



CAR Report Configuration

Use report configuration to define the following parameters:

- Rating parameters for calls—duration, time of day, voice quality
- Quality of service
- Automatic generation of reports with alerts
- Notification limits

This chapter contains the following topics:

- [Configuring the Rating Engine, page 15-1](#)
- [Defining the Quality of Service \(QoS\) Values, page 15-9](#)
- [Configuring Automatic Report Generation/Alert, page 15-12](#)
- [Configuring Notification Limits, page 15-14](#)

Before You Begin

Before you start generating reports with CAR, configure the system. See [Chapter 14, “CAR System Configuration.”](#)

Configuring the Rating Engine

You can use CAR to set a base monetary rate for the cost of calls based on a time increment. You can further qualify the cost by applying the time of day and voice quality factors. Service providers who must account for service to subscribers

commonly use this feature. Some organizations also use this information to establish billing costs for users and departments in the organization for accounting or budgeting purposes.

Reports that use these rating parameters include individual bill, department bill, Top N by charge, and top N by duration.

**Note**

If you do not change the default value for charge base/block, the cost will always be zero because the default base charge per block is zero.

The charge of any call is the multiplication of the basic charge of the call, multiplication factor for time of day, and multiplication factor for voice quality. You can set the basic charge for a call through the **Report Config > Rating Engine > Duration** web page. Refer to the following list:

- Basic charge = number of blocks or pulses in the call (Base Charge/Block)
- Number of blocks = total duration of call/duration of a block (To - From)

You can set the multiplication factor for time of day through the **Report Config > Rating Engine > Time of Day** web page. The settings are based on the connect time of the call.

You can set the multiplication factor for voice quality through the **Report Config > Rating Engine > Voice Quality** web page.

Setting the Base Rate and Duration

To establish a cost basis for calls, you must specify a base rate for all calls. For example, if your service provider charges you 6 cents for each minute, billed in 10-second increments, you can set the base rate at which all calls are charged at 1 cent for each 10-second increment.

This section describes how to establish the base charge and duration values.

**Note**

If you use the default base charge value, reports do not provide any costs. Default values are provided, but if left to the defaults, the Rating Engine stays disabled and does not provide costs.

Procedure

Step 1 Choose **Report Config > Rating Engine > Duration of Time**.

The Call Duration window displays.

Step 2 In the To (seconds) field, enter the seconds for which you want the base charge to be applied. For example, if you are billed in 6-second increments, enter 6 in this field. If you are billed a flat rate for each minute regardless of call duration, enter 60 in this field, so the charge is based on whole minutes.

Step 3 In the Base Charge/Block field, enter the cost basis for the seconds shown in the To (seconds) field. For example, if you are billed 6 cents for each minute in 6-second increments, enter 0.006 in this field. If you are billed 7 cents for each minute in whole minutes (no incremental billing), enter 0.07 in this field.

In the preceding examples, if you are billed in 6-second increments and the cost is 0.006 for each 6-second increment, a call that lasted 7 seconds would cost 0.012. Rationale: Each 6-second increment costs 0.006, and there were two blocks from 0 to 6 seconds.

Likewise, if you are billed in whole minutes and the cost is 7 cents for each minute, a call that lasted 3 minutes would cost 21 cents. Rationale: Each 60-second increment costs 7 cents, and there were 3 blocks of 1 minute.

Step 4 Click the **Update** button.

Related Topics

- [Factoring Time of Day into Call Cost, page 15-3](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Restoring Default Values for Call Cost, page 15-7](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Factoring Time of Day into Call Cost

To further define the cost of calls, you can specify a multiplication factor for certain times of day. For example, if you want to charge subscribers a premium for daytime calls, you can apply a multiplication factor to the base charge/block that you specified in the Call Duration window.

This section describes how to establish certain times of day when calls cost more.

**Note**

If you do not want to increase call cost by time of day, you can use the default values. The default multiplication factor is 1.00, so no increase in call cost for time of day occurs.

Procedure

Step 1 Choose **Report Config > Rating Engine > Time of Day**.

The Time of Day window displays.

Step 2 To add rows, click the **Add Rows** link.

Step 3 Enter the From and To time ranges in 24-hour, minute, and second format. A 24-hour period from 00:00:00 to 23:59:59, represents the default time range. If you want to set one time-of-day range from 8 am to 5 pm, you will need to establish three time-of-day ranges: the first from 00:00:00 to 07:59:59; the second from 08:00:00 to 16:59:59; and the third from 17:00:00.

**Note**

You must use military time, rather than a 12-hour clock when factoring Time of Day into Call Cost.

Step 4 Check the check box for the row above which you want to add a new row.

Step 5 Enter the Multiplication Factor that designates a number by which you want the base charge/block to be multiplied when a call occurs in the specified time range. For example, if you charge a premium of double the price for calls placed between 8 a.m. and 5 p.m., the multiplication factor would be 2.00. A multiplication factor of 1.00 does not affect the cost of the call.

Step 6 Click the **Add Row** link.

The new row gets added above the row that you checked, and the check box is cleared.



Note To delete rows, check the check box for the row that you want to delete and click the **Delete Rows** link.

Step 7 Click the **Update** button to add the time-of-day and multiplication factors.

Related Topics

- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Restoring Default Values for Call Cost, page 15-7](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Factoring Voice Quality into Call Cost

To further define the cost of calls, you can specify a multiplication factor for the voice quality of a call. For example, if subscribers are paying a premium price to ensure the highest voice quality on calls, you can apply various multiplication factors to the base charge/block that you specified in the Call Duration window depending on the voice quality. Using a multiplication factor other than 1.00 helps differentiate between the various voice quality calls as well.

This section describes how to establish call cost when calls that have a certain voice quality cost more.



Note If you do not want to increase call cost by voice quality, you can use the default values. The default multiplication factor is 1.00, so there is no increase in call cost for voice quality.

Procedure

Step 1 Choose **Report Config > Rating Engine > Voice Quality**.

The Voice Quality window displays.

Step 2 In the Multiplication Factor field, enter the number by which you want the base charge/block to be multiplied when a call occurs in the specified voice-quality category. [Defining the Quality of Service \(QoS\) Values, page 15-9](#), defines the voice quality categories, Good, Acceptable, Fair, and Poor.

Example

Voice Quality Good; Factor 1.2

Voice Quality Acceptable; Factor 1.0

Voice Quality Fair; Factor 1.0

Voice Quality Poor; Factor 0.8

A good call will be charged 1.2 times that of an acceptable and fair call. A poor call would be charged 0.8 times that of an acceptable and fair call.



Note Multiplication factor for a good call \geq the multiplication factor for acceptable \geq multiplication factor for fair \geq multiplication factor for poor.

Step 3 To set the voice quality multiplication factors, click the **Update** button.

Related Topics

- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Time of Day into Call Cost, page 15-3](#)
- [Restoring Default Values for Call Cost, page 15-7](#)
- [Restoring Default QoS Values, page 15-10](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Restoring Default Values for Call Cost

You can restore the default values that CAR uses to determine call cost. By restoring the default value of 0.00 for the call charge/block, you effectively disable the other factors used in determining call cost.

Restoring Default Values for Duration

This section describes how to restore defaults for duration.

Procedure

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- Step 1** Choose **Report Config > Rating Engine > Duration**.
- The Call Duration window displays.
- Step 2** Click the **Restore Defaults** button.
- Step 3** Click **Restore Defaults**.
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Related Topics

- [Configuring the Rating Engine, page 15-1](#)
- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Restoring Default Values for Time of Day

This section describes how to restore defaults for time of day.

Procedure

Step 1 Choose **Report Config > Rating Engine > Time of Day**.

The Time of Day window displays.

Step 2 Click the **Restore Defaults** button.

Related Topics

- [Configuring the Rating Engine, page 15-1](#)
- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Restoring Default Values for Voice Quality

This section describes how to restore defaults for voice quality.

Procedure

Step 1 Choose **Report Config > Rating Engine > Voice Quality**.

The Voice Quality window displays.

Step 2 Click the **Restore Defaults** button.

Related Topics

- [Configuring the Rating Engine, page 15-1](#)
- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Defining the Quality of Service (QoS) Values

CAR generates Quality of Service reports. To qualify the data presented in those reports, CAR uses predefined values that are set about voice quality. Specify the value ranges that are good, acceptable, fair, and poor for jitter, latency, and lost packets. If a call does not satisfy any of the criteria set for the four voice-quality categories, it receives a classification of NA (not applicable).

Enter NA to ignore the values of a parameter. For example, a QoS parameter such as jitter, has NA, and the QoS is defined as good. This means that the QoS depends only on the values of latency and lost packets. All three parameters cannot have NA as values. Infinity designates the maximum value that is available for any parameter. If you specify a rule where a jitter value from 500 to Infinity is considered poor, a call with jitter greater than 500 receives a classification of poor.

This section describes how to define the quality-of-service values.

Procedure

Step 1 Choose **Report Config > Define QoS**.

The Define Quality of Service window displays.

Step 2 To add rows, check the check box for the row above which you want to add a new row and click the Add Rows link.

The new row gets added above the row that you checked and the check box is cleared.

The rows represent the values that CAR uses to quantify the conditions good, acceptable, fair, and poor in the QoS reports. For each value set, enter the upper and lower limits in the From and To columns.



Note To delete rows, check the check box for the row that you want to delete, and click the Delete Rows link.

Step 3 For each value that you have set, choose the Quality of Service.

Step 4 Click the **Update** button.

Related Topics

- [Configuring the Rating Engine, page 15-1](#)
- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Time of Day into Call Cost, page 15-3](#)
- [Factoring Voice Quality into Call Cost, page 15-5](#)
- [Restoring Default QoS Values, page 15-10](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Restoring Default QoS Values

This section describes how to restore the default QoS values.

Procedure

Step 1 Choose **Report Config > Define QOS**.

The Define Quality of Service window displays. [Table 15-1](#) describes the QoS default values.

Table 15-1 QoS Default Values

QoS Parameter	Default
Lost Packets	Good—0.00 to 15.00 Acceptable—15.01 to 30.00 Fair—30.01 to 45.00 Poor—45.01 to infinity
Jitter	Good—0 to 20 Acceptable—21 to 100 Fair—101 to 150 Poor—151 to infinity
Latency	Latency has no default values.

Step 2 Click the **Restore Defaults** button.

Related Topics

- [Configuring the Rating Engine, page 15-1](#)
- [Setting the Base Rate and Duration, page 15-2](#)
- [Factoring Time of Day into Call Cost, page 15-3](#)
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Configuring Automatic Report Generation/Alert

CAR automatically generates reports based on a schedule. Report generation can include a daily, weekly, or monthly summary report, QoS reports, traffic reports, Device/Route Plan utilization reports, etc., that you may want to view on a regular basis.

Before You Begin

Automatically generating reports involves a two-step process:

- First, enable the reports that you want generated unless they are enabled by default. See [Chapter 14, “CAR System Configuration.”](#)
- Second, schedule the reports for the day and time that you want them to generate. (CAR provides a default schedule. If the default schedule is acceptable, only enable the reports that you want automatically generated.)

CAR provides e-mail alerts for various events. Enabling the system for e-mail alerts involves a two-step process:

- First, enable the e-mail alerts. Default enables some, but not all, reports.
- Second, configure the e-mail that is sent when the alert criteria is met.

Refer to the *Cisco CallManager Serviceability System Guide* for more information about scheduling report generation and e-mail alerts.

Related Topics

- [Enabling or Customizing Reports for Automatic Generation, page 15-12](#)
- [Enabling or Disabling Alerts by Mail, page 15-14](#)

Enabling or Customizing Reports for Automatic Generation

This section describes how to enable or disable one or all reports for automatic generation. You can also customize the report parameters and enable a mailing option, so reports get e-mailed when they are created.

The *Cisco CallManager Serviceability System Guide* describes reports that are enabled by default.

Procedure

Step 1 Choose **Report Config > Automatic Generation/Alert**.

The Automatic Report Generation/Alert Option window displays.

Step 2 In the Reports [Report Generation Interval] box, choose the report that you want to automatically generate based on the schedule that you defined in the System Scheduler. See [System Scheduler Configuration, page 14-11](#).

Step 3 In the Status field, choose Enabled or Disabled.

Step 4 To customize the report or have the report e-mailed when it is generated, click the **Customize Parameters** button.

The Customize Parameters window displays.



Note Each report provides different customization options, depending on the type of report. Refer to the *Cisco CallManager Serviceability System Guide* for more information.

Step 5 Check the Mailing Option check box to have the report mailed to an individual user, manager, or administrator, depending on the type of report.

Step 6 Click the **Update** button to save the values that you specified.

The Customize Parameters window closes.

Step 7 Repeat [Step 4](#) through [Step 6](#) to enable or customize other reports.

Step 8 Click the **Update** button.

Changes take effect at midnight. You can force the change to take effect immediately by stopping and restarting the CAR Scheduler service.

Related Topics

- [Enabling or Disabling Alerts by Mail, page 15-14](#)
- [Configuring Mail Server Parameters, page 14-3](#)
- [System Scheduler Configuration, page 14-11](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

Enabling or Disabling Alerts by Mail

This section describes how to enable alerts to be mailed to users specified in System Database Alert. See [System Database Configuration, page 14-24](#).

Procedure

- Step 1** Choose **Report Config > Automatic Generation/Alert**.
- The Automatic Report Generation/Alert window displays.
- Step 2** In the Alerts by Mail box, choose the alert that you want to enable or disable.
- Step 3** In the Status field, choose Enabled or Disabled.
- Step 4** Click the **Update** button.
- Step 5** Repeat [Step 2](#) and [Step 4](#) to enable or disable other alerts.

Changes take effect at midnight. You can force the change to take effect immediately by stopping and restarting the CAR Scheduler service.

Related Topics

- [Enabling or Customizing Reports for Automatic Generation, page 15-12](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)
- [System Parameters Configuration, page 14-1](#)
- [Configuring Mail Server Parameters, page 14-3](#)

Configuring Notification Limits

You can specify limits for QoS and daily charges, so the administrator gets alerted by e-mail when these limits are exceeded. The alerts go to all administrators that are identified in the administration rights window. See [System Parameters Configuration, page 14-1](#), and [Configuring Mail Server Parameters, page 14-3](#).

This section describes how to specify the notification limits for QoS and daily charges.

Procedure

Step 1 Choose **Report Config > Notification Limits**.

The Set Limits for Notification window displays.

Step 2 In the Daily QoS Parameters area, enter a threshold for good and poor calls.

The threshold applies in the form of a percentage of all calls that must be exceeded to trigger an e-mail alert to the administrator. The default for good calls specifies less than 20 percent, meaning that when good calls represent less than 20 percent of all calls per day, an alert gets sent. The default for poor calls specifies greater than 30 percent, meaning that when poor calls represent more than 30 percent of all calls per day, an alert gets sent.

Step 3 In the Daily Charge Limit area, enter the number of monetary units (such as dollars, francs, or pounds) that, when exceeded by any user in the system, will trigger sending of an e-mail alert to the administrator.

Step 4 Click the **Update** button.

Changes take effect immediately. The new values will be used whenever the next alert is sent.

Related Topics

- [System Parameters Configuration, page 14-1](#)
- [Starting or Stopping the CAR Scheduler, page 14-23](#)

■ **Configuring Notification Limits**