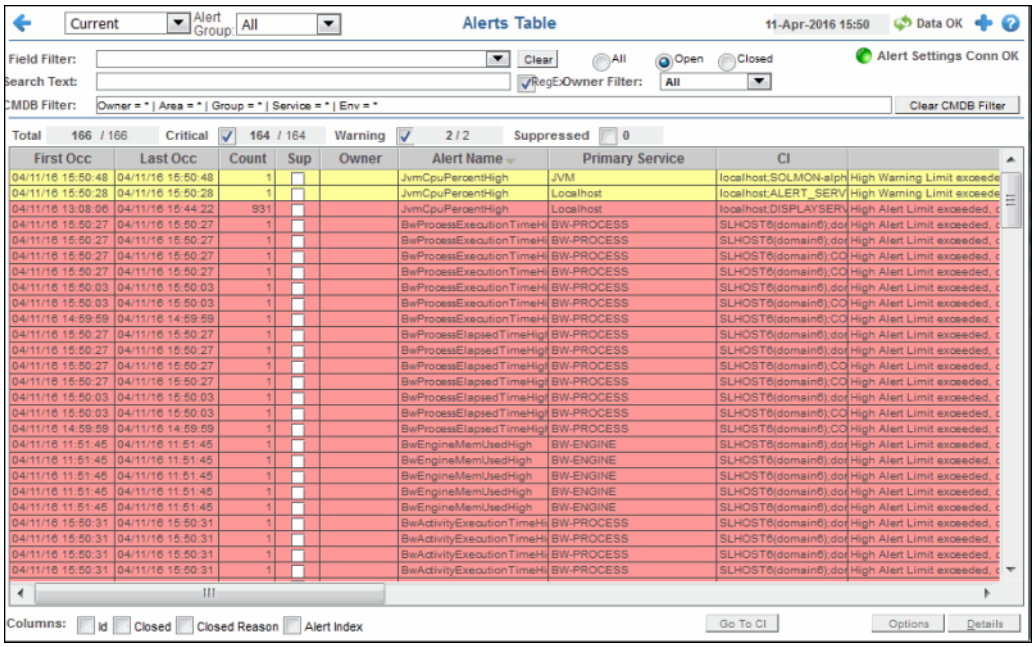
```
<tr>
<td>MyCustomTab</td>
<td>MyCustomTab_1</td>
<td></td>
<td>MyCustomTab</td>
```

# Configure RTView Alerts Table Columns

RTView Enterprise Monitor allows you to specify which columns to include in the **Alert Views - RTView Alerts Table**. You can also specify which column to sort on (rather than the **Time** column) and whether to sort a column by ascending or descending order.

This configuration impacts the **RTView Alerts Table** in the following displays and any custom displays that include **rtv_alerts_table_common.rtv**:

- **Alert Views - RTView Alerts Table**display (**rtv_alerts_table.rtv**)
- **Service Summary Views - Service by CI Type** display (**rtv_service_citype_summary.rtv**)
- **Service Summary Views - Service Summary** display (**rtv_service_summary.rtv**)
- **Multi Area Service Views - Services CI Type Summary** display (**rtv_allareas_allservices_citype_summary.rtv**)
- **Single Area Service Views - Services CI Type Summary** display (**rtv_area_allservices_citype_summary.rtv**) By default, this display is not included in the navigation tree.



By default, the **RTView Alerts Table** (**rtv_alerts_table_common.rtv**) includes the following columns in the following order:

- Time (the column label is **First Occ**)
- Last Update Time (the column label is **Last Occ**)
- **Count**
- **Alert Index** (hidden by default)
- **ID** (hidden by default)
- Cleared (the column label is **Closed** and is hidden by default)
- Cleared Reason (the column label is **Closed Reason** and is hidden by default)
- Acknowledged (the column label is **Sup**)
- **Owner**
- **Alert Name**
- **PrimaryService** (the column label is **Primary Service**)
- CIName (the column label is **CI**)
- **Alert Text**
- **AlertClass**
- **CompID**
- **TicketID**
- **TicketGroup**

## Change the Default Columns

**To change the default columns:**

1. "Open the RTView Configuration Application" and go to the **General>CUSTOM PROPERTIES** tab.
2. Click  and create a new property using the following values:

   **name=sl.rtview.sub**
   **value=$rtvUserAlertTableColumns:'Time:94 Last Update Time:93 Count:50 ID:50 Cleared:40 Cleared Reason:85 Acknowledged:40 Owner:70 Alert Name:134 Alert Index:150 PrimaryService:150 CIName:117 Alert Text:1000 AlertClass:83 CompID:75 TicketID:69 TicketGroup:86'**
   **filter=uiprocess**

3. Replace everything after **$rtvUserAlertTableColumns:** with the column names and column widths in the order you want. The above example configures the default setup for the columns. The value after **$rtvUserAlertTableColumns:** must be enclosed in single quotes and use the following syntax:

   **'colName:colWidth colName2:colWidth2'**

   Valid column names are **Time**, **Last Update Time**, **Count**, **ID**, **Cleared**, **Cleared Reason**, **Acknowledged**, **Owner**, **Alert Name**, **PrimaryService**, **CIName**, **CIType**, **Alert Index**, **Alert Text**, **Severity**, **Source**, **AlertClass**, **CompID**, **TicketID**, **TicketGroup** and any other custom columns you have added to the **RTView Alerts Table**.

4. Click SAVE to close the **Add Property** dialog and SAVE (in title bar) to save your changes.

5. Click RESTART SERVERS to apply changes.

## Expose ID, Cleared, Cleared Reason and Alert Index Columns

The **ID**, **Cleared**, **Cleared Reason** and **Alert Index** columns are always included but are hidden by default. To control the visibility of these columns, create a custom property using **0** in the value to hide the column, and using **1** in the value to show it.

1. "Open the RTView Configuration Application" and go to the **General>CUSTOM PROPERTIES** tab.

2. Click + and create properties using the following values for each column your wish to show:

- To control the visibility of the **Closed** column:

  **name=sl.rtview.sub**
  **value=$rtvUserShowCleared:1**
  **filter=uiprocess**

- To control the visibility of the **Closed Reason** column:

  **name=sl.rtview.sub**
  **value=$rtvUserShowClearedReason:1**
  **filter=uiprocess**

- To control the visibility of the **ID** column:

  **name=sl.rtview.sub**
  **value=$rtvUserShowId:1**
  **filter=uiprocess**

- To control the visibility of the **Alert Index** column:

  **name=sl.rtview.sub**
  **value=$rtvUserShowAlertIndex:1**
  **filter=uiprocess**

3. Click SAVE to close the **Add Property** dialog and SAVE (in title bar) to save your changes.

4. Click RESTART SERVERS to apply changes.

If the ID, Cleared and Cleared Reason columns are specified in the **$rtvUserAlertTableColumns**, the columns are positioned in columns according to that order. If they are not specified in the **$rtvUserAlertTableColumns**, they are positioned after (to the right of) the columns specified in **$rtvUserAlertTableColumns**. In **rtv_alerts_table.rtv** (**Alert Views - RTView Alerts Table**), you can also toggle the visibility of these columns using the check-boxes at the bottom of the display.

> **Note:** The values in **$rtvUserAlertTableColumns** also populate the **Field Filter** drop-down menu in the **rtv_alerts_table.rtv** (Alert Views>RTView Alerts Table). The **Field Filter** drop-down menu also always contains the ID, Closed and Closed Reason columns whether or not those columns are visible.

### Change the Sort Column and Order

By default, the **RTView Alerts Table** is sorted by the **Time** column in descending order to show new alerts first. You can configure the **RTView Alerts Table** to sort by a different column and by descending order. To configure the columns in this way:

1. "Open the RTView Configuration Application" and go to the **General>CUSTOM PROPERTIES** tab.
2. Click + and enter the following parameters to create a property, replacing **Time** with the name of the column you want to sort by:

   **name=sl.rtview.sub**
   **value=$rtvUserAlertTableSortColumn:Time**
   **filter=uiprocess**

   Click SAVE to close the Add Property dialog.
3. Click + and enter the following parameters to create a property, using a value of **1** to sort ascending or **0** to sort descending:

   **name=sl.rtview.sub**
   **value=$rtvUserAlertTableSortAsc:0**
   **filter=uiprocess**

   Click SAVE to close the Add Property dialog.
4. Click SAVE (in title bar) to save your changes and RESTART SERVERS to apply changes.

   **Note:** You can also change the column sorted on in the display by clicking the header of the column you want to sort on.

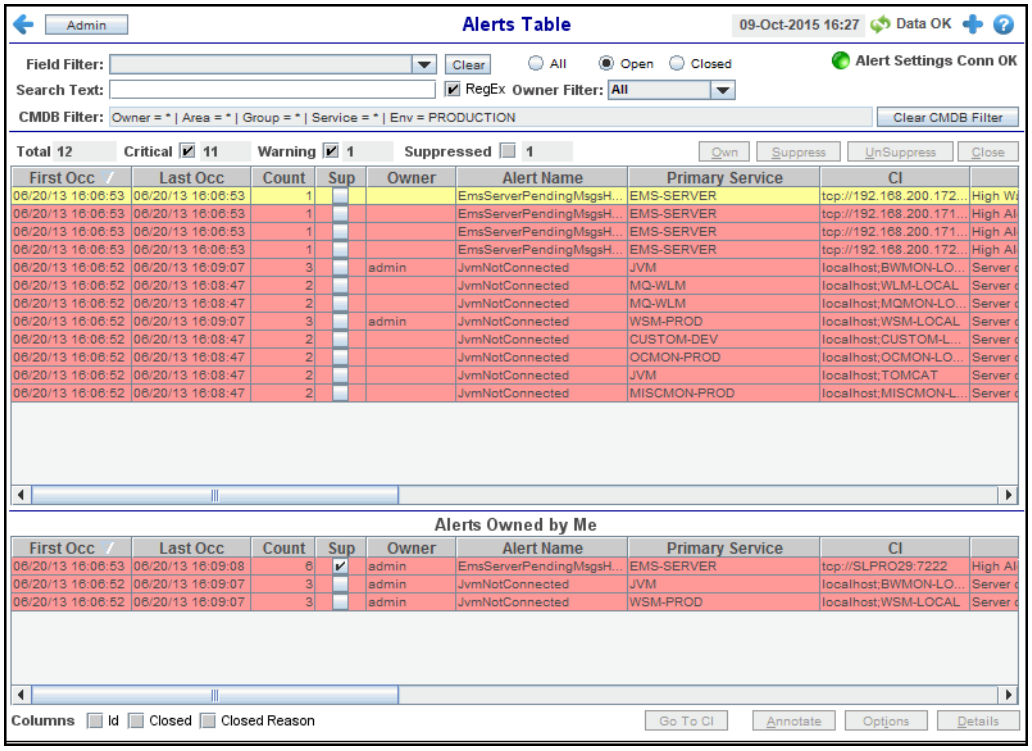
All of the above substitutions can be set on a per-user or per-role basis if the RTView login is enabled and custom users or roles are defined. See the documentation for information on how to define substitution values for custom users and roles.

---

# Add Owned By Me to RTView Alerts Table

RTView Enterprise Monitor allows you to include the **Alerts Owned By Me** table in the lower portion of the **Alert Views - RTView Alerts Table** display.

The **Alerts Owned By Me** table shows all open (not cleared) alerts owned by the logged in user. Filters selected in the display do not apply to this table.




1. "Open the RTView Configuration Application" and go to **General>CUSTOM PROPERTIES** tab.
2. Click + and enter the following parameters to create a property:

   name=sl.rtview.sub

   value=$rtvUserShowDualTables:1
   filter=uiprocess

   Click SAVE to close the **Add Property** dialog.
3. Click SAVE (in title bar) to save your changes and RESTART SERVERS to apply changes.

The **Alerts Owned By Me** table can be set on a per-user or per-role basis if the RTView login is enabled and custom users or roles are defined.

For details about how to define substitution values for custom users and roles, see "Configure User and Role Management".

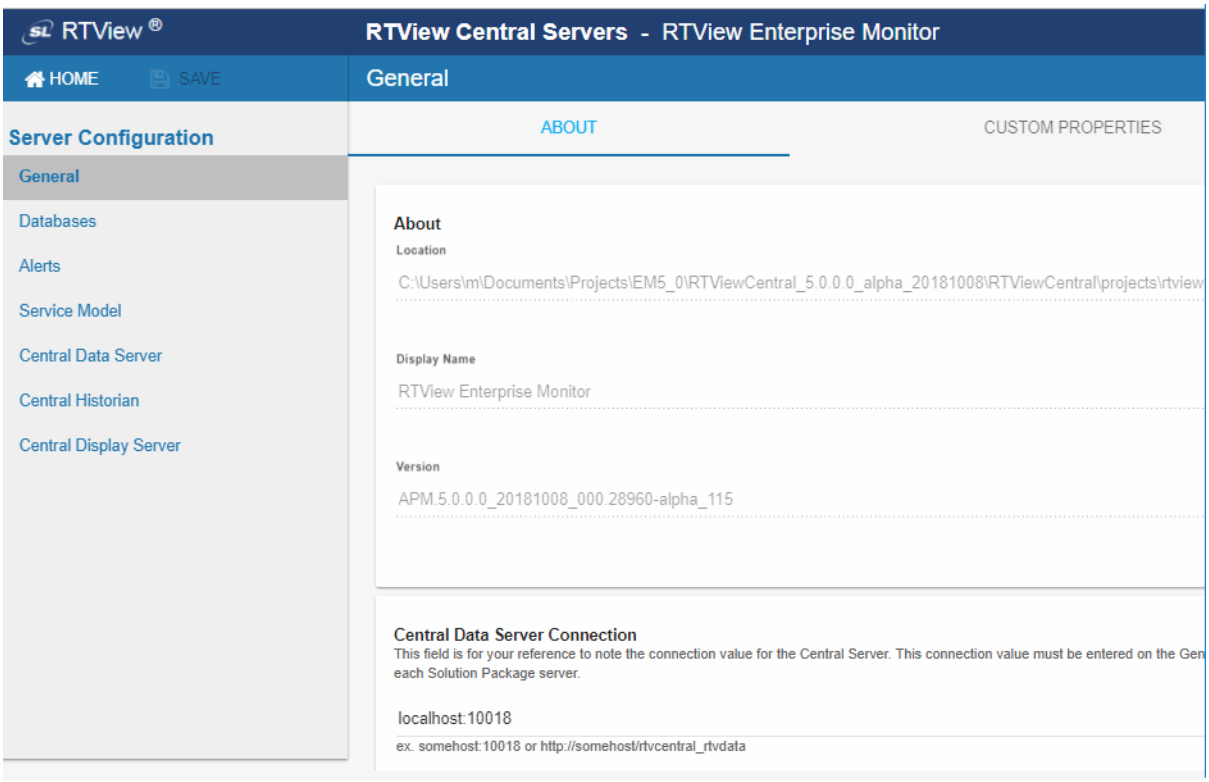
# APPENDIX A RTView Configuration Application for RTViewCentral

This section describes the RTView Configuration Application settings for configuring RTViewCentral.

The "Overview" provides general information about:

- "Opening the RTView Configuration Application"
- "The HOME Page"

and goes on to describe each RTViewCentral configuration page in the order that they appear in the navigation tree (the left panel in the following figure). See links, below.




- "The General Page": Describes the pages in which you get details about your RTViewCentral installation ("ABOUT Tab") and enter custom properties ("CUSTOM PROPERTIES Tab").

- "Databases Page": Describes the page in which you setup connections for the Alert Threshold Database, the Historian Database, the CMDB Database, the Diagram Generator and the Metric Explorer.
- "Alerts Page": Describes the pages in which you configure alert notifications and persistence ("ALERTS Tab") and alert storage ("HISTORY Tab").
- "Service Model Page": Describes the page in which you configure the model that maps each CI in your system that you monitor.
- "Central Data Server Page": Describes the pages in which you set the initial and maximum amount of memory for RTViewCentral processing, log file name and location, set the RTViewCentral to host servlets ("CENTRAL DATA SERVER Tab") and add data server connections ("CONNECTIONS Tab").
- "Central Historian Page": Describes the page in which you allocate memory and set log files for the Central Alert Historian.
- "Central Display Server Page": Describes the page in which you select the light or dark background for displays, enable/disable cross platform fonts, allocate memory and set log files for the Central Display Server process.

# Overview

The RTView Configuration Application is used to configure *projects*. Typically, you have one or more of the following types of projects: RTViewCentral (referred to as the RTView Central Server project), RTView DataServers and solution packages. This document describes the RTView Configuration Application pages for configuring RTViewCentral.

## Opening the RTView Configuration Application

1. In the RTView Enterprise Monitor, click  (top right in title bar) to open the RTView Configuration Application.

**Note:** The  icon is only visible if you are logged in as admin. You also might need to disable your browser popup blocker. If you are not logged in as admin or cannot disable your popup blocker, open the RTView Configuration Application at the following URL:

**http://localhost:10070/rtview-central-rtvadmin**

2. Login to RTView Configuration Application.

   User: **rtvadmin**

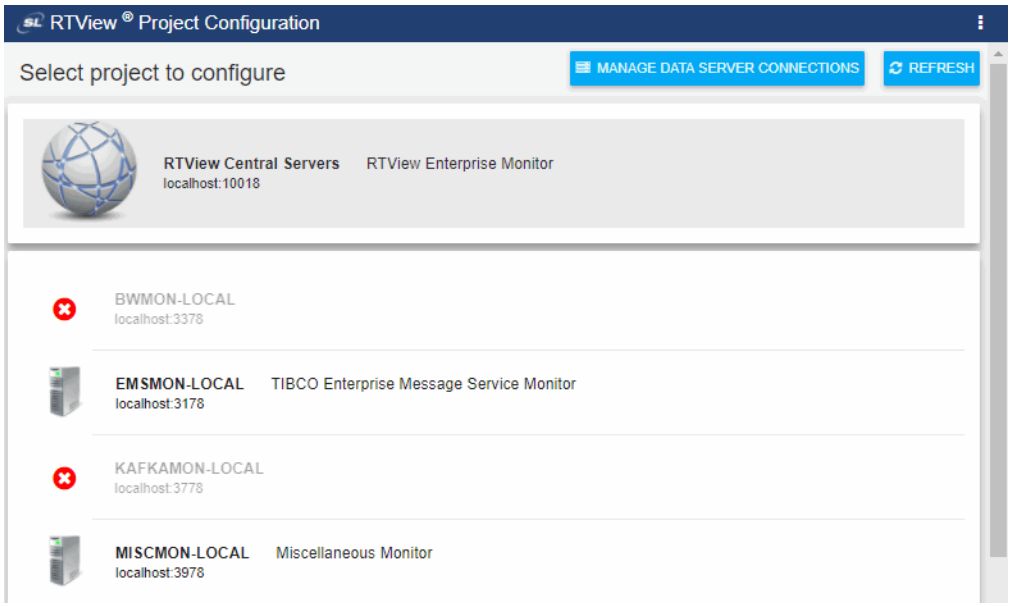
   Password: **rtvadmin**

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

3. Select the project you want to configure (scroll down if necessary).

## The HOME Page

The home page provides access to your RTViewCentral project, as well any solution package projects to which RTViewCentral is connected. The RTView Central Server project allows you to configure the Enterprise Monitor Central Configuration Server, Central Alert Server, Central Alert Historian and Central Display Server.




Select a project in the list to configure that project.

The MANAGE DATA SERVER CONNECTIONS button is a shortcut to the Data Servers tab in the RTView Central Server project.

The REFRESH button updates the project list.

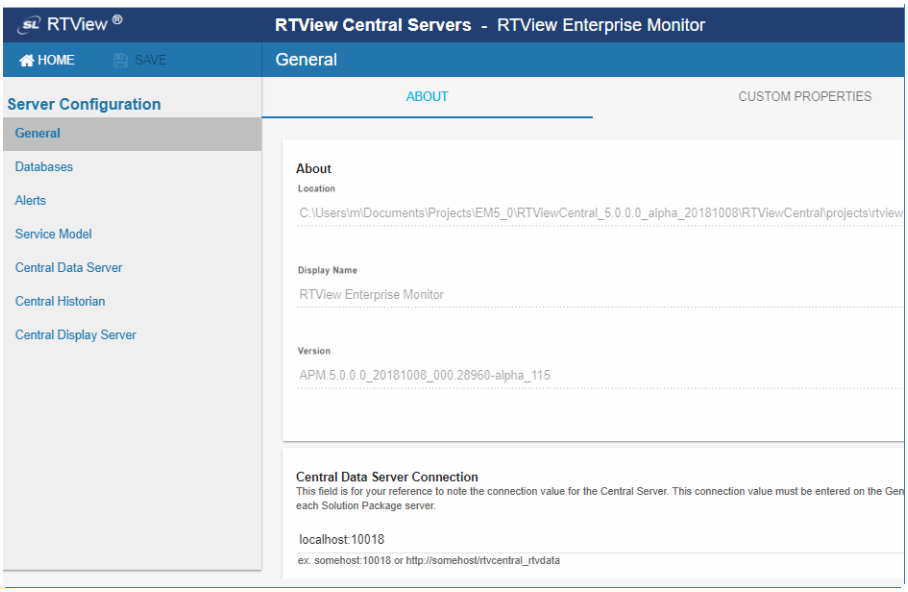
The RESTART SERVERS button is visible when you have changes that need to be applied.

**RESTART SERVERS** restarts the RTViewCentral, the associated historian and the display server if they are running.

# The General Page

The **General** page opens by default. This page has two tabs:

- "ABOUT Tab": Get details about your RTViewCentral installation from this page.
- "CUSTOM PROPERTIES Tab": Use this page to enter custom properties.




## ABOUT Tab

The **ABOUT** tab provides details about your RTViewCentral installation:

| Field Name | Description |
|---|---|
| **Location** | The location of the directory where the central server is running. |
| **Display Name** | The display name. |
| **Version** | The Central Server software version. |
| **Central Data Server Connection** | The Central Server connection value that is used to connect to Solution Package servers. Enter this value on the General tab for each Solution Package server. |

## CUSTOM PROPERTIES Tab

Use the **CUSTOM PROPERTIES** page to create custom properties for the Central Server. The **CUSTOM PROPERTIES** tab has the following fields:

| Field Name | Description |
|---|---|
| **Custom Properties** | Click  to enter a custom property. To configure a custom property, you must know the name of the associated property, the syntax for the property value and the appropriate property filter. |

Property values are applied in the order specified with the last value taking precedence.

**Name**: The property name.

**Value**: The property value.

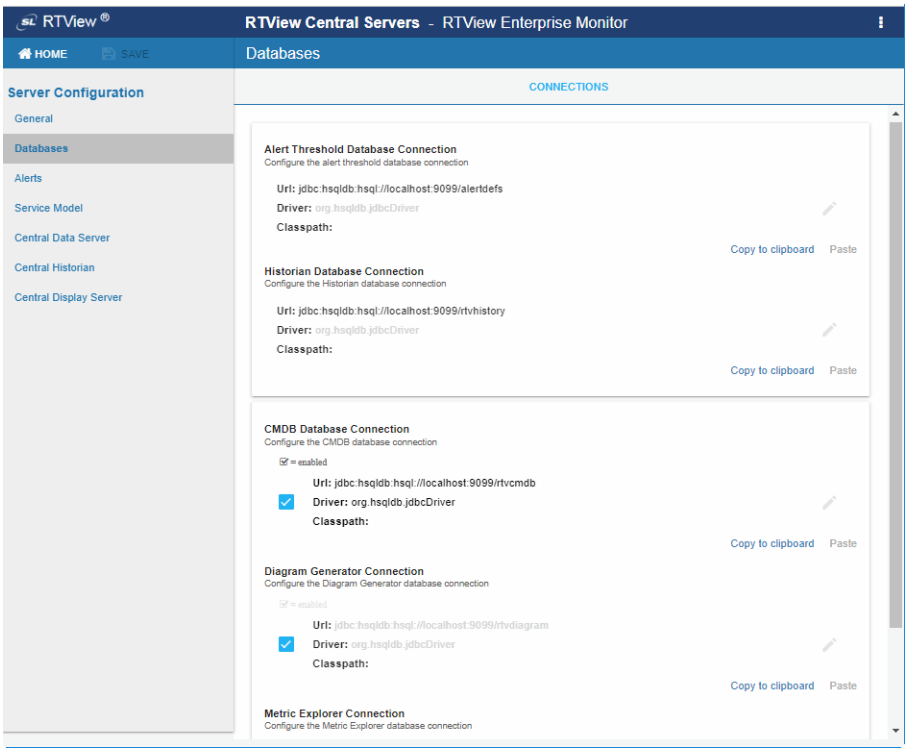
**Filter**: The propery filter (optional).

**Comment**: A comment describing this property (optional).

# Databases Page

Use the **Databases** page to setup the Alert Threshold Database Connection, the Historian Database Connection, the CMDB Database Connection, the Diagram Generator Connection and the Metric Explorer Connection.

The settings you make here are applied to all Central Servers as well as all Solution Package Project Servers. For example, when you change the historian database connection in this tab, the database connection for the Central Alert Historian also changes, as well as for the Solution Package for EMS Project Server (servers\emsmon historian).



The **Databases** page has the following fields:

| Field Name | Description |
|---|---|
| **Alert Threshold Database Connection** | This is the connection to use for the Alert Threshold database. This database contains all alert settings (warning and alarm thresholds, etc). See the "Configure RTViewCentral Databases" instructions on how to populate this database with the correct table schemas.<br><br>**URL**: Full URL to use when connecting to this database using the specified JDBC driver.<br><br>**Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.<br><br>**Classpath**: The classpath to the jar containing the driver class.<br><br>**Username**: (optional) User name to enter into this database when making a connection.<br><br>**Password**: (optional) Password to enter into this database when making a connection.<br><br>**Run Queries Concurrently**: If true, each query on the connection is run on its own execution thread. ote: This option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.<br><br>TIP: Click **Copy to clipboard** on any RTView Central Servers database field to copy it to the clipboard. Then click **Paste** on any of the other connection listed. |
| **Historian Database Connection** | This is the connection to use for the Historian database. See the "Configure RTViewCentral Databases" instructions on how to populate this database with the correct table schemas.<br><br>**URL**: Full URL to use when connecting to this database using the specified JDBC driver.<br><br>**Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.<br><br>**Classpath**: The classpath to the jar containing the driver class.<br><br>**Username**: (optional) User name to enter into this database when making a connection.<br><br>**Password**: (optional) Password to enter into this database when making a connection.<br><br>**Run Queries Concurrently**: If true, each query on the connection is run on its own execution thread. ote: This option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.<br><br>TIP: Click **Copy to clipboard** on any RTView Central Servers database field to copy it to the clipboard. Then click **Paste** on any of the other connection listed. |
| **CMDB Database Connection** | The database connection to use for the CMDB. This is required if you enable the Read CMDB from Database option. See "Configure RTViewCentral Databases" instructions on how to populate this database with the correct table schemas.<br><br>**URL**: Full URL to use when connecting to this database using the specified JDBC driver. |

**Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.

**Classpath**: The classpath to the jar containing the driver class.

**Username**: (optional) User name to enter into this database when making a connection.

**Password**: (optional) Password to enter into this database when making a connection.

**Run Queries Concurrently**: If true, each query on the connection is run on its own execution thread. ote: This option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.

**Connection Enabled**: Set to false to disable this database connection.

TIP: Click **Copy to clipboard** on any RTView Central Servers database field to copy it to the clipboard. Then click **Paste** on any of the other connection listed.

**Diagram Generator**

The connection to use for the Diagram Generator. This is only needed if you will be using the Diagram Generator.

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

**Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.

**Classpath**: The classpath to the jar containing the driver class.

**Username**: (optional) User name to enter into this database when making a connection.

**Password**: (optional) Password to enter into this database when making a connection.

**Run Queries Concurrently**: If true, each query on the connection is run on its own execution thread. ote: This option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.

**Connection Enabled**: Set to false to disable this database connection.

TIP: Click **Copy to clipboard** on any RTView Central Servers database field to copy it to the clipboard. Then click **Paste** on any of the other connection listed.

**Metric Explorer**

The connection to use for the Metric Explorer. This is only needed if you will be using the Metric Explorer.

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

**Driver**: Fully qualified name of the driver class to use when connection to this database via JDBC.

**Classpath**: The classpath to the jar containing the driver class.

**Username**: (optional) User name to enter into this database when making a connection.

**Password**: (optional) Password to enter into this database when making a connection.

**Run Queries Concurrently**: If true, each query on the connection is run on its own execution thread. ote: This option should be used with caution since it may cause SQL errors when used with some database configurations and may degrade performance due to additional database server overhead. See your database documentation to see whether it supports concurrent queries on multiple threads.

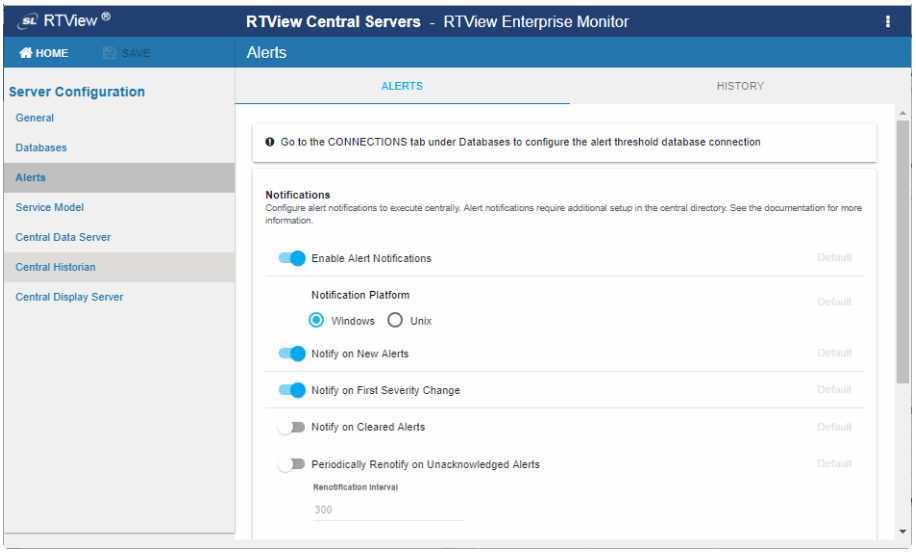
**Connection Enabled**: Set to false to disable this database connection.

TIP: Click **Copy to clipboard** on any RTView Central Servers database field to copy it to the clipboard. Then click **Paste** on any of the other connection listed.

# Alerts Page

Use the **Alerts** page to configure central alert notifications, alert persistence for high availability and alert storage. The Alerts page has two tabs:

- "ALERTS Tab": Configure central alert notifications and alert persistence for high availability.
- "HISTORY Tab": Configure alert storage.




## ALERTS Tab

Use the **ALERTS** tab to configure central alert notifications and persistence for high availability. The **ALERTS** tab has the following fields:

| Field Name | Description |
|---|---|
| **Enable Alert Notifications** | Toggle on to enable alert notifications. By default, alert notifications will execute a script in the **servers/central** directory. |

| | |
|---|---|
| **Notification Platform** | Select the platform of the system that the central alert server is running on. |
| **Notify on New Alerts** | Toggle on to notify on new alerts. This requires some additional setup: Copy the **my_alert_actions**(.bat or .sh) script from **RTVAPM_HOME/common/bin** to **RTViewCentral/projects/rtview-server** and modify it to execute the action you want to perform. |
| **Notify on First Severity Change** | Toggle on to notify the first time the Severity value changes on an alert. This requires some additional setup: Copy the **my_alert_actions**(.bat or .sh) script from **RTVAPM_HOME/common/bin** to **RTViewCentral/projects/rtview-server** and modify it to execute the action you want to perform. |
| **Notify on Cleared Alerts** | Toggle on to notify when an alert is cleared. This requires some additional setup: Copy the **my_alert_actions**(.bat or .sh) script from **RTVAPM_HOME/common/bin** to **RTViewCentral/projects/rtview-server**, rename it **my_alert_actions.cleared**(.bat or .sh) and modify it to execute the action you want to perform. |
| **Periodically Renotify on Unacknowledged Alerts** | Toggle on to notify on the **Renotification Interval** for all unacknowledged alerts. This requires some additional setup: Copy the **my_alert_actions**(.bat or .sh) script from **RTVAPM_HOME/common/bin** to **RTViewCentral/projects/rtview-server**, rename it **my_alert_actions.renotify**(.bat or .sh) and modify it to execute the action you want to perform. |
| **Renotification Interval** | Set to the interval, in seconds, on which you want to renotify on unacknowledged alerts. |
| **Persist Alerts** | Toggle on to persist the current alert table to the Alert Threshold Database. See the "Configure RTViewCentral Databases" instructions on how to populate this database with the correct table schemas. |
| **Persist Engine Name** | Assign a unique name for this data server. This is needed when multiple data servers persist alerts to the same database. |

## HISTORY Tab

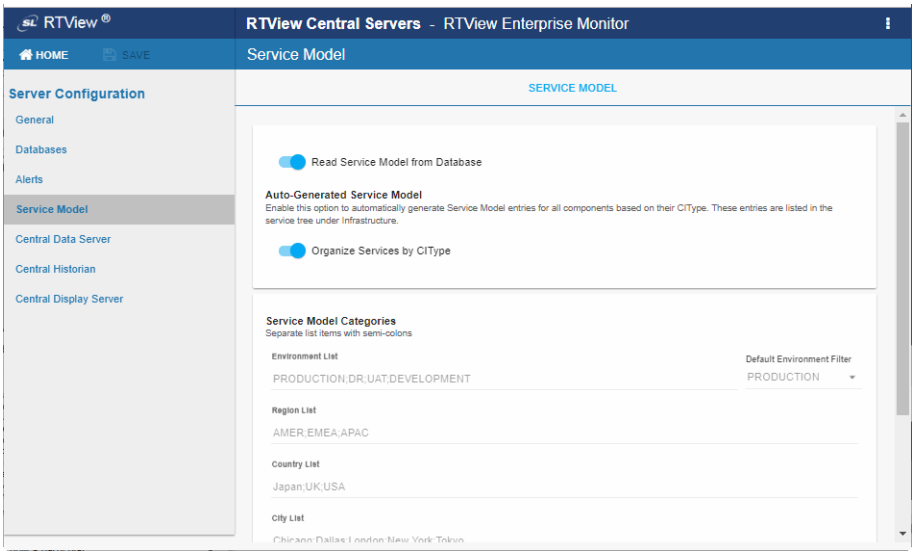
Use the **HISTORY** tab to enable alert storage in the history database. The **HISTORY** tab has the following fields:

| **Field Name** | Description |
|---|---|
| **Store Alert History** | Toggle on to have the Central Alert Historian store alert history to the Historian database. |
| **History Table Name Prefix** | The **History Table Name Prefix** field allows you to define a prefix that will be added to the database table names so that EM can differentiate history data between data servers when you have multiple Central Alert Servers. In this case, each Historian needs to save to a different table, otherwise the corresponding data server will load metrics from both Historians on startup.<br>**NOTE:** If you are using Oracle for your Historian Database, you must limit the History Table Name Prefix to 2 characters because Oracle does not allow table names greater than 30 characters.<br>Once you have defined the **History Table Name Prefix**, you will need to create the corresponding tables in your database as follows:<br>• Locate the .sql template for your database under **RTVAPM_HOME/common/dbconfig** and make a copy of it. |

- Add the value you entered for the **History Table Name Prefix** to the beginning of all table names in the copied .sql template.
- Use the copied .sql template to create the tables in your database.

# Service Model Page

Use the **Service Model** page to setup the CMDB (the Service Model that maps all CIs being monitored).




The **Service Model** page has the following fields:

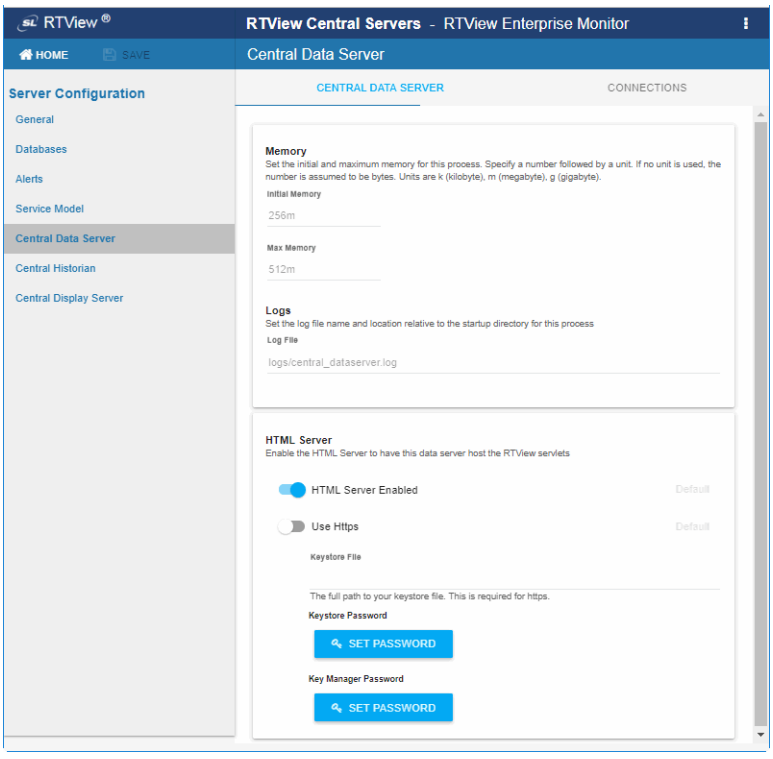
| Field Name | Description |
|---|---|
| **Read Service Model from Database** | Toggle on to read CMDB entries from the database defined in the CMDB Database Connection |
| **Organize Services by CIType** | Toggle on to enable automatic generation of CMDB entries for all components based on their CIType. When enabled, this option organizes CIs in the Service Tree based on their CI Type. |
| **Environment List** | A semicolon (**;**) delimited list of Environments to use for your CMDB entries. This populates the Environment filter list and also the list of available Environments in the CMDB Administration display. |
| **Default Environment Filter** | The initially selected value in the Environment filter field on the **SERVICE TREE** and **SERVICE VIEWS** tabs in the monitor. |
| **Region List** | A semicolon (**;**) delimited list of Regions to use for your CMDB entries. This populates the list of available Regions in the CMDB Administration display. |
| **Country List** | A semicolon (**;**) delimited list of Countries to use for your CMDB entries. This populates the list of available Countries in the CMDB Administration display. |
| **City List** | A semicolon (**;**)delimited list of Cities to use for your CMDB entries. This populates the list of available Cities in the CMDB Administration display. |

| | |
|---|---|
| **Site List** | A semicolon (**;**) delimited list of Sites to use for your CMDB entries. This populates the list of available Site in the CMDB Administration display. |
| **OS List** | A semicolon (**;**) delimited list of Operating Systems to use for your CMDB entries. This populates the list of available Operating Systems in the CMDB Administration display. |

# Central Data Server Page

Use the **Central Data Server** page to set the initial and maximum amount of memory for Central Data Server processing, log file name and location, set the Central Data Server to host servlets, and add data server connections. The Central Data Server page has two tabs:

- "CENTRAL DATA SERVER Tab": Configure initial and maximum amount of memory for Central Data Server processing, log file name and location and set the Central Data Server to host servlets.
- "CONNECTIONS Tab": Add data server connections.



## CENTRAL DATA SERVER Tab

Use the **CENTRAL DATA SERVER** tab to set the initial and maximum amount of memory for Central Data Server processing, log file name and location and set the Central Data Server to host servlets. The **CENTRAL DATA SERVER** tab has the following fields:

| Field Name | Description |
|---|---|
| **Initial Memory*** | The initial amount of memory to allocate for this process. |
| **Max Memory*** | The maximum amount of memory to allocate for this process. |
| **Log File** | The log file name and location relative to the startup directory for this process. |
| **HTML Server Enabled** | Toggle on to enable the Eclipse Jetty HTML Server in the Data Server. If enabled, it will host the RTView Servlets at **http://localhost:XX70** where **XX** is the port prefix specified on the General tab. Note that you cannot disable this option if the Configuration Application is being hosted by Eclipse Jetty in the Data Server. All RTView Servlets hosted by Eclipse Jetty are automcatically configured with the correct Data Server port at runtime. The following RTView Servlets are hosted in Eclipse Jetty:<br>rtvadmin<br>rtvdata<br>rtvquery<br>rtvagent<br>rtvpost |
| **Use Https** | Toggle on to enable use of Https. This requires that you set the **Keystore File**. |
| | **Keystore File**: Set to the key store file name (including the path) that contains the certificate for your domain. This is required to use https. |
| | **Keystore Password**: Set to the password for the keystore. This field is optional. |
| | **Key Manager Password**: Set to the password for the key manager. This field is optional. |

***Note:** Units for memory are k (kilobyte), m (megabyte), g (gigabyte). If no unit is used, the number is assumed to be bytes. Note: Use caution when you change the memory allocation. If the memory allocation is too small the server might crash during startup (with an out of memory exception). If too large the server might eventually exceed the available CPU/ memory on your system and fail.

## CONNECTIONS Tab

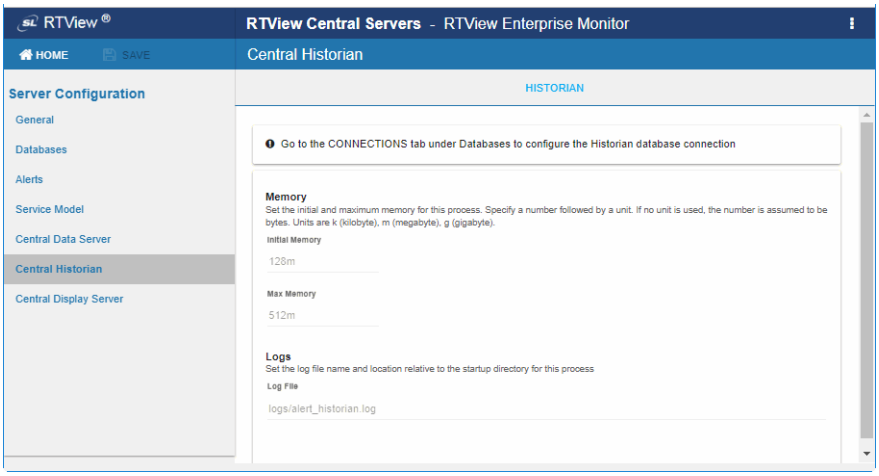
Use the **CONNECTIONS** tab to add, enable and configure data server connections, and also select the CIs on the data server that you want to include in the Service Model. Click  to open the **Add Connection** dialog which has the following fields:

| Field Name | Description |
|---|---|
| **Name** | The name of the connection. |
| **URL** | The URL for the connection. |
| **RTVQuery URL** | The RTView query URL for the connection. |

| | |
|---|---|
| **Connection Enabled** | Set to false to disable this connection. |
| **SOLUTION PACKAGES** | Select this option if you want to choose (from a list of all available Solution Packages) which Solution Package data hosted by this data server to include in the Service Model. You can then optionally exclude specific CI Types. |
| **CI TYPES** | Select this option if you want to choose (from a list of CI Types for all available Solution Packages) which CI Type data this data hosted by this data server to include in the Service Model. |
| **Monitor Data Server** | Enable and enter JMX host and port number this if you want to use JMX to monitor data server processes on this data server and view performance data in RTView Servers displays. |
| **Monitor Historian** | Enable and enter JMX host and port number this if you want to use JMX to monitor historian processes on this data server and view performance data in RTView Servers displays. |

# Central Historian Page

Use the **Central Historian** page to allocate memory and set log files for the Central Alert Historian.

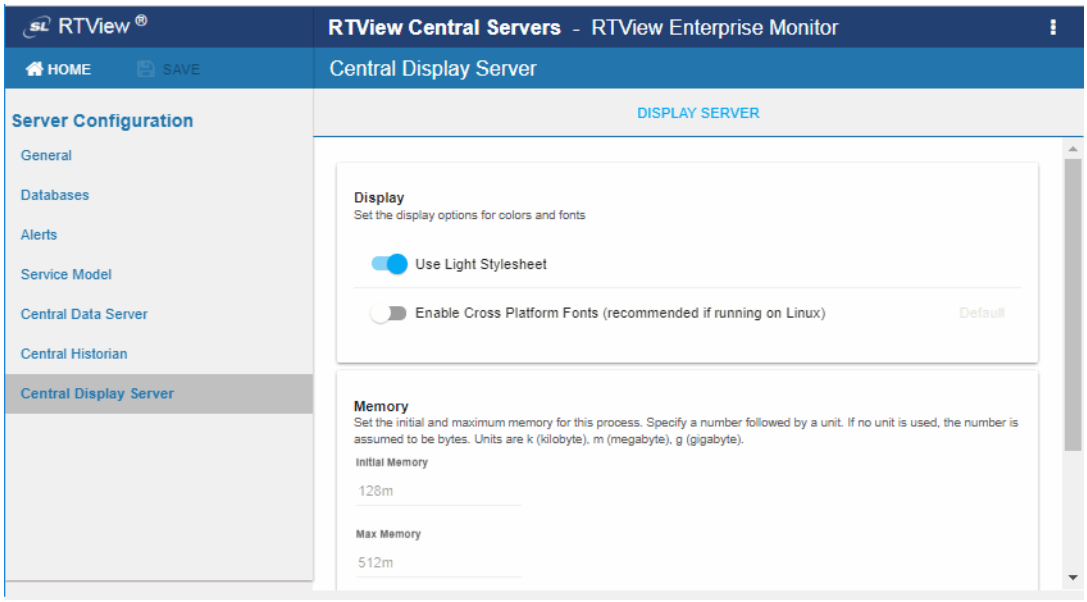



| Field Name | Description |
|---|---|
| **Initial Memory*** | The initial amount of memory to allocate for this process. |
| **Max Memory*** | The maximum amount of memory to allocate for this process. |
| **Logs** | The log file name and location relative to the startup directory for this process. |

***Note:** Units for memory are k (kilobyte), m (megabyte), g (gigabyte). If no unit is used, the number is assumed to be bytes. Note: Use caution when you change the memory allocation. If the memory allocation is too small the server might crash during startup (with an out of memory exception). If too large the server might eventually exceed the available CPU/ memory on your system and fail.

# Central Display Server Page

Use the **Central Display Server** page to select the light or dark background for your displays, enable/disable cross platform fonts, allocate memory and set log files for the Central Display Server process.




The **Central Display Server / DISPLAY SERVER** page has the following fields:

| Field Name | Description |
|---|---|
| **Use Light Stylesheet** | Toggle on to use the light colored stylesheet, false to use the dark stylesheet. |
| **Enable Cross Platform Fonts** | LINUX users might see inconsistently aligned labels in displays. To resolve, this to true. |
| **Initial Memory*** | The initial amount of memory to allocate for this process. |
| **Max Memory*** | The maximum amount of memory to allocate for this process. |
| **Logs** | The log file name and location relative to the startup directory for this process. |

# APPENDIX B Properties

This section describes properties that are available for RTView Enterprise Monitor and how to configure them. This section includes:

- "Overview," next
- "Properties File Format": Describes property format and naming conventions.
- "Applying Properties Files and Filters": Describes how to use properties files and filters on the command line and by editing the **rtvservers.dat** file.
- "Sample Properties Files": Describes where to get sample properties files for solution packages, the configurations that sample properties specify and how to create custom properties files.

## Overview

RTView Enterprise Monitor configuration is specified using a series of properties. Most properties are configured via the "RTView Configuration Application" which reads and writes the following properties files:

- project/rtview-server//**project.properties**
- project/rtview-server/**project.properties.json**
- project/rtview-manager/**project.properties**
- project/rtview-manager/**project.properties.json**

These properties files are automatically read at startup. They are added to the end of the properties file list so that they will override properties in all other properties files. Users should never modify these files directly. They should only be edited via the "RTView Configuration Application". However, you can optionally create additional properties files in a text editor. This is required for solution packages that are not included in the "RTView Configuration Application" and can be useful in cases where you want to generate a properties file of connections from an existing list.

## Properties File Format

The properties files used by RTView Enterprise Monitor are the in standard Java properties file format. Each property is specified on a separate line as follows:

**propertyName=propertyValue**

For example,

**sl.rtview.cache.config=mycachefile.rtv**

Filters are available to limit the scope to which a property is applied.

## Property Filters

Filters precede the property name as follows:

**propertyFilter.sl.rtview.cache.config=mycachefile.rtv**

The following RTView Enterprise 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** |
| **proxyclient** | Applies the property to the proxy client. For example: **proxyclient.sl.rtview.dataserver.port=2078** |
| **rtvanalyzer** | Applies the property to the RTView Analyzer. For example: **rtvanalyzer.sl.rtview.stylesheet=rtv_default,rtv_flat** |

You can also define your own property filters and use them as prefixes in your properties files.

# Applying Properties Files and Filters

To use a properties file, add it to the command line as follows:

**-properties:propertyFileName**

To specify a property filter, add it to the command line as follows:

**-propfilter:propertyFilter**

These command line options can be added to the end of the line in **RTViewCentral/projects/rtview-server/rtvservers.dat** so that they are automatically applied by the start and stop server scripts.

# Sample Properties Files

A sample properties file is provided for each solution package in **RTVAPM_HOME/<sp>/conf/sample.properties**. For example, the sample properties file for the Solution Package for TIBCO Enterprise Monitor is located under **RTVAPM_HOME/emsmon/conf/sample.properties**. This file contains the properties needed to configure classpath, connections and history. When creating your own properties file, copy properties from the appropriate **sample.properties** file into the properties file in your project directory.

# APPENDIX C Scripts

This section describes scripts that are available for RTView Enterprise Monitor as well as the **rtvservers.dat** configuration file. This section includes:



## Scripts

The following scripts are available when used from an initialized command window. The scripts can be executed from a Windows Command Prompt or UNIX terminal window. On Windows, you can type the commands as described in this section. On UNIX systems, you must add **.sh** to each command. For example, **rtvapm_init.sh**. Also on UNIX systems, it is a requirement that the installation directory path not contain spaces.

These instructions assume use of a BASH or a BASH-compliant shell.

| Script Name | Description |
|---|---|
| **my_alert_actions.bat/sh** | Sample script to define actions for alerts.<br>Location:<br>**rtvapm/common/bin**<br>Format:<br>**my_alert_actions**<br>(Append **.sh** on UNIX) |
| **rtv_setup.bat/sh** | Initializes a command prompt or terminal window.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides. This script references RTVAPM_HOME.<br>Format:<br>**rtv_setup**<br>(Append **.sh** on UNIX) |
| **rtvapm_init.bat/sh** | Initializes a command window.<br>Location:<br>**rtvapm_home**<br>This script must be executed in the directory in which it resides. This script references RTVAPM_HOME.<br>Format:<br>**rtvapm_init**<br>(Append **.sh** on UNIX) |

| | |
|---|---|
| **start_cmd.bat** | Starts an initialized Command Prompt window on Windows.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. |
| **start_rtv.bat/sh** | Starts processes in an RTView Enterprise Monitor configuration as specified in the **rtvservers.dat** configuration file.<br>Location:<br>**project directory**<br>This script must be executed in the project directory (the directory containing the **rtvservers.dat** file). This script references RTVAPM_HOME.<br>An RTView Enterprise Monitor configuration might include a Data Server or Display Server, an Historian and a Central Server Database. **start_rtv** only attempts to start processes it detects are not running. The action can be applied to all RTView Enterprise Monitor configurations, a single RTView Enterprise Monitor configuration or a single process in an RTView Enterprise Monitor configuration.<br>Before starting an RTView server, this script detects port conflicts caused by another server. If the conflict is caused by another RTView server, it returns a message identifying that server by its **RTVAPM_HOME**. For example:<br>`...start_rtv.bat: another dataserver running with JMX port 3268 under C:\rtview\RTViewDataServer\rtvapm`<br>If the port conflict is caused by a non-RTView process, it returns a message similar to this, for example:<br>`...start_rtv.bat: JMX port 3268 in use by PID 1234`<br>In both cases the script includes this advice:<br>`Warning: server not started, port conflict`<br>To avoid port conflicts, run your start script with the **-portprefix:** command line argument to change the first two (**2**) digits of all your server ports.<br>To persist these port changes, change the port prefix in the RTView Configuration Application or use the **-saveportprefix** command line argument.<br>Additional arguments can be included on the command line in which case they are passed to every server specified by the command.<br>Additional arguments can also be included in the **rtvservers.dat** file, in which case they are only applied to the specific server in whose command they are included.<br>**Note:** If you use the **-properties** or **-propfilter** argument with **start_rtv**, you should also use them with **status_rtv** and **stop_rtv**. Those commands use the JMX ports defined for the server, and if any of the properties specified by **-properties** or **-propfilter** arguments change those ports, subsequent commands will be unable to find the server unless also given those properties. |

**–console** (or **–c**) - Start the processes with a command window (which is useful for testing).

When used without arguments, this script returns usage information and a list of available configurations. For example, **start_rtv** returns:

```
Usage: start_rtv config or 'all' [server or 'all'] [args...]
Available configs:
     default
          dataserver
          historian
          displayserver
          database
     sender
          dataserver
```

**all**

Starts all RTView Enterprise Monitor configurations that are specified in the **rtvservers.dat** file.

**all** applies the action to all RTView Enterprise Monitor configurations specified in the **rtvservers.dat** file (and corresponding servers or clients specified in each configuration). **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.

Example:

**start_rtv all**
(Append **.sh** on UNIX)

**[Configuration Name]**

Starts a single RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:

**start_rtv [Configuration Name]**
(Append **.sh** on UNIX)

Configuration Name is the RTView Enterprise Monitor configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.

Example:

**start_rtv web_deployment**
(Append **.sh** on UNIX)

**[Server Name]**

Starts a single process in an RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:

**start_rtv [Configuration Name] [Server Name]**
(Append **.sh** on UNIX)

Server Name is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.

Example:

**start_rtv web_deployment dataserver**
(Append **.sh** on UNIX)

| | |
|---|---|
| | **Use With Secured JMX Ports**<br>This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.<br><br>**Securing with username and password**<br>• To secure with a username and password via command-line, use the arguments as follows:<br>**-jmxuser:...**<br>**-jmxpass:...**<br>• To secure with a username and password in a property file, use the properties as follows:<br>**sl.rtview.jmxremote.username=...**<br>**sl.rtview.jmxremote.password=....**<br><br>**Securing with SSL**<br>To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.<br>• To secure with SSL via command-line, use the arguments as follows:<br>**-sslkeystore:...**<br>**-sslkeystorepass:...**<br>**-ssltruststore:...**<br>**-ssltruststorepass:...**<br>• To secure with SSL in a property file, use the properties as follows:<br>**sl.rtview.ssl.client.keyStore=...**<br>**sl.rtview.ssl.client.keyStorePassword=...**<br>**sl.rtview.ssl.client.trustStore=...**<br>**sl.rtview.ssl.client.trustStorePassword=....**<br><br>**Password Encryption**<br>To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:<br>**encode_string encoder2 password**<br>This will give you an encrypted value for "password" that you can use in your properties. |
| **start_server.bat/sh** | Starts the RTViewDataServerSP server.<br>Location:<br>**<installation directory>**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. This script references RTVAPM_HOME.<br>Format:<br>**start_server**<br>(Append **.sh** on UNIX) |

| | |
|---|---|
| **start_servers.bat/sh** | Starts the RTView Enterprise Monitor servers.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. This script references RTVAPM_HOME.<br>Format:<br>**start_servers**<br>(Append **.sh** on UNIX) |
| **start_tomcat.bat/sh** | Starts Apache Tomcat.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. This script references RTVAPM_HOME.<br>Format:<br>**start_tomcat**<br>(Append **.sh** on UNIX) |
| **status_rtv.bat/sh** | Returns the status of all RTView Enterprise Monitor configurations that are specified in the **rtvservers.dat** configuration file.<br>Location:<br>**project directory**<br>This script must be executed in the project directory (the directory containing the **rtvservers.dat** file). This script references RTVAPM_HOME.<br>This action uses defined JMX ports. An RTView Enterprise Monitor configuration might include a Data Server, a Display Server or Viewer, an Historian and a Central Server Database. **status_rtv** only attempts to start processes it detects are not running. The action can be applied to all RTView Enterprise Monitor configurations, a single RTView Enterprise Monitor configuration or a single process in an RTView Enterprise Monitor configuration.<br>Additional arguments can be included on the command line in which case they are passed to every server specified by the command. Additional arguments can also be included in the **rtvservers.dat** file, in which case they are only applied to the specific server in whose command they are included.<br>Note that if you use **-properties** or **-propfilter** arguments with **start_rtv**, you should also use them with **status_rtv** and **stop_rtv**. Those commands use the JMX ports defined for the server, and if any of the properties specified by **-properties** or **-propfilter** arguments change those ports, subsequent commands will be unable to find the server unless also given those properties. |
| | **all**<br>Returns the status of all RTView Enterprise Monitor configurations specified in the **rtvservers.dat** file. **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.<br>Example:<br>**status_rtv all**<br>(Append **.sh** on UNIX) |

| | |
|---|---|
| | **[Configuration Name]**<br>Returns the status of a single RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:<br>**status_rtv [Configuration Name]**<br>(Append **.sh** on UNIX)<br>Configuration Name is the RTView Enterprise Monitor configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.<br>Example:<br>**status_rtv web_deployment**<br>(Append **.sh** on UNIX) |
| | **[Server Name]**<br>Returns the status of a single process in an RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:<br>**status_rtv [Configuration Name] [Server Name]**<br>(Append **.sh** on UNIX)<br>Server Name is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.<br>Example:<br>**status_rtv web_deployment dataserver**<br>(Append **.sh** on UNIX) |

| | |
|---|---|
| | **Use With Secured JMX Ports**<br>This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.<br><br>**Securing with username and password**<br>• To secure with a username and password via command-line, use the arguments as follows:<br>**-jmxuser:...**<br>**-jmxpass:...**<br>• To secure with a username and password in a property file, use the properties as follows:<br>**sl.rtview.jmxremote.username=...**<br>**sl.rtview.jmxremote.password=....**<br><br>**Securing with SSL**<br>To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.<br>• To secure with SSL via command-line, use the arguments as follows:<br>**-sslkeystore:...**<br>**-sslkeystorepass:...**<br>**-ssltruststore:...**<br>**-ssltruststorepass:...**<br>• To secure with SSL in a property file, use the properties as follows:<br>**sl.rtview.ssl.client.keyStore=...**<br>**sl.rtview.ssl.client.keyStorePassword=...**<br>**sl.rtview.ssl.client.trustStore=...**<br>**sl.rtview.ssl.client.trustStorePassword=....**<br><br>**Password Encryption**<br>To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:<br>**encode_string encoder2 password**<br>This will give you an encrypted value for "password" that you can use in your properties. |
| **stop_collector.bat/sh** | Stops the RTViewDataCollectorSP server.<br>Location:<br>**<installation directory>**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. This script references RTVAPM_HOME.<br>Format:<br>**stop_collector**<br>(Append **.sh** on UNIX) |

| | |
|---|---|
| **stop_rtv.bat/sh** | Stops processes in an RTView Enterprise Monitor configuration as specified in the **rtvservers.dat** configuration file.<br>Location:<br>**project directory**<br>This script must be executed in the project directory (the directory containing the **rtvservers.dat** file). This script references RTVAPM_HOME.<br>This action uses defined JMX ports. An RTView Enterprise Monitor configuration might include a Data Server or a Display Server, an Historian and a Central Server Database. **stop_rtv** only attempts to start processes it detects are not running. The action can be applied to all RTView Enterprise Monitor configurations, a single RTView Enterprise Monitor configuration or a single process in an RTView Enterprise Monitor configuration.<br>Additional arguments can be included on the command line in which case they are passed to every server specified by the command. Additional arguments can also be included in the **rtvservers.dat** file, in which case they are only applied to the specific server in whose command they are included.<br>Note that if you use **-properties** or **-propfilter** arguments with **start_rtv**, you should also use them with **status_rtv** and **stop_rtv**. Those commands use the JMX ports defined for the server, and if any of the properties specified by **-properties** or **-propfilter** arguments change those ports, subsequent commands will be unable to find the server unless also given those properties.<br>Location:<br>**project directory**<br>This script must be executed in the project directory (the directory containing the **rtvservers.dat** file). |
| | **all**<br>Stops all RTView Enterprise Monitor configurations that are specified in the **rtvservers.dat** file. **all** applies the action to all RTView Enterprise Monitor configurations specified in the **rtvservers.dat** file (and corresponding servers or clients specified in each configuration). **Note:** When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the **all** argument processes only the first configuration as the others are considered alternative configurations.<br>Example:<br>**stop_rtv all**<br>(Append **.sh** on UNIX) |
| | **[Configuration Name]**<br>Stops a single RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:<br>**stop_rtv [Configuration Name]**<br>(Append **.sh** on UNIX)<br>Configuration Name is the RTView Enterprise Monitor configuration name specified in the **rtvservers.dat** file. The action applies to all servers or clients specified in the configuration.<br>Example:<br>**stop_rtv web_deployment**<br>(Append **.sh** on UNIX) |

**[Server Name]**

Stops a single process in an RTView Enterprise Monitor configuration specified in the **rtvservers.dat** file:

**stop_rtv [Configuration Name] [Server Name]**
(Append **.sh** on UNIX)

**Server Name** is the name of a server or client member in the configuration. For example, **dataserver**, **displayserver**, **historian** and **database**. The action applies only to that server or client in the configuration.

Example:

**stop_rtv web_deployment dataserver**
(Append **.sh** on UNIX)

**Use With Secured JMX Ports**

This script works with RTView servers whose JMX ports are secured with either a username and password, or with SSL. You provide the scripts with the necessary credential information and the scripts manage authentication with the server. There are two ways that you can provide credential information to the scripts: via command-line arguments and via properties placed in any property file that is used by the server.

**Securing with username and password**

- To secure with a username and password via command-line, use the arguments as follows:

**-jmxuser:...**

**-jmxpass:...**

- To secure with a username and password in a property file, use the properties as follows:

**sl.rtview.jmxremote.username=...**

**sl.rtview.jmxremote.password=....**

**Securing with SSL**

To secure with SSL, you provide the client KeyStore and TrustStore locations and their corresponding passwords.

- To secure with SSL via command-line, use the arguments as follows:

**-sslkeystore:...**

**-sslkeystorepass:...**

**-ssltruststore:...**

**-ssltruststorepass:...**

- To secure with SSL in a property file, use the properties as follows:

**sl.rtview.ssl.client.keyStore=...**

**sl.rtview.ssl.client.keyStorePassword=...**

**sl.rtview.ssl.client.trustStore=...**

**sl.rtview.ssl.client.trustStorePassword=....**

**Password Encryption**

To encrypt the passwords in your properties files, use the command-line tool "encode_string", for example:

**encode_string encoder2 password**

This will give you an encrypted value for "password" that you can use in your properties.

| | |
|---|---|
| **stop_server.bat/sh** | Stops the RTViewDataServerSP server.<br>Location:<br>**project directory/bin**<br>This script must be executed in the directory in which it resides. This script references RTVAPM_HOME.<br>Format:<br>**stop_server**<br>(Append **.sh** on UNIX) |
| **stop_servers.bat/sh** | Stops the RTView Enterprise Monitor servers.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides. You can also execute the script by double-clicking in an Explorer window. This script references RTVAPM_HOME.<br>Format:<br>**stop_servers**<br>(Append **.sh** on UNIX) |
| **stop_tomcat.bat/sh** | Stops Apache Tomcat.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides.<br>Format:<br>**start_tomcat**<br>(Append **.sh** on UNIX) |
| **update_wars.bat/sh** | Creates/updates the primary Enterprise Monitor servlets.<br><br>Location:<br>**<installation directory>/projects/rtview-server**<br>This script must be executed in the directory in which it resides.<br><br>Format:<br>**update_wars.sh [appname [host [portprefix]]]**<br><br>For example:<br>**update_wars.sh my-appname my-hostname 99**<br><br>The name, host, and portprefix are declared in variables at the top of the script for easy editing, and can be passed into the scripts on the command-line.<br><br>You can use **?** or **help** to get a usage message. For example:<br>**update_wars.sh help**<br><br>You can edit other variables at the top of the scripts to set properties for high-availability (HA).<br>**Set HA_HOST** to the hostname of the backup data server.<br>**Set HA_DISPLAYHOST** to the hostname of the backup display server.<br>**Set HA_FAILBACK** to true to automatically reconnect to the primary display server. |

| | |
|---|---|
| **validate_install.bat/sh** | Use this script if you encounter error messages when starting servers, to verify your system environment (for example, to verify that Java is installed) as well as your installation directories.<br>Location:<br>**<installation directory>/bin**<br>This script must be executed in the directory in which it resides.<br>Also, in Unix, this script checks and corrects file permissions and file formats (if, for example, the wrong unzip command was used during installation). If file permissions or formats are fixed, the script returns a count of the files fixed. Additionally, if invoked with the argument "-v" (verbose) it returns the names of the files fixed.<br>The script returns the following information (where **<RTViewInstallation>** is your RTView installation):<br>• In Windows<br>Validating installation in /opt/rtview/<RTViewInstallation><br>... Java installation correct.<br>... rtvapm installation correct.<br>• In UNIX<br>Validating installation in /opt/rtview/<RTViewInstallation><br>... Java installation correct.<br>... rtvapm installation correct.<br>... file permissions correct.<br>... file formats correct. |

# rtvservers.dat

This section describes the **rtvservers.dat** configuration file which is used to manage your RTView Enterprise Monitor deployment and RTView Enterprise Monitor processes. This section includes:

- "Single Configuration File"
- "Multiple Configuration File"

The **rtvservers.dat** text file contains one or more RTView Enterprise Monitor configurations. An RTView Enterprise Monitor configuration is a group of servers that should be started together. For example, the configuration might include any of the following: a Data Server, Historian, HSQLDB database, and a Display Server (for a Web Deployment). The **rtvservers.dat** file is used when the following scripts are executed:

- start_rtv Starts RTView Enterprise Monitor processes specified in the **rtvservers.dat** file.
- stop_rtv Stops the RTView Enterprise Monitor processes specified in the **rtvservers.dat** file.
- status_rtv Returns status information for RTView Enterprise Monitor processes specified in the **rtvservers.dat** file.

### Single Configuration File

The following **rtvservers.dat** file, located in your project directory, contains a single RTView Enterprise Monitor configuration, named **default**.

```
default . dataserver rundata
default . historian runhist -ds
default . displayserver rundisp -ds
default . database rundb
```

**Note:** The last line in the **rtvservers.dat** file must end with a new line, or be followed by a blank line.

In this example, to start the **default** configuration type: **start_rtv default** or **start_rtv all**. To start a single server in the configuration, type **start_rtv <Configuration Name> <Server Name>**. For example: **start_rtv default displayserver**.

Each line has the following format consisting of four fields:

**<Configuration Name> <Project Settings Directory Location> <Property Filter Identifying the Server> <Command>**

| | |
|---|---|
| **<Configuration Name>** | The name of the RTView Enterprise Monitor configuration (**default** in this example). |
| **<Project Settings Directory Location>** | The RTView Enterprise Monitor project settings directory location, relative to the location of the **rtvservers.dat** file (**.**, the current directory, in this example). |
| **<Property Filter Identifying the Server>** | The property filter that identifies the server, which is the property filter under which the server's JMX port is defined. By default, this is the server name, such as **dataserver**, **displayserver** and **historian**. |
| **<Command>** | The script used to start the process. Valid values are:<br>• rundata: Starts the Data Server.<br>• runhist: Starts the Historian.<br>• rundisp: Starts the Display Server.<br>• rundb: Starts the HSQLDB Database. |

### Multiple Configuration File

When multiple configurations are specified in the **rtvservers.dat** file and they have different project settings directory locations, the **all** argument processes all the configurations. However, if the configurations have the same project settings directory locations, the all argument processes only the first configuration as the others are considered alternative configurations. Alternative configurations allow you to alternate between two configurations for a single RTView Enterprise Monitor deployment.

For example, the following **rtvservers.dat** file, located in your project directory**/servers** directory, contains two configurations, **bwmon** and **emsmon**. Note that the project settings directory locations differ (**./bwmon** and **./emsmon**, respectively).

```
bwmon ./bwmon dataserver rundata
bwmon ./bwmon historian runhist -ds
bwmon ./bwmon displayserver rundisp -ds

emsmon ./emsmon dataserver rundata
emsmon ./emsmon historian runhist -ds
emsmon ./emsmon displayserver rundisp –ds
```

Because the project settings directory locations differ, you can use type **start_rtv all** to start both configurations. To start only the bwmon configuration, type: **start_rtv bwmon**. To start a single server in the **bwmon** configuration, type **start_rtv <Configuration Name> <Server Name>**. For example: **start_rtv bwmon displayserver**.

# APPENDIX D Limitations

This section includes:



## 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 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.

# APPENDIX E Third Party Notice Requirements

This section includes:



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