CHAPTER 4

Understanding Performance Monitoring

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Cisco Unity Connection directly updates Performance counters (called PerfMon counters). The counters contain simple, useful information on the system and its functions.

You can monitor the performance of the components of the system and the components for the application on the system by choosing the counters for any object by using RTMT. The counters for each object display when the folder expands.

You can log perfmon counters locally on the computer and use the performance log viewer in RTMT to display the perfmon CSV log files that you collected or the Realtime Information Server Data Collection (RISDC) perfmon logs.

This chapter contains information on the following topics:

Using RTMT for Performance Monitoring

RTMT integrates with the administration and serviceability software for Cisco Unity Connection. RTMT displays performance information for all Connection components. RTMT provides alert notification for troubleshooting performance. It also periodically polls performance counter to display data for that counter. Refer to "Displaying a Counter Description" section on page 5-7 for examples on displaying perfmon counters in a chart or table format.

Perfmon monitoring allows you to perform the following tasks:

- Continuously monitor a set of preconfigured objects AND receive notification in the form of an e-mail message.
- Associate counter threshold settings to alert notification. An e-mail or popup message provides notification to the administrator.
- Save and restore settings, such as counters being monitored, threshold settings, and alert notifications, for customized troubleshooting tasks.
- Display up to six perfmon counters in one chart for performance comparisons.

RTMT displays performance counters in chart or table format. Chart format looks like a miniature window of information. Up to six charts display in the RTMT performance monitoring pane for each category tab that you create. You can display a particular counter by double clicking the counter in the perfmon monitoring pane. Because chart view represents the default, you configure the performance counters to display in table format when you create a category.

You can remove a counter chart (table entry) with the Remove Chart/TableEntry menu item in the Perfmon menu in the menu bar.

Tip The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate for the AMC (Alert Manager and Collector) service parameter changes, the polling rate in the precanned window also updates. In addition, the local time of the RTMT client application and not the backend server time, provides the basis for the time stamp in each chart.

For more information on Service Parameters, refer to *Cisco Unity Connection System Administration Guide*.

See the following sections for configuration options in the RTMT perfmon monitoring pane:

- Category Tabs, page 4-2
- Sample Rate, page 4-2
- Using RTMT for Performance Monitoring, page 4-1
- Zooming a Counter, page 5-6

Category Tabs

A category comprises a group of monitored performance counters. A tab in the RTMT monitoring pane contains the category name. All performance counters that are monitored in this tab belong to a category. The system polls the performance counters in the tab at the same rate, with each category configured to have its own polling rate.

You can create custom categories in the RTMT monitoring pane to view information that helps you troubleshoot specific performance or system, problems. If your system is experiencing performance problems with specific objects, create custom categories to monitor the performance of the counters within the object. In addition, you can create alert notifications for counters and gateways in these custom categories. To create custom categories, you add a new category tab. When the tab is created, you specify the specific performance counters and alerts within that tab and then save your custom category by using Profile.

Sample Rate

The application polls counters to gather status information. In the RTMT monitoring pane, you configure the polling intervals for the performance counters for each category tab that you create.

Note High-frequency polling rate affects the performance on the server. The minimum polling rate for monitoring a performance counter in chart view equals 5 seconds; the minimum rate for monitoring a performance counter in table view equals 1 second. The default for both specifies 10 seconds.

Adding Counters to Monitor

To troubleshoot system performance problems, you add the counter that is associated with the perfmon object to the RTMT performance monitoring pane, which displays a chart for the counter. Before you add counters, see the "Category Tabs" section on page 4-2.

Category tabs contain up to six perfmon counter charts.

Alert Notification for Counters

Using the alert notification feature, the application notifies you of system problems. Perform the following configuration setup to activate alert notifications for a system counter:

- From the RTMT Perfmon Monitoring pane, choose the system perfmon counter.
- Set up an e-mail or a message popup window for alert notification.
- Determine the threshold for the alert.
- Determine the frequency of the alert notification (for example, the alert occurs once or every hour).
- Determine the schedule for when the alert activates (for example, on a daily basis or at certain times of the day).

Zoom Counter

To get a closer look at performance monitors, zoom the monitor counter in the RTMT perfmon monitoring pane by highlighting the counter chart and choosing **System > Performance > Zoom Chart**.

Counter Properties

Counter properties allow you to display a description of the counter and configure data-sampling parameters.

The Counter Property window contains the option to configure data samples for a counter. The performance counters that display in the RTMT performance 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 to view all the data that a perfmon counter collected.

Additional Information

See the "Related Topics" section on page 4-8.

Troubleshooting Perfmon Data Logging

The troubleshooting perfmon data logging feature assists Cisco TAC in identifying system problems. When you enable troubleshooting perfmon data logging, you initiate the collection of a set of Cisco Unity and operating system performance statistics for that server. The statistics that are collected include comprehensive information that can be used for system diagnosis.

The system automatically enables troubleshooting perfmon data logging to collect statistics from a set of perfmon counters that provides comprehensive information on the system state.When Troubleshooting Perfmon Data Logging is enabled, Cisco estimates that the system experiences a less than 5-percent increase in CPU utilization and an insignificant increase in the amount of memory that is being used, and it writes approximately 50 MB of information to the log files daily.

You can perform the following administrative tasks with the troubleshooting perfmon data logging feature:

- Enable and disable the trace filter for Troubleshooting perfmon data logging.
- Monitor a set of predefined System and Cisco Unity performance objects and counters on each server.
- Log the monitored performance data in CSV file format on the server in the active log partition in the var/log/active/cm/log/ris/csv directory. The log file uses 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. Specify the polling rate. This rate specifies the rate at which performance data gets gathered and logged. You can configure the polling rate down to 5 seconds. Default polling rate equals 15 seconds.
- View the log file in graphical format by using the Microsoft Windows performance tool or by using the Performance Log viewer in the Real-Time Monitoring Tool.
- Specify the maximum number of log files that will be stored on disk. Log files exceeding this limit get purged automatically by removal of the oldest log file. The default specifies 50 files.
- Specify the rollover criteria of the log file based on the maximum size of the file in megabytes. The default value specifies 2 MB.
- Collect the Cisco RIS Data Collector PerfMonLog log file by using the Trace & Log Central feature of the Real-Time Monitoring Tool or Command Line Interface.

For more information on configuring Troubleshooting Perfmon Data Logging, see "Configuring Troubleshooting Perfmon Data Logging" section on page 5-13.

The troubleshooting perfmon data-logging feature collects information from the following counters within the following perfmon objects.

Refer to the "Performance Objects and Counters for Cisco Unity Connection" appendix for a description on the following counters:

- CUC Data Store: Databases
  - Disk Free/chunk [kb]
- CUC Message Store
  - Messages Delivered Total
  - Messages Received Total
  - VPIM Messages Delivered Total
  - VPIM Messages Received Total
  - VPIM Messages Total
- CUC Personal Call Transfer Rules
  - Applicable Rule Found
  - Destinations Tried
  - PCTR Calls
  - Rules Evaluated
  - Subscriber Reached
  - Transfer Failed
  - Voicemail Reached
- CUC Phone System

  - Call Count Current
  - Call Count Total
  - Call Duration Average [s]
  - Call Duration Total [s]
  - Incoming Calls CFB Current
  - Incoming Calls CFB Total
  - Incoming Calls CFNA Current
  - Incoming Calls CFNA Total
  - Incoming Calls Current
  - Incoming Calls Direct Current
  - Incoming Calls Direct Total
  - Incoming Calls Duration Average [s]
  - Incoming Calls Duration Total [s]
  - Incoming Calls No Info Total
  - Incoming Calls Total
  - MWI Request Duration Average [ms]
  - MWI Request Duration Total [ms]
  - MWI Requests Failed Total
  - MWI Requests Total
  - Notification Duration Average [s]
  - Notification Duration Total [s]
  - Notifications Failed
  - Notifications Total
  - Outgoing Calls Duration Average [s]
  - Outgoing Calls Duration Total [s]
  - Pager Notifications Duration Average [s]
  - Pager Notifications Duration Total [s]
  - Pager Notifications Failed
  - Pager Notifications Total
  - Port Idle Duration [s]
  - Port Idle Duration Average [s]
  - Ports Idle Current
  - Ports In Use Current
  - Ports Locked
- CUC Phone System: Ports
  - Port Calls
  - Port Usage Duration Average [s]
  - Port Usage Duration Total [s]

- CUC Sessions: IMAP Server
  - Commands/second Average
  - Connection Length Average [s]
  - Errors Total
  - EXAMINE Requests Total
  - Failed Login Requests Total
  - FETCH Requests Total
  - Login Requests Total
  - Logout Requests Total
  - Messages Read Total
  - Messages Read/hour
  - Messages/fetch Average
  - NOOP Requests Total
  - Response Time Average [ms]
  - Socket Connections Current
  - Socket Connections Total
  - STARTTLS Requests Total
  - STATUS Requests Total
  - TLS Connections Current
  - TLS Errors Total
  - Unsolicited Notify Response Time Average [ms]
  - Unsolicited Notify Responses Total
- CUC Sessions: TRaP
  - Session Duration Average [s]
  - Session Duration Total [s]
  - Sessions Current
  - Sessions Total
- CUC Sessions: TTS
  - Session Duration Average [s]
  - Session Duration Total [s]
  - Sessions Current
  - Sessions Total
- CUC Sessions: Voice
  - Delay - Directory Search [ms]
  - Delay - Opening Greeting [ms]
  - Delay - Subscriber Delete Message [ms]
  - Delay - Subscriber Logon [ms]
  - Delay - Subscriber Message Count [ms]

  - Delay - Subscriber Message Header [ms]
  - Failsafes Total
  - Messages Deleted
  - Messages Forwarded
  - Messages Read
  - Messages Replied
  - Messages Sent
  - MRCP Define Grammar Delay [ms]
  - MRCP Define Grammar Delay Average [ms]
  - MRCP Define Grammar Delay Max [ms]
  - MRCP Delay [ms]
  - MRCP Delay Average [ms]
  - MRCP Delay Max [ms]
  - Subscriber lookup delay [ms]
- CUC Sessions: VUI
  - Delay - Subscriber Message Access [ms]
  - Matches Total
  - Messages Deleted
  - Messages Forwarded
  - Messages Read
  - Messages Replied
  - Messages Sent
  - No-matches Total
  - Session Duration Average/call [s]
  - Session Duration Total [s]
  - Sessions Current
  - Sessions Total
- CUC Sessions: Web
  - CPCA Failed Authentications Total
  - CPCA Pages Saved Total
  - CPCA Pages Served Total
  - CPCA Requests In Queue Total
  - CPCA Server Busy Pages Total
  - CPCA Sessions Current
  - CPCA Sessions Total

Related Topics

- Using RTMT for Performance Monitoring, page 4-1
- Troubleshooting Perfmon Data Logging, page 4-3
- Configuring and Displaying Performance Counters, page 5-1
- Performance Objects and Counters for the System, page A-1
- Performance Objects and Counters for Cisco Unity Connection, page B-1