SYBASE®

Administration Guide

Risk Analytics Platform

3.0

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Contents

About This Book

Audience

The *Risk Analytics Platform Administration Guide* is intended for Sybase® Professional Services, Risk Analytics Platform Administrators, and Risk Analytics Platform Operators. Familiarity with Sybase Adaptive Server® Enterprise, Sybase Replication Server®, Sybase IQ, data warehousing, and other related topics is assumed.

How to use this book

This document includes three chapters:

- Chapter 1, Sybase Risk Analytics Platform Operations Console, describes Risk Analytics Platform Operations Console, and includes installation instructions and basic setup procedures.
- Chapter 2, Administering Operations Console, breakdown of an administrator's responsibilities, introduces the working environment, and takes you through each task you perform to administer Operations Console.
- Chapter 3, Monitoring System Operations, provides a breakdown of an operator's responsibilities, introduces the working environment, and describes the tools you use to monitor specific system activities.

Before you use this book, refer to the *Release Bulletin Risk Analytics Platform* for any last-minute information about this product.

Related documents

For more information, see:

- *Release Bulletin Risk Analytics Platform*
- *Risk Analytics Platform Installation and Configuration Guide*
- *Risk Analytics User's Guide*
- Sybase IQ 12.6 product documentation
- Adaptive Server Enterprise 15.0 product documentation
- OpenSwitch 15.0 product documentation
- PowerDesigner® 11.1 product documentation

- Replication Server 12.6 product documentation

Note This product includes software developed by Apache Software Foundation. See The Apache Software Foundation at http://www.apache.org/.

Other sources of information

Use the Sybase Getting Started CD, the Sybase Infocenter Web site, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains the release bulletin, installation and configuration guide, administration guide, and user's guide in PDF format. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The Sybase Infocenter Web site is an online version of the product manuals that you can access using a standard Web browser.

  To access the Infocenter Web site, go to Sybooks Online Help at http://infocenter.sybase.com/help/index.jsp
- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

  To access the Sybase Product Manuals Web site, go to Product Manuals at http://www.sybase.com/support/manuals/.

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ **Finding the latest information on product certifications**

1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Click Certification Report.

3 In the Certification Report filter select a product, platform, and timeframe and then click Go.

Note The Product Family for Risk Analytics Platform 3.0 is Sybase IQ.

4 Click a Certification Report title to display the report.

❖ **Finding the latest information on component certifications**

1 Point your Web browser to Availability and Certification Reports at http://certification.sybase.com/.

2 Either select the product family and product under Search by Base Product; or select the platform and product under Search by Platform.

3 Select Search to display the availability and certification report for the selection.

❖ **Creating a personalized view of the Sybase Web site (including support pages)**

Set up a MySybase profile. MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Click MySybase and create a MySybase profile.

Sybase EBFs and software maintenance

❖ **Finding the latest information on EBFs and software maintenance**

1 Point your Web browser to the Sybase Support Page at http://www.sybase.com/support.

2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.

3 Select a product.

4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the “Technical Support Contact” role to your MySybase profile.

5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

The Risk Analytics Platform 3.0 documentation complies with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

For information about accessibility support in the Sybase IQ plug-in for Sybase Central, see "Using accessibility features" in Chapter 1, "Introducing Sybase IQ" in *Introduction to Sybase IQ*. The online help for Sybase IQ, which you can navigate using a screen reader, also describes accessibility features, including Sybase Central keyboard shortcuts.

Note You might need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

For information about how Sybase supports accessibility, see Sybase Accessibility at http://www.sybase.com/accessibility. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

CHAPTER 1

Sybase Risk Analytics Platform Operations Console

About this Chapter

This chapter provides an overview of the Sybase Risk Analytics Platform Operations Console.

Contents

Overview

Operations Console monitors the availability, performance, and status of the Sybase Risk Analytics Platform. Operations Console deploys agents and listeners. Agents continually broadcast information about specific system components. Listeners intercept and write this information to a central repository.

A Web-based management console interfaces with the repository and provides distinct views to operators with privileges determined by the Operations Console Administrator. Operations Console continually refreshes these views at intervals determined by those operators.

Unified Agent Framework

Operations Console requires the Sybase Unified Agent Framework (UAF), which provides a common set of services, as well as the ability to host agent plug-ins to manage server resources or to perform various operations. These agent plug-ins can perform product-specific commands, and have control and discovery capabilities including: status, start, stop, and restart.

Agent plug-ins

Agents are installed as plug-ins to Operations Console's modular framework. During installation, you can decide which plug-ins you want to install:

Agent plug-in	Description
Application Services	Provides application functionality such as alert generation, audit reporting, and detection of exceptions. Generally, this agent takes data from the repository as input and generates output for users.
Batch File Monitor	Monitors input directories for incoming batch files, logs delivery and size of the incoming files, and identifies incomplete file transfers. Batch File Monitor pushes data to the Operations Console repository based on local system performance and resource requirements.
Data Synch	Tracks differences between the cache and VLDB databases at specific points in time for auditing and planning purposes. These agents also timestamp activities at specific intervals to record the states of the databases at specific intervals Data Synch also collects statistics that track database transaction times, data sources, and record counts. An additional option lets you delete data from the cache database.

Agent plug-in	Description
File Load Monitor	Monitors processes that load incoming data and logs data loads, including the file name, record count, data set transaction times, type of data (tick data, end-of-day data, quote, trade), load start and completion times. File Load Monitor identifies file load failures and file load performance degradations.
Query Status	Monitors connections that route queries to the cache database. Collects execution times of the last query, records per second of the last query, and the running status of the cache database, and collects the server running status of the historical database.
Server status	Monitors the status of the cache database, including memory usage, number of connections, and server running status.
Repository Agent	Intercepts broadcasts from monitoring agents, and writes the information to the repository database.

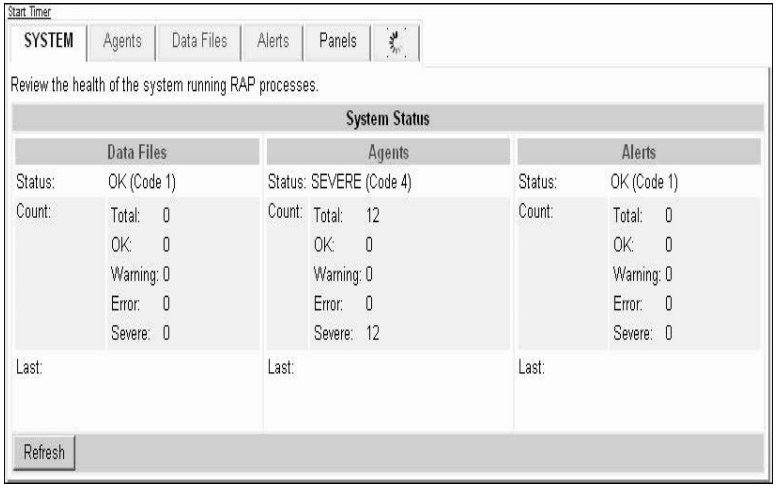
Operations Console repository

Agents begin broadcasting as soon as you start them. Agents write the results of their findings to a repository database, which stores information about the behavior an operator expects to see and the rules that generate an exception. Writing to the repository makes it possible to establish and measure performance standards over time.

The repository also stores performance statistics, configuration parameters, and exception and alert definitions. Operations Console uses this information to detect abnormal conditions and produce a corresponding response.

Web Monitoring Console

The Web Monitoring Console is a Web-based management application that interfaces with the repository and provides distinct views to operators whose privileges are determined by the Operations Console Administrator.



Modes

Web Monitor supports two basic modes: Administration and Operations. The class to which a user belongs determines which mode that user can access at login. Administrators log in to Administration mode; operators log in to Operations mode.

Administration

Administrators manage Operations Console configuration, alerts, and access. The Operations Console Administrator also determines the roles and responsibilities of individual operators. There is one default administrator with full administrator privileges: rapadmin.

Operations

Operators monitor the status of system operations. There is one default operator: rapuser.

The view of an operator within Operations mode is determined by privileges granted by the Operations Console Administrator. Generally, an administrator associates an operator with one or more agents, which gives that operator access to all of the monitoring properties of those agents. An operator's view is determined by which of those properties the administrator ultimately permits the operator to see.

An operator can also have administrator privileges within Operations mode. An operator with administrator privileges can access another operator's views.

Installing Operations Console

You can install Operations Console on a UNIX, Linux, or Windows system. The installation requires that RAPCache or ASE already be installed on an accessible machine, as RAPCache or another ASE server hosts the Operations Console repository.

Resource requirements

- Web Monitor requires 400MB of disk space for a full installation.
- Sybase recommends at least 512MB RAM for Web Monitor.
- Web Monitor supports the Web browsers Microsoft® Internet Explorer® 6.0 and Mozilla Firefox® 1.5.
- Web Monitor is HTML 4.01 compliant.
- If are installing Operations Console on Windows, and plan to install the File Monitor agent and Batch Monitor agent, you to deploy

Windows may require additional NFS connectivity software
If you plan to install Operations Console on Windows, you may need additional NFS connectivity software. Installing the File Monitor and Batch Monitor agents requires a mapped drive from Windows to your UNIX or Linux host. You may need additional third-party software to access these resources from Windows.

Repository characteristics

If you choose to deploy the Repository Agent, the Installer creates a repository database with the following characteristics:

Repository sizes

Device size*	250MB
Database size	200MB
Log size	40MB

*one database allowed per device

Full install

A Full install installs all Operations Console agents and the Unified Agent Framework on the same machine as a previously installed RAPCache server. By default, the target installation directory is *$RAP30/RAPCache*.

Custom install

A Custom install allows you to install Operations Console on a machine that does not have a previously installed RAPCache server. A Custom install lets you choose what you want to install.

On UNIX systems, y

- You can choose an existing ASE server to host the Operations Console repository or create a new ASE server to host the repository.
- You can either install Unified Agent Framework or specify the location of an existing UAF installation.
- You can choose which features you want to install, such as Application Services, monitoring agents, the repository, and the Web Monitor.

A Custom install gives you the flexibility to install specific agents on different servers. You can run the install multiple times to customize the locations of servers and the combinations of agents and the servers they monitor.

Installation layout

In a Full install, the Operations Console installation directory is typically the same directory as the RAP installation directory. The layout of the Operations Console installation directory contains the following subdirectories:

Directory	Contents
WebMonitoringConsole	The graphical user interface for Operations Console
_Opsconsole_jvm	Java™ 2 Runtime Environment
ua	Sybase Unified Agent
_uninst	Operations Console uninstall information
shared	Java Runtime Environment 1.4.2 (for the Sybase Unified Agent Framework) Java Software Development Kit 1.5 (for Web Monitor)

In a Custom install, you choose the server you want to install and where you want to install this server. The subdirectory structure remains the same, but includes only the server you chose to install.

Installing on UNIX and Linux

Follow this procedure to install Operations Console on UNIX and Linux. Before you run the Installer, start the servers you want Operations Console to monitor.

❖ **Installing Operations Console on UNIX or Linux**

1 Insert the Operations Console installation CD into the CD drive.

If the Risk Analytics Installer does not start automatically:

- Mount the drive.
- Use this command to start the Installer:

```
/cdrom/setup<Platform>.bin
```

where <*Platform*> is the name of your operating system. For example, use the command `/cdrom/setupSolaris.bin` on Sun Solaris.

2 Click Next on the Welcome screen.

3 Choose a location, read and accept the license agreement, and click Next.

If you do not find a license agreement that matches your location, or if the license agreement is unreadable on your system, you can read all available license agreements on the Sybase Web site at http://www.sybase.com/softwarelicenses.

4 Choose one of the following:

- Full install. Choose this option if you want to install Operations Console on the same machine as a previously installed RAPCache server. Click Next, then proceed to step 8.
- Custom install. Choose this option if you want to install Operations Console on a machine without a previously installed RAPCache server. A Custom install gives you the option to create a new ASE server to host the Operations Console repository. Click Next.

5 Do one of the following:

- If you already installed Unified Agent Framework, click I already have UAF installed at the location below, then identify the installation directory in the Directory Name box. Click Next.
- If Unified Agent Framework is not installed, click I would like to install UAF for the first time at the location below, then identify the installation directory in the Directory Name box. Click Next.

6 Choose the components you want to install, and click Next.

7 Do one of the following:

- If you already have an ASE server running and want to use this server to host the Operations Console repository, choose Use an existing RAPCache server to host the Operations Console repository. On the next screen, identify the RAPCache server information.
- If you want to create a new ASE server for the Operations Console repository, choose Create a new ASE server to host the Operations Console repository.

  On the next screen, enter the name of the directory in which the ASE server is installed.

8 Identify the servers you want the Operations Console agents to monitor. (The servers must be running.)

9 Add the ASE information to configure the Operations Console repository.

10 Identify the location of the RAPCache automated file load directory, *Auto_File_Load*, and the logical names of the RAPCache and VLDB servers. Click Next.

11 Review the summary information and click Install.

12 After the Operations Console device and database are created, click Next. After the plug-ins are configured, click Next. Read the summary information and click Finish.

Installing on Windows

Follow this procedure to install Operations Console on Windows. Before you run the Installer, map a drive to the RAPCache automated file load directory *$RAP_HOME/Auto_File_Load* in the RAP installation directory. Also start the servers you want Operations Console to monitor.

Note Because the Batch File and File Load agent plug-ins need to be separately installed on a UNIX or Linux machine, do not install these plug-ins on Windows.

❖ **Installing Operations Console on Windows**

1 Insert the Operations Console installation CD into the CD drive.

If the Risk Analytics Installer does not start automatically:

- Click Start, choose Run.
- Browse to select your CD drive letter, choose *setup.exe*.

2 Click Next on the Welcome screen.

3 Choose a location, accept the license agreement, and click Next.

If you do not find a license agreement that matches your location, or if the license agreement is unreadable on your system, you can read all available license agreements on the Sybase Web site at http://www.sybase.com/softwarelicenses.

4 When the Installer prompts you for the installation type, choose Custom Install, then click Next.

5 Do one of the following:

- If you already have installed United Agent Framework, click I already have UAF installed at the location below, then identify the installation directory in the Directory Name box.
- If United Agent Framework is not installed, click I would like to install UAF for the first time at the location below, then identify the installation directory in the Directory Name box.

6 Choose the components you want to install, and click Next.

7 Add the connection information for the RAPCache and VLDB servers you want Operations Console to monitor. You must specify the host name, port number, user name, and password for each server. Click Next.

8 Add the connection information for the Operations Console repository. You must specify the host name, port number, user name, password, and database name. Click Next.

9 Identify the location of the *$RAP_HOME/Auto_File_Load* directory and click Next.

10 Review the summary information and click Install.

11 After the Operations Console device and database are created, click Next. After the plug-ins are configured, click Next. Read the summary information and click Finish.

Postinstallation tasks

This section identifies post installation tasks.

Sourcing bcp and dbisql for UNIX and Linux users only

Before starting UA, you must set up the environment for the bcp and dbisql utilities if you have not already done so.

❖ **Sourcing bcp environmental variables**

1 Open a command window.

2 Change to the *$RAP30/RAPCache* directory.

3 Run the appropriate shell command:

```
source SYBASE.csh
```

or

```
. ./SYBASE.sh
```

❖ **Sourcing dbisql**

1 Open a command window.

2 Change to the *$RAP30/VLDBServer/ASIQ-12_6* directory.

3 Run the appropriate shell command:

```
ASIQ-12_6.sh
```

or

```
ASIQ-12_6.csh
```

Changing information about the repository database

Host names and port numbers for the cache and VLDB databases are set during installation. If these values change, use the Configurations panel in Administration mode to update these items. If the repository database location changes, you must manually update the Repository agent, AppSvc agent, and WebMonitoringConsole property files.

❖ **Updating the repository agent**

1. Change to the directory where you installed Operations Console.
2. Change to *ua\plugins\com.sybase.rap.repository* on Windows, or *ua/plugins/com.sybase.rap.repository* on UNIX or Linux.
3. Open *agent-plugin.xml* with an editor.
4. Update the following line:

```
<set-property property="repository.database.url"
value="jdbc:sybase:Tds:<host name>:
<port name>/<repository database name>" />
```

❖ **Updating the AppSvc agent**

1. Change to the directory where you installed Operations Console.
2. Change to *ua\plugins\com.sybase.rap.appsvc* on Windows, or *ua/plugins/com.sybase.rap.appsvc* on UNIX or Linux.
3. Open *agent-plugin.xml* with an editor.
4. Update the following line:

```
<set-property property="appsvc.database.url"
value=="jdbc:sybase:Tds:<host name>:
<port name>/<repository database name>" />
```

❖ **Updating the WebMonitoringConsole properties**

1. Change to the directory where you installed Operations Console.
2. Change to *\WebMonitoringConsole\bin* on Windows, or */WebMonitoringConsole/bin* on UNIX or Linux.
3. Open *opsconsole.properties* with an editor.
4. Update the following line:

```
database_url=jdbc\:sybase\:Tds\:<hostmachine>\:
<port number>/<repository database name>
```

Monitoring RAPCache query performance

There are two ways that you can monitor query performance.

Method	Description
Default	Run list queries contained in file *<OpsConsoleInstall>/ua/plugins /com.sybase.rap.querystatus/QueryStatusMsg.xml* Each query is run against the RAPCache database at the specified collection interval. Use an editor and modify file QueryStatusMsg.xml to add or delete queries.
Capture performance statistics from ASE Monitor tables	Refer to the chapter "Monitoring Tables" in the ASE book *Performance and Tuning: Monitoring and Analyzing Quick Start Guide* for more information on monitor tables. **Note** Performance is affected with this option.

Installing RAPCache Monitor MDA tables

- The monitoring tables are not created by default, but must be created using the *installmontables* script. You can find this script in the *$RAP30/RAPCache/ASE-15_0/scripts* directory on UNIX or LINUX, or *%RAP30\RAPCache\ASE-15_0\scripts* directory on Windows.
- Add the loopback server to sysservers:

```
sp_addserver loopback, NULL, <srvnetname>
```

- Grant the `mon_role` role to `sa_role`:

```
sp_role 'grant', mon_role, sa_role
```

- Map the `sa` login as well as the login of the DBA with `mon_role`:

```
sp_addexternlogin @server="loopback",
@loginame="sa",@externname="sa"
```

- Install the monitoring tables with the *installmontables* script (located in *$RAP30/RAPCache/ASE-15_0/scripts*):

```
$SYBASE/$SYBASE_OCS/bin/isql -Usa -P
-i $SYBASE/$SYBASE_ASE/scripts/installmontables
```

Setting Monitor parameters

```
sp_configure "sql text pipe active",1
go
sp_configure "statement pipe active",1
go
sp_configure "statement statistics active",1
go
sp_configure "max SQL text monitored",2000
/* will need to restart server for this one */
go
sp_configure "SQL batch capture",1
go
sp_configure "sql text pipe max messages",2000
go
sp_configure "per object statistics active",1
go
sp_configure "statement pipe max messages",2000
go
sp_configure "per object statistics active",1
go
sp_configure Monitor
/* this command will display all the Monitor
parameters */
go
```

Running Monitor parameters

This command starts the monitor. If the monitor is not running, the Query Status agent starts. Stopping the agent also stops the monitor.

```
sp_configure "enable monitoring",1
go
```

This command stops the monitor

```
sp_configure "enable monitoring",0
go
```

Changing the agent attributes

1. Change to the directory where you installed Operations Console.
2. Change to the *ua/plugins/com.sybase.rap.querystatus* directory on Windows, or *ua/plugins/com.sybase.rap.querystatus* directory on UNIX or Linux.

3 Open *agent-plugin.xml* with an editor.

4 Change the *value* attribute on the following line to *true*.

```
<set-property
property="querystatus.use.monitor.tables"
value="false" />
```

Changing the query strings to monitor

Query properties reside in this file: *<OpsConsoleInstall>\ua\plugins\com.sybase.rap.querystatus\QueryStatusMsg.xml*. To list the query strings to monitor, refer to QueryStatusMsg.xml.monitor for examples.

Query Status agent will look up the query string in the mda tables and report statistics. From the last time the query was run. If the query did not run within the last collection Time, there will be no statistics for that query.

Modifying agent start properties

Agents begin broadcasting as soon as you start UAF. Changing the start properties of agents prevents them from broadcasting statistics.

Applies to

These instructions apply to the following agents: Batch File Monitor, File Load Agent, Server Status, Data Synch, Query Status.

❖ **Changing the start properties of an agent**

1 Open a command window.

2 Change to the directory where you installed Operations Console.

3 Change to *ua\plugins* on Windows, or *ua/plugins/*on UNIX or Linux.

4 Choose an appropriate domain or directory.

Choose this domain	To modify this agent
com.sybase.rap.rapbfap	Batch File Monitor
com.sybase.rap.rapflap	File Load Agent
com.sybase.rap.serverstatus	Server Status
com.sybase.rap.datasynch	Data Synch
com.sybase.rap.querystatus	Query Status

5 Open *agent-plugin.xml* with an editor.

6 Change the *value* attribute on the following line to *false*:

```
<set-property property="<agent>.start.agent.onload
value="true" />"
```

Starting Web Monitor

Use these instructions to start Web Monitor.

UNIX or Linux

❖ **Starting the Web Monitoring Console on UNIX or Linux**

1 Open a terminal window.

2 Change to the Operations Console installation directory.

3 Change to */WebMonitoringConsole/bin*.

4 Use this command to start the Web Monitor application server:

```
startup.sh
```

5 Start your Web browser and point to this address:

```
http://<hostname>:8080/
```

Where <*hostname*> is the name of the machine running Web Monitor.

Windows

❖ **Starting Web Monitor on Windows**

Use the shortcuts on your desktop to control agents and start Web Monitor.

1 Click the Start Risk Analytics Platform 3.0 Agents shortcut on your desktop.

2 Click the Start Web Console shortcut.

3 Start your Web browser and point to this address:

```
http://<hostname>:8080/
```

Where <*hostname*> is the name of the machine running Web Monitor.

Stopping Web Monitor

UNIX or Linux

1 Close your Web browser.

2 Open a terminal window.

3 Change to the Operations Console installation directory.

4 Change to the */WebMonitoringConsole/bin* directory.

5 Use this command to stop the Web Monitor application server:

```
./shutdown.sh stop
```

Uninstalling Operations Console

Before you uninstall Operations Console, stop Web Monitor.

UNIX and Linux

To uninstall Operations Console on UNIX and Linux, run *$RAP30/_uninst2/Uninstall.sh*. The uninstall program deletes only local files.

Note All selected features are uninstalled, even if the feature name does not appear on the summary list.

Windows

To uninstall Operations Console on Windows, use Add or Remove Programs in Control Panel.

CHAPTER 2

Administering Operations Console

About this Chapter

The Operations Console Web Monitor includes all the tools required to configure, fine-tune, and maintain Operations Console. This chapter provides a breakdown of an administrator's responsibilities, introduces the working environment, and takes you through each task you perform to administer Operations Console.

Contents

Overview

An Operations Console Web Monitor administrator's activities include postinstallation configuration, performance analysis, and maintenance. A summary of these tasks appears below.

Task	Description
Define the agent plug-ins and services you want to monitor	Agent plug-ins monitor and report on specific system activities. Defining an agent initializes a listener that intercepts all messages broadcast by that agent. See "Agents" on page 23 for more information.
Configure optional components and services	Although most configuration properties are set during installation, you may want to update some properties to reflect your environment. For example, properties for the primary cache server are always set during installation; properties for a secondary cache server must be configured manually. See "Configuration Properties" on page 26 for more information.
Identify the monitoring properties of specific agents	Defining an agent initializes a listener that intercepts all messages broadcast by that agent. A monitoring property represents a single thread of all messages broadcast by that agent. See "Monitoring Properties" on page 29 for more information.
Create panels that contain views of system operations	A panel contains all the monitoring properties that define a view. For example, you may want to add a panel that contains all elements required to alert an operator when a batch file delivery occurs. See "Panels" on page 31 for more information.
Associate operators with specific agents and panels	An operator can be a user, group or class of users. You can configure Web Monitor to notify specific operators about system conditions. See "Operators" on page 33 for more information.
Define exceptions and alerts about critical system conditions	When an event occurs outside of normal operating parameters, Web Monitor generates an exception and notifies an operator that something unexpected happened. See "System Exceptions" on page 37 for more information.
Monitor operations and services	Console panel provides a current system snapshot. See "Console" on page 43 for more information.
Debug problems with Web Monitor	Web Monitor stores debugging information in the *rap_opsconsole.log*. All log entries are based on settings in the *log4j.properties* file. See "Debugging" on page 45 for more information.

❖ **Logging in as administrator**

1 Start your Web browser and point to this address:

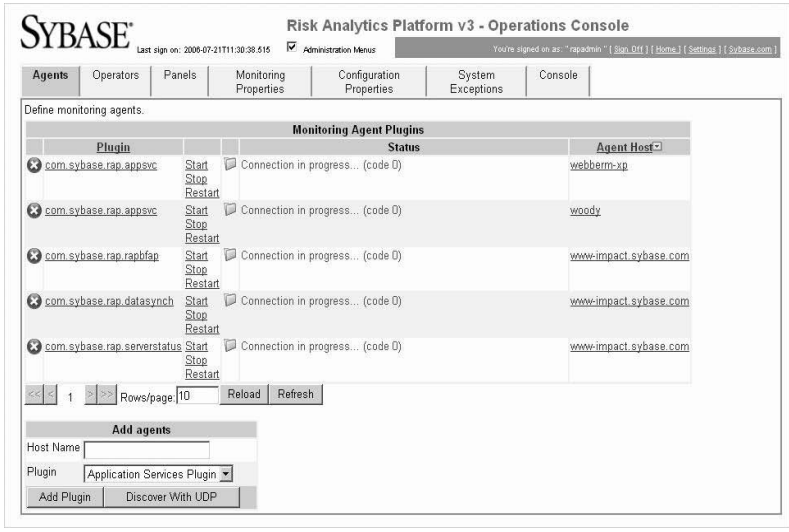
```
http://<hostname>:8080/
```

2 In the User box, type rapadmin.

3 Click Sign In.

Administration mode

Logging in as rapadmin opens Web Monitor Administration mode. Administration mode consists of a banner, seven tabbed panels, Workspace, and an optional set of page tools. When an administrator logs in to Web Monitor, the Agent panel is in focus. To change the focus to another panel, click that panel's tab.



Panels

Panels are associated with specific tasks.

Panel	Task
Agents	Define the agent plug-ins and services you want to monitor.
Operators	Create panels that contain views of system operations.
Panels	Associate operators with specific agents and panels.
Monitoring Properties	Identify the monitoring properties of specific agents.
Configuration Properties	Configure optional components and services.
System Exceptions	Define exceptions and alerts about critical system conditions.
Console	Monitor operations and services.

Workspace banner

The Workspace banner is a static region at the top of the page that includes a menu bar with shortcuts to some common functions.

Shortcut	Description
Administration Menus	Toggles Web Monitor between Administrator and User views
Sign off	Logs you off and displays the Welcome page
Home	Displays the Welcome page
Settings	Open the Application Settings page, which displays the repository settings
Sybase.com	Opens the Sybase home page

Workspace

A panel can contain one or more panes that define the Workspace. The Agents panel, for example, contains a single pane that contains all defined agent plug-ins. Other panels contain multiple panes. For example, the Monitoring Properties panel includes a pane for available monitoring properties and a pane that for selected properties.

In many cases, selecting an object moves that object from one pane to another. On the Monitoring Properties panel, for example, choosing an Available Monitoring Property moves that property to the Selected Monitoring Properties pane.

Display options

Panels can also contain different display options, including filters and selected property options.

Option	Description
Filters	Web Monitor's default behavior is to display all object properties. Applying a filter can limit the view to objects whose properties you want to see.
Selected property options	Selected property options differ from panel to panel. Some options restrict your view to specific properties; others drill deeper into a particular property.

Icons

Panels share a common set of icons.

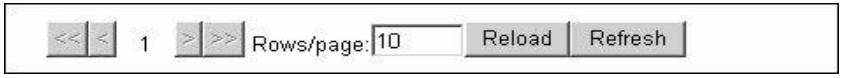
Icon	Name
	Add
	Delete
	Details
	Save
	Update
	Validate

Page tools

Page tools appear below the Workspace. They include navigation and display objects.

- The number of rows per page determines how many objects appear on a page. Increasing or decreasing the number of rows can also increase or decrease the number of pages.

- Navigation controls move you from page to page. You can navigate by page number or arrow control. Single-arrow controls move one page at a time. Double-arrow controls move to the first or last page in a page sequence.
- Display options include the Reload and Refresh buttons. Click Reload to reload objects on the page. Click Refresh to make sure you have the latest version of the page.

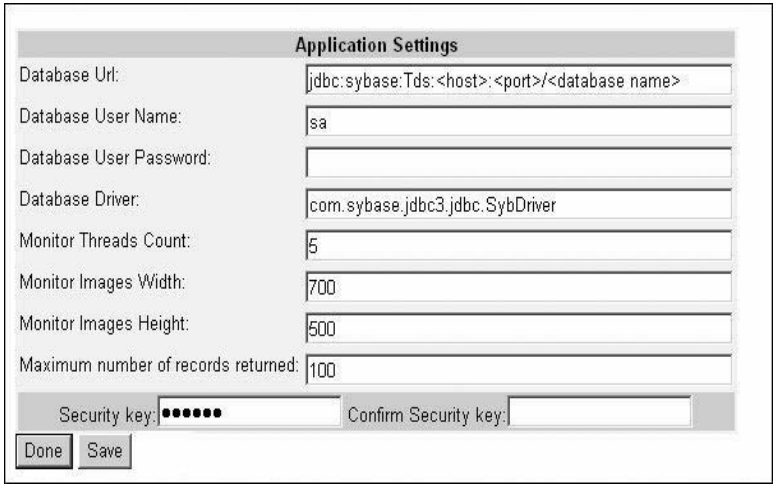


Security key

Some panels include functions that require a security key. By default, the security key is `sybase`.

Settings

The settings panel displays application settings for the Operations Console repository. Operations Console sets these initial application settings during the install.



❖ **Changing the application settings**

1 On the menu bar below the product name, click Settings.

2 On the Application Settings panel, change the appropriate values.

3 In the Confirm Security key box, type the Security key.

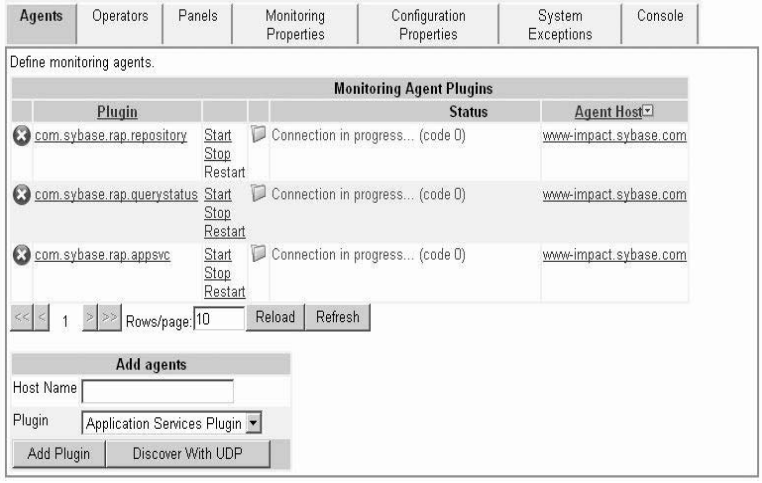
4 Click Save.

5 Click Done.

Agents

Agents monitor and report on specific system activities. Although agents begin broadcasting as soon as you start them, you must define each agent whose activities you want Web Monitor to track.

Defining an agent plug-in allows you to monitor the status of that agent.



Defining Agents

You can define individual agents on a specific host or use a discovery mechanism to locate all available monitoring agents.

Adding specific agents

To add specific agents to Web Monitor, you must identify the host and name of each agent plug-in you want to define. After you define an agent plug-in, Web Monitor tries to establish a connection to that plug-in. Messages in the Status column indicate the state of connection.

❖ **Adding agents to Web Monitor**

1 Click Agents.

2 Specify the host name.

3 Choose a plug-in from the drop-down box.

4 Click Add Plug-in.

5 Repeat these steps for each agent you want to define.

Discovering agents with UDP

Agents broadcast messages on a subnet using User Datagram Protocol (UDP). As an alternative to adding agents manually, you can use a UDP discovery mechanism to detect agents broadcasting on the subnet.

Clicking Discover with UDP opens a listener on the subnet and broadcasts a request for information. Any agents that respond to the request become part of Web Monitor.

Starting and stopping agents

Once you establish a successful connection to an agent, Web Monitor listens to that agent as long as the agent remains active. You can, however, change the status of the agent, or remove it from the panel entirely.

If you want to...	Do this...
Stop an Agent	Click Stop in the cell next to the plug-in name.
Start an Agent	Click Start in the cell next to the plug-in name.
Restart an Agent	Click Restart in the cell next to the plug-in name.
Remove an Agent	Click the Delete icon next to the plug-in name.

Monitoring the state of an agent

Web Monitor displays status messages and codes that describe the state of an agent.

Status

Status messages tell you about the state of an agent:

- Running
- Not loaded
- Stopped
- Anything else that flags a potential problem

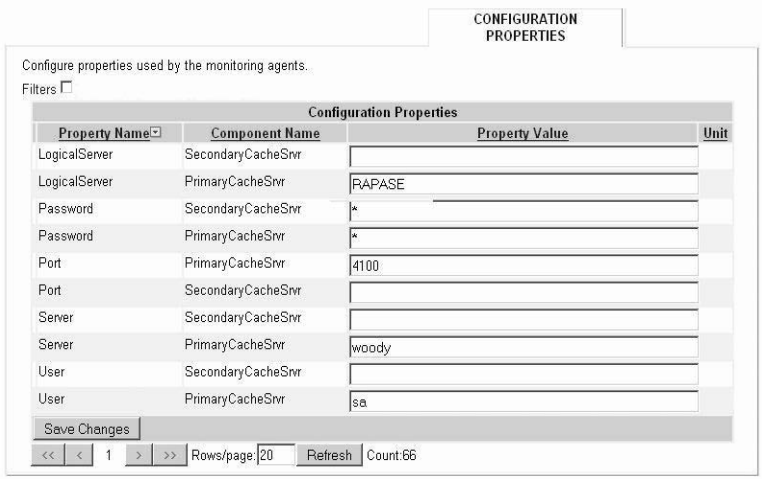
Status codes

Status codes indicate the state of an agent or the severity of a potential problem:

- Code 0: OK
- Code 100: warning
- Code 200: error
- Code 300: severe

Configuration Properties

Although most configuration properties are set during installation, you may want to update some properties to reflect your environment. For example, properties for the primary cache server are always set during installation; properties for a secondary cache server must be configured manually.



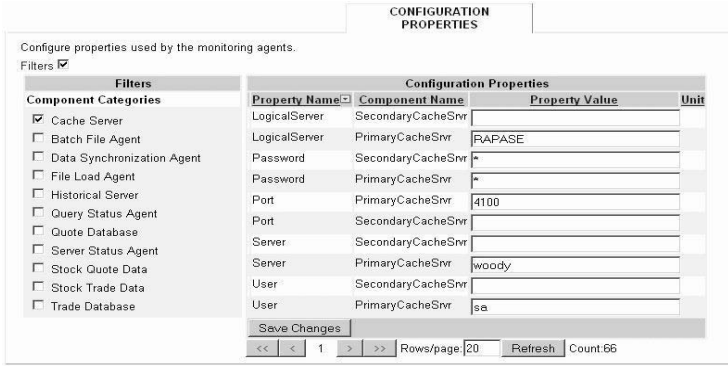
Component categories

Configuration properties are grouped by category. Each category is associated with an agent plug-in.

Category	Description
Cache Server	Primary and secondary cache server properties
Batch File Agent	Inbound data monitor properties
Data Synchronization Agent	Collection time interval
File Load Agent	VLDB and Cache server load properties.
Historical Server	VLDB server properties
Query Status Agent	Collection time interval
Quote Database	Quote database name properties
Server Status Agent	Collection time interval
Stock Quote Data	VLDB and Cache stock quote table properties
Stock Trade Data	VLDB and Cache stock trade table properties
Trade Database	VLDB and Cache trade database properties

Applying Filters

By default, Web Monitor displays configuration properties for all components. Applying a filter limits the view to the components you want to see. To display a list of filters, click Filters, then choose the component or components whose properties you want to see.



Updating properties

All configuration properties are stored in the repository, and any configuration change you make updates the repository. You must restart the appropriate agent plug-in for configuration changes to take place.

❖ **Updating configuration properties**

1 Click Configuration Properties, then click Filters.

2 On the Filters pane, choose the component whose properties you want to change.

3 Update the appropriate property or properties.

4 Click Save Changes.

5 Click Agents.

6 Restart the appropriate agent plug-in.

Deleting data from the cache database

You may want to set the configuration properties of the DataSynch agent to periodically purge records from the RAPCache database.

Method for deleting data in CacheDB

You can assign four possible values to the `Method for deleting data in CacheDB` property.

Value	Description
""	Double quotation marks is the default value. Setting `Method for deleting data in CacheDB` to this value means that no data is deleted from the cache database.
hour	The earliest hour of data will be deleted at startup and then every hour after that.
day	The earliest day of data will be deleted once per day at the scheduled time.
truncate	This option truncates the trade and quote tables once per day at the scheduled time.

Minimum amount of data to retain in CacheDB

The `Minimum amount of data to retain in CacheDB for types hours and days` property determines how long Operations Console retains data in the cache database. For example if the `Method for deleting data in CacheDB = hour` and you want to keep at least 4 hours of data in the cache database this value should be 4.

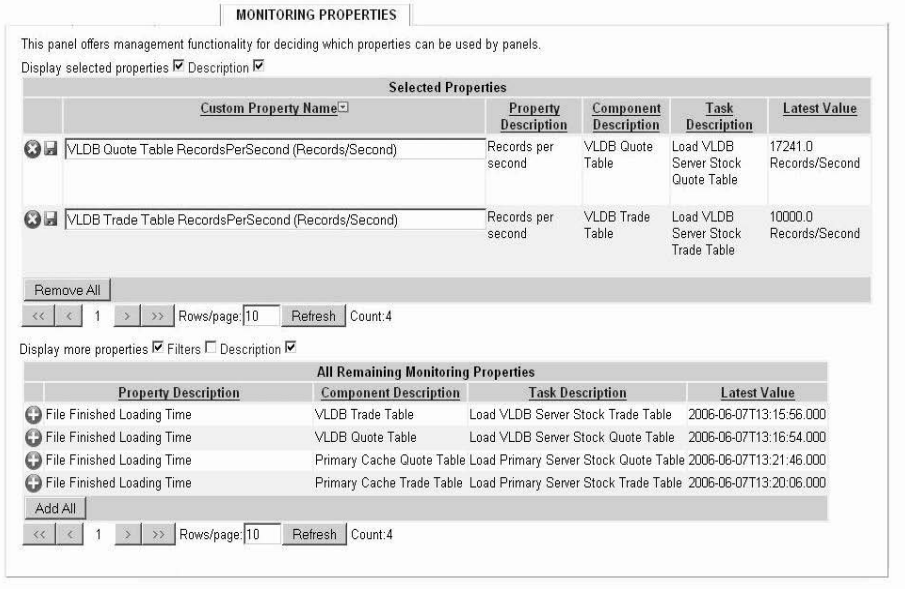
Time of day to run delete

The `Time of day(HH:MM) to run delete for types day and truncate` property determines when Operations Console deletes and truncates the cache database. Format is (`hh:mm`) on a twenty-four hour clock (valid `hh` values: `01-24` value MM values `00-59`).

Monitoring Properties

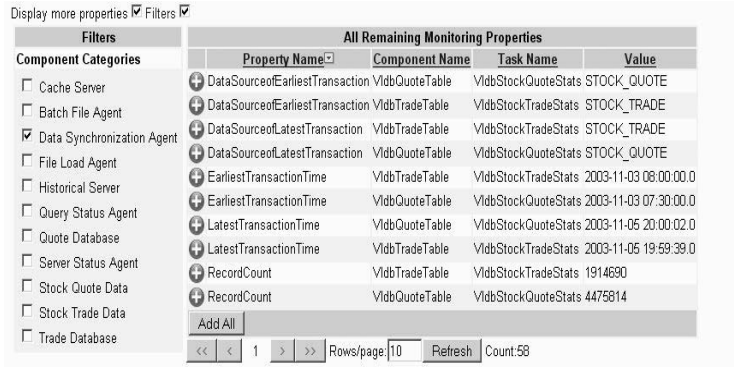
Defining an agent initializes a listener that intercepts all messages broadcast by that agent. Operations Console writes all of these messages to the repository database at collection intervals determined by the operator. A monitoring property represents a single thread of all messages broadcast by that agent.

Although all monitoring properties are available, you must define each property you want Web Monitor to observe, and then add the properties to a panel. Monitoring properties become available only when the system runs and publishes its first statistics.



Applying Filters

By default, Web Monitor displays monitoring properties for all components. Applying a filter limits the view to the components whose properties you want to see. To display a list of filters, click Filters, then choose the component or components whose properties you want to see.



Available and selected properties

The Monitoring Properties panel includes a list of custom or selected properties and an available or remaining properties list. To monitor an agent's property, you choose an item from the available property list. Web Monitor creates a custom property definition based on the monitoring property you selected.

❖ **Adding monitoring properties**

1 From the list of remaining properties, click the Add icon next to the property you want to monitor.

Web Monitor adds a custom property to the selected properties list. The custom property name is a concatenation of the component name and property name of the monitoring property you selected. You can change the property name if you want.

2 Click the Save icon to save the new property.

Removing monitoring properties

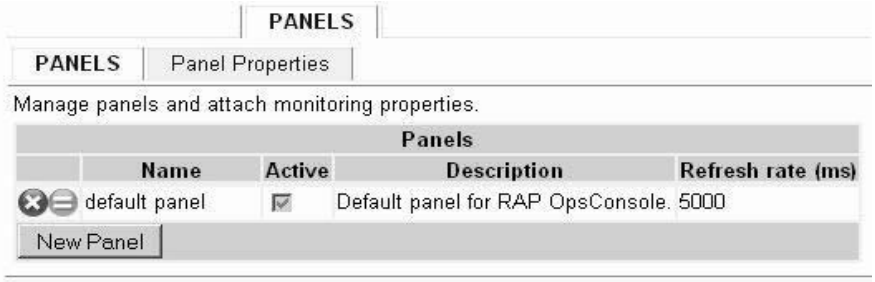
Click the Delete icon next to the property you want to delete. Deleting an item from the selected properties list returns that item to the available properties list.

Property view

You can restrict the items that appear on the monitoring properties panel. Click Display selected properties to see only those items you selected. Click Display all properties to display deselected items.

Panels

After you define the properties you want to monitor, you attach some or all or those properties to one or more panels. A panel is a container object you can use to create distinct operational views. For example, you can create a panel with properties that monitor input directories for incoming batch files, and another panel that monitors the status of the cache database.



New Panels

You must add a new panel for each operational view you want to create. New panels do not contain monitoring properties. You attach monitoring properties to a panel on the Panel Properties panel.

❖ **Adding a new panel**

1 Click Panels | New Panel.

2 Identify the new Panel.

3 Determine whether you want the panel to be active or inactive.

4 Determine the refresh interval in milliseconds.

5 Describe the panel. This is optional.

6 Click Save.

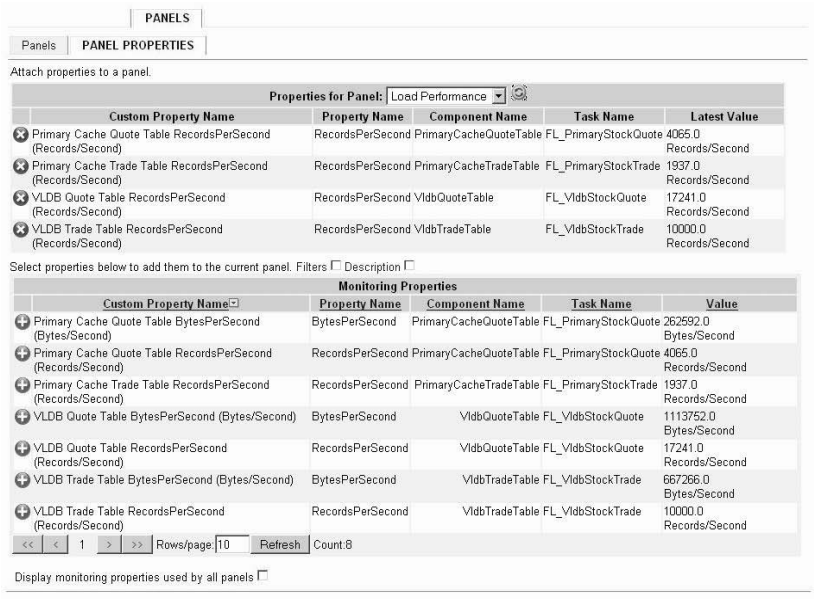
Modifying panels

Administrators can modify or delete a panel.

- To change a panel's properties, click the Details icon next to the panel. Change the appropriate values on the properties page.
- To delete a panel, click the Delete icon next to the panel.

Panel properties

On the Panel Properties pane, you associate a panel with monitoring properties. The Panel Properties panel includes a *panel properties* pane and *monitoring properties* pane. To associate a panel with a property, choose an appropriate panel, and then select an appropriate property.



Applying Filters

By default, Web Monitor displays all available monitoring properties. Applying a filter can limit the view to the properties you want to see. To display a list of filters, click Filters, and then choose an agent to see the properties for that agent.

- For more information about properties, components, and tasks in the monitoring properties list, click Description.
- To display a list of monitoring properties attached to other panels, click the Display monitoring properties used by all panels.

❖ **Adding properties to a panel**

1 Click Panels | Panel Properties.

2 From the Properties for Panel drop-down, choose a panel.

3 Click the Add icon next to the property you want to add to the panel.

4 Repeat step 3 for each additional property you want to add.

Modifying panel properties

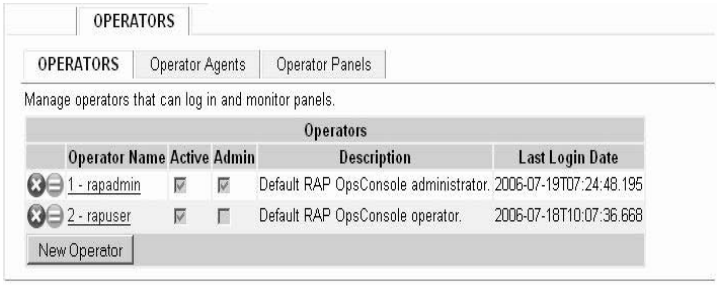
Administrators can modify or delete a panel's monitoring properties.

- To delete a property from a panel, click the Delete icon next to the property.
- To modify a panel's properties, choose the panel you want to change, then make the appropriate changes.

Operators

Operators monitor statistics, the data-file load process, system alerts, and monitoring agents. You can restrict an operator's view to specific agents and panels.

To create an operator whose responsibilities include monitoring the status of the cache servers, for example, you associate the operator with the Server Status agent plug-in, and a panel that contains ServerStatus monitoring properties.



New Operators

A new operator can represent a user, group or class of users. An operators can be an administrator or user, but operators as a class can access only Operator mode. Only the default administrative user, rapadmin can access Administrative mode, create new operators, assign roles, and create views.

❖ **Adding new operators**

1 Click Operators | New Operator.

2 On the properties page, identify the new Operator.

3 Create a password. This is optional.

4 Describe the operator. This is optional.

5 Determine the operator's status. Operators can be active or inactive. Inactive operators cannot log in to Web Monitor.

6 Identify the operator's user class:

- Click the Admin box to create an Administrator.
- Clear the Admin box to create a rapuser.

7 Click Save.

Modifying operators

Administrators can modify or delete an operator.

- To change an operator's properties, click the Details icon next to the operator. Change the appropriate values on the properties page.
- To delete an operator, click the Delete icon next to the operator.

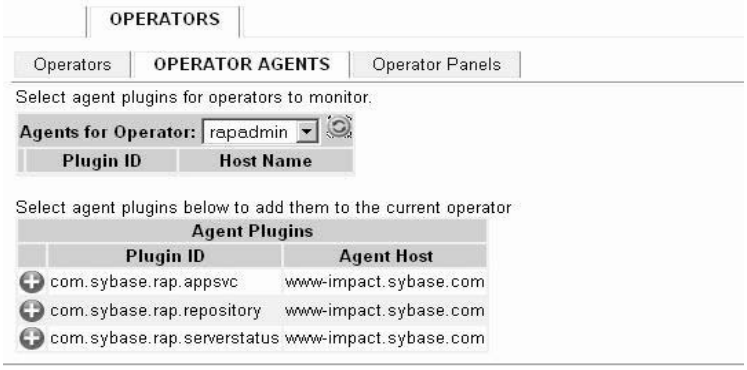
Displaying panels for all operators

Click Display panels for all operators to see a list of panels associated with each operator.

Operator Agents

You can associate an operator with one or more agents. Associating an operator with an agent gives that operator access to all of the monitoring properties of the agent.

To create an operator whose responsibilities include monitoring the status of the cache servers, for example, you associate that operator with the Server Status agent plug-in.



❖ **Assigning an agent to an Operator**

1 Click Operators | Operator Agents.

2 Choose an Operator from the drop-down box.

3 Click the Add icon next to the plug-in you want to assign to the operator.

4 Repeat step 2 for each plug-in you want to assign to the operator.

If you want to remove an agent currently assigned to the operator, click the Delete icon next to the plug-in name.

Removing assigned agents

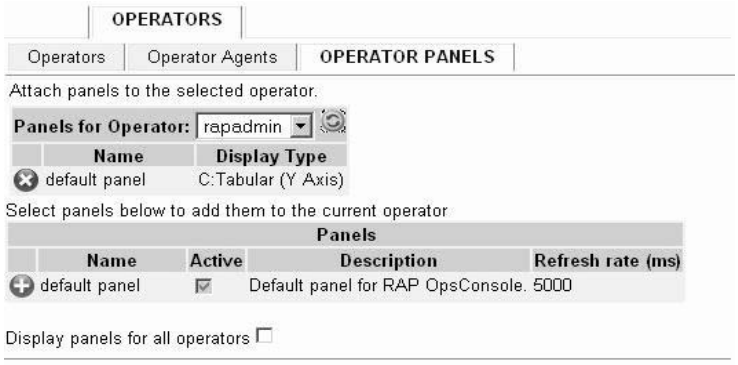
Administrators can remove an agent associated to an operator:

- To remove an agent currently assigned to the operator, click the Delete icon next to the plug-in name.

Operator Panels

Although an operator can see only information from an agent associated with that operator, a panel can contain multiple views and different perspectives. A view is restricted to those items associated with a particular operator. A perspective is a view restricted to one operator who shares the same panel as another operator.

For example, three operators might share the same panel. The first operator monitors the status of the RAPCache server; the second monitors the status of the VLDBServer; and the third watches batch file deliveries. All operators share the same panel, but see only what they are supposed to see. Agent associations determine the operator perspective.



❖ **Assigning a panel to an Operator**

1 Click Operators | Operator Panels.

2 Choose an Operator from the drop-down box.

3 Click the Add icon next to the panel you want to assign to the operator.

4 Repeat step 3 for each additional panel you want to assign to the operator.

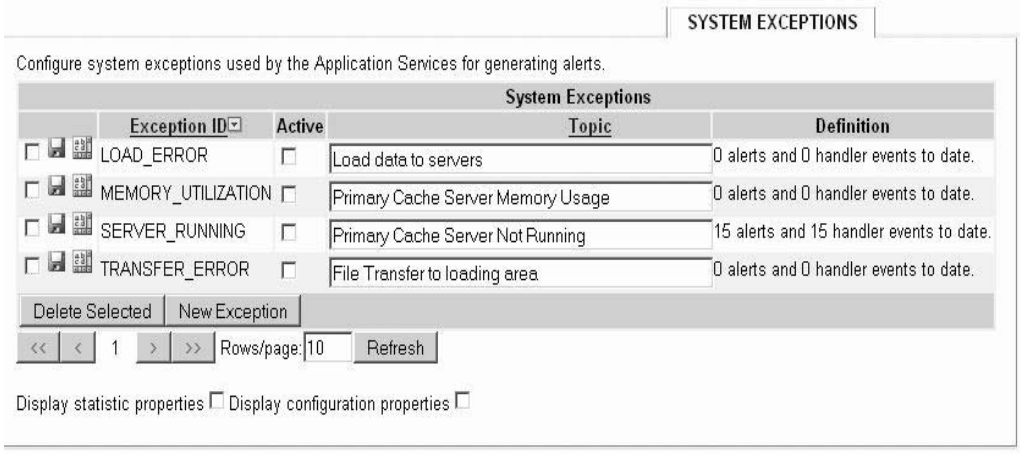
Deleting panels

Administrators can remove a panel associated with an operator:

- To delete a panel, click the Delete icon next to the panel.

System Exceptions

An alert exception defines one or more conditions. When conditions defined in the exception are met, Web Monitor generates an alert. Although Web Monitor includes a number of standard exceptions, you can use the options on the System Exceptions panel to create alerts specific to your environment.



Adding new exceptions

Web Monitor configures each alert in its own XML file, and registers the alert in the repository database. Alert exceptions are written in XML. See the *..\plugins\com.sybase.rap.appsvc\systemExceptionsSamples* directory for sample exception files.

❖ Creating a new exception

1 Click System Exceptions | New Exception.

Web Monitor inserts a new item in the list of system exceptions.

2 Replace the New Exception string in the Exception ID column with an appropriate Exception ID.

3 Replace the New Topic string in the Topic column with a short description of the exception.

4 Click the Details icon to open a configuration window.

5 Configure the exception.

6 Click the Details icon to close the definition.

7 Click the Save icon

Modifying exceptions

Administrators can change or delete exceptions.

- To change an exception's status, click the check box in the Active column. Application services agents recognize only active exceptions.
- To delete an exception, click the check box next to the exception, and click Delete Exception.
- To change an exception, click the Details icon, change the rules, close the definition window, and save your changes.

Processing complex exceptions
You may need to increase the number of worker threads in the *com.sybase.rap.appsvc* plug-in to process complex exceptions. See "Creating complex exceptions" on page 42 for more information.

Understanding the structure of exceptions and alerts

All exceptions and alerts are written in XML. An exception configuration has four nodes: exception, acquire, handler and dispatcher.

```
<?xml version="1.0" encoding="UTF-8"?>
    <exception version="1.1" interval="5000">
        <acquire/>
        <handler logic="AND"/>
        <dispatcher/>
    </exception>
```

Exception

The root of the exception XML is exception where the version attribute is `1.1` (fixed for this release) and interval attribute is `5000` in milliseconds (user can enter any value). The interval attribute determines how often Web Monitor checks the exception conditions against the data to generate alerts.

Acquire

The acquire node describes statistics (data) collected from the repository to test the exceptions. You can also define constants. For example, an acquire node in the XML may look like this:

```
<acquire>
   <statistic name="RC">
       <propertyName>RecordCount</propertyName>
       <componentName>BF_BatchFileMon</componentName>
       <taskName>BF_BatchFileMon_Task1</taskName>
    </statistic>
    <constant name="RCMax">
       <type>java.lang.Double</type>
       <value>30000</value>
    </constant>
    <constant name="RCMin">
       <type>java.lang.Double</type>
       <value>10000</value>
    </constant>
</acquire>
```

In this example, the statistic element defines the data the exception definition collects. The statistic element includes a name attribute. The propertyName is an element that defines the property whose value will be collected. A property is distinguished from other same name properties by the componentName and taskName elements. So, a property with a componentName element and taskName element is identified uniquely. For a list of configuration properties, component name and task name, see Appendix A, “Operations Console Properties.”

A constant element is a child of the acquire element. constant elements are defined for a specific purpose. In this example we have two constants, `RCMax` (Record Count Max) and `RCMin` (Record Count Min), defined as double. The type element is a child of the constant element. type elements define a Java data type, such as Integer or Double.

Handler

The handler element evaluates the expression or conditions for the alert. An expression can be active or disabled. Each expression (evaluation) is defined using valid operators which are defined as: `lesser`, `lesser_equal`, `equal`, `greater_equal`, `greater` and `lesser_greater`. There can be more than one expression in this section.

logic attribute

logic is an attribute of the handler element. The logic attribute defines how Web Monitor evaluates the expressions:

- If logic=OR, then any expression evaluated as true raises the alert.
- If logic=AND, then all expressions must be true to raise an alert.
- If logic=XOR, then if one of the expression is false and one is true then it raises the alert.
- If there is only one expression then OR, XOR and AND have the same result.

source element

The source element is a child of the handler element. In the expression evaluation, source defines the name of the statistics group defined in the acquire section.

target element

The target element is a child element of the handler element. The target points to the constant which the expression is evaluated.

Example

The XML below evaluates the following:

```
RecordCont <= 10000
RecordCount >= 30000
```

If any one of these conditions are satisfied, an alert is generated.

```
 <handler logic="OR">
    <eval active="True">
        <source>RC</source>
        <operand>lesser_equal</operand>
        <target>RCMin</target>
    </eval>
    <eval active="True">
        <source>RC</source>
        <operand>greater_equal</operand>
        <target>RCMax</target>
    </eval>
</handler>
```

Dispatcher

The dispatcher node determines what happens when an alert is generated:

- Display the alert in Web Monitor Console.
- Execute a command on a machine where an agent is running.
- Notify an operator about the alert by E-mail.

Only active dispatchers handle alerts. You can have more than one type of dispatcher for each alert. For example, if two active dispatchers are set to send e-mail and execute a command for an alert, then dispatchers are executed when alert occurs

Severity levels

Alert has four different severity levels: `DEBUG`, `INFO`, `WARNING` and `ERROR`. `ERROR` is the highest severity level. The audit attribute indicates whether Web Monitor saves the alert in the repository database. If audit=`true`, the alert is saved in the database. Only alerts that you can audit are saved in the monitoring database and displayed on the Alerts panel.

Console element

The console element displays alerts in the agent log files. The message element is a child of the console element that defines the message the user wants to display. The printException element is a child of the console element that defines whether you want to print the stack trace in the log. You can also choose to display an exception in the XML by setting the xmlType attribute to true.

rsh element

The rsh element is a child of the dispatcher element that asks a remote agent to execute a command on that machine/host. The command element is a child of the rsh element that identifies the command you want to execute when the alert occurs. The command element can also include the script name and any additional arguments.

The workingDirectory element identifies the directory from which the command is executed. The synchronous element defines whether command will be executed synchronously and asynchronously. In synchronous mode, the caller waits to get the result back from the command execution (success, exceptions). The user and password elements contain login information to the host. The url defines the host element and port number that the agent is running. For example: `url="rmi://localhost:9999"`.

Example

This example demonstrates how you can setup an E-mail receiver to notify an operator an alert. Besides the appropriate E-mail ids, this example shows you how to include SMTP information, subject and description lines, and Mime Type. You can send E-mail alerts in text, HTML, and XML format.

```
<dispatcher>
    <console active="True" severity="INFO" audit="False" available="">
        <message>Occurs console alert</message>
        <printException xmlType="False">True</printException>
    </console>
    <rsh active="False" severity="INFO" audit="False" available="">
        <description>RAP Sample script test.cmd</description>
        <command>c:\test.cmd any arguments like Hello world!</command>
        <workingDirectory>c:\</workingDirectory>
        <synchronous>True</synchronous>
```

```
        <url>[host name]</url>
        <user>uafadmin</user>
        <password />
    </rsh>
    <mail active="True" severity="INFO" audit="True" available="">
        <severity>error</severity>
        <host>smtp.[domain name]</host>
        <from>[sender's email address]</from>
        <to>[recipient's email address]</to>
        <cc />
        <bcc />
        <header>key1=value1</header>
        <subject>RAP3.0 AppSvc - Statistic email alert v1.2</subject>
        <description>This sample email alert is generated from RAP
application services and is intended for internal use only. This
code can be customized by users for each exception. below the
exception content as HTML.</description>
        <mimeType>text/html</mimeType>
    </mail>
</dispatcher>
```

Creating complex exceptions

The AppSvc plug-in uses two worker threads to process exceptions. You may need to increase the number of worker threads handle complex exception, or a large number of exceptions. Insufficient number of threads does not yield to an error, but can delay the processing of system exceptions. The AppSvc plug-in will warn of insufficient number of threads into the agent log file.

❖ **Increasing the number of worker threads**

1. Click Agents.
2. Stop the *com.sybase.rap.appsvc* plug-in.
3. Open a command window.
4. Change to the directory where you installed Operations Console.
5. Change to *ua\plugins\com.sybase.rap.appsvc* on Windows, or *ua/plugins/com.sybase.rap.appsvc* on UNIX or Linux.
6. Open *agent-plugin.xml* with an editor.
7. Increase the value of .*threads_count* attribute on the following lines:

```
<set-property
```

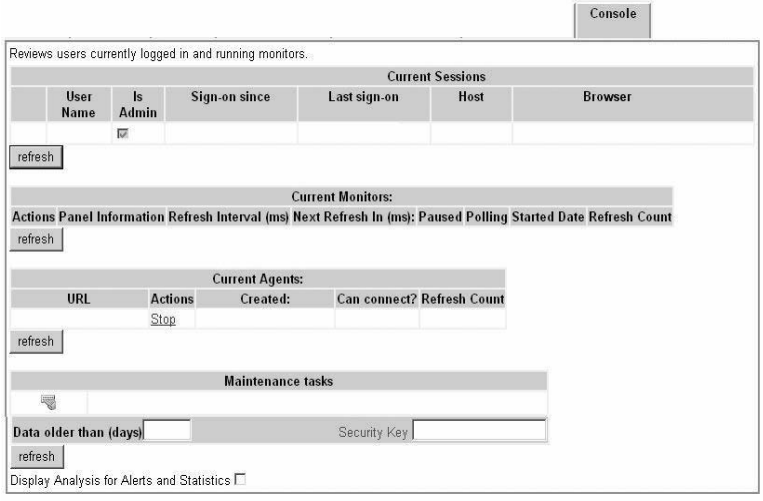
```
property="appsvc.acquire.worker.threads_count"
value="2" />

<set-property
property="appsvc.dispatcher.worker.
threads_count" value="2" />

<set-property
property="appsvc.handler.worker.
threads_count" value="2" />
```

Set the number of threads for about one per exception until is a max number of 6 or 7. The total amount of threads necessary to run UA and its plug-ins should not exceed the maximum number allowed by the UAF JVM.

You can tune the JVM with additional command line arguments. Threads in AppSvc plug-in are only used when needed then released for similar tasks to execute, so realistically 6 threads per module should be sufficient to run hundreds of exceptions.

Console

Console panel provides a current system snapshot.



Session monitor

The Console session monitor tracks four activity areas:

Activity	Description
Current Sessions	Identifies the name, status, history, and host name of current system users. Administrators can click `logout` to log out current system users. Click `Refresh` to update your view of the current session.
Current Monitors	Identifies active monitoring panels. Administrators can start or `pause` a panel while an agent reloads, or `resume` a panel you temporarily stopped. Click `Refresh` to update your view of current monitoring panels.
Current Agents	Checks the current status of agents and agent plug-ins. Administrators can `Stop`, `Pause`, `Refresh` an agent.
Maintenance tasks	Clears statistics and alerts that are older than *x* number of days. To set this property: 1 In the Days Older than... box, specify how you want to delete the statistics. 2 In the Security Key box, type the security key. 3 Click `Refresh`.

Alerts and statistics analysis

Click Display Analysis for Alerts and Statistics to see a cumulative statistics and alerts count for the number of days in the Days Older than...box. The graphic below shows a 10-day cumulative count.

Display Analysis for Alerts and Statistics ☑

Analysis for Statistic Count				Analysis for alerts count			
Days Ago	Day	Cumulative	Remaining	Days Ago	Day	Cumulative	Remaining
1	0	0	8468	1	0	0	15
2	0	0	8468	2	0	0	15
3	0	0	8468	3	0	0	15
4	0	0	8468	4	0	0	15
5	4827	4827	3641	5	0	0	15
6	0	4827	3641	6	0	0	15
7	0	4827	3641	7	0	0	15
8	0	4827	3641	8	0	0	15
9	0	4827	3641	9	0	0	15
10	0	4827	3641	10	0	0	15

Debugging

Web Monitor stores debugging information in the *rap_opsconsole.log*. All log entries are based on settings in the *log4j.properties* file. Web Monitor logs all properties with severity level of `INFO` or higher. You can update the default settings any time after installation.

File locations

Depending on installation options, directory locations may vary. Default paths are listed below.

UNIX or Linux

On UNIX or Linux installations, you can find a copy of *rap_opsconsole.log* in the *$RAP30/WebMonitoringConsole/logs* directory. The *log4j.properties* file is stored in the *$RAP30/WebMonitoringConsole/webapps/ROOT/WEB-INF/classes* directory.

Windows

On Windows, you can find a copy of *rap_opsconsole.log* in the *%RAP30\WebMonitoringConsole\logs* directory. The *log4j.properties* file is stored in the *%RAP30\WebMonitoringConsole\webapps\ROOT\WEB-INF\classes* directory.

Structure of log4j.properties

The default values of the properties in *log4j.properties* appear in the listing below. For more information on how to configure *log4j.properties*, please refer to the Short introduction to log4j at http://logging.apache.org/log4j/docs/manual.html.

```
log4j.debug=false
log4j.threshold=DEBUG
log4j.rootLogger=INFO, stdout, rap

log4j.logger.com.sybase.ua=OFF
log4j.logger.com.sybase.security=OFF
log4j.logger.org.apache.commons.modeler=OFF
log4j.logger.com.sybase.rap.management.console=INFO
log4j.logger.com.sybase.rap.management.console.beans=INFO
log4j.logger.com.sybase.rap.management.console.jsf=INFO
log4j.logger.com.sybase.rap.management.console.jsf.component=INFO
log4j.logger.com.sybase.rap.management.console.jsf.events=INFO
log4j.logger.com.sybase.rap.management.console.jsf.model=INFO
log4j.logger.com.sybase.rap.management.console.jsf.renderer=INFO
log4j.logger.com.sybase.rap.management.console.jsf.taglib=INFO
log4j.logger.com.sybase.rap.management.console.util=INFO
log4j.logger.com.sybase.rap.management.console.model=INFO
log4j.logger.com.sybase.rap.management.console.model.spi=INFO

log4j.logger.sun.rmi.transport=OFF
log4j.logger.sun.misc=OFF

# console appender
log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%d %-5p [%t] %c{1}(%F:%L) - %m%n

# file appender (size-based rolling) for RAP
log4j.appender.rap=org.apache.log4j.RollingFileAppender
log4j.appender.rap.File=${catalina.base}/logs/rap_opsconsole.log
log4j.appender.rap.layout=org.apache.log4j.PatternLayout
log4j.appender.rap.layout.ConversionPattern=%d [%-5p] [%t] %c.%M(%F:%L) - %m%n
log4j.appender.rap.MaxFileSize=5MB
log4j.appender.rap.MaxBackupIndex=5
```

CHAPTER 3

Monitoring System Operations

About this Chapter

Operations Console Web Monitor includes all the tools you need to monitor the status of the Sybase Risk Analytics Platform. This chapter provides a breakdown of an operator's responsibilities, introduces the working environment, and describes the tools you use to monitor specific system activities.

Contents

Overview

Operators monitor the Sybase Risk Analytics Platform with privileges determined by the Operations Console system administrator. An operator's view may represent a subset of all system operations, and include access to specific panels, agents, and control operations.

Although specific responsibilities may vary, an operator task breakdown appears below.

Task	Description
Review system status	Review summary status information about the data file loading processes, the monitoring agents, and the system alerts. See "System" on page 52 for more information.
Monitor agents	Review the runtime health of the monitoring agents. See "Agents" on page 53 for more information.
Monitor data file processing	Review information related to the data loading process. See "Data Files" on page 54 for more information.
Check alerts	Review system alerts. See "Alerts" on page 55 for more information.
Set panel display options	Review and modify current display options for panels. See "Panels" on page 56 for more information.

❖ **Logging in as an Operations Console user**

1 Start your Web browser, and point to this address:

```
http://<host name>:8080/
```

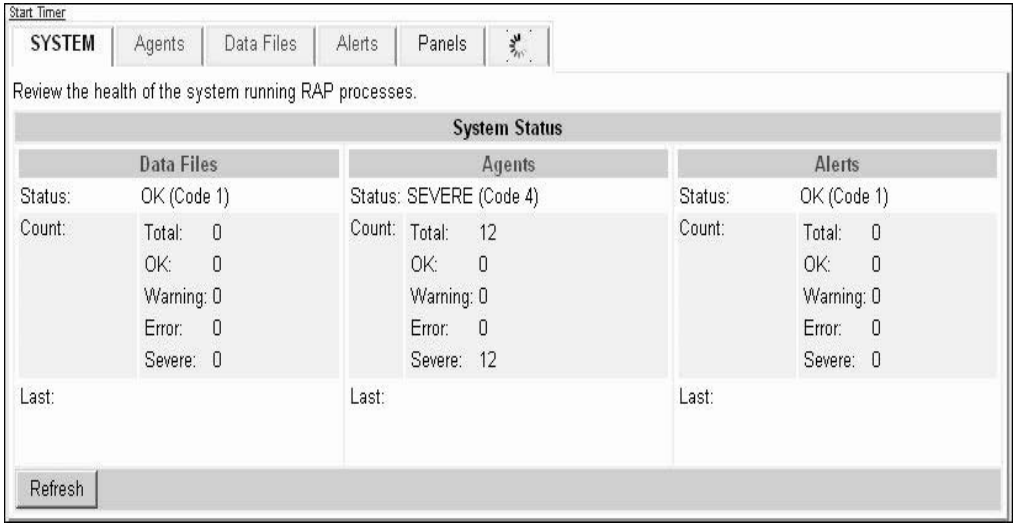
Where <*hostname*> is the name of the machine running Web Monitor.

2 On the Welcome screen, type your user name and password. The default user is rapuser.

3 Click Sign In.

Operator mode

Operator mode consists of a page banner, six tabbed panels, Workspace, and an optional set of page tools. When you log in to Web Monitor, the System panel is in focus. To change the focus to another panel, click the tab of the panel.



Workspace banner

The Workspace banner is a static region at the top of the page, and includes a menu bar with shortcuts to some common functions.

Shortcut	Description
Sign off	Logs you out and displays the Welcome page
Home	Displays the Welcome page
Sybase.com	Opens the Sybase home page on the Web
Start/Stop timer	Toggles the interval timer on and off.

Refresh timer

Web Monitor checks the status of the system at intervals determined by each operator. The default interval is set at 5000 milliseconds. Options on the Interval panel let you to control the refresh rate.

❖ **Setting the refresh interval**

1 Click the Interval panel.

2 Change the Refresh Interval value to an appropriate number in milliseconds.

You can use the controls on the Interval panel to start or stop the timer, or click the shortcut on the Workspace banner.

Workspace

A panel can contain one or more panes that define the Workspace. The Agents panel, for example, contains a single pane that identifies the status of all defined agent plug-ins.

Display options

Panels can also contain different display options, including filters and selected property options.

Option	Description
Filters	Operations Console default behavior is to display all object properties. Applying a filter can limit the view to objects whose properties you want to see.
Selected property options	Selected property options differ from panel to panel. Some options restrict your view to specific properties; others drill deeper into a particular property.

Alerts

Alerts are color-coded to indicate their severity.

- Alerts that appear against a normal background indicate that the status falls within the normal operating range.
- Alerts that appear against a yellow background indicate a warning.
- Alerts that appear against a red background indicate a severe error.

Icons

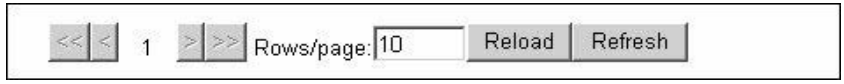
Some panels share a common set of icons.

Icon	Name
	Details
	Monitor

Page tools

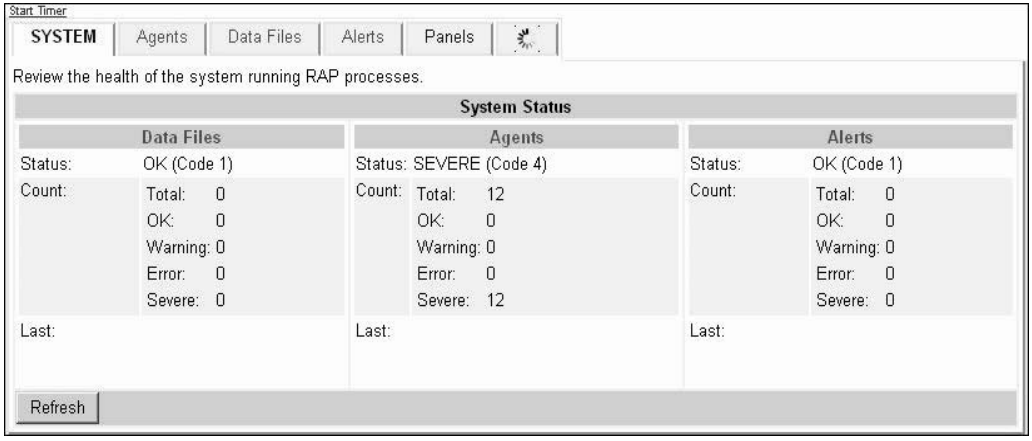
Page tools appear below the Work Area. Page tools include navigation and display objects.

- The number of rows per page determines how many objects appear on a page. Increasing or decreasing the number of rows can also increase or decrease the number of pages.
- Navigation controls move you from page to page. You can navigate by page number or arrow control. Single-arrow controls move one page at a time. Double-arrow controls move to the first or last page in a page sequence.
- Display options include the Reload and Refresh buttons. Click Reload to reload objects on the page. Click Refresh to make sure you have the latest version of the page.



System

The System panel identifies the current status of the system, and notifies you about potential problems.



Status pane

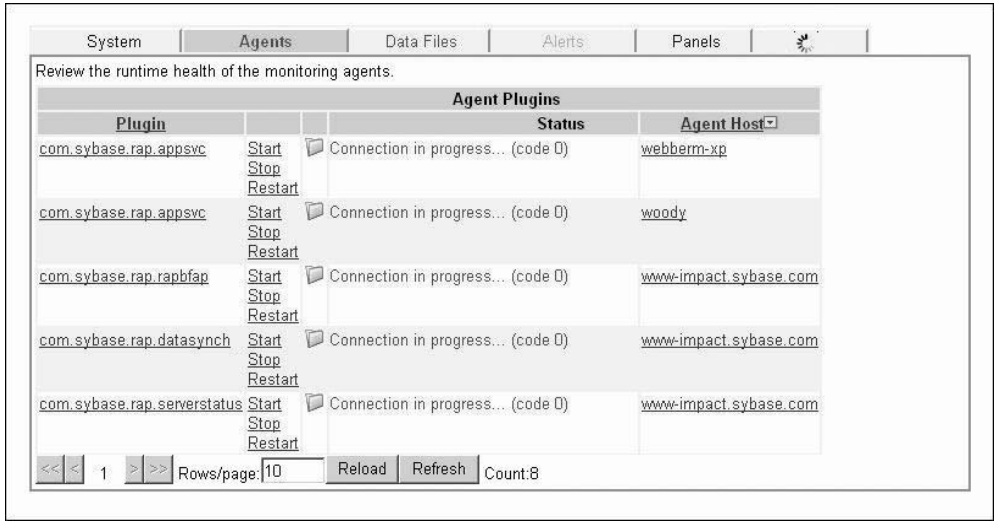
The System Status pane includes three columns: Data Files, Agents, and Alerts.

Pane	Description
Data Files	Summarizes the status of the inbound data directory. Statistics include a count, status, and state of all data deliveries. Web Monitor also identifies the size, time, and record count of the last inbound file.
Agents	Identifies the status of all monitoring agents. Statistics include the status, and state of all agents running on your system. If the status of an agent changes from Code 1 (OK) to Code 2 (Warning), or Code 3 (Severe), Web Monitor identifies the agent, host, and problem.
Alerts	Identifies potential problems and summarizes past alerts. Statistics include a tally of past alerts. If a real or potential problem occurs, Web Monitor displays a message that explains the problem and tells you when the exception occurred.

Agents

The Agents panel identifies the agents associated with a particular view. A view determines what activities you see when you log in to the system.

The Operations Console Web Administrator creates a view by associating an operator with one or more agents, which gives that operator access to all the monitoring properties of those agents. A view may reflect some or all of the monitoring properties of those agents.



Panel properties

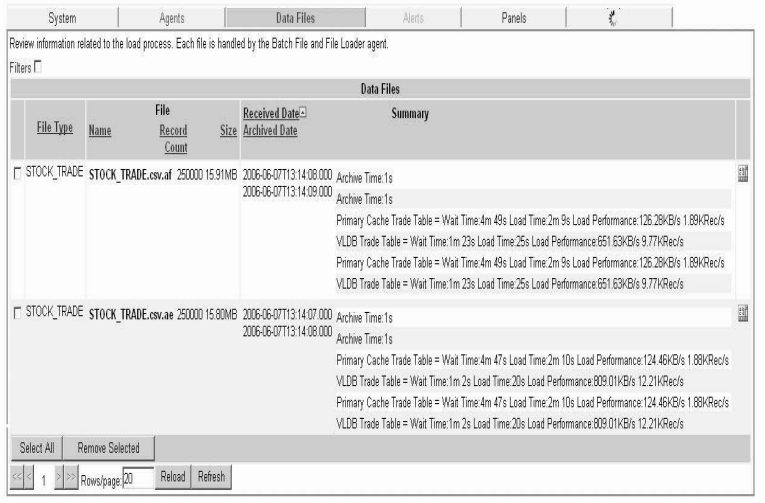
For each agent plug-in, the Agents panel lists the plug-in name, the status of the plug-in, and the host name of the agent. On the Agents panel, you can:

- Control the behavior of the plug-in by clicking Start, Stop, or Restart next to the name of the plug-in.
- Display the information in the agent log by clicking the file folder icon for the plug-in.
- Sort by plug-in name or agent host by clicking on the column header Plug-in or Agent Host.

Data Files

The Data Files panel displays the history of inbound data files, including the name, size, delivery date, and load status of each file. The Batch File agent and File Loader agent must be active to monitor these statistics.

You can sort this information by file type, file name, record count, size, delivery date, and archive date.



Filters

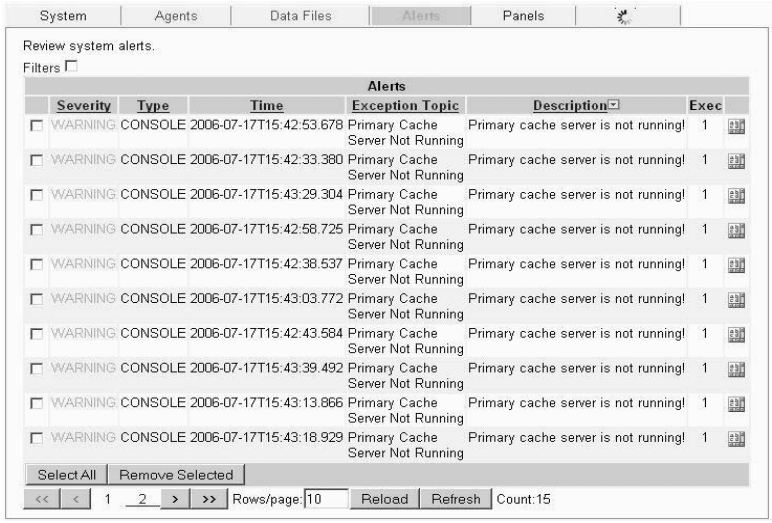
The Data Files panel displays information about all data files by default. Applying a filter can limit the view to the file type you want to see. To display a list of filters, click Filters, and then choose the appropriate filter. You can narrow the view to Stock Quote files or Stock Trade files.

Details

Click the Details icon in the far right column to display additional details about the data load and the load performance.

Alerts

Alerts notify you about conditions that fall outside of normal operating parameters. The Alerts panel lets you examine individual alerts and discover the source of the exception.



Properties

Properties on the Alerts panel help you isolate the exception and determine what action to take. Click on the column name to sort the information in these columns by column name.

Property Name	Description
Severity	Maps the severity level specified in the dispatcher definition: `DEBUG`, `INFO`, `WARNING` and `ERROR`
Type	Describes the dispatcher type: Console, E-mail, rsh, etc.
Time	Indicates when the exception occurred.
Exception Topic	Indicates where the exception occurred, or what part of the system is impacted.
Description	Describes the exception.
Exec	Contains the return code (0 or 1) of the dispatcher after execution. For example, if dispatcher fails to send an E-mail alert, the Exec code would be 0.

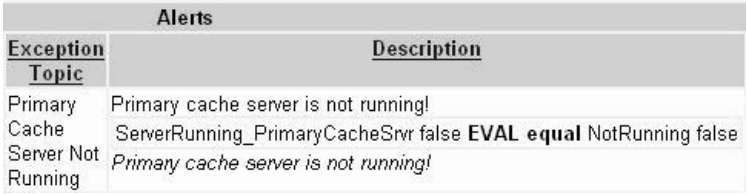
Applying Filters

By default, the Alerts panel displays all alerts. Applying a filter can limit the view to the components you want to see. To display a list of filters, click Filters, then choose the filters you want to apply: DEBUG, INFO, WARNING and ERROR.

Code	Description
DEBUG	Provides information about possible steps to take.
INFO	Provides additional information about the exception.
WARNING	Indicates that the process is near operation limits.
ERROR	Indicates a process failure.

Details

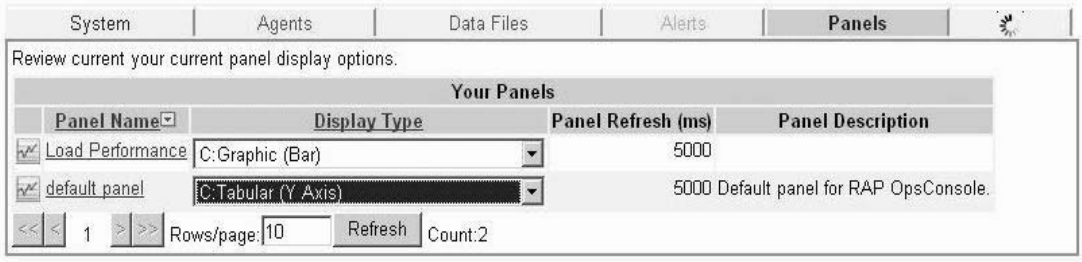
Click the Details icon to see information about the property that triggered the alert.



Panels

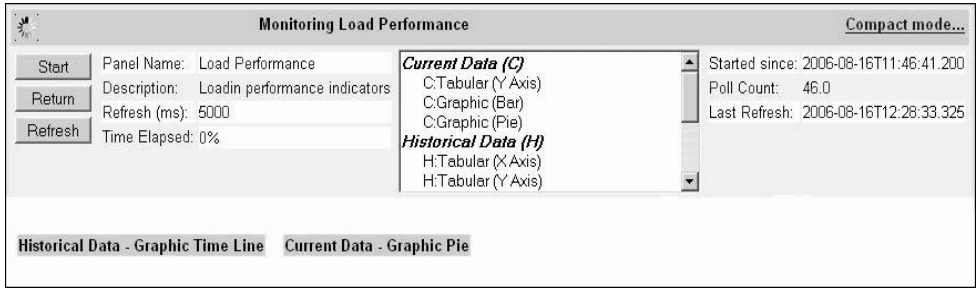
The Panels panel provides access to other panels with distinct operational views. A view is a subset of system operations that determines what activities you see on a particular panel. For example, one panel may monitor input directories for incoming batch files; another panel may monitor the status of the cache database.

The Panels panel includes tools that initialize the monitoring properties of the panel, and display options that control how information appears on that panel.



Panel monitoring

Click the name of the panel in the Panel Name column to access the Panel Monitor, which includes the panel controls, display options, and mode options. Click Compact mode... to toggle the graphic display of the monitoring properties of the panel on and off.



Panel controls

By default, the Panel Monitor is not active. To activate the monitoring properties associated with the panel, you use the Panel controls.

If you want to...	Do this...
Stop the monitoring properties of the panel	Click Stop.
Start the monitoring properties of the panel	Click Start.
Refresh the panel	Click Refresh.
Return to the Panel panel	Click Return.

Display options

Choose an option from the drop-down box on the Panels panel or Panel Monitor pane to change the way the monitoring properties appear on the panel. You can choose to display a combination of both current and historical data or just one type.

Static properties

The static properties of the panel appear in a region on the right side of the Panel Monitor. These properties identify the panel, the refresh rate of the panel, operator, and operator session statistics.

APPENDIX A

Operations Console Properties

About this Appendix

This appendix lists configuration and monitoring properties.

Configuration properties

Cache Server

Component Name	Property Name
SecondaryCacheSrvr	LogicalServer
PrimaryCacheSrvr	LogicalServer
PrimaryCacheSrvr	Password
SecondaryCacheSrvr	Password
PrimaryCacheSrvr	Port
SecondaryCacheSrvr	Port
SecondaryCacheSrvr	Server
PrimaryCacheSrvr	Server
PrimaryCacheSrvr	User
SecondaryCacheSrvr	User

Batch File Agent

Component Name	Property Name
BatchFileMon	ArchiveDirectory
BatchFileMon	CollectTimeInterval
BatchFileMon	InputDirectory1
BatchFileMon	InputDirectory2
BatchFileMon	InputDirectory3
BatchFileMon	InputDirectory4
BatchFileMon	InputDirectory5
BatchFileMon	PrimaryCacheServerDataDirectory
BatchFileMon	RapHome
BatchFileMon	ScriptDirectory
BatchFileMon	SecondaryCacheServerDataDirectory
BatchFileMon	StartScript
BatchFileMon	StopScript
BatchFileMon	TelemetryDirectory
BatchFileMon	TicklerDirectory
BatchFileMon	TicklerFile
BatchFileMon	VldbServerDataDirectory

Data Synchronization Agent

Component Name	Property Name
DataSync	CollectTimeInterval

File Load Agent

FileLoadMon	CollectTimeInterval
FileLoadMon	DbServerInterface
FileLoadMon	LoadVldbScriptDirectory
FileLoadMon	MaxPtnQuote
FileLoadMon	MaxPtnTrade
FileLoadMon	PrimaryCacheServerDataDirectory
FileLoadMon	RapHome
FileLoadMon	ScriptDirectory
FileLoadMon	SecondaryCacheServerDataDirectory
FileLoadMon	StartScript
FileLoadMon	StopScript
FileLoadMon	TelemetryDirectory
FileLoadMon	TicklerDirectory
FileLoadMon	TicklerFile
FileLoadMon	VldbServerDataDirectory

Historical Server

Component Name	Property Name
VldbServer	LogicalServer
VldbServer	Password
VldbServer	Port
VldbServer	Server
VldbServer	User

Query Status Agent

Property Name	Component Name	Task Name
NbrRowsPerSecond	PrimaryCacheSrvr	PrimaryQueryStats
NbrRowsReturned	PrimaryCacheSrvr	PrimaryQueryStats
QueryName	PrimaryCacheSrvr	PrimaryQueryStats
QueryTime	PrimaryCacheSrvr	PrimaryQueryStats
ServerRunning	VldbServer	VldbQueryStats
ServerRunning	PrimaryCacheSrvr	PrimaryQueryStats
Sql	PrimaryCacheSrvr	PrimaryQueryStats

Quote Database

Component Name	Property Name
VldbQuoteDatabase	Database
CacheQuoteDatabase	Database

Server Status

Component Name	Property Name
ServerStatus	CollectTimeInterval

Stock Quote Data

Component Name	Property Name
PrimaryCacheQuoteTable	Table
SecondaryCacheQuoteTable	Table
VldbQuoteTable	Table
VldbQuoteTable	TimestampColumn
PrimaryCacheQuoteTable	TimestampColumn
SecondaryCacheQuoteTable	TimestampColumn

Stock Trade Data

Component Name	Property Name
VldbTradeTable	Table
SecondaryCacheTradeTable	Table
PrimaryCacheTradeTable	Table
SecondaryCacheTradeTable	TimestampColumn
PrimaryCacheTradeTable	TimestampColumn
VldbTradeTable	TimestampColumn

Trade Database

Component Name	Property Name
VldbTradeDatabase	Database
CacheTradeDatabase	Database

Monitoring properties

Batch File

Property Name	Component Name	Task Name	Sample Value
FileArchivedTime	BatchFileMon	BF_BFMTask	2006-06-07T13:14:09.000
FileName	BatchFileMon	BF_BFMTask	STOCK_TRADE.csv.af
FileReceivedTime	BatchFileMon	BF_BFMTask	2006-06-07T13:14:08.000
FileSize	BatchFileMon	BF_BFMTask	16681660
FileType	BatchFileMon	BF_BFMTask	STOCK_TRADE
FirstTransactionTime	BatchFileMon	BF_BFMTask	Nov 11 2005 4:42:30:000PM
InputDirectory	BatchFileMon	BF_BFMTask	/rapqa/RAP30/AutoLoad/data/rap_in3
LastTransactionTime	BatchFileMon	BF_BFMTask	Nov 14 2005 12:21:59:000PM
RecordCount	BatchFileMon	BF_BFMTask	250000
TimeOfFileTransfer	BatchFileMon	BF_BFMTask	1

Data Synch

Property Name	Component Name	Task Name	Sample Value
DataSourceofEarliestTransaction	VldbQuoteTable	VldbStockQuoteStats	STOCK_QUOTE
DataSourceofEarliestTransaction	VldbTradeTable	VldbStockTradeStats	STOCK_TRADE
DataSourceofLatestTransaction	VldbTradeTable	VldbStockTradeStats	STOCK_TRADE
DataSourceofLatestTransaction	VldbQuoteTable	VldbStockQuoteStats	STOCK_QUOTE
EarliestTransactionTime	VldbTradeTable	VldbStockTradeStats	2003-11-03 08:00:00.0
EarliestTransactionTime	VldbQuoteTable	VldbStockQuoteStats	2003-11-03 07:30:00.0
LatestTransactionTime	VldbQuoteTable	VldbStockQuoteStats	2003-11-05 20:00:02.0
LatestTransactionTime	VldbTradeTable	VldbStockTradeStats	2003-11-05 19:59:39.0
RecordCount	VldbTradeTable	VldbStockTradeStats	1914690
RecordCount	VldbQuoteTable	VldbStockQuoteStats	4475814

File Load

Property Name	Component Name	Task Name	Sample Value
BytesPerSecond	VldbQuoteTable	FL_VldbStockQuote	1113752.0
BytesPerSecond	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	262592.0
BytesPerSecond	PrimaryCacheTradeTable	FL_PrimaryStockTrade	129315.0
BytesPerSecond	VldbTradeTable	FL_VldbStockTrade	667266.0
FileName	VldbQuoteTable	FL_VldbStockQuote	STOCK_QUOTE.csv.af
FileName	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	STOCK_QUOTE.csv.af
FileName	VldbTradeTable	FL_VldbStockTrade	STOCK_TRADE.csv.af
FileName	PrimaryCacheTradeTable	FL_PrimaryStockTrade	STOCK_TRADE.csv.af
FinishedLoadingTime	PrimaryCacheTradeTable	FL_PrimaryStockTrade	2006-06-07T13:20:06.000
FinishedLoadingTime	VldbTradeTable	FL_VldbStockTrade	2006-06-07T13:15:56.000
FinishedLoadingTime	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	2006-06-07T13:21:46.000
FinishedLoadingTime	VldbQuoteTable	FL_VldbStockQuote	2006-06-07T13:16:54.000
LoadSuccessStatus	VldbTradeTable	FL_VldbStockTrade	true
LoadSuccessStatus	PrimaryCacheTradeTable	FL_PrimaryStockTrade	true
LoadSuccessStatus	VldbQuoteTable	FL_VldbStockQuote	true
LoadSuccessStatus	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	true
RecordsPerSecond	VldbTradeTable	FL_VldbStockTrade	10000.0
RecordsPerSecond	VldbQuoteTable	FL_VldbStockQuote	17241.0
RecordsPerSecond	PrimaryCacheTradeTable	FL_PrimaryStockTrade	1937.0
RecordsPerSecond	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	4065.0
StartedLoadingTime	VldbTradeTable	FL_VldbStockTrade	2006-06-07T13:15:31.000
StartedLoadingTime	PrimaryCacheTradeTable	FL_PrimaryStockTrade	2006-06-07T13:17:57.000
StartedLoadingTime	VldbQuoteTable	FL_VldbStockQuote	2006-06-07T13:16:25.000
StartedLoadingTime	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	2006-06-07T13:19:43.000
TimeOfFileLoad	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	123
TimeOfFileLoad	VldbQuoteTable	FL_VldbStockQuote	29
TimeOfFileLoad	VldbTradeTable	FL_VldbStockTrade	25
TimeOfFileLoad	PrimaryCacheTradeTable	FL_PrimaryStockTrade	129
TimeOfWaitToLoad	VldbQuoteTable	FL_VldbStockQuote	139
TimeOfWaitToLoad	PrimaryCacheQuoteTable	FL_PrimaryStockQuote	337
TimeOfWaitToLoad	VldbTradeTable	FL_VldbStockTrade	83
TimeOfWaitToLoad	PrimaryCacheTradeTable	FL_PrimaryStockTrade	229

Query Status

Property Name	Component Name	Task Name	Sample Value
NbrRowsPerSecond	PrimaryCacheSrvr	PrimaryQueryStats	0
NbrRowsReturned	PrimaryCacheSrvr	PrimaryQueryStats	
QueryName	PrimaryCacheSrvr	PrimaryQueryStats	Query4
QueryTime	PrimaryCacheSrvr	PrimaryQueryStats	0
ServerRunning	VldbServer	VldbQueryStats	false
ServerRunning	PrimaryCacheSrvr	PrimaryQueryStats	false
Sql	PrimaryCacheSrvr	PrimaryQueryStats	SELECT st.TRADING_SYMBOL,SUM(TRADE_SIZE) as TRADESIZE FROM STOCK_TRADE st inner join INSTRUMENT ii on ii.INSTRUMENT_ID = st.INSTRUMENT_ID inner join SCND_IDST_CLS sc on ii.SCND_IDST_CLS_ID = sc.SCND_IDST_CLS_ID and sc.SIC_NAME = 'COMPUTERS' WHERE TRADE_TI

Server Status

Property Name	Component Name	Task Name	Sample Value
MemoryActive	PrimaryCacheSrvr	PrimaryServerStats	
MemoryFree	PrimaryCacheSrvr	PrimaryServerStats	
MemoryUsage	PrimaryCacheSrvr	PrimaryServerStats	
NbrConnections	PrimaryCacheSrvr	PrimaryServerStats	
ServerRunning	PrimaryCacheSrvr	PrimaryServerStats	false
ServerRunning	VldbServer	VldbServerStats	false

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