



CHAPTER 10

Configuring QoS System Reports

CAR provides reporting capabilities for three levels of users:

- Administrators—Generate system reports to help with load balancing, system performance, and troubleshooting.
- Managers—Generate reports for users, departments, and QoS to help with call monitoring for budgeting or security purposes and for determining the voice quality of the calls.
- Individual users—Generate a billing report for calls by each user.



Note

Depending on your job function, you may not have access to every report that is described in this chapter.

This chapter contains the following topics:

- [Configuring QoS Detail Reports, page 10-2](#)
- [Configuring QoS Summary Reports, page 10-4](#)
- [Configuring QoS by Gateway Reports, page 10-6](#)
- [Configuring QoS by Call Types Reports, page 10-8](#)
- [Related Topics, page 10-10](#)
- [Additional Cisco Documentation, page 10-10](#)

Only CAR administrators generate the QoS detail report. The report details the QoS ratings that are attributed to inbound and outbound calls on the Cisco Unified Communications Manager network for the period that is specified.

Managers or CAR administrators generate the QoS summary report. The report provides a two-dimensional pie chart that shows the distribution of QoS grades that are achieved for the specified call classifications and period. The report also provides a table that summarizes the calls for each QoS. The call details in CDRs and CMRs and the QoS parameters that are provided in the [“Configuring QoS Values” section on page 34-1](#) provide a basis for assigning a particular voice-quality category to a call.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See [Chapter 35, “Configuring the Automatic Generation of CAR Reports and Alerts”](#), for more information.

QoS Parameter Operators

[Table 10-1](#) describes the QoS parameter operators that you use in generating the QoS reports.

Table 10-1 QoS Parameter Operators

Operator	Description
>=	Choose this operator to generate jitter, latency, or lost packet data that is greater than or equal to the specified value.
=	Choose this operator to generate jitter, latency, or lost packet data that is equal to the specified value.
<=	Choose this operator to generate jitter, latency, or lost packet data that is less than or equal to the specified value.
N.A.	Choose this operator to preclude jitter, latency, or lost packet data.
Between	Choose this operator to generate jitter, latency, or lost packet data that occurs between one value and another value. When you choose this operator, a second field displays, so you can set the start and end values.

Configuring QoS Detail Reports

This section describes how to generate, view, or mail detailed information about the system QoS.

Procedure

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- Step 1** Choose **System Reports > QoS > Detail**.
The QoS Detail window displays.
- Step 2** In the Select Call Types area, check the check boxes for the types of calls that you want the report to include. [Table 10-2](#) describes the call types.

Table 10-2 QoS Detail Report Call Types

Call Type	Description
On Net	Outgoing calls that originate on one Cisco Unified Communications Manager network, go out through a trunk, and terminate on a different Cisco Unified Communications Manager network. For CAR purposes, be aware that any outgoing call can be classified as an On Net call if it is configured as such in the CAR dial plan configuration window. See “Configuring the Dial Plan” section on page 28-2.
Internal	Calls, including intracluster calls, that originate in the Cisco Unified Communications Manager network and end in the same Cisco Unified Communications Manager network (no gateways or trunks are used).

Table 10-2 QoS Detail Report Call Types (continued)

Call Type	Description
Local	Local calls that are routed through the public switched telephone network (PSTN) to numbers without an area code or that include one of the local area codes.
Long Distance	Long-distance calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
Incoming	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter through a gateway, and go into the Cisco Unified Communications Manager network.
Tandem	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter the Cisco Unified Communications Manager network through a gateway, and are transferred outbound from the Cisco Unified Communications Manager network through a gateway.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.

- Step 3** In the Select QoS area, check the check boxes for the voice-quality categories that you want included in the report. The parameters set in the [“Configuring QoS Values”](#) section on page 34-1 provide the basis for all voice-quality categories.

Table 10-3 QoS Detail Report Voice Quality

Voice Quality	Description
Good	QoS for these calls represents the highest possible quality.
Acceptable	QoS for these calls, although slightly degraded, still fall within an acceptable range.
Fair	Although QoS for these calls is degraded, calls still fall within a usable range.
Poor	QoS for these calls designates unsatisfactory quality.
NA	These calls did not match any criteria for the established QoS categories.

- Step 4** Choose the date range for the period for which you want to see QoS information.

- Step 5** In the Select Users field, you can either choose all users or search for particular users. To choose all users, check the **Select All Users** check box. To choose individual users, enter the user ID of the individual in the User ID field and click the **Add** button.



Note You can also use a provided search function. See the [“Searching for Users” section on page 9-3](#).

- Step 6** If you want the report in CSV format, choose CSV (comma separated value) in the Report Format area. Be aware that the CSV-format report is limited to 20,000 records. If you want the report in PDF format, choose PDF (portable document format) in the Report Format area. Be aware that the PDF-format report is limited to 5000 records.

- Step 7** Click the **View Report** button.

The report displays.

- Step 8** If you want to mail the report, click the **Send Report** button. To send the report, perform the procedure that is described in the [“Mailing a Report” section on page 3-3](#).

Additional Information

See the [“Related Topics” section on page 10-10](#).

Configuring QoS Summary Reports

This section describes how to generate, view, or mail summary information about the system QoS.

Procedure

- Step 1** Perform one of the following steps:
- If you are a manager, choose **QoS > Summary**.
 - If you are a CAR administrator, choose **System Reports > QoS > Summary**.
- The QoS Summary window displays.
- Step 2** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 6](#), or use the default setting, Generate New Report, and go to [Step 3](#).



Note You can only choose the automatically generated report if you are logged in as a CAR administrator. The automatically generated reports do not display in the drop-down list box if you are logged in as a manager.

- Step 3** In the Select Call Types area, check the check boxes for the types of calls that you want the report to include. [Table 10-4](#) describes the call types.

Table 10-4 QoS Summary Report Call Types

Call Type	Description
On Net	Outgoing calls that originate on one Cisco Unified Communications Manager network, go out through a trunk, and terminate on a different Cisco Unified Communications Manager network. For CAR purposes, be aware that any outgoing call can be classified as an On Net call if it is configured as such in the CAR dial plan configuration window. See “Configuring the Dial Plan” section on page 28-2 .
Internal	Calls, including intracluster calls, that originate in the Cisco Unified Communications Manager network and end in the same Cisco Unified Communications Manager network (no gateways or trunks are used).
Local	Local calls that are routed through the public switched telephone network (PSTN) to numbers without an area code or that include one of the local area codes.
Long Distance	Long-distance calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
Incoming	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter through a gateway, and go into the Cisco Unified Communications Manager network.
Tandem	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter the Cisco Unified Communications Manager network through a gateway, and transfer outbound from the Cisco Unified Communications Manager network through a gateway.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.

- Step 4** If you chose Generate New Report in [Step 2](#), choose the date range for the period for which you want to generate the report.
- Step 5** If you want the report in CSV format, choose CSV (comma separated value) in the Report Format area. Be aware that the CSV-format report is limited to 20,000 records. If you want the report in PDF format, choose PDF (portable document format) in the Report Format area. Be aware that the PDF-format report is limited to 5000 records.
- Step 6** Click the **View Report** button.
The report displays.

- Step 7** If you want to mail the report, click the **Send Report** button. To send the report, perform the procedure that is described in the “[Mailing a Report](#)” section on page 3-3.

Configuring QoS by Gateway Reports

Only CAR administrators generate the QoS by Gateway report. The report provides the percentage of calls that satisfy the selected QoS criteria for a period that is specified for the selected gateways.



Caution

Use CAR only during off-peak hours. Otherwise, data collection and report generation could cause performance degradation on the Cisco Unified Communications Manager system.

This section describes how to generate, view, or mail QoS information about all chosen gateways.

Before You Begin

Configure the gateway by using the procedures in the “[Configuring the Gateway](#)” section on page 28-4.

Procedure

- Step 1** Choose **System Reports > QoS > By Gateways**.
The QoS based on Gateways window displays.
- Step 2** In the Generate Reports field, choose a time as described in [Table 10-5](#).

Table 10-5 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the percentage of the calls, for each selected gateway, that satisfies the QoS criteria for the period that you specify in Step 6 . The percentage results show for hour of day.
Day of Week	Displays the percentage of the calls, for each selected gateway, that satisfies the QoS criteria for the period that you specify in Step 6 . The percentage results show for day of week.
Day of Month	Displays the percentage of the calls, for each selected gateway, that satisfies the QoS criteria for the period that you specify in Step 6 . The percentage results show for day of month.

- Step 3** In the Jitter field, choose the operator that you want to use and enter the value for jitter. See the “[QoS Parameter Operators](#)” section on page 10-1, for descriptions of operators.
- Step 4** In the Latency field, choose the operator that you want to use and enter the value for latency. See the [QoS Parameter Operators, page 10-1](#), for descriptions of operators.
- Step 5** In the Lost Packets field, choose the operator that you want to use and enter the value for number of lost packets. See the [QoS Parameter Operators, page 10-1](#), for descriptions of operators.

- Step 6** Choose the date range of the period for which you want to see call information.
- Step 7** To choose the type of gateway that you want included in the report, perform one of the following tasks:
- To display all the gateways that are configured in the system, click **Gateway Types** in the column on the left side of the window.
 - To expand the tree structure and display the type of gateway from which you can choose, click the icon next to Gateway Types.
 - To choose a gateway that uses a particular route pattern/hunt pilot, rather than a gateway type, click **Route Patterns/Hunt Pilots** in the column on the left side of the window. The tree structure expands and displays the gateways that are associated with the configured Route Patterns/Hunt Pilots.
 - To expand the tree structure and display route pattern/hunt pilot for you to choose, click the icon next to Route Patterns/Hunt Pilots.



Note You can also search for specific route patterns/hunt pilots by entering part of the name of the route pattern(s)/hunt pilot(s) in the Route Patterns/Hunt Pilots box in the column on the left side of the window. CAR searches for the route pattern(s)/hunt pilot(s) that matches the search string.

- Step 8** From the list, choose a gateway type.
The gateway name displays in the List of Gateways box.



Note The List of Gateways box will display up to 200 gateways that are configured for the chosen gateway type.

- Step 9** In the List of Gateways box, select the gateways that you want to include in the report.



Note You can generate a report for up to 15 gateways at a time. If you select more than 15 gateways, you will see the message “Select 15 or fewer gateways to generate new report.”

- Step 10** Click the down arrow icon to move the chosen gateway to the list of Selected Gateways box.
The gateway that you chose displays in the Selected Gateways box.
- Step 11** If you want the report in CSV format, choose CSV (comma separated value) in the Report Format area. Be aware that the CSV-format report is limited to 20,000 records. If you want the report in PDF format, choose PDF (portable document format) in the Report Format area. Be aware that the PDF-format report is limited to 5000 records.
- Step 12** Click the **View Report** button.
The report displays.
- Step 13** If you want to mail the report, click the **Send Report** button. To send the report, perform the procedure that is described in the “[Mailing a Report](#)” section on page 3-3.

Additional Information

See the “[Related Topics](#)” section on page 10-10.

Configuring QoS by Call Types Reports

Only CAR administrators generate the QoS by Call Types report. The report provides jitter, latency, and lost packet information for a period that is specified for all calls of a chosen type.

This section describes how to generate, view, or mail QoS information about all calls of a certain type.



Caution

Use CAR only during off-peak hours. Otherwise, data collection and report generation could cause performance degradation on the Cisco Unified Communications Manager system.

Procedure

Step 1 Choose **System Reports > QoS > By Call Types**.

The QoS based on Call Types window displays.

Step 2 In the Generate Report field, choose a time as described in [Table 10-6](#).

Table 10-6 Generate Report Fields

Parameter	Description
Hour of Day	Displays the percentage of the calls, for each call type, that satisfies the QoS criteria for the period that you specify in Step 7 . The percentage results show for hour of day.
Day of Week	Displays the percentage of the calls, for each call type, that satisfies the QoS criteria for the period that you specify in Step 7 . The percentage results show for day of week.
Day of Month	Displays the percentage of the calls, for each call type, that satisfies the QoS criteria for the period that you specify in Step 7 . The percentage results show for day of month.

Step 3 In the Jitter field, choose the operator that you want to use and enter the value for jitter. See the “[QoS Parameter Operators](#)” section on [page 10-1](#) for descriptions of operators.

Step 4 In the Latency field, choose the operator that you want to use and enter the value for latency. See the “[QoS Parameter Operators](#)” section on [page 10-1](#) for descriptions of operators.

Step 5 In the Lost Packets field, choose the operator that you want to use and enter the value for number of lost packets. See the “[QoS Parameter Operators](#)” section on [page 10-1](#) for descriptions of operators.

Step 6 In the Select Call Types area, check the check boxes for the types of calls that you want the report to include. [Table 10-7](#) describes the call types.

Table 10-7 QoS Parameters by Call Types

Call Type	Description
On Net	Outgoing calls that originate on one Cisco Unified Communications Manager network, go out through a trunk, and terminate on a different Cisco Unified Communications Manager network. For CAR purposes, be aware that any outgoing call can be classified as an On Net call if it is configured as such in the CAR dial plan configuration window. See “Configuring the Dial Plan” section on page 28-2 .
Internal	Calls, including intracluster calls, that originate in the Cisco Unified Communications Manager network and end in the same Cisco Unified Communications Manager network (no gateways or trunks are used).
Local	Local calls that are routed through the public switched telephone network (PSTN) to numbers without an area code or that include one of the local area codes.
Long Distance	Long-distance calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network and go out through the PSTN.
Incoming	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter through a gateway, and go into the Cisco Unified Communications Manager network.
Tandem	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter the Cisco Unified Communications Manager network through a gateway, and transfer outbound from the Cisco Unified Communications Manager network through a gateway.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.

- Step 7** Choose the date range for the period for which you want to see call information.
- Step 8** If you want the report in CSV format, choose CSV (comma separated value) in the Report Format area. Be aware that the CSV-format report is limited to 20,000 records. If you want the report in PDF format, choose PDF (portable document format) in the Report Format area. Be aware that the PDF-format report is limited to 5000 records.
- Step 9** Click the **View Report** button.
The report displays.

Step 10 If you want to mail the report, click the **Send Report** button. To send the report, perform the procedure that is described in the [“Mailing a Report”](#) section on page 3-3.

Additional Information

See the [“Related Topics”](#) section on page 10-10.

Related Topics

- [CDR Analysis and Reporting Configuration Checklist](#), page 2-1
- [Chapter 9, “Understanding CAR System Reports”](#)
- [Chapter 11, “Configuring Traffic System Reports”](#)
- [Chapter 12, “Configuring FAC/CMC System Reports”](#)
- [Chapter 13, “Configuring Malicious Call Details System Reports”](#)
- [Chapter 14, “Configuring Precedence Call Summary System Reports”](#)
- [Chapter 15, “Configuring System Overview System Reports”](#)
- [Chapter 16, “Configuring CDR Error System Reports”](#)
- [Chapter 17, “Reviewing System Reports Results”](#)

Additional Cisco Documentation

- *Cisco Unified Communications Operating System Administration Guide*
- *Cisco Unified Serviceability Administration Guide*
- *Cisco Unified Communications Manager Call Detail Records Administration Guide*