CHAPTER 24

CDR Analysis and Reporting Overview

Cisco Unified CallManager Serviceability supports CDR Analysis and Reporting (CAR) under the Tools menu. CAR generates reports for Quality of Service, traffic, and billing information.

Note CAR does not handle iDivert calls (feature that diverts calls to voice-messaging system) and treats them as normal calls. The part of the call after iDivert feature gets activated may not get charged to the correct party.

This chapter contains the following topics:

Understanding CDR Data

Call detail records (CDR) detail the called number, the number that placed the call, the date and time that the call was started, the time that it connected, and the time that it ended. Call management records (CMRs, or diagnostic records) detail the jitter, lost packets, the amount of data sent and received during the call, and latency. CDR data comprises CDRs and CMRs collectively. A single call can result in the generation of several CDRs and CMRs. Cisco Unified CallManager records information regarding each call in CDRs and CMRs. CDRs and CMRs, known collectively as CDR data, serve as the basic information source for CAR.

The Cisco CDR Agent service transfers CDR and CMR files that Cisco Unified CallManager generates from the local host to the CDR repository node, where the CDR Repository Manager service runs over a SFTP connection. If the SFTP connection fails, the Cisco CDR Agent services continue to make connection attempts to the CDR repository node until a connection is made. The Cisco CDR Agent

service sends any accumulated CDR files when the connection to the CDR Repository node resumes. The CDR Repository Manager service maintains the CDR and CMR files, allocates the amount of disk space for use by CMRs and CDRs, sends the files to up to three configured destinations, and tracks the delivery result for each destination. CDR Analysis and Reporting (CAR) accesses the CDR/CMR files in the directory structure that the CDR Repository Manager service creates.

The high and low water mark settings that you configure specify percentages of the total disk space that are allocated for the CDR repository. Although the preserved folder under the CDR repository folder contributes to the high and low water mark percentages, Log Partition Monitoring never deletes the folder if the high water mark gets reached. If the high water mark gets reached, the CDR Repository Manager deletes processed CDR files until the low water mark is reached or all processed files are deleted, whichever comes first. If all processed CDR files are deleted but the low water mark has not been reached, the deletion stops. The CDRHighWaterMarkExceeded alarm gets generated until the system reaches the maximum disk allocation. If the maximum disk allocation gets reached, the system deletes undelivered files and files within the preservation duration, starting with the oldest files, until disk utilization falls below the high water mark. If you receive the CDRMaximumDiskSpaceExceeded alarm repeatedly for this scenario, either increase the disk allocation or lower the number of preservation days.

For more information on CDR services and alarms, refer to the *Cisco Unified CallManager Serviceability Administration Guide, Release 5.0(4)*.

Note If you upgrade from Cisco Unified CallManager 4.x, Cisco Unified CallManager saves the CDRs in the CAR database to CSV files. The Data Migration Tool uses these CSV files to upgrade the CAR database. The system stores the CSV files in /common/download/windows/car. The system stores the pregenerated reports in /common/download/windows/pregenerated.

Because Cisco Unified CallManager 5.x does not use a CDR database to store CDR records as in previous releases, the CDR data does not migrate to the Cisco Unified CallManager 5.x system.

Understanding CDR Analysis and Reporting

You access CAR from the Tools menu of Cisco Unified CallManager Serviceability after you activate the appropriate services as described in the "Activating CAR" section in the *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*.

All CAR reports use CDR data. CAR processes the CDRs from flat files that the CDR Repository service has placed in the CDR repository folder structure. CAR processes CDRs at the scheduled time and frequency. By default, CDR data loads from midnight to 5 a.m. on a daily basis; however, you can set the loading time, interval, and duration as needed.

CAR retrieves information that is required for various reports from the CDRs and CMRs as well as from the Cisco Unified CallManager database.

Scheduling Reports

You can schedule CAR reports to generate automatically at a regular time. Each report that can be scheduled has its own report generation interval. You can make the report generation interval be daily, weekly, or monthly. Scheduling the Daily reports would schedule all the reports that have report generation intervals as Daily. Similarly, scheduling Weekly or Monthly reports would schedule the reports that have report generation intervals as weekly or monthly. You can also specify the time to keep a report before it gets automatically deleted.

By default, CAR uses the following report generation and deletion schedule:

- Daily reports run at 1 a.m. every day. These reports get purged after two days.
- Weekly reports run at 4 a.m. every Sunday. These reports get purged after four weeks.
- Monthly bill reports run at 3 a.m. on the first day of every month. These reports get purged after two months.
- Other monthly reports run at 2 a.m. on the first day of every month. These reports get purged after two months.

Note For a list of reports and the default generation schedule, see the "CAR Reports General Information" section on page 24-6.

For system monitoring, automatically generate various reports, such as QoS reports, and review them at regular intervals, perhaps every day if you have a very large system, or every week or every two weeks for smaller systems. QoS reports help you determine the quality of calls that are running on your network and judge whether you need additional hardware to improve performance. You can use utilization reports for gateways, voice messaging, conference bridge, route groups, route lists, and route patterns to provide a picture of the usage to help with system handling.

You can also customize the report parameters and enable a mailing option, so reports get e-mailed when they are created. The Customize Parameters option allows you to customize the report parameters for particular reports in the Customize Parameters window. For each individual report, you can customize the parameters for that report.

Setting Up Alerts

CAR provides e-mail alerts for various events, including the following events:

- Charge Limit Notification indicates when the daily charge limit for a user exceeds the specified maximum. You can set the maximum in the **Report Config > Notification Limits** window.
- QoS Notification indicates when the percentage of good calls drops below a specified range or the percentage of poor calls exceeds a specified limit. You can set the range in the **Report Config > Notification Limits** window.

Enabling the system for e-mail alerts comprises a two-step process. First, you must specify the mail server configuration information (**System > System Parameters > Mail Parameters**). CAR uses the configuration information to successfully connect to the e-mail server. Next, you must enable the e-mail alerts on the Automatic Report Generation/Alert window (**Report Config > Automatic Generation/Alert**). By default, CAR enables e-mail alerts for some, but not all, reports.

Purging CAR data

This section contains information on the following topics:

- Automatic purging
- Manual purging
- Event log purging

CAR provides automatic and manual purging of the CAR database. By default, the system enables automatic purging. Before and after loading CDRs/CMRs, CAR checks the size of the CAR database and invokes automatic purging, if necessary, to control the CAR database size.

With automatic purging, CAR continuously monitors the number of days that the CDRs are kept in the CAR database; when the CDR age exceeds the maximum number of days as configured in the maximum age setting in the Configure Automatic Database Purge window, CAR deletes all CDRs that are older than the number of days that you configured.

In the Configure Automatic Database Purge window, you specify the percentages of the CAR database that you want to allot for CAR data; the system maintains the CAR database size between the high water mark and low water mark that you specify. When the CAR database size exceeds the low water mark, CAR sends an e-mail to all CAR administrators. When the database size exceeds the high water mark or the number of CDRs in the CAR database exceeds two million records, CAR deletes CDRs that are older than the number of days that you specified for the CDR minimum age in the Configure Automatic Database Purge window; then, an e-mail gets sent to all CAR administrators. If the high water mark gets breached again or if the CDRs exceed two million even after automatic purging completes, CAR triggers auto purging, does not load the CDRs/CMRs, and sends another e-mail.

Tip To disable automatic purging to the minimum age when the high water mark gets breached or when the CDRs exceed two million records, configure the CDR minimum age to equal the CDR maximum age in the Configure Automatic Database Purge window.

Configure manual database purge when you want to delete records that are older than a particular date or that fall in a specific date range, but you do not want to change the automatic purging schedule. You can also reload the CAR database with CDR records by clicking the Reload button in the Manual Purge window. You may want to reload the database to reclassify calls after dial-plan updates, user-device association changes, call rate changes, and so on. After the system loads the new records, the system loads the records according to the schedule in the configured CDR load schedule. By default, CDR data loads every day from midnight to 5 a.m.

Tip Schedule database purges or manual purging during off-peak hours to minimize any degradation of Cisco Unified CallManager performance.

Event log purging, which is a daily scheduled job that monitors the tbl_event_log table, automatically deletes the tbl_event_ log records to keep the latest 3 days of daily jobs, the latest 3 weeks of weekly jobs, and the latest 3 months of monthly jobs; that is, if more than 1500 rows exist in the tbl_event_log table. CAR automatically enables event log purging and does not send an e-mail when event log purging occurs.

Call Costs

You can use CAR to set a base monetary rate for the cost of calls on the basis of a time increment. Then, 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 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, top N by number, and top N by duration.

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

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

For more information on setting call rates, see the "Configuring the Rating Engine" section on page 26-1.

Tracking Activity

CAR provides logs that can track the status of the various activities. The event log tracks events that the CAR Scheduler triggers, such as automatically generated reports, loading of CDRs, notifications, report deletions, and database purging.

CAR Administrators, Managers, and Users

CAR provides reporting capabilities for three levels of users.

- Administrators use all the features of CDR Analysis and Reporting; for example, they can generate system reports to help with load balancing, system performance, and troubleshooting.
- Managers can 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 can generate a billing report for calls.

Any user can act as a CAR administrator. Users who have been identified as CAR administrators have full control over the CAR system. The administrator can modify all the parameters that relate to the system and the reports.

CAR requires a minimum of one administrator.

You set up administrators, managers, and users in Cisco Unified CallManager Administration. For more information, see the "Configuring CAR Administrators, Managers, and Users" section in the *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*.

CAR System Settings

CDR Analysis and Reporting sets default values for all system parameters. Before you generate any reports in CAR, Cisco recommends that you customize a number of system parameters. Because default values are provided for all system parameters, Cisco recommends customizing but does not require it.

CAR allows you to set the following parameters:

- The mail server criteria—CAR uses this information to successfully connect to the e-mail server to send alerts and reports by e-mail. If you do not want to send alerts or reports by e-mail, you do not need to specify this information.
- Dial plan—The default dial plan in CAR specifies the North American numbering plan (NANP). Ensure the dial plan is properly configured, so call classifications are correct in the reports. If you have modified the default NANP that Cisco Unified CallManager Administration provides, or if you are outside the NANP, be sure to configure the dial plan according to your Cisco Unified CallManager dial plan.
- Gateways—To utilize the gateway reports, you need to configure gateways in CAR. You should do this after installation for any existing gateways in your Cisco IP telephony system and when you add gateways to the system. If the system deletes any gateways, CAR gets the latest list of gateways, and any configuration that is specified in CAR for the deleted gateways gets deleted. CAR uses the area code information to determine whether calls are local or long distance. You must provide the Number of Ports information for each gateway to enable CAR to generate the Utilization reports.
- System preferences—You can set CAR system preferences for the Company Name parameter.

CAR Reports

From CAR, you can generate reports on demand, or if you are an administrator, you can schedule reports for automatic generation. You can view reports in comma separated values (CSV) format or portable document format (PDF). If you choose PDF, you must have Adobe Acrobat Reader installed on your PC.

The section describes the reports that are available with CDR Analysis and Reporting and contains the following topics:

CAR Reports General Information

For all the CAR reports that show the pattern for Hour of Day, Day of Week, and Day of Month, the charts and tables get shown according to the following conditions:

- When no records match the time range specified (hour of day, day of week, or day of month) in the search criteria, the report displays a value of 0.00 for all of the days/hours.
- If all records that are returned have a value of 0.00, CAR does not display the charts. CAR displays the charts if any record contains a non-zero value.

- When records get generated (for at least one day in the chosen date range) and the number of days chosen is more than the number of days that the report can show (more than seven for weekly and more than 31 for monthly), the chart displays all the days (with 0 value for the days that do not generate records). A table displays for all the days with relevant value and 0.00 for the days that do not contain data.
- When records generate (for at least one day in the chosen date range) and the number of days chosen is less than the number of days that the report can show (less than seven for weekly and less than 31 for monthly), the chart displays all the days (with 0 value for the days that do not generate records). A table displays all the days with relevant value and 0.00 for the days that do not contain data.

In all the CAR reports that display username, userid displays if CAR cannot retrieve the username. This can happen when the report gets generated for the past data and if the user that was involved in a call at that time no longer exists in the system (Cisco Unified CallManager database).

Additional Information

See the "Related Topics" section on page 24-16.

User Reports

Users, managers, and CAR administrators can generate user reports. CAR includes the following user reports:

- Individual Bills—Available for users, managers, and CAR administrators. Individual bills provide your call information for the date range that you specify. You can generate, view, or mail summary or detail information about your individual phone bills.
- Department Bills—Available for managers and CAR administrators. Department bills provide call information and quality of service (QoS) ratings. If you are a manager, you can generate a summary or detailed report of the calls that are made by all users who report to you, or only those users that you choose. If you are a CAR administrator, you can generate a summary or detailed report of the calls that some or all users in the system make. This report helps you to keep track of all calls on a user-level basis for the entire system.
- Top N by Charge—Available for managers and CAR administrators. Top N by Charge reports that individual users generate list the top number of users that incurred a maximum charge for calls during a period that you specify. Reports generated by destinations list the destinations that incurred the maximum charges. Reports generated by all calls list the calls that incurred the maximum charges. If you are a manager, the report includes the top charges for all calls that are made by users who report to you during the specified period. If you are a CAR administrator, the report includes the top charges for all calls that are made by all users on the system for the specified period.
- Top N by Duration—Available for managers and CAR administrators. Top N by Duration reports that individual users generate list the top number of users that incurred a maximum time on calls during a period that you specify. Reports generated by destinations list the destinations that incurred the maximum duration. Reports generated by all calls list the calls that incurred the maximum duration. If you are a manager, the report lists the top number of users who report to you who incurred a maximum time for calls that are made during the chosen date range, starting with the longest. If you are a CAR administrator, the report lists the top number of users that incurred a maximum time for calls that were made during the chosen date range, starting with the longest.
- Top N by Number of Calls—Available for managers and CAR administrators. Top N by Number of Calls reports that individual users generate lists the users who incurred the maximum number of calls. Reports that extensions generate list the extensions that placed or received the greatest number of calls during a period that you specify. If you are a manager, the report lists the top number of calls

by user or extension, among the users who report to you, for the chosen date range. If you are a CAR administrator, the report lists the top number of calls for each user or extension in the system. Reports generated By Individual Users lists the Users who incurred the maximum number of calls. Reports generated By Extensions lists the extensions that have placed or received the greatest number of calls in the group (for a Manager) or in the System (for the CAR Administrator).

- Cisco CallManager Assistant Call Completion Usage Reports—Available for CAR administrators. The Cisco IPMA summary and detail reports provide call completion usage details for both IPMA managers and assistants. The manager reports can include calls that managers handle for themselves only, calls that assistants handle for managers only, or calls that both managers and assistants handle for managers. The assistant reports can include calls that assistants handle for themselves only, calls that assistants handle for managers, calls that both assistants handle for themselves and for managers.
- Cisco IP Phone Services—Available for CAR administrators. The Cisco IP Phone Services report shows selected Cisco Unified IP Phone services, the number of users that are subscribed to each of the selected services, and the utilization percentage for each of the selected services. You can create services for a wide variety of business and entertainment uses. If you have revenue tied to a service, such as for advertising, you can use this report to determine the number of users who have subscribed to the service. You can also use this report to indicate the popularity of selected services.

Additional Information

See the "Related Topics" section on page 24-16.

System Reports

CDR Analysis and Reporting provides system reports for managers and CAR administrators. Managers or CAR administrators can access the QoS summary report. Only CAR administrators can access all other reports. This section describes the following reports:

- QoS Detail—Available for CAR administrators. The QoS detail report provides the QoS ratings that are attributed to inbound and outbound calls on the Cisco Unified CallManager network for the period that you specify. Use this report to help monitor the voice quality of all calls on a user-level basis for the entire system. The call details in CDRs and CMRs and the QoS parameters that you choose provide the basis for assigning a particular voice-quality category to a call.
- QoS Summary—Available for managers and CAR administrators. This 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 you choose provide the basis for assigning a call to a particular voice-quality category. Use this report to monitor the voice quality of all calls through the network.
- QoS By Gateway—Available for CAR administrators. This report shows the percentage of the calls for each of the chosen gateways that meet the QoS criteria that the user chooses. You can generate this report on an hourly, daily, or weekly basis.
- QoS By Call Types—Available for CAR administrators. This report shows the percentage of the calls for each chosen call type that meet the QoS criteria that the user chooses. You can generate this report on an hourly, daily, or weekly basis.

- Traffic Summary—Available for CAR administrators. This report provides information about the call volume for a period that you specify. Include only those call types and QoS voice-quality categories that you chose. Use this report to determine the number of calls that are being made on an hourly, weekly, or daily basis. This report helps you identify high- and low-traffic patterns for capacity planning.
- Traffic Summary by Extensions—Available for CAR administrators. This report provides information about the call volume for a period and set of extensions that you specify. Include only those call types and extensions that you chose. You can generate the report on an hourly, weekly, or daily basis. This report helps you determine high-usage users or groups by aggregating the usage level across the users that you specify.
- Authorization Code Name—Available for CAR administrators. This report allows administrators to view the originating and destination numbers, the date and time that the call originated, the call duration in seconds, the call classification, and the authorization level for calls that relate to each chosen authorization code name.
- Authorization Level—Available for CAR administrators. This report allows administrators to view the originating and destination numbers, the date and time that the call originated, the call duration in seconds, the authorization code name, and the call classification for calls that relate to each chosen authorization level.
- Client Matter Code—Available for CAR administrators. This report allows administrators to view the originating and destination numbers, the date and time that the call originated, the call duration in seconds, and the call classification for calls that relate to each chosen client matter code.
- Malicious Call Details—Available for CAR administrators. The Cisco CallManager Malicious Call Identification (MCID) service tracks malicious calls. The Malicious Call Details report displays the details of malicious calls for a given date range.
- Precedence Call Summary—Available for CAR administrators. The Cisco CallManager Call Precedence service allows authenticated users to preempt lower priority phone calls. The PDF version of the CAR Precedence Call Summary report displays the Call Summary for the precedence values in the form of a bar chart, on an hour of day, day of week, or day of month basis, for each of the precedence levels that you choose. CAR generates one chart for each precedence level, a table for each precedence level that lists the number of call legs, and a subtable that summarizes the percentage distribution for each of the precedence levels. CAR makes the report available on-demand; the report does not get autogenerated.
- System Overview—Available for CAR administrators. This report provides a list of reports that you can select to generate. You can choose a list of reports that you want to appear on the report. Use this report to see a high-level picture of the Cisco Unified CallManager network.
- CDR Error—Available for CAR administrators. This report provides statistics for the number of error records in the CAR Billing_Error table and the reason for the errors. Use this report to determine whether CAR incurred any errors with CDR data while loading the CDR data. This report lists the percentage of CDRs that are invalid and the reason these CDRs have been classified as invalid.

Additional Information

See the "Related Topics" section on page 24-16.

Device Reports

Device reports help CAR administrators track the load and performance of Cisco Unified CallManager-related devices, such as conference bridges, voice-messaging server, and gateways. This section describes the device reports:

- Gateway Detail—Available for CAR administrators. Use the gateway detail report to track issues with specific gateways. The report provides a list of calls that used the specified gateways. Use this report to review detailed information about chosen gateways. You can specify gateways by type, such as all or some of the VG200 gateways in your system, or by only those gateways that use a particular route pattern. You can also specify search criteria based on call types and QoS values.
- Gateway Summary—Available for CAR administrators. This report provides a summary of all the calls that went through the gateways. It also provides the total number of calls and duration for each of the categories, namely Incoming, Tandem, and Outgoing (Long Distance, Local, International, Others, OnNet) and also, the total calls for each QoS value for each gateway in the system. Use this report to track the functionality of the system on a daily basis. If you discover issues that need to be studied further, use the gateway detail report.
- Gateway Utilization—Available for CAR administrators. The report provides an estimate of the utilization percentage of the gateway(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Reports generate for each gateway that is chosen. Use this report for load balancing or capacity planning (to evaluate the need for adding or removing gateways, depending on their utilization). You can specify gateways by type, such as all or some of the VG200 gateways in your system, or by only those gateways that use a particular route pattern.
- Route and Line Group Utilization—Only CAR administrators can generate the route and line group utilization report. This report provides an estimated utilization percentage of the chosen route and line group(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Reports generate for each chosen route and line group. Use the report to analyze whether the route and line group capacity is sufficient to meet the usage requirements. Based on the results, you can decide whether additions are required. If you are load balancing gateways by using different route and line groups or route patterns and hunt lists that are assigned to the gateways, you can use this report to see the load for the whole grouping. This report also provides a convenient way of generating utilization information for a grouping of gateways by a particular route and line group; the group will also include any H.323 fallback gateways that are using the specified route and line group.
- Route/Hunt List Utilization—Available for CAR administrators. The route/hunt list utilization report provides an estimated utilization percentage of the chosen route/hunt list(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Reports generate for each chosen route/hunt list. Use the report to analyze whether the route and line group capacity is sufficient to meet the usage requirements. Based on the results, you can decide whether additions are required. If you are load balancing gateways by using different route/hunt lists that are assigned to the gateways, you can use this report to see the load for the whole grouping. This report also provides a convenient way of generating utilization information for a grouping of gateways by a particular route/hunt list; the group will also include any H.323 fallback gateways that are using the chosen route/hunt list.
- Route Pattern/Hunt Pilot Utilization—Available for CAR administrators. The route pattern/hunt pilot utilization report provides an estimated utilization percentage of the chosen route pattern(s)/hunt pilot(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Reports generate for each chosen route pattern/hunt pilot. Use the report to analyze system usage on the chosen route pattern/hunt pilot.

- Conference Call Details—Available for CAR administrators. The Conference Call Details reports allows you to generate and view details about conference calls. The Summary Report displays the summary information of conference calls within a chosen date/time range but does not contain information about each individual conference participant call leg. The Detailed Report displays the detailed information about the conference calls within a chosen date/time range and includes information about each individual conference participant call leg.
- Conference Bridge Utilization—Available for CAR administrators. The report provides an estimate of the utilization percentage of the conference bridge(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Generate reports for all the conference bridges in the system. Use this report to determine the activity on the conference bridge(s) and whether you need to add additional resources. This report helps you identify usage patterns, so you can plan capacity when you discover recurring peaks in the usage pattern.
- Voice Messaging Utilization—Available for CAR administrators. The report provides an estimate of the utilization percentage of the voice-messaging device(s). You can examine the usage on the basis of each hour of a day or by a specified number of days of the week or month. Reports generate for each voice-messaging device. Use this report to determine the activity on the voice messaging device(s) and whether you need to add additional resources. This report helps you to identify usage patterns, so you can plan capacity when you discover recurring peaks in the usage pattern.

Additional Information

See the "Related Topics" section on page 24-16.

Automatically Generated Reports Schedule

Automatically generating reports comprises a two-step process. First, you must enable the reports that you want to have generated, unless they are enabled by default. Second, you must schedule the reports for the day and time that you want them to generate. CAR provides a default schedule, so if the default schedule is acceptable, you need only enable the reports that you want to automatically generate.

The system enables or disables the following reports for automatic generation by default. The words Daily, Weekly, or Monthly in the square brackets next to the report name specify the report generation interval of the particular report.

- Traffic Summary-Hour of Day[Daily] - Enabled
- Conference-Summary [Monthly] - Disabled
- Conference-Detail [Daily] - Disabled
- Conference Bridge Util-Day of Week[Weekly] - Enabled
- Gateway Util-Day of Week[Weekly] - Enabled
- Line Group Util-Day of Week[Weekly] - Disabled
- Route Group Util-Day of Week[Weekly] - Disabled
- Route/Hunt List Util-Day of Week[Weekly] - Disabled
- Route Pattern/Hunt Pilot Util-Day of Week[Weekly] - Disabled
- Traffic Summary-Day of Week[Weekly] - Enabled
- Traffic Summary-Day of Month [Monthly] - Enabled
- Voice Messaging Util-Day of Week[Weekly] - Enabled
- Gateway Summary [Monthly] - Enabled

- QOS Summary [Monthly] - Enabled
- System Overview [Monthly] - Enabled
- Department Bill Summary [Monthly] - Disabled
- Individual Bill Summary [Monthly] - Disabled
- Top N Calls [Daily] - Disabled
- Top N Calls [Monthly] - Disabled
- Top N Charge [Daily] - Disabled
- Top N Charge [Monthly] - Disabled
- Top N Duration [Daily] - Disabled
- Top N Duration [Monthly] - Disabled

To enable or disable report generation, see the "Enabling or Customizing Reports for Automatic Generation" section on page 26-7.

To change the specific time each day, week, or month that reports get generated and get purged from the system see the "System Scheduler Configuration" section on page 25-7.

Additional Information

See the "Related Topics" section on page 24-16.

CDR Search

Call detail records (CDR) provide details about the called number, the number that placed the call, the date and time that the call was started, the time that it connected, the time that it ended, and the cause for the termination of a call. Call management records (CMRs, or diagnostic records) detail the jitter, lost packets, the amount of data that was sent and received during the call, and latency. CDR data comprises CDRs and CMRs collectively. A single call can result in the generation of several CDRs and CMRs as Cisco Unified CallManager tracks the progress of the call through each part of the call: sending digits, receiving digits, hold, transfer, engaging a transcoder for conferencing, and disengaging the transcoder.

You must enable the CDR Enabled Flag, CDR Log Calls with Zero Duration, and Call Diagnostics service parameters in Cisco Unified CallManager for CDR data to be generated. You must enable the CDR Enabled Flag parameter on each node in the cluster. For more information about configuring these service parameters, see the *Cisco Unified CallManager Administration Guide, Release 5.0(4)*.

All CAR reports use CDR data. Make sure that you have the most current CDR data from which to build your reports. By default, CDR data loads from midnight to 5 a.m. on a daily basis; however, you can set the loading time, interval, and duration as needed.

Tip When you configure the time range, use Coordinated Universat Time (UTC). When you configure the date and time range, configure the settings, so the number of CDR results does not exceed 15,000. If the results exceed 15,000, CDR search cannot occur, and a message displays to inform you that you must revise the date and time range.

In all CDR Search reports, the system only displays the oldest 100 records that fall into the time and date range that you configure.

You can configure CDR searches to verify the details of a call. The search forms groups of all the related legs of a call, which can be useful if the call involves a conference or transfer. This method helps you track the progress and quality of each part of an entire call.

This section describes the following features:

- CDR Search by User Extension—Available for CAR administrators. You can search CDRs by user or directory number (calling, original called, or final called) to analyze call details for the first 100 records that satisfy the search criteria. You can search for calls by using specific numbers for the period that you specify, which helps you trace calls that are placed from or to any specific numbers for diagnostic or informational purposes. All associated records, such as transfer and conference calls, appear together as a logical group. If you do not specify an extension, the system returns the first 100 CDR records that match the date range that you specify.
- CDR Search by Gateway—Available for CAR administrators. You can search CDRs by gateways to analyze the call details of calls that are using specific gateways. This method helps you trace issues on calls through specific gateways.
- CDR Search by Cause for Call Termination—Available for CAR administrators. You can search CDRs by cause for call termination to get information about the cause for the termination of a call. You can choose from a list of causes for call termination and can generate the report for a particular date range. The generated report contains the report criteria, along with the total number of calls that were placed in the given time. In addition, a table displays with the fields Call Termination Cause Value and description, the total number of calls, and the percentage of calls for each Call Termination Cause, and an option to choose the CDRs.
- CDR Search by Call Precedence Level—Available for CAR administrators. You can search CDRs by call precedence level. The report that generates allows you to view the CDRs on the basis of precedence. You can choose the precedence level and date range for which to generate a report. The report displays the number of calls and the percentage of these calls for each precedence level that you chose. Report criteria display the precedence levels and date range for which the report generated information in the Call Precedence Details window. You can view the media information and the CDR-CMR dump from the CDR Search by Precedence Levels Result window. The media information and CDR-CMR dump information display in separate windows.
- CDR Search for Malicious Calls—Available for CAR administrators. You can search CDRs to get information about malicious calls. You can choose extensions and the date range for which to generate a report. The report displays the CDRs for all the malicious calls for a chosen extension and date range. Report criteria display the extensions and the date range for which the report generated information. You can view the media information and CDR-CMR dump from the CDR-CMR search results window. The media information and CDR-CMR dump information display in separate windows.
- Export CDR/CMR—Available for CAR administrators. With this feature, you can export CDR/CMR dump information, for a given date range in the CSV format, to a location that you choose on your computer. You can also view the file size of the dump information and delete CDR/CMR files.

Internationalization for CDR Analysis and Reporting

CAR, designed to be internationalized to handle any locale (or language), includes a database that can also handle any locale.

Note CAR supports all Latin-1 language and Unicode language locales as the Cisco Unified CallManager help pages specify. Latin-1 languages include English and Western European languages. Unicode languages include Japanese and Chinese.

Two types of locale exists: user and network. Each locale comprises a set of locale files. The following definitions describe the two types of files:

- User—Files that relate to user-related functions, such as phone display text, user applications, and user web pages.
- Network—Files that relate to network-related functions, such as phone and gateway tones. Country names designate network locales.

CAR supports the locales only if the Locale Installer has installed locales.

Note Make sure that you have first installed the Cisco Unified CallManager Locale Installer on every server in the cluster. Installing the locale installer ensures that you have the latest translated text available for the CAR web pages. For more information on the Cisco Unified CallManager Locale Installer, refer to the *Cisco Unified Communications Operating System Administration Guide, Release 5.0(4)*.

Only User and Manager windows support multiple locales. Administrator pages display in English.

In the Cisco Unified CallManager Administration, set the user-preferred locale in the Cisco Unified CallManager database. You do this when you create a user from the End User Configuration window. Specify the preferred locale along with the user name, user ID, and so on. The Cisco Unified CallManager database stores this information. Refer to the *Cisco Unified CallManager Administration Guide, Release 5.0(4)* for more detailed information.

This section describes the elements that make up the internationalization of CAR.

Logon Page

When the client (browser) requests the logon information, the logon window header includes the client's most preferred locale. The CAR system checks whether the CAR UI supports this locale. If the CAR UI does not support the locale, or if the locale is not installed in the system, the logon window displays in the Cisco Unified CallManager system default locale that is set in the Cisco CallManager Enterprise parameter. If CAR does not also support this locale, or the locale is not installed in the system, the locale gets set to English_United_States.

Authenticate and Show CAR Pages for Post Logon Windows

User credentials (in any language) get authenticated through the Cisco Unified CallManager database, and then CAR windows for non-administrative users (users or managers) display the user's preferred locale. If the CAR UI does not support this locale, or if the locale is not installed in the system, the Cisco Unified CallManager system default locale gets used. If this locale is not supported by CAR, or is not installed in the system, pages display in the most preferred locale of the browser. When the browser-preferred locale is also not supported or not installed, the locale gets set to English_United_States. All information on the UI pages, including labels, number formats, and so on., displays based on the locale. The administrator windows always display in English.

Reports

Reports, which are generated in both CSV and PDF formats, display in the user's preferred locale for non-administrative users (users or managers). However, the dynamic data (like the Company Name shown in the report header) displays in the same language as was used to enter it in the database. The locale provides the basis for the header, footers, number formats, and some static data (like call classification). Reports for administrators display in English.

Web Browsers

The CAR program supports the following web browsers:

- Netscape Communicator 7.1 (or later)
- Microsoft Internet Explorer 6.0 (or later)

From any user PC in your network, browse into a server that is running Cisco Unified CallManager Administration and log in with administrative privileges.

Note Simultaneous logon to Cisco Unified CallManager Administration by a large number of users can cause web page performance to suffer. Try to limit the number of users and administrators that are logged on simultaneously.

CDR Analysis and Reporting Configuration Checklist

Table 24-1 provides an overview of the steps for configuring CDR Analysis and Reporting.

Table 24-1 CAR Configuration Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Activate the CDR services on the appropriate servers.	Activating CAR, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
Step 2	To ensure that the CDR records write to flat files, you must enable the Cisco CallManager service parameters, CDREnabled and CallDiagnosticsEnabled.	*Cisco Unified CallManager Administration Guide, Release 5.0(4)*
Step 3	Set up CAR administrators, managers, and users in Cisco Unified CallManager Administration.	Configuring CAR Administrators, Managers, and Users, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
Step 4	Configure CAR system parameters for report generation: • Configure mail server. • Configure dial plan. • Configure gateway. • Set system preferences.	System Parameters Configuration, page 25-1
Step 5	Specify the value ranges that you consider good, acceptable, fair, and poor for jitter, latency, and lost packets.	Defining the Quality of Service (QoS) Values, page 26-5

Table 24-1 CAR Configuration Checklist (continued)

Configuration Steps		Related Procedures and Topics
Step 6	If desired, set a base monetary rate for the cost of calls on the basis of a time increment. You can further qualify the cost by applying the time-of-day and voice-quality factors.	Configuring the Rating Engine, page 26-1
Step 7	Enable the reports that you want to automatically generate by using the Automatic Generation/Alert Option window.	Configuring Automatic Report Generation/Alert, page 26-6 Automatically Generated Reports Schedule, page 24-11
Step 8	Configure the system scheduler to schedule when CAR loads CDRs as well as daily, weekly, and monthly reports.	System Scheduler Configuration, page 25-7
Step 9	Set the parameters for automatic purging of the CAR database. You can set the percentage of the CAR database that you want the system to use for CAR data and the age of CAR data that you want to delete when the CAR data exceeds the database size limit. You can disable automatic database purging, but the system enables purging by default.	Configuring Automatic Database Purge, page 25-14
Step 10	Set the charge limit notification that indicates when the daily charge limit for a user exceeds the specified maximum and the QoS notification that indicates when the percentage of good calls drops below a specified range or the percentage of poor calls exceeds a specified limit.	Configuring Notification Limits, page 26-8
Step 11	If your users want to view localized user and manager reports, install the proper locales.	*Cisco Unified Communications Operating System Administration Guide, Release 5.0(4)*
Step 12	To back up CAR, including the database and the pregenerated reports, make sure that you configure the CAR target in the backup utility.	*Disaster Recovery Administration Guide, Release 5.0(4)*

Additional Information

See the "Related Topics" section on page 24-16.

Related Topics

- CAR Reports General Information, page 24-6
- User Reports, page 24-7
- System Reports, page 24-8
- Device Reports, page 24-10
- Automatically Generated Reports Schedule, page 24-11
- Getting Started with CDR Analysis and Reporting, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
- CAR System Configuration, page 25-1
- CAR Report Configuration, page 26-1

- CAR User Reports Configuration, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
- CAR System Reports Configuration, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
- CAR Device Reports Configuration, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
- CDR Search Configuration, page 27-1
- Export CDR/CMR Records Configuration, *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide, Release 5.0(4)*
- CAR Report Results, page 28-1

Additional Cisco Documentation

- *Cisco Unified Communications Operating System Administration Guide, Release 5.0(4)*
- *Cisco Unified CallManager Serviceability Administration Guide, Release 5.0(4)*
- *Cisco Unified CallManager Serviceability System Guide, Release 5.0(4)*