



Tools and Reports

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Serviceability Reports Archive

The Cisco Serviceability Reporter service generates daily reports containing charts that display a summary of the statistics for that particular report. Reporter generates reports once a day on the basis of logged information.

Using the serviceability GUI, view reports from **Tools > Serviceability Reports Archive**. You must activate the Cisco Serviceability Reporter service before you can view reports. After you activate the service, report generation may take up to 24 hours.

The reports contain 24-hour data for the previous day. A suffix that is added to the report names shows the date for which Reporter generated them; for example, AlertRep_mm_dd_yyyy.pdf. The Serviceability Reports Archive window uses this date to display the reports for the relevant date only. The reports generate from the data that is present in the log files, with the timestamp for the previous day. The system considers log files for the current date and the previous two days for collecting data.

The time that is shown in the report reflects the server “System Time.”

You can retrieve log files from the server while you are generating reports.



Note The Cisco Unified Reporting web application provides snapshot views of data into one output and runs data checks. The application also allows you to archive generated reports. See the *Cisco Unified Reporting Administration Guide* for more information.

Serviceability Report Archive Considerations for Cluster Configurations

This section applies to Unified Communications Manager and IM and Presence Service only.

- Because the Cisco Serviceability Reporter is only active on the first server, at any time, Reporter generates reports only on the first server, not the other servers.
- The time that is shown in the report reflects the first server “System Time.” If the first server and subsequent servers are in different time zones, the first server “System Time” shows in the report.

- The time zone differences between the server locations in a cluster are taken into account when data is collected for the reports.
- You can select log files from individual servers or from all servers in the cluster when you generate reports.
- Cisco Unified Reporting web application output and data checks include cluster data from all accessible servers.

Serviceability Reporter Service Parameters

Cisco Serviceability Reporter uses the following service parameters:

- RTMT Reporter Designated Node - Specifies the designated node on which RTMT Reporter runs. This default equals the IP address of the server on which the Cisco Serviceability Reporter service is first activated.

Unified Communications Manager only: Because the Serviceability Reporter service is CPU intensive, Cisco recommends that you specify a non-call-processing node.

- Report Generation Time - Specifies the number of minutes after midnight. Reports are generated at this time for the most recent day. The minimum value equals 0 and the maximum value equals 1439.
- Report Deletion Age - Specifies the number of days that the report must be kept on the disk. The system deletes reports that are older than the specified age. The minimum value equals 0, and the maximum value equals 30.



Tip You can disable reports by setting the service parameter Report Deletion Age to a value of 0.

For more information about service parameter configuration, see the following guides:

- Unified Communications Manager only: *System Configuration Guide for Cisco Unified Communications Manager*
- Connection only: *System Administration Guide for Cisco Unity Connection*



Note Unified Communications Manager only: If a node is removed completely from the network and does not appear in the list of servers in Cisco Unified Communications Manager Administration, Reporter does not include that node when it generates reports, even if the log file contains the data for that node.

Device Statistics Report

The Device Statistics Report does not apply to IM and Presence Service and Cisco Unity Connection.

The Device Statistics Report provides the following line charts:

- Number of Registered Phones per Server
- Number of H.323 Gateways in the Cluster

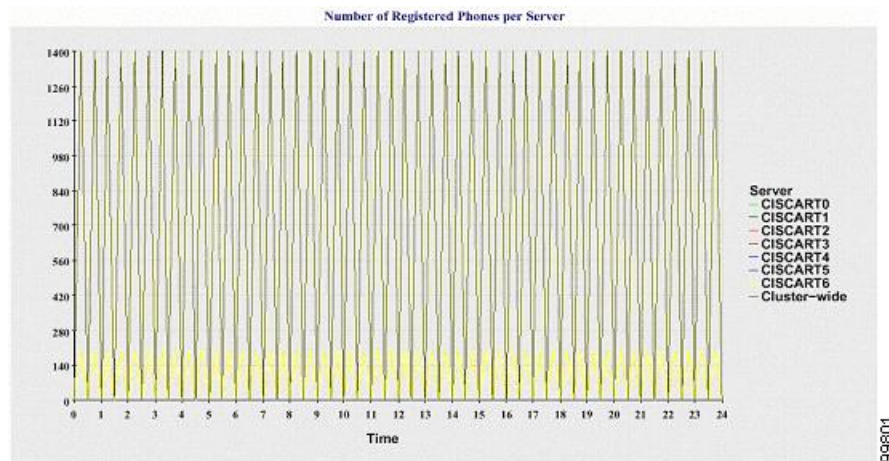
- Number of Trunks in the Cluster

Number of Registered Phones Per Server

A line chart displays the number of registered phones for each Unified Communications Manager server (and cluster in a Unified Communications Manager cluster configuration). Each line in the chart represents the data for a server for which data is available, and one extra line displays the clusterwide data (Unified Communications Manager clusters only). Each data value in the chart represents the average number of phones that are registered for a 15-minute duration. If a server shows no data, Reporter does not generate the line that represents that server. If no data exists for the server (or for all servers in a Unified Communications Manager cluster configuration), for registered phones, Reporter does not generate the chart. The message “No data for Device Statistics report available” displays.

Figure 1: Line Chart That Depicts Number of Registered Phones Per Server

The following figure shows an example of a line chart representing the number of registered phones per Unified Communications Manager server in a Unified Communications Manager cluster configuration.

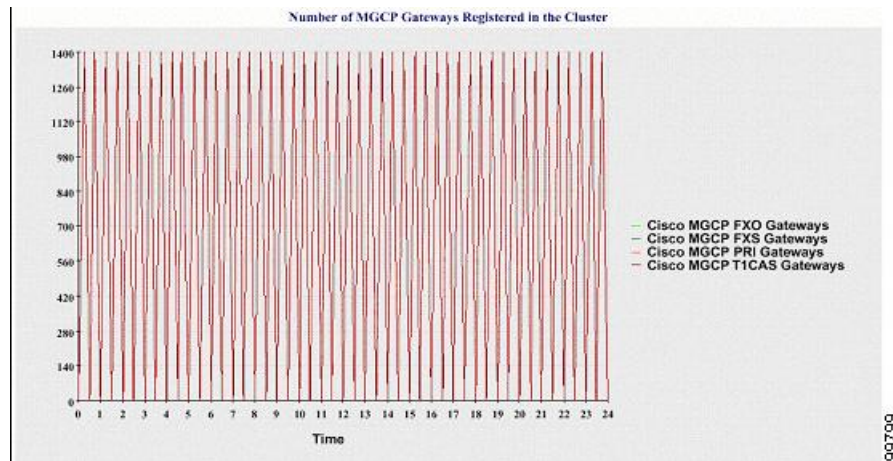


Number of MGCP Gateways Registered in the Cluster

A line chart displays the number of registered MGCP FXO, FXS, PRI, and TICAS gateways. Each line represents data only for the Unified Communications Manager server (or cluster in a Unified Communications Manager cluster configuration); so, four lines show server (or clusterwide) details for each gateway type. Each data value in the chart represents the average number of MGCP gateways that are registered for a 15-minute duration. If no data exists for a gateway for the server (or all the servers in a cluster), Reporter does not generate the line that represents data for that particular gateway. If no data exists for all gateways for the server (or for all servers in a cluster), Reporter does not generate the chart.

Figure 2: Line Chart That Depicts Number of Registered Gateways Per Cluster

The following figure shows an example of a line chart representing the number of registered gateways per cluster, in a Unified Communications Manager cluster configuration.

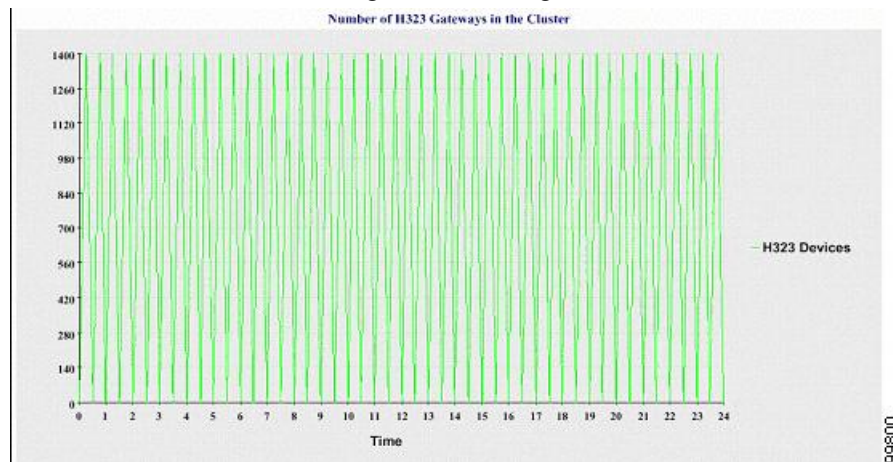


Number of H.323 Gateways in the Cluster

A line chart displays the number of H.323 gateways. One line represents the details of the H.323 gateways (or the clusterwide details in a Unified Communications Manager cluster configuration). Each data value in the chart represents the average number of H.323 gateways for a 15-minute duration. If no data exists for H.323 gateways for the server (or for all servers in a cluster), Reporter does not generate the chart.

Figure 3: Line Chart That Depicts Number of Registered H.323 Gateways Per Cluster

The following figure shows an example line chart representing the number of H.323 gateways per cluster in a Unified Communications Manager cluster configuration.

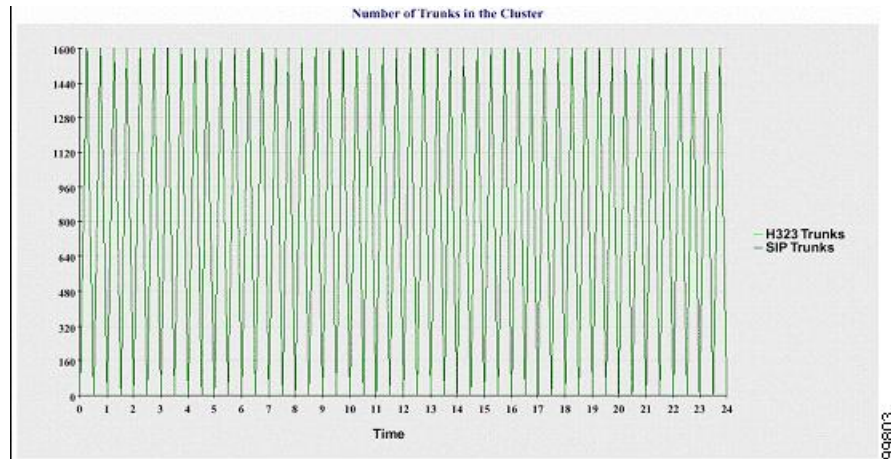


Number of Trunks in the Cluster

A line chart displays the number of H.323 and SIP trunks. Two lines represent the details of the H.323 trunks and SIP trunks (or the clusterwide details in a Unified Communications Manager cluster configuration). Each data value in the chart represents the average number of H.323 and SIP trunks for a 15-minute duration. If no data exists for H.323 trunks for the server (or for all servers in a cluster), Reporter does not generate the line that represents data for the H.323 trunks. If no data exists for SIP trunks for the server (or for all servers in the cluster), Reporter does not generate the line that represents data for SIP trunks. If no data exists for trunks at all, Reporter does not generate the chart.

Figure 4: Line Chart That Depicts Number of Trunks Per Cluster

The following figure shows an example line chart representing the number of trunks per cluster in a Unified Communications Manager cluster configuration.



The server (or each server in the cluster) contains log files that match the filename pattern DeviceLog_mm_dd_yyyy_hh_mm.csv. The following information exists in the log file:

- Number of registered phones on the server (or on each server in a Unified Communications Manager cluster)
- Number of registered MGCP FXO, FXS, PRI, and TICAS gateways on the server (or on each server in a Unified Communications Manager cluster)
- Number of registered H.323 gateways on the server (or on each server in a Unified Communications Manager cluster)
- Number of SIP trunks and H.323 trunks

Server Statistics Report

The Server Statistics Report provides the following line charts:

- Percentage of CPU per Server
- Percentage of Memory Usage per Server
- Percentage of Hard Disk Usage of the Largest Partition per Server

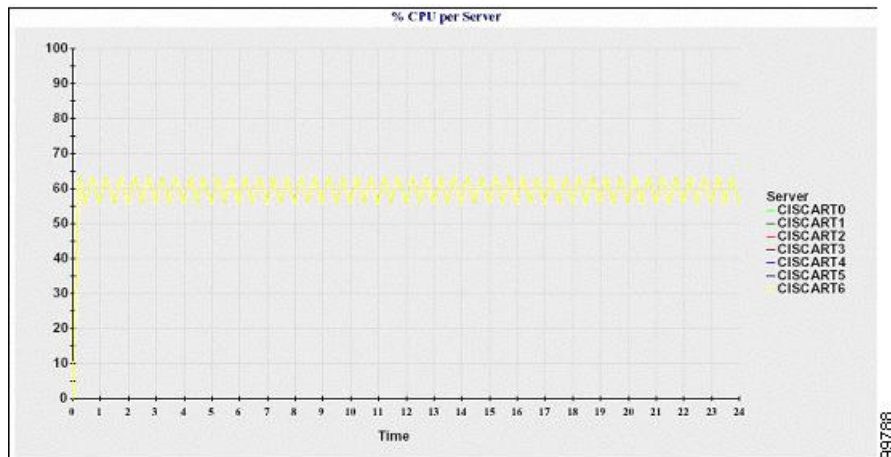
Cluster-specific statistics are only supported by Unified Communications Manager and IM and Presence Service.

Percentage of CPU Per Server

A line chart displays the percentage of CPU usage for the server (or for each server in a cluster). The line in the chart represents the data for the server (or one line for each server in a cluster) for which data is available. Each data value in the chart represents the average CPU usage for a 15-minute duration. If no data exists for the server (or for any one server in a cluster), Reporter does not generate the line that represents that server. If there are no lines to generate, Reporter does not create the chart. The message “No data for Server Statistics report available” displays.

Figure 5: Line Chart That Depicts the Percentage of CPU Per Server

The following figure shows a line chart example representing the percentage of CPU usage per server in a Unified Communications Manager cluster configuration.

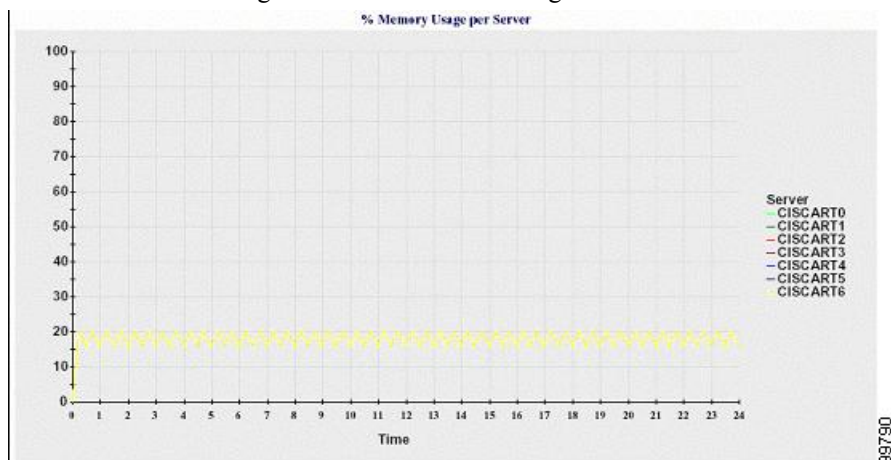


Percentage of Memory Usage Per Server

A line chart displays the percentage of Memory Usage for the Unified Communications Manager server (%MemoryInUse). In a Unified Communications Manager cluster configuration, there is one line per server in the cluster for which data is available. Each data value in the chart represents the average memory usage for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data exists for any server in a cluster configuration, Reporter does not generate the line that represents that server.

Figure 6: Line Chart That Depicts Percentage of Memory Usage Per Server

The following figure shows a line chart example representing the percentage of memory usage per Unified Communications Manager server in a cluster configuration.



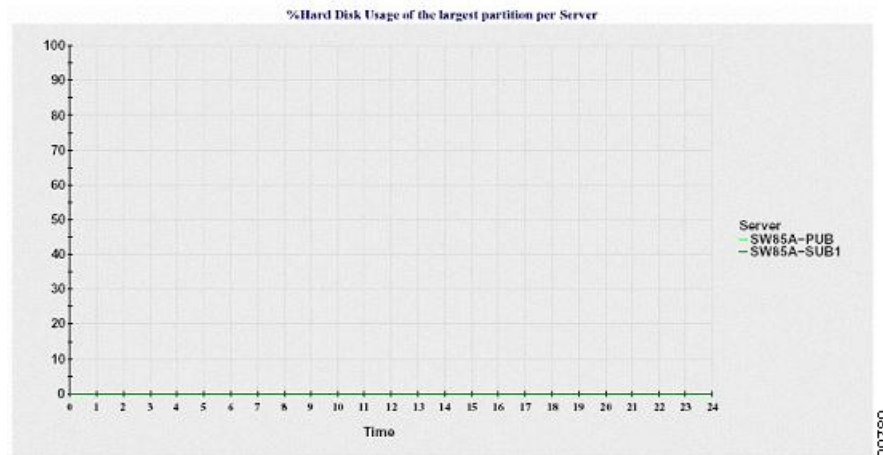
Percentage of Hard Disk Usage of the Largest Partition Per Server

A line chart displays the percentage of disk space usage for the largest partition on the server (%DiskSpaceInUse), or on each server in a cluster configuration. Each data value in the chart represents the average disk usage for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data

exists for any one server in a cluster configuration, Reporter does not generate the line that represents that server.

Figure 7: Line Chart That Depicts Percentage of Hard Disk Usage of the Largest Partition Per Server

The following figure shows a line chart example representing the percentage of hard disk usage for the largest partition per server in a Unified Communications Manager cluster configuration.



The server (or each server in a cluster configuration) contains log files that match the filename pattern `ServerLog_mm_dd_yyyy_hh_mm.csv`. The following information exists in the log file:

- Percentage of CPU usage on the server (or each server in a cluster)
- Percentage of Memory usage (%MemoryInUse) on the server (or on each server in a cluster)
- Percentage of Hard disk usage of the largest partition (%DiskSpaceInUse) on the server (or on each server in a cluster)

Service Statistics Report

The Service Statistics Report does not support IM and Presence Service and Cisco Unity Connection.

The Service Statistics Report provides the following line charts:

- Cisco CTI Manager: Number of Open Devices
- Cisco CTI Manager: Number of Open Lines
- Cisco TFTP: Number of Requests
- Cisco TFTP: Number of Aborted Requests

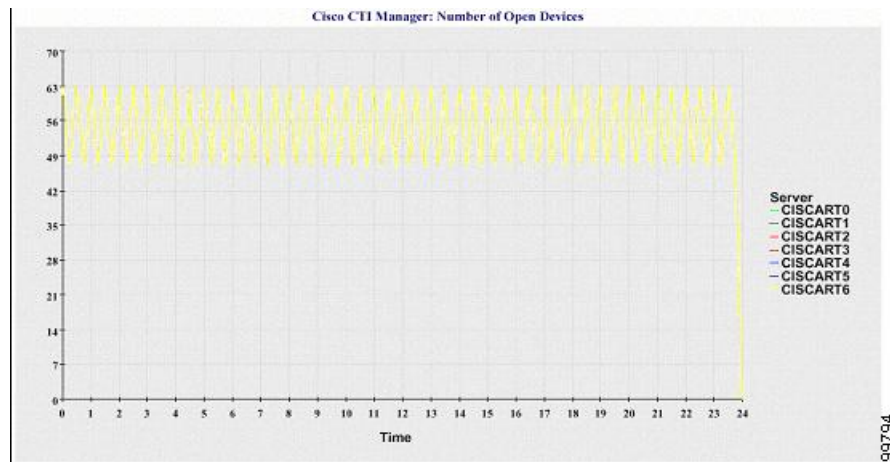
Cisco CTI Manager: Number of Open Devices

A line chart displays the number of CTI Open Devices for the CTI Manager (or for each CTI Manager in a Unified Communications Manager cluster configuration). Each line chart represents the data for the server (or on each server in a Unified Communications Manager cluster) on which service is activated. Each data value in the chart represents the average number of CTI open devices for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data exists for any one server in a Unified Communications

Manager cluster configuration, Reporter does not generate the line that represents that server. The message “No data for Service Statistics report available” displays.

Figure 8: Line Chart That Depicts Cisco CTI Manager: Number of Open Devices

The following figure shows a line chart example representing the number of open devices per Cisco CTI Manager in a Unified Communications Manager cluster configuration.

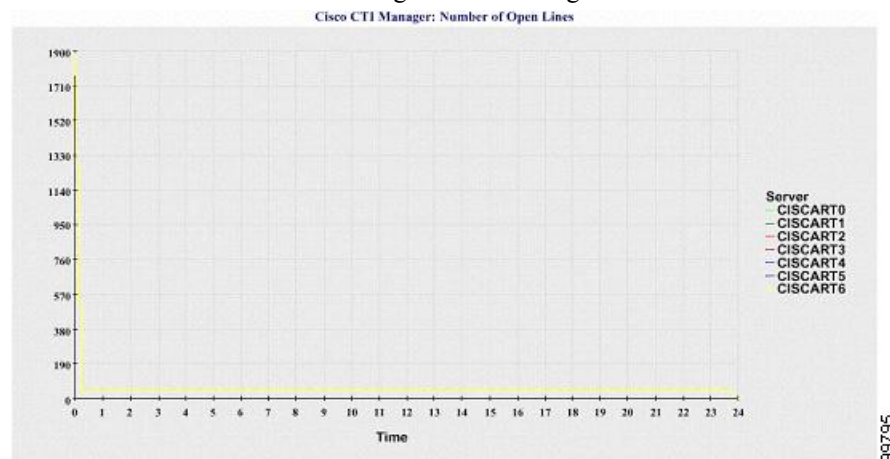


Cisco CTI Manager: Number of Open Lines

A line chart displays the number of CTI open lines for the CTI Manager (or per CTI Manager in a Unified Communications Manager cluster configuration). A line in the chart represents the data for the server (or one line for each server in a Unified Communications Manager cluster configuration) where the Cisco CTI Manager service is activated. Each data value in the chart represents the average number of CTI open lines for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data exists for any one server in a Unified Communications Manager cluster configuration, Reporter does not generate the line that represents that server.

Figure 9: Line Chart That Depicts Cisco CTI Manager: Number of Open Lines

The following figure shows a line chart example representing the number of open lines per Cisco CTI Manager in a Unified Communications Manager cluster configuration.

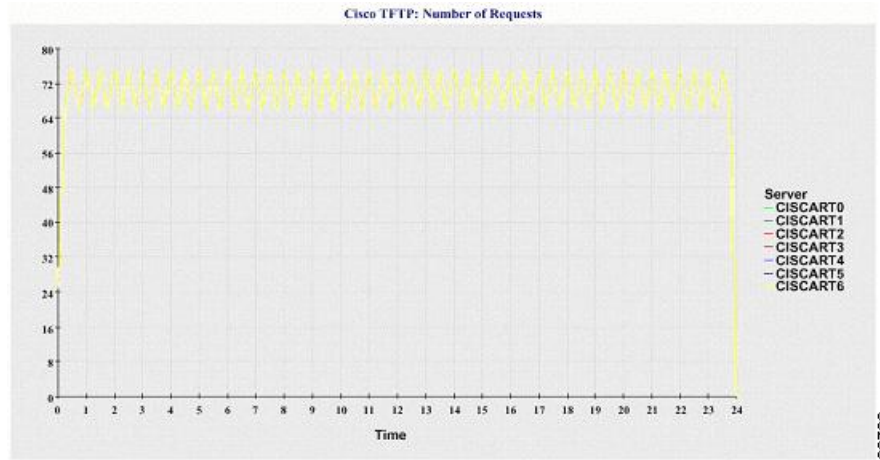


Cisco TFTP: Number of Requests

A line chart displays the number of Cisco TFTP requests for the TFTP server (or per TFTP server in a Unified Communications Manager cluster configuration). A line in the chart represents the data for the server (or one line for each server in a Unified Communications Manager cluster) where the Cisco TFTP service is activated. Each data value in the chart represents the average number of TFTP requests for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data exists for any one server in a Unified Communications Manager cluster configuration, Reporter does not generate the line that represents that server.

Figure 10: Line Chart That Depicts Cisco TFTP: Number of Requests

The following figure shows a line chart example representing the number of Cisco TFTP requests per TFTP server.

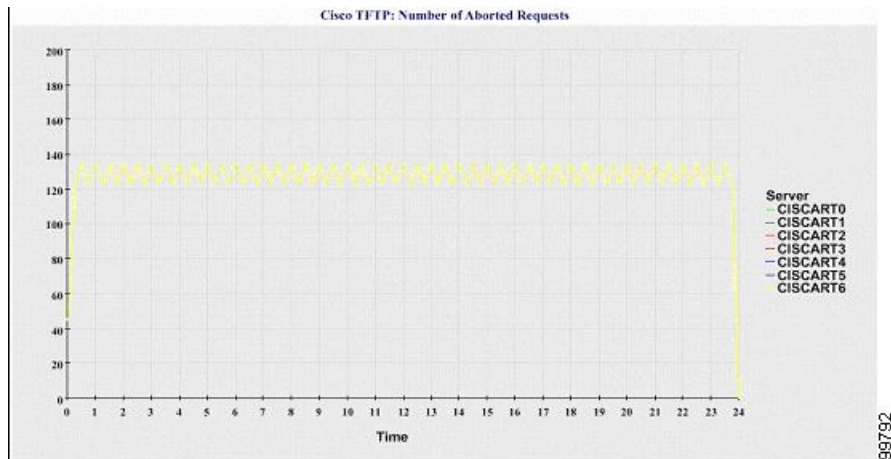


Cisco TFTP: Number of Aborted Requests

A line chart displays the number of Cisco TFTP requests that were aborted for the TFTP server (or per TFTP server in a Unified Communications Manager cluster configuration). A line in the chart represents the data for the server (or one line for each server in a Unified Communications Manager cluster) where the Cisco TFTP service is activated. Each data value in the chart represents the average of TFTP requests that were aborted for a 15-minute duration. If no data exists, Reporter does not generate the chart. If no data exists for any one server in a Unified Communications Manager cluster configuration, Reporter does not generate the line that represents that server.

Figure 11: Line Chart That Depicts Cisco TFTP: Number of Aborted Requests

The following figure shows a line chart example that represents the number of Cisco TFTP requests that were aborted per TFTP server.



The server (or each server in a Unified Communications Manager cluster) contains log files that match the filename pattern ServiceLog_mm_dd_yyyy_hh_mm.csv. The following information exists in the log file:

- For each CTI Manager - Number of open devices
- For each CTI Manager - Number of open lines
- For each Cisco TFTP server - TotalTftpRequests
- For each Cisco TFTP server - TotalTftpRequestsAborted

Call Activities Report

The Call Activities Report does not support IM and Presence Service and Cisco Unity Connection.

The Call Activities Report provides the following line charts:

- Unified Communications Manager Call Activity for a cluster
- H.323 Gateways Call Activity for the Cluster
- MGCP Gateways Call Activity for the Cluster
- MGCP Gateways
- Trunk Call Activity for the Cluster

Cisco Unified Communications Manager Call Activity for the Cluster

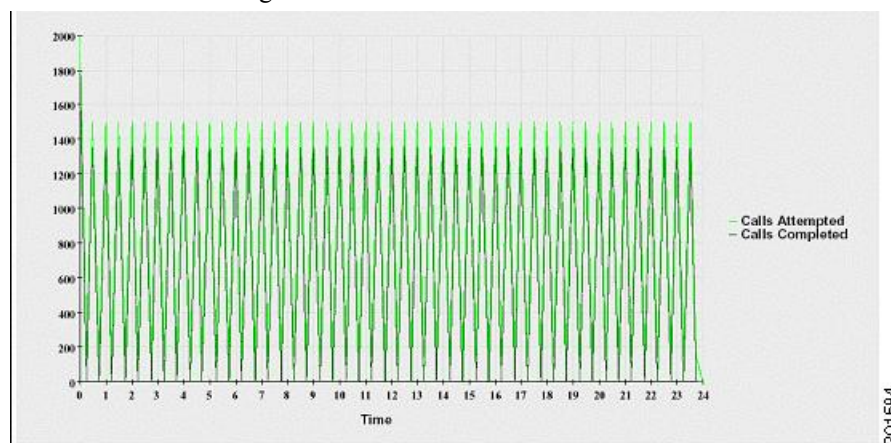
A line chart displays the number of Unified Communications Manager calls that were attempted and calls that were completed. In a Unified Communications Manager cluster configuration, the line chart displays the number of calls attempted and completed for the entire cluster. The chart comprises two lines, one for the number of calls that were attempted and another for the number of calls that were completed. For a Unified Communications Manager cluster configuration, each line represents the cluster value, which is the sum of the values for all the servers in the cluster (for which data is available). Each data value in the chart represents the total number of calls that were attempted or calls that were completed for a 15-minute duration.

If no data exists for Unified Communications Manager calls that were completed, Reporter does not generate the line that represents data for the calls that were completed. If no data exists for Unified Communications

Manager calls that were attempted, Reporter does not generate the line that represents data for the calls that were attempted. In a Unified Communications Manager cluster configuration, if no data exists for a server in the cluster, Reporter does not generate the line that represents calls attempted or completed on that server. If no data exists for Unified Communications Manager call activities at all, Reporter does not generate the chart. The message “No data for Call Activities report available” displays.

Figure 12: Line Chart That Depicts Cisco Unified Communications Manager Call Activity for a Cluster

The following figure shows a line chart representing the number of attempted and completed calls for a Unified Communications Manager cluster.

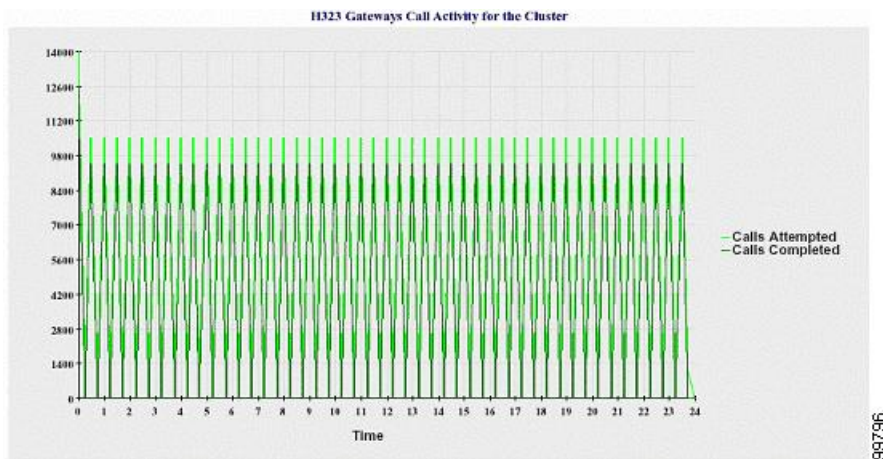


H.323 Gateways Call Activity for the Cluster

A line chart displays the number of calls that were attempted and calls that were completed for H.323 gateways. In a Unified Communications Manager cluster configuration, the line chart displays the number of calls attempted and completed for the entire cluster. The chart comprises two lines, one for the number of calls that were attempted and another for the number of calls that were completed. For a Unified Communications Manager cluster configuration, each line represents the cluster value, which equals the sum of the values for all the servers in the cluster (for which data is available). Each data value in the chart represents the total number of calls that were attempted or calls that were completed for a 15-minute duration. If no data exists for H.323 gateways calls that were completed, Reporter does not generate the line that represents data for calls that were completed. If no data exists for H.323 gateways calls that were attempted, Reporter does not generate the line that represents data for calls that were attempted. In a Unified Communications Manager cluster configuration, if no data exists for a server in the cluster, Reporter does not generate the line that represents calls attempted or completed on that server. If no data exists for H.323 gateways call activities at all, Reporter does not generate the chart.

Figure 13: Line Chart That Depicts H.323 Gateways Call Activity for the Cluster

The following figure shows a line chart representing the H.323 gateway call activity for a Unified Communications Manager cluster.

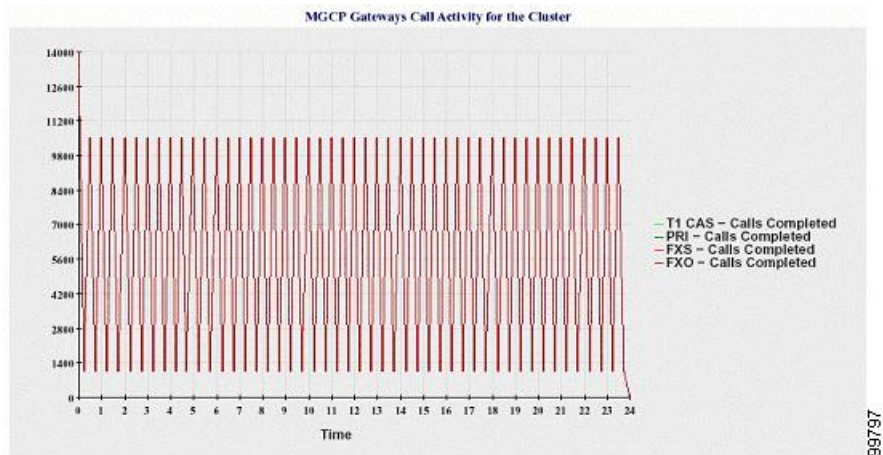


MGCP Gateways Call Activity for the Cluster

A line chart displays the number of calls that were completed in an hour for MGCP FXO, FXS, PRI, and TICAS gateways. In a Unified Communications Manager cluster configuration, the chart displays the number of calls that were completed for the entire Unified Communications Manager cluster. The chart comprises four lines at the most, one for the number of calls that were completed for each of the gateway types (for which data is available). Each data value in the chart represents the total number of calls that were completed for a 15-minute duration. If no data exists for a gateway, Reporter does not generate the line that represents data for calls that were completed for a particular gateway. If no data exists for all gateways, Reporter does not generate the chart.

Figure 14: Line Chart That Depicts MGCP Gateways Call Activity for the Cluster

The following figure shows a line chart representing the MGCP gateways call activity for a Unified Communications Manager cluster.



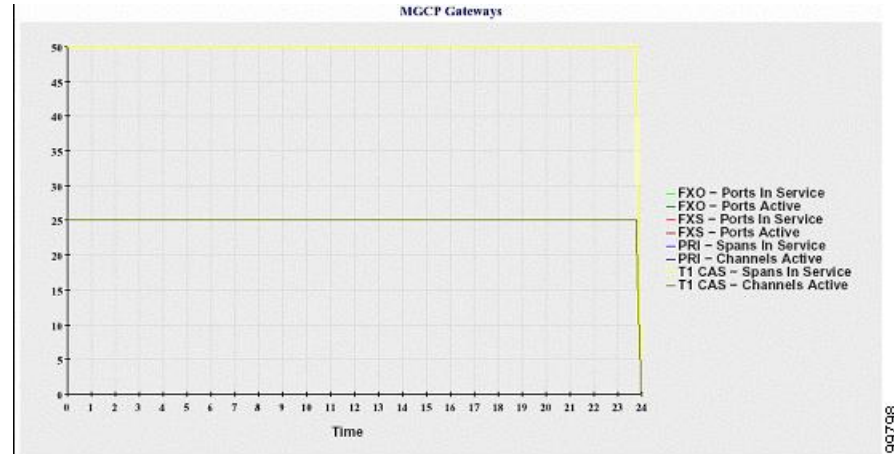
MGCP Gateways

A line chart displays the number of Ports In Service and Active Ports for MGCP FXO, FXS gateways and the number of Spans In Service or Channels Active for PRI, TICAS gateways. For a Unified Communications Manager cluster configuration, the chart displays the data for the entire Unified Communications Manager cluster. The chart comprises eight lines, two lines each for the number of Ports In Service for MGCP FXO and FXS, and two lines each for the number of Active Ports for MGCP FXO and FXS. Four more lines for

the number of Spans In Service and Channels Active for PRI and T1CAS gateways exist. For a Unified Communications Manager cluster configuration, each line represents the cluster value, which is the sum of the values for all servers in the cluster (for which data is available). Each data value in the chart represents the total Number of Ports In Service, Number of Active Ports, Spans In Service or Channels Active for a 15-minute duration. If no data exists for the number of Spans In Service or the Channels Active for a gateway (MGCP PRI, T1CAS) for all servers, Reporter does not generate the line that represents data for that particular gateway.

Figure 15: Line Chart That Depicts MGCP Gateways

The following figure shows a line chart representing the MGCP gateways.

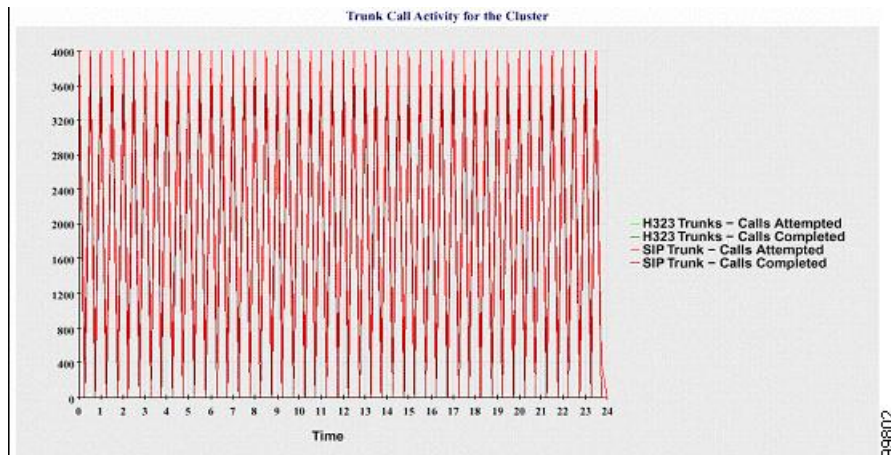


Trunk Call Activity for the Cluster

A line chart displays the number of calls that were completed and calls that were attempted in an hour for SIP trunk and H.323 trunk. For a Unified Communications Manager cluster configuration, the chart displays the number of calls that were completed and calls that were attempted for the entire Unified Communications Manager cluster. The chart comprises four lines, two for the number of calls that were completed for each SIP and H.323 trunk (for which data is available) and two for the number of calls that were attempted. For a Unified Communications Manager cluster configuration, each line represents the cluster value, which is the sum of the values for all nodes in the cluster (for which data is available). Each data value in the chart represents the total number of calls that were completed or number of calls that were attempted for a 15-minute duration. If no data exists for a trunk, Reporter does not generate the line that represents data for the calls that were completed or the calls that were attempted for that particular trunk. If no data exists for both trunk types, Reporter does not generate the chart.

Figure 16: Line Chart That Depicts Trunk Call Activity for the Cluster

The following figure shows a line chart representing the trunk call activity for a Unified Communications Manager cluster.



The server (or each server in a Unified Communications Manager cluster configuration) contains log files that match the filename pattern `CallLog_mm_dd_yyyy_hh_mm.csv`. The following information exists in the log file:

- Calls that were attempted and calls that were completed for Unified Communications Manager (or for each server in a Unified Communications Manager cluster)
- Calls that were attempted and calls that were completed for the H.323 gateways (or for the gateways in each server in a Unified Communications Manager cluster)
- Calls that were completed for the MGCP FXO, FXS, PRI, and T1CAS gateways (or for the gateways in each server in a Unified Communications Manager cluster)
- Ports in service, active ports for MGCP FXO and FXS gateways and spans in service, channels active for PRI, and T1CAS gateways (in each server in a Unified Communications Manager cluster)
- Calls that were attempted and calls that were completed for H.323 trunks and SIP trunks

Alert Summary Report

The Alert Summary Report provides the details of alerts that are generated for the day.

Cluster-specific statistics are supported only by Unified Communications Manager and IM and Presence Service.

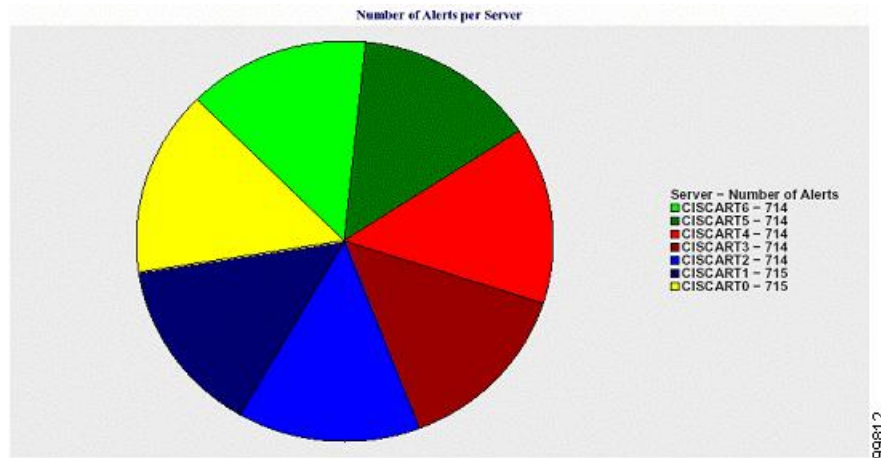
Number of Alerts Per Server

A pie chart provides the number of alerts per node in a cluster. The chart displays the serverwide details of the alerts that are generated. Each sector of the pie chart represents the number of alerts generated for a particular server in the cluster. The chart includes as many number of sectors as there are servers (for which Reporter generates alerts in the day) in the cluster. If no data exists for a server, no sector in the chart represents that server. If no data exists for all servers, Reporter does not generate the chart. The message “No alerts were generated for the day” displays.

Cisco Unity Connection only: A pie chart provides the number of alerts for the server. The chart displays the serverwide details of the alerts that are generated. If no data exists for the server, Reporter does not generate the chart. The message “No alerts were generated for the day” displays.

The following chart shows a pie chart example that represents the number of alerts per server in a Unified Communications Manager cluster.

Figure 17: Pie Chart That Depicts Number of Alerts Per Server

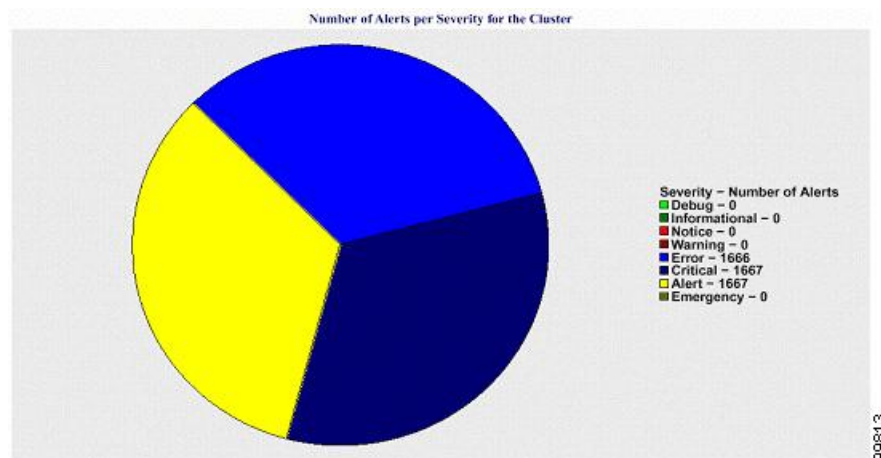


Number of Alerts Per Severity for the Cluster

A pie chart displays the number of alerts per alert severity. The chart displays the severity details of the alerts that are generated. Each sector of the pie chart represents the number of alerts that are generated of a particular severity type. The chart provides as many number of sectors as there are severities (for which Reporter generates alerts in the day). If no data exists for a severity, no sector in the chart represents that severity. If no data exists, Reporter does not generate the chart.

The following chart shows a pie chart example that represents the number of alerts per severity for a Unified Communications Manager cluster.

Figure 18: Pie Chart That Depicts Number of Alerts Per Severity for the Cluster



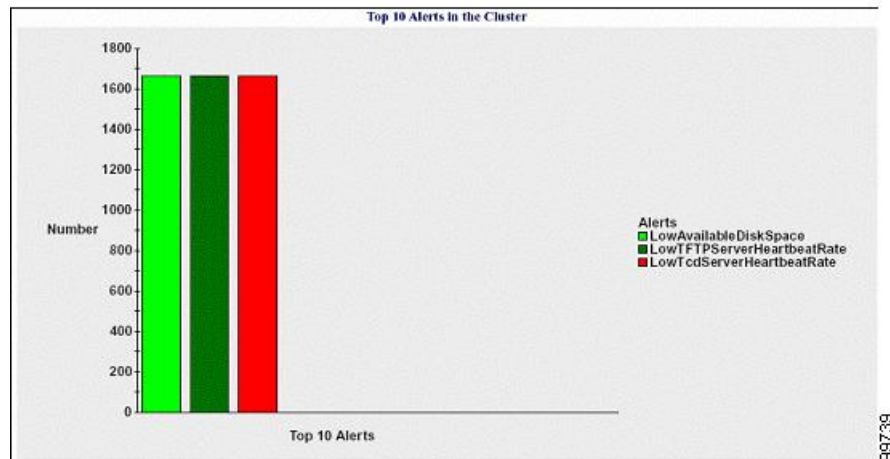
Top Ten Alerts in the Cluster

A bar chart displays the number of alerts of a particular alert type. The chart displays the details of the alerts that are generated on the basis of the alert type. Each bar represents the number of alerts for an alert type. The chart displays details only for the first ten alerts based on the highest number of alerts in descending order. If

no data exists for a particular alert type, no bar represents that alert. If no data exists for any alert type, RTMT does not generate the chart.

The following chart shows a bar chart example that represents the top ten alerts in a Unified Communications Manager cluster.

Figure 19: Bar Chart That Depicts Top 10 Alerts in the Cluster



The server (or each server in a cluster) contains log files that match the filename pattern AlertLog_mm_dd_yyyy_hh_mm.csv. The following information exists in the log file:

- Time - Time at which the alert occurred
- Alert Name - Descriptive name
- Node Name - Server on which the alert occurred
- Monitored object - The object that is monitored
- Severity - Severity of this alert

Performance Protection Report

The Performance Protection Report does not support IM and Presence Service and Cisco Unity Connection.

The Performance Protection Report provides a summary that comprises different charts that display the statistics for that particular report. Reporter generates reports once a day on the basis of logged information.

The Performance Protection Report provides trend analysis information on default monitoring objects for the last seven that allows you to track information about Cisco Intercompany Media Engine. The report includes the Cisco IME Client Call Activity chart that shows the total calls and fallback call ratio for the Cisco IME client.

The Performance Protection report comprises the following charts:

- Cisco Unified Communications Manager Call Activity
- Number of registered phones and MGCP gateways
- System Resource Utilization

- Device and Dial Plan Quantities

Cisco Unified Communications Manager Call Activity

A line chart displays the hourly rate of increase or decrease for number of calls that were attempted and calls that were completed as the number of active calls. For a Unified Communications Manager cluster configuration, the data is charted for each server in the cluster. The chart comprises three lines, one for the number of calls that were attempted, one for the calls that were completed, and one for the active calls. If no data exists for call activity, Reporter does not generate the chart.

Number of Registered Phones and MGCP Gateways

A line chart displays the number of registered phones and MGCP gateways. For a Unified Communications Manager cluster configuration, the chart displays the data for each server in the cluster. The chart comprises two lines, one for the number of registered phones and another for the number of MGCP gateways. If no data exists for phones or MGCP gateways, Reporter does not generate the chart.

System Resource Utilization

A line chart displays the CPU load percentage and the percentage of memory that is used (in bytes) for the server (or for the whole cluster in a Unified Communications Manager cluster configuration). The chart comprises two lines, one for the CPU load and one for the memory usage. In a Unified Communications Manager cluster, each line represents the cluster value, which is the average of the values for all the servers in the cluster (for which data is available). If no data exists for phones or MGCP gateways, Reporter does not generate the chart.

Device and Dial Plan Quantities

Two tables display information from the Unified Communications Manager database about the numbers of devices and number of dial plan components. The device table shows the number of IP phones, Cisco Unity Connection ports, H.323 clients, H.323 gateways, MGCP gateways, MOH resources, and MTP resources. The dial plan table shows the number of directory numbers and lines, route patterns, and translation patterns.

Set Up Serviceability Reports Archive Overview

The following steps provide information for configuring the serviceability report archive feature.

Procedure

- Step 1** Activate the Cisco Serviceability Reporter service.
 - Step 2** Configure the Cisco Serviceability Reporter service parameters.
 - Step 3** View the reports that the Cisco Serviceability Reporter service generates.
-

Related Topics

- [Activate Feature Services](#)
- [Serviceability Reporter Service Parameters](#), on page 2

Set Up Serviceability Reports Archive

The Cisco Serviceability Reporter service generates daily reports in Cisco Unified Serviceability. Each report provides a summary that comprises different charts that display the statistics for that particular report. Reporter generates reports once a day on the basis of logged information.

This section describes how to use the Serviceability Reports Archive window.

Before you begin

Activate the Cisco Serviceability Reporter service, which is CPU intensive. After you activate the service, report generation may take up to 24 hours.

Unified Communications Manager only: Cisco recommends that you activate the service on a non-call-processing server.

Procedure

Step 1 Choose **Tools > Serviceability Reports Archive**.

The Serviceability Reports Archive window displays the month and year for which the reports are available.

Step 2 From the Month-Year pane, choose the month and year for which you want to display reports.

A list of days that correspond to the month displays.

Step 3 To view reports, click the link that corresponds to the day for which reports were generated.

The report files for the day that you chose display.

Step 4 To view a particular PDF report, click the link of the report that you want to view.

Tip If you browsed into Cisco Unified Serviceability by using the node name, you must log in to Cisco Unified Serviceability before you can view the report.

If your network uses Network Address Translation (NAT) and you are trying to access serviceability reports inside the NAT, enter the IP address for the private network that is associated with the NAT in the browser URL. If you are trying to access the reports outside the NAT, enter the public IP address, and NAT will accordingly translate/map to the private IP address.

To view PDF reports, you must install Acrobat Reader on your machine. To download Acrobat Reader, click the link at the bottom of the Serviceability Reports Archive window.

A window opens and displays the PDF file of the report that you chose.

Access to Serviceability Reports Archive

Activate Serviceability Reports Archive

Procedure

- Step 1** Select **Tools > Service Activation**.
 - Step 2** Select the required server from the **Server** list box, and then select **Go**.
 - Step 3** Navigate to the **Performance and Monitoring** services pane.
 - Step 4** Check the **Cisco Serviceability Reporter** service checkbox, and then select **Save**.
 - Step 5** Select **Tools > Control Center - Feature Services**.
 - Step 6** Select the required server from the **Server** list box, and then select **Go**.
 - Step 7** Navigate to the **Performance and Monitoring** services pane and locate the Cisco Serviceability Reporter.
 - Step 8** Verify that the status of the Cisco Serviceability Reporter is Started and Activated. If the Cisco Serviceability Reporter is not running, select the Cisco Serviceability Reporter and select **Start**.
-

What to do next

If you opened Cisco Unified IM and Presence Serviceability by entering the server name in the browser, you must sign in to Cisco Unified IM and Presence Serviceability before you can view the report.

The Cisco Unified IM and Presence Serviceability service generates reports only on the first node, even if you turn on the service on other nodes.

Access Serviceability Reports Archive

Before you begin

Activate the Cisco Serviceability Reporter service. After you activate the service, report generation may take up to 24 hours.

Procedure

- Step 1** Select **Tools > Serviceability Reports Archive**.
- Step 2** Select the month and year for which you want to display reports in the **Month-Year** section.
- Step 3** Select the link that corresponds to the day for which reports were generated to view the required report.
- Step 4** Select the link of the report that you want to view to view a particular PDF report.

The section in the Trace Filter Settings area that relates to devices is not relevant to IM and Presence.

Tip If you opened Cisco Unified IM and Presence Serviceability by entering the server name in the browser, you must sign in to Cisco Unified IM and Presence Serviceability before you can view the report.

CDR Repository Manager

This section does not apply to IM and Presence Service.

Use the CDR Management Configuration window to set the amount of disk space to allocate to call detail record (CDR) and call management record (CMR) files, configure the number of days to preserve files before deletion, and configure up to three billing application server destinations for CDRs. The CDR Repository Manager service repeatedly attempts to deliver CDR and CMR files to the billing servers that you configure in the CDR Management Configuration window until it delivers the files successfully, until you change or delete the billing application server on the CDR Management Configuration window, or until the files fall outside the preservation window and are deleted.

**Note**

To access the Enterprise Parameters Configuration window, open Cisco Unified Communications Manager Administration and choose **System > Enterprise Parameters**. The **CDR File Time Interval** parameter specifies the time interval for collecting CDR data. For example, if this value is set to 1, each file will contain 1 minute of CDR data (CDRs and CMRs, if enabled). The external billing server and CAR database will not receive the data in each file until the interval has expired, so consider how quickly you want access to the CDR data when you decide what interval to set for this parameter. For example, setting this parameter to 60 means that each file will contain 60 minutes worth of data, but that data will not be available until the 60-minute period has elapsed, and the records are written to the CAR database. and the CDR files are sent to the configured billing servers. The default value equals 1. The minimum value specifies 1, and the maximum value specifies 1440. The unit of measure for this required field represents a minute.

Both the CDR Agent and the CDR Repository Manager process files with an interval that is independent of the CDR File Time Interval. The CDR Repository Manager sends all existing CDR files to the billing application servers, sleeps for 6 seconds before checking the new files to send, and continues that 6-second interval. If the destination (the external billing application servers) does not respond, the system attempts the process again by using a doubled length of the sleep interval (12 seconds). Each delivery failure results in double the sleep time (6, 12, 24, 48, and so on, seconds) until 2 minutes occurs, then stays at 2-minute intervals until successful delivery occurs. After successful delivery, the 6-second interval automatically resumes.

Users cannot configure the 6-second processing time, with the sleep time interval doubling in case of failure. Users can configure only the **CDR File Time Interval** enterprise parameter. No alert gets sent after the first file delivery failure. By default, the system generates the CDRFileDeliveryFailed alert after the second delivery failure of the Cisco CDR Repository Manager service to deliver files to any billing application server. You can configure the alert to send you an e-mail or to page you. For information on configuring alerts, see the “Working with Alerts” chapter in the *Cisco Unified Real-Time Monitoring Tool Administration Guide*.

The system generates the CDRFileDeliveryFailureContinues syslog alarm upon subsequent failures to deliver the files to the billing application servers.

The CDR Agent behaves in almost the same manner. First, it sends all the existing CDR files to the publisher. If no additional files to send exist, the CDR Agent sleeps for 6 seconds before checking for new files. Each delivery failure results in the immediate change of the sleep interval to 1 minute, then stays at 1-minute intervals until successful delivery. After the first successful delivery of files, the 6-second interval resumes.

The system sends no alert after the first file delivery failure by the CDR Agent. By default, the system generates the CDRAgentSendFileFailed alert after the second delivery failure of the CDR Agent. You can configure the alert to send you an email or to page you. For information on configuring alerts, see the “Working with Alerts” chapter in the *Cisco Unified Real-Time Monitoring Tool Administration Guide*

The system generates the CDRAgentSendFileFailedContinues syslog alarm upon subsequent failures to deliver the files.

If you need to start or restart the file transfer timer, you can restart the Cisco CDR Repository Manager or CDR Agent process by going to the Cisco Unified Serviceability window and selecting **Tools > Control Center > Network Services**.

When you enable the file deletion based on high water mark parameter, the CDR repository manager service monitors the amount of disk space that CDR and CMR files use. If disk usage exceeds the high water mark that you configure, the system purges the CDR and CMR files that have been successfully delivered to all destinations and loaded into the CAR database (if CAR is activated) until the disk space reaches the low water mark or the system deletes all successfully delivered files. If disk usage still exceeds the high water mark after the system deletes all successfully delivered files, it does not delete any more files, unless the disk usage still exceeds the disk allocation that you configure. If the disk usage still exceeds the disk allocation that you configure, the system purges files beginning with the oldest, regardless of whether the files fall within the preservation window or have been successfully delivered, until the disk usage falls below the high water mark.



Note Regardless of whether you enable the deletion of files based on the high water mark parameter, if disk usage exceeds the disk allocation that you configure, the CDR repository manager service deletes CDR and CMR files, beginning with the oldest files, until disk utilization falls below the high water mark.

The Cisco Log Partition Monitoring Tool service monitors the disk usage of CDR and CMR flat files that have not been delivered to the CDR repository manager.

Unified Communications Manager only: If the disk usage of the log partition on a server exceeds the configured limit and the service has deleted all other log and trace files, the log partition monitor service deletes CDR/CMR files on the subsequent nodes that have not been delivered to the CDR repository manager.

For more information about log partition monitoring, see the *Cisco Unified Real-Time Monitoring Tool Administration Guide*.

Set Up General Parameters

To set disk utilization and file preservation parameters for CDRs, perform the following procedure.

Procedure

Step 1 Choose **Tools > CDR Management**.

The CDR Management window displays.

Step 2 Click the CDR Manager general parameter value that you want to change.

Step 3 Enter the appropriate CDR Repository Manager general parameter settings.

Step 4 Click **Update**.

Tip At any time, you can click **Set Default** to specify the default values. After you set the defaults, click **Update** to save the default values.

Related Topics

[General Parameter Settings](#), on page 22

General Parameter Settings

The following table describes the available settings in the General Parameters section of the CDR Management Configuration window.

Table 1: CDR Repository Manager General Parameter Settings

Field	Description
Disk Allocation (MB)	<p>Choose the number of megabytes that you want to allocate to CDR and CMR flat file storage.</p> <p>The default disk allocation and range vary depending on the size of the server hard drive.</p> <p>Note The maximum disk allocation space equals 3328 MB for a Unified Communications Manager server.</p> <p>If disk usage exceeds the allocated maximum disk space for CDR files, the system generates the CDRMaximumDiskSpaceExceeded alert and deletes all successfully processed files (those delivered to billing servers and loaded to CAR). If disk usage still exceeds the allocated disk space, the system deletes undelivered files and files within the preservation duration, starting with the oldest, until disk utilization falls below the high water mark.</p> <p>If you have a large system and do not allocate enough disk space, the system may delete the CDR and CMR files before the CAR Scheduler loads the files into the CAR database. For example, if you configure the CAR Scheduler to run once a day and you set the disk allocation to a value that is not large enough to hold the CDR and CMR files that are generated in a day, the system will delete the files before they are loaded into the CAR database.</p>

Field	Description
High Water Mark (%)	<p>This field specifies the maximum percentage of the allocated disk space for CDR and CMR files. For example, if you choose 2000 megabytes from the Disk Allocation field and 80% from the High Water Mark (%) field, the high water mark equals 1600 megabytes. In addition to the high water mark percentage, the number of CDRs in the CAR database cannot exceed two million records for a Unified Communications Manager server.</p> <p>When the disk usage exceeds the percentage that you specify, or the total number of CDRs is exceeded, and the Disable CDR/CMR Files Deletion Based on HWM check box is unchecked, the system automatically purges all successfully processed CDR and CMR files (those delivered to billing servers and loaded to CAR) beginning with the oldest files to reduce disk usage to the amount that you specify in the Low Water Mark (%) drop-down list box.</p> <p>If the disk usage still exceeds the low water mark or high water mark, the system does not delete any undelivered or unloaded files, unless the disk usage exceeds the disk allocation.</p> <p>If you check the Disable CDR/CMR Files Deletion Based on HWM check box, the system does not delete CDRs and CMRs based on the percentage that you specify in this field.</p> <p>Note If CDR disk space exceeds the high water mark, the system generates the CDRHWMExceeded alert.</p>
Low Water Mark (%)	<p>This field specifies the percentage of disk space that is allocated to CDR and CMR files that is always available for use. For example, if you choose 2000 megabytes from the Disk Allocation field and 40% from the Low Water Mark (%) field, the low water mark equals 800 megabytes.</p>
CDR / CMR Files Preservation Duration (Days)	<p>Choose the number of days that you want to retain CDR and CMR files. The CDR Repository Manager deletes files that fall outside the preservation window.</p> <p>Note If you continuously receive the CDRMaximumDiskSpaceExceeded alarm, you either must increase the disk allocation or lower the number of preservation days.</p>
Disable CDR/CMR Files Deletion Based on HWM	<p>Note Regardless of whether you enable the deletion of files based on the high-water mark parameter, if disk usage exceeds the disk allocation that you configure, the maximum database size, or the maximum number of records for your installation, the CDR repository manager service deletes CDR and CMR files, beginning with the oldest files, until disk utilization falls below the high water mark.</p> <p>If you do not want to delete CDRs and CMRs even if disk usage exceeds the percentage that you specify in the High Water Mark (%) field, check this check box. By default, this check box remains unchecked, so the system deletes CDRs and CMRs if disk usage exceeds the high water mark.</p>
CDR Repository Manager Host Name	<p>This field lists the hostname of the CDR repository manager server.</p>

Field	Description
CDR Repository Manager Host Address	This field lists the IP address of the CDR repository manager server.

Set Up Application Billing Servers

Use the following procedure to configure application billing servers to which you want to send CDRs. You can configure up to three billing servers.

Cipher Support

For Unified Communications Manager 11.5 and earlier versions, Unified Communications Manager advertises the following CBC ciphers for SFTP connections:

- aes128-cbc
- 3des-cbc
- blowfish-cbc



Note Make sure that the backup SFTP Server supports one of these CBC ciphers to communicate with Unified Communications Manager.

From Unified Communications Manager 12.0 release onwards, CBC ciphers are not supported. Unified Communications Manager supports and advertises only the following CTR ciphers:

- aes256-ctr
- aes128-ctr
- aes192-ctr



Note Make sure that the backup SFTP Server supports one of these CTR ciphers to communicate with Unified Communications Manager.

Procedure

Step 1 Choose **Tools > CDR Management Configuration**.

The CDR Management Configuration window displays.

Step 2 Perform one of the following tasks:

- To add a new application billing server, click the **Add New** button.
- To update an existing application billing server, click the server hostname/IP address.

Step 3 Enter the application billing server parameter settings.

Step 4 Click **Add** or **Update**.

Related Topics

[Application Billing Server Parameter Settings](#), on page 25

Application Billing Server Parameter Settings

The following table describes the available settings in the Billing Application Server Parameters section of the CDR Management Configuration window.

Table 2: Application Billing Server Parameter Settings

Field	Description
Host Name/IP Address	<p>Enter the hostname or IP address of the application billing server to which you want to send CDRs.</p> <p>If you change the value in this field, a prompt asks whether you want to send the undelivered files to the new destination.</p> <p>Perform one of the following tasks:</p> <ul style="list-style-type: none"> • To deliver the files to the new server, click Yes. • To change the server hostname/IP address without sending undelivered files, click No. The CDR Management service marks the CDR and CMR files as delivered.
User Name	Enter the username of the application billing server.
Protocol	Choose the protocol, either FTP or SFTP, that you want to use to send the CDR files to the configured billing servers.
Directory Path	<p>Enter the directory path on the application billing server to which you want to send the CDRs. You should end the path that you specify with a "/" or "\", depending on the operating system that is running on the application billing server.</p> <p>Note Make sure the FTP user has write permission to the directory.</p>
Password	Enter the password that is used to access the application billing server.

Field	Description
Resend on Failure	<p>When you check the Resend on Failure box, this option informs CDRM to send outdated CDR and CMR files to the billing server after the FTP or SFTP connection is restored. When the box is checked, the Resend on Failure flag is set to True. When the box is not checked, the Resend on Failure flag is set to False.</p> <p>There are several different scenarios that can occur. When the billing server Resend on Failure flag is set to True, all CDR files get moved to the billing server. When the Resend On Failure flag is set to False, CDR files that get generated during shutdown of the billing server get moved to the processed folder, but do not get moved to the billing server. When the Resend on Failure flag gets set to True at the beginning, and then gets changed several times, the result is that the CDR files get moved to the billing server whenever the Resend on Failure box gets checked.</p>
Generate New Key	Click on the Reset button to generate new keys and reset the connection to the SFTP server.

Delete Application Billing Servers

Use the following procedure to delete an application billing server.

Procedure

-
- Step 1** Choose **Tools > CDR Management**.
- The CDR Management Configuration window displays.
- Step 2** Check the check box next to the application billing server that you want to delete and click **Delete Selected**.
- A message displays that indicates that if you delete this server, any CDR or CMR files that have not been sent to this server will not be delivered to this server and will be treated as successfully delivered files.
- Tip** When you delete a server, the system does not generate the CDRFileDeliveryFailed alert for the files that are not sent to that server.
- Step 3** To complete the deletion, click **OK**.
-

Billing Server Authentication Issue

If you have a billing server deployed with SFTP, and you are using a non-default cipher that you configured on both Unified Communications Manager and on the billing server, a connection issue may result if you restart a Unified Communications Manager server, or if you restart the Cisco CallManager service. If this occurs, the billing server will be unable to authenticate and the connection will be broken.

After the restart, Unified Communications Manager advertises only the default ciphers and will not advertise any new ciphers that you installed, which will result in an authentication issue if you are using a non-default cipher. If you run into this issue, generate a new key and reset the connection:

Procedure

- Step 1** Choose **Tools > CDR Management**.
- The CDR Management Configuration window displays.
- Step 2** Under **Billing Application Server Parameters**, locate your billing server.
- Step 3** Click **Reset** to generate a new key that corresponds to your billing server.
-

After the reset, Unified Communications Manager advertises the default ciphers, and some additional ciphers. The billing server must have one of these ciphers installed to restore communication.

Locations

This section does not apply to IM and Presence Service.

This section explains the Locations feature (**Tools > Locations**) in Cisco Unified Serviceability. This feature enables an administrator to view details of the configured locations in an enterprise, understand the link and intralocation discrepancies, view effective path between the two locations, and identify disconnected groups of locations.

Locations Topology

Cisco Unified Serviceability Locations Topology provides details of configured locations in your enterprise. Location Topology refers to a modeled topology representing the flow of media in a network.

The following are some commonly used terms and their definitions:

Assertion

An assertion refers to the location and link bandwidth and weight values configured in a cluster. Asserted values may be replicated to another cluster.

Discrepancy

A discrepancy occurs if there is a difference in the location bandwidth values or link bandwidth and weight values asserted across various clusters.

Effective Path

An Effective Path is a sequence of intermediate locations connecting two end locations, with weight assigned to each link between each adjacent pair of locations. The Effective Path, as determined by the least cumulative weight, is the only path used for bandwidth deductions between any two end locations.

View Locations Topology

Cisco Unified Serviceability Locations Topology helps an administrator view the graphical locations topology in a tabular format. The administrator can filter required location names using the **Find** filter. The locations topology data includes the intralocation details and link details for a selected location.

This section describes how to search and view location topology in Cisco Unified Serviceability.

Procedure

Step 1 In Cisco Unified Serviceability, choose **Tools > Locations > Topology**.

The Locations Topology window appears.

Step 2 From the Find Locations Where Location Name drop-down box, choose the filter criteria.

Step 3 Enter the search string in the Find Locations Where Location Name field and then click **Find**.

Note The Find Locations Where Location Name field is not casesensitive.

The list of locations is displayed for the chosen filter criteria.

Step 4 In the list, click to expand any location to view its intralocation details and link details.

The intralocation details include audio, video, and immersive bandwidth whereas the link details contain the details of the link connecting two locations such as its weight, audio, video and immersive bandwidth.

Tip If the list of locations is long, it may run into multiple pages. To view another page, click the appropriate navigation button at the bottom of the Locations Topology window or enter a page number in the Page field. To change the number of locations that display in the window, choose a different value from the Rows Per Page drop-down box.

Tip If a location is highlighted by a Caution symbol, this indicates a discrepancy. To view the details of this discrepancy, click **View Assertion Details** link.

Step 5 To view the assertion details of any location, click **View Assertion Details** link at the bottom of the expanded details section.

The Assertion Details window appears.

Step 6 To return to the Locations Topology window, click **Close**.

Note To download the locations topology data in XML format, click **Download Topology** at the bottom of the Locations Topology window or **Download Topology** icon in the toolbar at the top.

For more information about the topology data in XML format, see the *Cisco Unified Communications Manager XML Developers Guide*.

View Assertion Details

Use the serviceability GUI to view the following assertion details:

- Intralocation configuration assertions—Includes the intralocation assertion details such as Asserted by Cluster, Audio, Video and Immersive bandwidth. Asserted by Cluster column lists the names of all the clusters that assert a particular location.
- Link assertions—Includes the assertion details of the link that connects two locations, such as Asserted by Cluster, Weight, Audio, Video, and Immersive bandwidth.

Procedure

- Step 1** Select **Tools > Locations > Locations Topology**.
- Step 2** Click the **View Assertion Details** link in the **Locations Topology** window.
-

Locations Discrepancy

The Locations Discrepancy screen displays the conflicts in assertions for various locations configurations.

The following details are displayed:

- Link Configuration Discrepancy—Includes the discrepancy details of the link that connects two locations, such as Weight, Audio, Video and Immersive bandwidth.
- Intralocation Configuration Discrepancy—Includes intralocation discrepancy details such as Audio, Video, and Immersive bandwidth.

View Locations Discrepancy

This section describes how to view a location discrepancy in Cisco Unified Serviceability.

Procedure

- Step 1** In Cisco Unified Serviceability, choose **Tools > Locations > Discrepancy**.
The Location Discrepancy window appears.
- Step 2** The list of link configuration discrepancies and intralocation configuration discrepancies is displayed.
- Note** The Link Configuration Discrepancy section lists only those link names where discrepancy has been detected. Link names are listed in the format *<Location Name 1> <--> <Location Name 2>*. The Intralocation Configuration Discrepancy section lists only those location names where such discrepancy has been detected. The elements in the list are sorted in lexical order.

If no discrepancies are found, the following status message is displayed:

No discrepancies found

- Step 3** In the list, click on a link name or location name to expand and view its configuration details as asserted by different clusters, in a tabular view.

The bottom row displays the effective values considered for audio, video, and immersive bandwidth pools and weight (in the case of links). The values that do not match with the effective values are highlighted in red.

Note The Effective Value is the least of the values in a particular column. For example, the Effective Value of audio bandwidth is the minimum value in the Audio Bandwidth column.

Effective Path

The Cisco Unified Serviceability Effective Path screen provides details of the effective path that media takes for audio, video, or immersive calls made between two locations provided by the administrator. This screen displays the Available bandwidth and the Configured bandwidth across each link and intralocation in the effective path. An administrator can use this report to determine bandwidth availability across a link and intra-location when there are bandwidth issues in making calls. Cisco Unified Serviceability Effective Path can also be used to troubleshoot bandwidth issues in making calls and find out where the bandwidth availability is low.

The Cisco Unified Serviceability Effective Path screen displays the following details between two selected locations:

- Quick Path Overview —Displays the cumulative weight and the least of the configured and available Audio, Video, and Immersive Bandwidth values across the effective path.
- Detailed Path View—Displays the weight and bandwidth values (Available and Configured) for Audio, Video, and Immersive calls for locations and links constituting the effective path, in a tabular view ordered from source location at top to the destination location at bottom.



Note The Available bandwidth values displayed in the report are the value at the time of viewing the Effective Path. You can view the real-time values in the Cisco Unified Real-Time Monitoring Tool.

View Effective Path

Procedure

Step 1 In Cisco Unified Serviceability, choose **Tools > Locations > Effective Path**.

The Effective Path window appears.

Step 2 From the **Location** drop-down boxes, select any two locations between which effective path is required and then click **Find**.

Alternatively, start typing the location name in the input box to shortlist the matching location names and then click **Find**.

The effective path details, which include the Quick Path Overview and Detailed Path View sections, are displayed. If there is no path between the two selected locations, the following status message is displayed:

No path exists between <From_Location> and <To_Location>.

Disconnected Groups

Cisco Unified Serviceability Disconnected Groups screen enables an administrator to view and analyze any disconnect between the locations that are part of the topology. It displays a list of disconnected groups of locations, which helps an administrator understand which locations need to be connected.

The disconnect in the topology can occur when a link between two locations is not configured or a shared location name is misspelled.



Note The Disconnected Groups screen displays and compares only disconnected groups of locations. For information on connecting locations, see topics related to location configuration in *Administration Guide for Cisco Unified Communications Manager*.

View Disconnected Groups

This section describes how to view disconnected groups in Cisco Unified Serviceability.

Procedure

In Cisco Unified Serviceability, choose **Tools > Locations > Disconnected Groups**.

The Disconnected Groups screen appears.

The following table describes the settings that are displayed on the Disconnected Groups screen.

Table 3: Settings on the Disconnected Groups Screen

Setting	Description
List of Disconnected Groups	
Select	Check this box to select a disconnected group to be compared with another disconnected group. Caution You can select only two groups for comparison.
Group ID	Auto-generated unique identification number of the selected group is displayed here.
Description	The names of the first and last location (as per the alphabetical order) in the group are displayed here. Note If a disconnected group has only one node, only the name of that node is displayed here.

Setting	Description
No of Locations	The number of locations in a group is displayed here.
Compare Selected Groups	Click this button to display and compare the selected groups. After you click this button, the details that pertain to the selected groups are displayed. For every group you select, names of the locations that are part of that group and the corresponding clusters that assert a location are displayed. See Comparison view for the selected groups below.
Comparison view for the selected groups	
Location Name	The names of all the locations that are part of a group are listed in this column.
Asserted by Cluster	The names of all the clusters that assert a particular location are listed in this column.

If there are no disconnected groups of locations, the following status message is displayed:

No disconnected groups of locations found



Note The List of Disconnected Groups can be sorted by any column. By default, the groups are sorted by the No. of Locations column.
