



CHAPTER 5

Configuring and Displaying Performance Counters

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Displaying Performance Counters

RTMT displays perfmon counters in chart or table format. The chart format, displays the perfmon counter information by using line charts. For each category tab that you create, you can display up to six charts in the RTMT Perfmon Monitoring pane with up to three counters in one chart.



Tip

You can display up to three counters in one chart in the RTMT Perfmon Monitoring pane. To add another counter in a chart, click the counter and drag it to the RTMT Perfmon Monitoring pane. Repeat again to add up to three counters.

By default, RTMT displays perfmon counters in a chart format. You can also choose to display the perfmon counters in a table format. To display the perfmon counters in table format, you need to check the **Present Data in Table View** check box when you create a new category.

You can organize the perfmon counters to display a set of feature-based counters and save it in a category. After you save your RTMT profile, you can quickly access the counters that you are interested in. After you create a category, you cannot change the display from a chart format to a table format, or vice versa.

Procedure

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- Step 1** Perform one of the following tasks:
- On the Quick Launch Channel
 - Click **System**.
 - In the tree hierarchy, double-click **Performance**.
 - Click the **Performance** icon.
 - Choose **System > Performance > Open Performance Monitoring**.
- Step 2** Click the name of the server where you want to add a counter to monitor.
The tree hierarchy expands and displays all the perfmon objects.
- Step 3** To monitor a counter in table format, continue to [Step 4](#). To monitor a counter in chart format, skip to [Step 9](#).
- Step 4** Choose **Edit > New Category**.
- Step 5** In the Enter Name field, enter a name for the tab.
- Step 6** To display the perfmon counters in table format, check the **Present Data in Table View** check box.
- Step 7** Click **OK**.
A new tab with the name that you entered displays at the bottom of the pane.
- Step 8** Click the file icon next to the object name that lists the counters that you want to monitor. Skip the remaining step in this procedure.



Tip To display the counter in chart format after you display it in table format, right-click the category tab and choose **Remove Category**. The counter displays in chart format.

- Step 9** To monitor a counter in chart format, perform the following tasks:
- Click the file icon next to the object name that lists the counters that you want to monitor.
A list of counters displays.
 - To display the counter information, either right-click the counter and click **Counter Monitoring**, double-click the counter, or drag and drop the counter into the RTMT Perfmon Monitoring pane.
- The counter chart displays in the RTMT Perfmon Monitoring pane.
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Additional Information

See the [Related Topics, page 5-14](#).

Removing a Counter from the RTMT Performance Monitoring Pane

You can remove counters from the RTMT Perfmon Monitoring pane when you no longer need them. This section describes how to remove a counter from the pane.

Perform one of the following tasks:

- Right-click the counter that you want to remove and choose **Remove**.
- Click the counter that you want to remove and choose **Perfmon > Remove Chart/Table Entry**.

The counter no longer displays in the RTMT Perfmon Monitoring pane.

Additional Information

See the [Related Topics, page 5-14](#).

Adding a Counter Instance

To add a counter instance, perform the following procedure:

Procedure

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- Step 1** Display the performance monitoring counter, as described in the [“Using RTMT for Performance Monitoring” section on page 4-1](#).
- Step 2** Perform one of the following tasks:
- Double-click the performance monitoring counter in the performance monitoring tree hierarchy.
 - Click the performance monitoring counter in the performance monitoring tree hierarchy and choose **System > Performance > Counter Instances**.
 - Right-click the performance monitoring counter in the performance monitoring tree hierarchy and choose **Counter Instances**.
- Step 3** In the Select Instance window, click the instance; then, click **Add**.
The counter displays.
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Additional Information

See the [Related Topics, page 5-14](#).

Configuring Alert Notification for a Counter

The following procedure describes how to configure alert notification for a counter.



Tip

To remove the alert for the counter, right-click the counter and choose Remove Alert. The option appears gray after you remove the alert.

Procedure

- Step 1** Display the performance counter, as described in the “Using RTMT for Performance Monitoring” section on page 4-1.
- Step 2** From the counter chart or table, right-click the counter for which you want to configure the alert notification, and choose **Set Alert/Properties**.
- Step 3** Check the **Enable Alert** check box.
- Step 4** In the Severity drop-down list box, choose the severity level at which you want to be notified.
- Step 5** In the Description pane, enter a description of the alert.
- Step 6** Click **Next**.
- Step 7** Use [Table 5-1](#) to configure the settings in the Threshold, Value Calculated As, Duration, Frequency, and Schedule panes. After you enter the settings in the window, click **Next** to proceed to the next panes.

Table 5-1 Counter Alert Configuration Parameters

Setting	Description
Threshold Pane	
Trigger alert when following conditions met (Over, Under)	<p>Check the check box and enter the value that applies.</p> <ul style="list-style-type: none"> Over—Check this check box to configure a maximum threshold that must be met before an alert notification is activated. In the Over value field, enter a value. For example, enter a value that equals the number of calls in progress. Under—Check this check box to configure a minimum threshold that must be met before an alert notification is activated. In the Under value field, enter a value. For example, enter a value that equals the number of calls in progress. <p>Tip Use these check boxes in conjunction with the Frequency and Schedule configuration parameters.</p>
Value Calculated As Pane	
Absolute, Delta, Delta Percentage	<p>Click the radio button that applies.</p> <ul style="list-style-type: none"> Absolute—Choose Absolute to display the data at its current status. These counter values are cumulative. Delta—Choose Delta to display the difference between the current counter value and the previous counter value. Delta Percentage—Choose Delta Percentage to display the counter performance changes in percentage.
Duration Pane	
Trigger alert only when value constantly...; Trigger alert immediately	<ul style="list-style-type: none"> Trigger alert only when value constantly...—If you want the alert notification only when the value is constantly below or over threshold for a desired number of seconds, click this radio button and enter seconds after which you want the alert to be sent. Trigger alert immediately—If you want the alert notification to be sent immediately, click this radio button.

Table 5-1 Counter Alert Configuration Parameters (continued)

Setting	Description
Frequency Pane	
Trigger alert on every poll; trigger up to...	<p>Click the radio button that applies.</p> <ul style="list-style-type: none"> • Trigger alert on every poll—If you want the alert notification to activate on every poll when the threshold is met, click this radio button. <p>For example, if the calls in progress continue to go over or under the threshold, the system does not send another alert notification. When the threshold is normal (between 50 and 100 calls in progress), the system deactivates the alert notification; however, if the threshold goes over or under the threshold value again, the system reactivates alert notification.</p> <ul style="list-style-type: none"> • Trigger up to...—If you want the alert notification to activate at certain intervals, click this radio button and enter the number of alerts that you want sent and the number of minutes within which you want them sent.
Schedule Pane	
24-hours daily; start/stop	<p>Click the radio button that applies:</p> <ul style="list-style-type: none"> • 24-hours daily—If you want the alert to be triggered 24 hours a day, click this radio button. • Start/Stop—If you want the alert notification activated within a specific time frame, click the radio button and enter a start time and a stop time. If the check box is checked, enter the start and stop times of the daily task. For example, you can configure the counter to be checked every day from 9:00 am to 5:00 pm or from 9:00 pm to 9:00 am.

Step 8 If you want the system to send an e-mail message for the alert, check the **Enable Email** check box.

Step 9 If you want to trigger an alert action that is already configured, choose the alert action that you want from the Trigger Alert Action drop-down list box.

Step 10 If you want to configure a new alert action for the alert, click **Configure**.



Note Whenever the specified alert is triggered, the system sends the alert action.

The Alert Action dialog box displays.

Step 11 To add a new alert action, click **Add**.

The Action Configuration dialog box displays.

Step 12 In the Name field, enter a name for the alert action.

Step 13 In the Description field, enter a description for the alert action.

Step 14 To add a new e-mail recipient for the alert action, click **Add**.

The Input dialog box displays.

Step 15 Enter either the e-mail or e-page address of the recipient that you want to receive the alert action notification.

Step 16 Click **OK**.

The recipient address displays in the Recipient list. The Enable check box gets checked.



Tip To disable the recipient address, uncheck the Enable check box. To delete a recipient address from the Recipient list, highlight the address and click **Delete**.

Step 17 Click **OK**.

Step 18 The alert action that you added displays in Action List.



Tip To delete an alert action from the action list, highlight the alert action and click **Delete**. You can also edit an existing alert action by clicking **Edit**.

Step 19 Click **Close**.

Step 20 In the User-defined email text box, enter the text that you want to display in the e-mail message.

Step 21 Click **Activate**.

Additional Information

See the [Related Topics, page 5-14](#).

Zooming a Counter

To get a closer look at perfmon counters, you can zoom the perfmon monitor counter in the RTMT Perfmon Monitoring pane.

Procedure

Step 1 Perform one of the following tasks:

- In the RTMT Performance Monitoring pane, double-click the counter that you want to zoom. The box with the counter appears highlighted, and the Zoom window automatically displays.
- In the RTMT Performance Monitoring pane, click the counter that you want to zoom. The box with the counter appears highlighted. Choose **System > Performance > Zoom Chart**. The Zoom window automatically displays.

The minimum, maximum, average, and last fields show the values for the counter since the monitoring began for the counter.

Step 2 To close the window, click **OK**.

Additional Information

See the [Related Topics, page 5-14](#).

Displaying a Counter Description

Use one of two methods to obtain a description of the counter:

Procedure

- Step 1** Perform one of the following tasks:
- In the Perfmon tree hierarchy, right-click the counter for which you want property information and choose **Counter Description**.
 - In the RTMT Performance Monitoring pane, click the counter and choose **System > Performance > Counter Description** from the menu bar.



Tip To display the counter description and to configure data-sampling parameters, see the [“Configuring a Data Sample” section on page 5-7](#).

The Counter Property window displays the description of the counter. The description includes the host address, the object to which the counter belongs, the counter name, and a brief overview of what the counter does.

- Step 2** To close the Counter Property window, click **OK**.
-

Additional Information

See the [Related Topics, page 5-14](#).

Configuring a Data Sample

The Counter Property window contains the option to configure data samples for a counter. The perfmon counters that display in the RTMT Perfmon Monitoring pane contain green dots that represent samples of data over time. You can configure the number of data samples to collect and the number of data points to show in the chart. After the data sample is configured, view the information by using the View All Data/View Current Data menu option. See the [“Viewing Counter Data” section on page 5-8](#).

This section describes how to configure the number of data samples to collect for a counter.

Procedure

- Step 1** Display the counter, as described in the [“Using RTMT for Performance Monitoring” section on page 4-1](#).
- Step 2** Perform one of the following tasks:
- Right-click the counter for which you want data sample information and choose **Monitoring Properties** if you are using chart format and **Properties** if you are using table format.
 - Click the counter for which you want data sample information and choose **System > Performance > Monitoring Properties**.

The Counter Property window displays the description of the counter, as well as the tab for configuring data samples. The description includes the host address, the object to which the counter belongs, the counter name, and a brief overview of what the counter does.

- Step 3** To configure the number of data samples for the counter, click the **Data Sample** tab.
- Step 4** From the No. of data samples drop-down list box, choose the number of samples (between 100 and 1000). The default specifies 100.
- Step 5** From the No. of data points shown on chart drop-down list box, choose the number of data points to display on the chart (between 10 and 50). The default specifies 20.
- Step 6** Click one parameter, as described in [Table 5-2](#).

Table 5-2 Data Sample Parameters

Parameter	Description
Absolute	Because some counter values are accumulative, choose Absolute to display the data at its current status.
Delta	Choose Delta to display the difference between the current counter value and the previous counter value.
Delta Percentage	Choose Delta Percentage to display the counter performance changes in percentage.

- Step 7** To close the Counter Property window and return to the RTMT Perfmon Monitoring pane, click the **OK** button.

Additional Information

See the [Related Topics, page 5-14](#).

Viewing Counter Data

Perform the following procedure to view the data that is collected for a performance counter.

Procedure

- Step 1** In the RTMT Perfmon Monitoring pane, right-click the counter chart for the counter for which you want to view data samples and choose **View All Data**.
- The counter chart displays all data that has been sampled. The green dots display close together, almost forming a solid line.
- Step 2** Right-click the counter that currently displays and choose **View Current**.
- The counter chart displays the last configured data samples that were collected. See the [“Configuring a Data Sample” section on page 5-7](#) procedure for configuring data samples.

Additional Information

See the [Related Topics, page 5-14](#).

Local Logging of Data from Perfmon Counters

RTMT allows you to choose different perfmon counters to log locally. You can then view the data from the perfmon CSV log by using the performance log viewer. See [“Viewing Log Files on the Performance Log Viewer”](#) section on page 5-10.

Starting the Counter Logs

To start logging perfmon counter data into a CSV log file, perform the following procedure:

Procedure

- Step 1** Display the performance monitoring counters, as described in the [“Using RTMT for Performance Monitoring”](#) section on page 4-1.
- Step 2** If you are displaying perfmon counters in the chart format, right-click the graph for which you want data sample information and choose **Start Counter(s) Logging**. If you want to log all counters in a screen (both chart and table view format), you can right-click the category name tab at the bottom of the window and choose **Start Counter(s) Logging**.

The Counter Logging Configuration dialog box displays.

- Step 3** In the Logger File Name field, enter a file name and choose **OK**.

RTMT saves the CSV log files in the log folder in the .jrtmt directory under the user home directory. For example, in Windows, the path specifies D:\Documents and Settings\userA\.jrtmt\log, or in Linux, the path specifies /users/home/.jrtmt/log.

To limit the number and size of the files, configure the maximum file size and maximum number of files parameter in the trace output setting for the specific service in the Trace Configuration window of Cisco Unified Serviceability. See *Cisco Unified Serviceability Administration Guide*.

Stopping the Counter Logs

To stop logging perfmon counter data, perform the following procedure:

Procedure

- Step 1** Display the performance monitoring counters, as described in the [“Using RTMT for Performance Monitoring”](#) section on page 4-1.
- Step 2** If you are displaying perfmon counters in the chart format, right-click the graph for which counter logging is started and choose **Stop Counter(s) Logging**. If you want to stop logging of all counters in a screen (both chart and table view format), you can right-click the category name tab at the bottom of the window and choose **Stop Counter(s) Logging**.
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Additional Information

See the [Related Topics](#), page 5-14.

Viewing Perfmon Log Files

You can view data from the perfmon CSV log by using the Performance Log Viewer in RTMT or by using the Microsoft Performance tool.

Viewing Log Files on the Performance Log Viewer

The Performance Log Viewer displays data for counters from perfmon CSV log files in a graphical format. You can use the performance log viewer to display data from the local perfmon logs that you collected, or you can display the data from the Realtime Information Server Data Collection (RISDC) perfmon logs.

The local perfmon logs comprise data from counters that you choose and store locally on your computer. For more information on how to choose the counters and how to start and stop local logging, see [“Local Logging of Data from Perfmon Counters” section on page 5-9](#).

Procedure

Step 1 Perform one of the following tasks:

- On the Quick Launch Channel
 - Click **System**.
 - In the tree hierarchy, double-click **Performance**.
 - Click the **Performance Log Viewer** icon.
- Choose **System > Performance > Open Performance Log Viewer**.

Step 2 Choose the type of perfmon logs that you want to view:

- For RISDC Perfmon Logs, perform the following steps:
 - a. Click on RISDC Perfmon Logs and choose a node from the Select a node drop-down box.
 - b. Click **Open**.
The File Selection Dialog Box displays.
 - c. Choose the file and click **Open File**.
The Select Counters Dialog Box displays.
 - d. Choose the counters that you want to display by checking the check box next to the counter.
 - e. Click **OK**.
- For locally stored data, perform the following steps:
 - a. Click Local Perfmon Logs.
 - b. Click **Open**.
The File Selection Dialog Box displays. RTMT saves the perfmon CSV log files in the log folder in the .jrtmt directory under the user home directory. In Windows, the path specifies D:\Documents and Settings\userA\.jrtmt\log, or in Linux, the path specifies /users/home/.jrtmt/log.
 - c. Browse to the file directory.
 - d. Choose the file that you are interested in viewing or enter the file name in the filename field.

e. Click **Open**.

The Select Counters Dialog Box displays.

f. Choose the counters that you want to display by checking the check box next to the counter.

g. Click **OK**.

The performance log viewer displays a chart with the data from the selected counters. The bottom pane displays the selected counters, a color legend for those counters, display option, mean value, minimum value, and the maximum value.

Table 5-3 describes the functions of different buttons that are available on the performance log viewer.

Table 5-3 Performance Log Viewer

Button	Function
Select Counters	Allows you to add counters that you want to display in the performance log viewer. To not display a counter, uncheck the Display column next to the counter.
Reset View	Resets the performance log viewer to the initial default view.
Save Downloaded File	Allows you to save the log file to your local computer.



Tip

You can order each column by clicking on a column heading. The first time that you click on a column heading, the records display in ascending order. A small triangle pointing up indicates ascending order. If you click the column heading again, the records display in descending order. A small triangle pointing down indicates descending order. If you click the column heading one more time, the records displays in the unsorted state.

Additional Information

See the [Related Topics, page 5-14](#).

Zooming In and Out

The performance Log viewer includes a zoom feature that allows you to zoom in on an area in the chart. To zoom in, click and drag the left button of the mouse until you have the selected desired area.

To reset the chart to the initial default view, click **Reset View** or right-mouse click the chart and choose **Reset**.

Additional Information

See the [Related Topics, page 5-14](#).

Viewing the Perfmon Log Files with the Microsoft Performance Tool

To view the log files by using the Microsoft Performance tool, follow these steps:

Procedure

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- Step 1** Choose **Start > Settings > Control Panel > Administrative Tools > Performance**.
 - Step 2** In the application window, click the right mouse button and choose **Properties**.
 - Step 3** Click the Source tab in the System Monitor Properties dialog box.
 - Step 4** Browse to the directory where you downloaded the perfmon log file and choose the perfmon csv file. The log file includes the following naming convention:
PerfMon_<node>_<month>_<day>_<year>_<hour>_<minute>.csv; for example,
PerfMon_172.19.240.80_06_15_2005_11_25.csv.
 - Step 5** Click **Apply**.
 - Step 6** Click the **Time Range** button. To specify the time range in the perfmon log file that you want to view, drag the bar to the appropriate starting and ending times.
 - Step 7** To open the Add Counters dialog box, click the Data tab and click **Add**.
 - Step 8** From the Performance Object drop-down box, choose the perfmon object. If an object has multiple instances, you may choose **All instances** or select only the instances that you are interested in viewing.
 - Step 9** You can choose **All Counters** or select only the counters that you are interested in viewing.
 - Step 10** To add the selected counters, click **Add**.
 - Step 11** When you finish selecting counters, click **Close**.
-

Additional Information

See the [Related Topics, page 5-14](#).

Troubleshooting Perfmon Data Logging

When you enable RISDC perfmon logs, Cisco Unified Communications Manager collects information for the system in logs that are written on the Cisco Unified Communications Manager server. You can enable or disable RISDC perfmon logs on Cisco Unified Communications Manager Administration by choosing **System > Service Parameter** and selecting the Cisco RIS Data Collector Service from the Service drop-down menu. By default, RISDC perfmon logging gets enabled. Be aware that RISDC perfmon logging is also known as Troubleshooting Perfmon Data logging. When you enable RISDC perfmon logging, the server collects performance data that are used to troubleshoot problems.

You can collect the log files for Cisco RIS Data Collector service on the server by using RTMT to download the log files. If you want to download the log files by using the CLI, refer to *Cisco Unified Communications Operating System Administration Guide*. After you collect the log files, you can view the log file by using the Performance Log Viewer in RTMT or by using the Microsoft Windows performance tool. See [“Viewing Log Files on the Performance Log Viewer”](#) section on page 5-10 or [“Viewing the Perfmon Log Files with the Microsoft Performance Tool”](#) section on page 5-11.

Configuring Troubleshooting Perfmon Data Logging

The following procedure describes how to configure the troubleshooting perfmon data logging feature.


Procedure

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- Step 1** In Cisco Unified Communications Manager Administration, choose **System > Service Parameters**. The Service Parameter Configuration window displays.
- Step 2** From the Server drop-down list box, choose the server.
- Step 3** From the Service drop-down list box, choose Cisco RIS Data Collector.
- Step 4** Enter the appropriate settings as described in [Table 5-4](#).
- Step 5** Click **Save**.
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Troubleshooting Perfmon Data-Logging Configuration Settings

[Table 5-4](#) describes the available settings to enable and disable troubleshooting perfmon data logging.

Table 5-4 Troubleshooting Perfmon Data-Logging Parameters

Field	Description
Enable Logging	From the drop-down box, choose True to enable or False to disable troubleshooting perfmon data logging. The default value specifies True.
Polling Rate	Enter the polling rate interval (in seconds). You can enter a value from 5 (minimum) to 300 (maximum). The default value specifies 15.
Maximum No. of Files	<p>Enter the maximum number of Troubleshooting Perfmon Data Logging files that you want to store on disk. You can enter a value from 1 (minimum) up to 100 (maximum). The default value specifies 50.</p> <p>Consider your storage capacity in configuring the Maximum No. of Files and Maximum File Size Parameters. Cisco recommends that you do not exceed a value of 100 MB when you multiply the Maximum Number of Files value by the Maximum File Size value.</p> <p>When the number of files exceeds the maximum number of files that you specified in this field, the system will delete log files with the oldest timestamp.</p> <p> Caution If you do not save the log files on another machine before you change this parameter, you risk losing the log files.</p>
Maximum File Size	<p>Enter the maximum file size (in megabytes) that you want to store in a perfmon log file before a new file is started. You can enter a value from 1 (minimum) to 500 (maximum). The default value specifies 2 MB.</p> <p>Consider your storage capacity in configuring the Maximum No. of Files and Maximum File Size Parameters. Cisco recommends that you do not exceed a value of 100 MB when you multiply the Maximum Number of Files value by the Maximum File Size value.</p>

Related Topics

- [Displaying Performance Counters, page 5-1](#)
- [Removing a Counter from the RTMT Performance Monitoring Pane, page 5-3](#)
- [Adding a Counter Instance, page 5-3](#)
- [Configuring Alert Notification for a Counter, page 5-3](#)
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- [Understanding Performance Monitoring, page 4-1](#)
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