



Cisco Unified Communications Manager CDR Analysis and Reporting Administration Guide for Cisco Unified Communications Manager

Release 6.0(1)

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Preface

This preface describes the purpose, audience, organization, and conventions of this guide, and provides information on how to obtain related documentation.



Note

This document may not represent the latest available Cisco product information. You can obtain the most current documentation by accessing the Cisco product documentation page at this URL:

<http://www.cisco.com/univercd/home/home.htm>

The preface covers these topics:

- [Purpose, page xi](#)
- [Audience, page xii](#)
- [Organization, page xii](#)
- [Related Documentation, page xiii](#)
- [Conventions, page xiii](#)
- [Obtaining Documentation, Obtaining Support, and Security Guidelines, page xiv](#)
- [Cisco Product Security Overview, page xiv](#)

Purpose

The *Cisco Unified Communications Manager CDR Analysis and Reporting Administration Guide* describes how to configure and use Cisco Unified Communications Manager CDR Analysis and Reporting (CAR), a tool that is used to create user, system, device, and billing reports. Use this guide in conjunction with the following documents:

- *Cisco Unified Serviceability Administration Guide*—This document provides descriptions and procedures for configuring alarms, traces, SNMP, and so on, through Cisco Unified Serviceability.
- *Cisco Unified Real-Time Monitoring Tool Administration Guide*—This document describes how to use RTMT, a tool that allows you to monitor many aspects of the system (critical services, alerts, performance counters, and so on).
- *Cisco Unity Connection Serviceability Administration Guide*—This document provides descriptions and procedures for using alarms, traces, reports, and so on, through Cisco Unity Connection Serviceability.

Audience

The *Cisco Unified Communications Manager CDR Analysis and Reporting Administration Guide* provides information for administrators who are responsible for managing and supporting CAR, and call detail records (CDRs). Network engineers, system administrators, or telecom engineers use this guide to learn about, and administer, CAR features. CAR administrators, managers and end users use CAR to generate certain reports.

Organization

The following table shows how this guide is organized:

Chapter	Description
Chapter 1, “CDR Analysis and Reporting Overview”	Provides an overview of CDR Analysis and Reporting, a tool that is used to create user, system, device, and billing reports.
Chapter 2, “Getting Started with CDR Analysis and Reporting”	Provides the procedures for configuring the CDR Analysis and Reporting (CAR), CDR service and enterprise parameters, and logging in and out of CAR.
Chapter 3, “CAR System Configuration”	Provides procedures for configuring the CAR system parameters, system scheduler, and system database.
Chapter 4, “CAR Report Configuration”	Provides procedures for configuring the rating engine, quality of service, and automatic generation of CAR reports.
Chapter 5, “CAR User Reports Configuration”	Provides procedures for configuring individual and department bills and Cisco Unified IP Phone services for use with CAR user reports.
Chapter 6, “CAR System Reports Configuration”	Provides procedures for configuring quality of service reports and parameters, traffic summary, system overview, and CDR errors for use with CAR system reports.
Chapter 7, “CAR Device Reports Configuration”	Provides procedures for configuring CAR device reports for gateways, conference bridges, and voice-messaging utilization.
Chapter 8, “CDR Search Configuration”	Provides procedures for configuring CAR CDR Search for user extension and gateways.
Chapter 9, “Export CDR/CMR Records Configuration”	Provides procedures for configuring the export of CDR/CMR records.
Chapter 10, “Understanding Cisco Call Detail Records”	Provides CDR definitions and examples.
Chapter 11, “CAR Report Results”	Provides information describing the results of all CAR reports.

Related Documentation

See the *Cisco Unified Communications Manager Documentation Guide* for additional Cisco Unified Communications Manager documentation. The following URL shows an example of the path to the documentation guide:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/<release #>/doc_gd/index.htm

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
→	This pointer highlights an important line of text in an example.
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords, are in angle brackets.

Notes use the following conventions:



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Timesavers use the following conventions:



Timesaver

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Tips use the following conventions:

**Tip**

Means *the information contains useful tips*.

Cautions use the following conventions:

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Warnings use the following conventions:

**Warning**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Cisco Product Security Overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: <http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>. If you require further assistance please contact us by sending email to export@cisco.com.



CHAPTER 1

CDR Analysis and Reporting Overview

Cisco Unified 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 a voice messaging system) and treats them as normal calls. The part of the call after the iDivert feature gets activated may not get charged to the correct party.

This chapter contains the following topics:

- [Understanding CDR Data, page 1-1](#)
- [Understanding CDR Analysis and Reporting, page 1-2](#)
- [CAR Administrators, Managers, and Users, page 1-5](#)
- [CAR System Settings, page 1-6](#)
- [CAR Reports, page 1-6](#)
- [CDR Search, page 1-12](#)
- [Internationalization for CDR Analysis and Reporting, page 1-13](#)
- [Web Browsers, page 1-14](#)
- [CDR Analysis and Reporting Configuration Checklist, page 1-15](#)
- [Related Topics, page 1-16](#)

Understanding CDR Data

Call detail records (CDRs) 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 Communications Manager 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 Communications Manager 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, see the *Cisco Unified Serviceability Administration Guide*.

**Note**

You cannot upgrade from a Microsoft Windows version of Cisco Unified Communications Manager system to a Cisco Unified Communications Manager Business Edition system (that runs Linux 5.0 and later). However, you can integrate a Windows version of Cisco Unified Communications Manager with a standalone Cisco Unity Connection system. In this particular situation, the CAR installation program will detect this option. CAR does not get supported on a Cisco Unity Connection system and will not be installed. When CAR is not installed, Cisco Unified Communications Manager Administration cannot activate, deactivate, start, stop, or restart CAR Web Service and CAR Scheduler from Cisco Unified Serviceability.

**Note**

If you upgrade from Cisco Unified Communications Manager 4.x, Cisco Unified Communications Manager saves the CDRs in the CAR database to comma separated value (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 Communications Manager 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 Communications Manager 5.x system.

Understanding CDR Analysis and Reporting

CAR's primary functionality generates reports on the users of Cisco Unified Communications Manager and generates reports on the system status with respect to call processing. CAR also performs CAR database management activities. You can perform these tasks in one of the following ways:

- Automatically configure the required tasks to take place.
- Manually perform the tasks by using the web interface.

You access CAR from the Tools menu of Cisco Unified Serviceability after you activate the appropriate services as described in the [“Activating CAR” section on page 2-1](#).

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. An option allows continuous loading 24/7 of the CDR data. An option also allows you to “Load CDR Only” data (the corresponding CMR records do not get loaded).

CAR retrieves information that is required for various reports from the CDRs and CMRs as well as from the Cisco Unified Communications Manager 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 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 1-6](#).

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.

**Note**

The system does not provide e-mail alerts to application users because no mail ID exists for an application user.

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 number of CDRs exceeds 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 Communications Manager 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 4-1](#).

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 Communications Manager Administration. For more information, see the [“Configuring CAR Administrators, Managers, and Users” section on page 2-4](#).

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:

- 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 Communications Manager Administration provides, or if you are outside the NANP, be sure to configure the dial plan according to your Cisco Unified Communications Manager dial plan.
- Gateways—To utilize the gateway reports, you need to configure gateways in CAR. You should do this after installation of 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, page 1-6](#)
- [User Reports, page 1-7](#)
- [System Reports, page 1-8](#)
- [Device Reports, page 1-10](#)
- [Automatically Generated Reports Schedule, page 1-11](#)

CAR Reports General Information

For all 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 situation can occur when the report gets generated for prior data where the user that was involved in a call at that time no longer exists in the system (Cisco Unified Communications Manager database).

Additional Information

See the [“Related Topics” section on page 1-16](#).

User Reports

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

- Bills
 - Individual—Available for users, managers, and CAR administrators. Individual bills provide call information for the date range that you specify. You can generate, view, or mail summary or detail information about your individual phone bills. Those CAR administrators who are also application users cannot get this report.
 - Department—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. The Top N by Charge reports 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.
 - By Duration—Available for managers and CAR administrators. The Top N by Duration reports 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.

- By Number of Calls—Available for managers and CAR administrators. The Top N by Number of Calls reports list 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 Unified Communications Manager Assistant
 - Manager Call Usage—Available for CAR administrators. The Cisco Unified Communications Manager Assistant (IPMA) summary and detail reports provide call completion usage details for IPMA managers. 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.
 - Assistant Call Usage—Available for CAR administrators. The Cisco IPMA summary and detail reports provide call completion usage details for IPMA assistants. The assistant reports can include calls that assistants handle for themselves only, calls that assistants handle for managers, calls that assistants handle for themselves and for managers.
- Cisco IP Phone Services—Available for CAR administrators. The Cisco IP Phone Services report shows selected Cisco 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 1-16.

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 Communications Manager 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.
 - 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.

- 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.
- 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 choose. 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.
 - Summary by Extension—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 choose. 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.
- FAC/CMC
 - 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.
 - 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.
- Malicious Call Details—Available for CAR administrators. The Cisco Unified Communications Manager 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 Unified Communications Manager 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 Communications Manager 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 1-16](#).

Device Reports

Device reports help CAR administrators track the load and performance of Cisco Unified Communications Manager-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.
 - **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.
 - **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 Plan**
 - **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 report allows you to generate and view details about conference calls and conference bridges. 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 1-16.

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 4-7.

To change the specific time each day, week, or month that reports get generated and get purged from the system see the [“Configuring CAR System Scheduler”](#) section on page 3-6.

Additional Information

See the [“Related Topics”](#) section on page 1-16.

CDR Search

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

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, final called, or bridge number) 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 choose. 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 Cisco Unified Communications Manager help specifies. 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 Communications Manager Locale Installer on every server in the cluster. Make sure that you have first installed the Cisco Unified Communications Manager Locale Installer on the server. Installing the Locale Installer ensures that you have the latest translated text available for CAR. For more information on the Cisco Unified Communications Manager Locale Installer, see the *Cisco Unified Communications Operating System Administration Guide*.

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

In the Cisco Unified Communications Manager Administration, set the user-preferred locale in the Cisco Unified Communications Manager 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 Communications Manager database stores this information. See the *Cisco Unified Communications Manager Administration Guide* 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 most preferred locale of the client. 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 Communications Manager system default locale that is set in the Cisco Communications Manager 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 Communications Manager database, and then CAR windows for non-administrative users (users or managers) display the user preferred locale. If the CAR UI does not support this locale, or if the locale is not installed in the system, the Cisco Unified Communications Manager system default locale gets used. If this locale is not supported by CAR, or is not installed in the system, windows 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 windows, 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 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

- Microsoft Internet Explorer 6.0

From any user PC in your network, browse into a server where CDR Analysis and Reporting displays in Cisco Unified Serviceability and log in as a CAR administrator, manager, or user.

CDR Analysis and Reporting Configuration Checklist

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

Table 1-1 CAR Configuration Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Activate the CDR services on the appropriate servers.	Activating CAR, page 2-1
Step 2	To ensure that the CDR records write to flat files, you must enable the Cisco Unified Communications Manager service parameters, CDREnabled and CallDiagnosticsEnabled.	Configuring CDR Service Parameters, page 2-2
Step 3	Set up CAR administrators, managers, and users in Cisco Unified Communications Manager Administration.	Configuring CAR Administrators, Managers, and Users, page 2-4
Step 4	Configure CAR system parameters for report generation: <ul style="list-style-type: none"> • Configure mail server. • Configure dial plan. • Configure gateway. • Set system preferences. 	Configuring CAR System Parameters, page 3-1
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 4-5
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 4-1
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 4-6 Automatically Generated Reports Schedule, page 1-11
Step 8	Configure the system scheduler to schedule when CAR loads CDRs as well as daily, weekly, and monthly reports.	Configuring CAR System Scheduler, page 3-6
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 3-14

Table 1-1 CAR Configuration Checklist (continued)

Configuration Steps		Related Procedures and Topics
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 4-8
Step 11	If your users want to view localized user and manager reports, install the proper locales.	<i>Cisco Unified Communications Operating System Administration Guide</i>
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.	<i>Disaster Recovery Administration Guide</i>

Additional Information

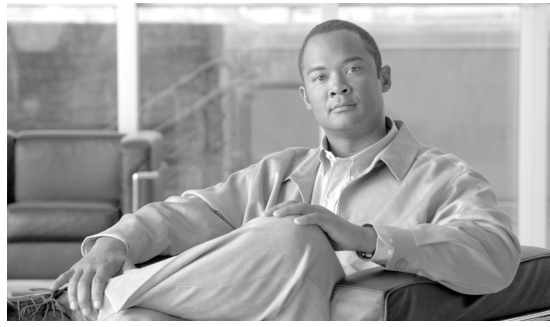
See the [“Related Topics”](#) section on page 1-16.

Related Topics

- [CAR Reports General Information, page 1-6](#)
- [User Reports, page 1-7](#)
- [System Reports, page 1-8](#)
- [Device Reports, page 1-10](#)
- [Automatically Generated Reports Schedule, page 1-11](#)
- [Getting Started with CDR Analysis and Reporting, page 2-1](#)
- [CAR System Configuration, page 3-1](#)
- [CAR Report Configuration, page 4-1](#)
- [CAR User Reports Configuration, page 5-1](#)
- [CAR System Reports Configuration, page 6-1](#)
- [CAR Device Reports Configuration, page 7-1](#)
- [CDR Search Configuration, page 8-1](#)
- [Export CDR/CMR Records Configuration, page 9-1](#)
- [Understanding Cisco Call Detail Records, page 10-1](#)
- [CAR Report Results, page 11-1](#)

Additional Cisco Documentation

- *Cisco Unified Communications Operating System Administration Guide*
- *Cisco Unified Serviceability Administration Guide*



CHAPTER 2

Getting Started with CDR Analysis and Reporting

The Cisco Unified Communications Manager CDR Analysis and Reporting (CAR) tool generates reports of information for quality of service, traffic, user call volume, billing, and gateways.

This chapter contains the following topics:

- [Activating CAR, page 2-1](#)
- [Configuring CDR Service Parameters, page 2-2](#)
- [Configuring CDR Enterprise Parameters, page 2-3](#)
- [Configuring CAR Administrators, Managers, and Users, page 2-4](#)
- [Logging On to CAR, page 2-5](#)
- [Logging Out of CAR, page 2-6](#)
- [Accessing CAR Documentation Online Help, page 2-7](#)
- [Related Topics, page 2-7](#)

Activating CAR

CAR comprises a group of complementary services, which you can activate in the Service Activation window in Cisco Unified Serviceability. Before you can launch CAR from the Tools menu in Cisco Unified Serviceability, you must activate the CAR services by using the following procedure.

Procedure

Step 1 Choose **Tools > Service Activation**.

The Service Activation window displays.

Step 2 From the Servers drop-down list box, choose the first node of the cluster server name.

The window displays the service names for the server that you chose, the service type, and the activation status of the services.



Note Activate the CAR services on only the first node, where the Cisco Unified Communications Manager database resides.

Step 3 Check the check boxes next to the following CDR Services:

- Cisco SOAP-CDRonDemand Service (optional). If you are using a third-party billing application that accesses CDR data via an HTTPS/SOAP interface, activate this service.
- Cisco CAR Scheduler
- Cisco CAR Web Service



Tip Unchecking the check boxes next to the CDR Services and clicking **Update** deactivates the services. If you deactivate the Cisco CAR Web Service, the system removes CAR from the Tools menu in Cisco Unified Serviceability.

Step 4 After you have finished making the appropriate changes, click **Update**.

Additional Information

See the [“Related Topics” section on page 2-7](#).

Configuring CDR Service Parameters

CAR relies on the data in the CDR and CMR records to generate both the CAR and CDR reports. CAR requires that the CDR records be available in flat files on the CDR Repository node (the first node). To ensure that the CDR records are generated, and generated in the manner you can use for your particular system, you must enable certain Cisco Unified Communications Manager service parameters:

You can configure these parameters on the Service Parameters Configuration window in Cisco Unified Communications Manager Administration. To access the Service Parameters Configuration window, open Cisco Unified Communications Manager Administration and choose **System -> Service Parameters**. Choose the **Advanced** button to display the complete list of Service Parameters. The following list of service parameters can affect CDR/CMR records:

- System Parameters
 - **CDR Enabled Flag**—This parameter determines whether CDRs are generated. Valid values specify True (CDRs are generated) or False (CDRs are not generated). For this required field, the default value specifies False. Enable this parameter on all servers in the cluster.
 - **CDR Log Calls With Zero Duration Flag**—This parameter enables or disables the logging of CDRs for calls which were never connected or which lasted less than 1 second. Cisco Unified Communications Manager logs unsuccessful calls (calls that result in reorder, such as might occur because of a forwarding directive failure or calls that attempt to go through a busy trunk) regardless of this flag setting. This represents a required field. The default value specifies False.
- Clusterwide Parameters (Device - General)
 - **Call Diagnostics Enabled**—This parameter determines whether the system generates call management records (CMRs), also called diagnostic records. Valid values specify Disabled (do not generate CMRs), Enabled Only When CDR Enabled Flag is True (generate CMRs only when the CDR Enabled Flag service parameter is set to True), or Enabled Regardless of CDR Enabled Flag (generates CMRs without regard to the setting in the CDR Enabled Flag service parameter). This represents a required field. The default value specifies Disabled.

- **Display FAC in CDR**—This parameter determines whether the Forced Authorization Code (FAC) that is associated with the call displays in the CDR. Valid values specify True (display authorization code in CDRs) or False (do not display authorization code in CDRs) for this required field. The default value specifies False.
- **Show Line Group Member DN in finalCalledPartyNumber CDR Fields**—This parameter determines whether the finalCalledPartyNumber field in CDRs shows the directory number (DN) of the line group member who answered the call or the hunt pilot DN. Valid values specify True (the finalCalledPartyNumber in CDRs will show the DN of the phone that answered the call) or False (the finalCalledPartyNumber in CDRs will show the hunt pilot DN). This parameter applies only to basic calls that are routed through a hunt list without feature interaction such as transfer, conference, call park, and so on. If a feature is involved in the call, the hunt pilot DN will show in the finalCalledPartyNumber field regardless of the setting in this parameter. This parameter does not apply to Cisco Unified Communications Manager Attendant Console. The default value for this required field specifies False.
- Clusterwide Parameters (Device - Phone)
 - **Add Incoming Number Prefix to CDR** —This parameter determines whether Cisco Unified Communications Manager adds the incoming prefix (as specified in the National Number Prefix, International Number Prefix, Subscriber Number Prefix, and Unknown Number Prefix service parameters) to the calling party number in the CDRs for that call. If the destination of the call is a gateway, Cisco Unified Communications Manager will not add the prefix to the CDRs even if this parameter is enabled. The default value for this required field specifies False.

Configuring CDR Enterprise Parameters

Configure these CDR parameters on the Enterprise Parameters Configuration window in the Cisco Communications Manager Administration. To access Enterprise Parameters Configuration windows, open Cisco Unified Communications Manager and choose **System -> Enterprise Parameters**.

- **CDR File Time Interval**—This 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 CDR 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 CDR database. The default value is 1. The minimum value specifies 1, and the maximum value specifies 1440. The unit of measure for this required field represents a minute.
- **Cluster ID**—This parameter provides a unique identifier for the cluster. Because the parameter gets used in CDRs, collections of CDRs from multiple clusters can be traced to the sources. The default value specifies StandAloneCluster. The maximum length comprises 50 characters and provides a valid cluster ID that comprises any of the following characters: A-Z, a-z, 0-9, ., -. .
- **Allowed CDRonDemand get_file Queries Per Minute**—This parameter specifies the maximum number of CDRonDemand get_file queries that are allowed per minute for the system. For this required field the default value specifies 10. The minimum value equals 1 and the maximum value equals 20.
- **Allowed CDRonDemand get_file_list Queries Per Minute**—This parameter specifies the maximum number of CDRonDemand get_file_list queries that are allowed per minute for the system. For this required field the default value specifies 20. The minimum value equals 1 and the maximum value equals 40.

Configuring CAR Administrators, Managers, and Users

Any user can act as a CAR administrator (including application users); however, you must add the end user to the Cisco CAR Administrators User Group in Cisco Unified Communications Manager Administration (Standard CAR Admin Users). End 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. End users who have not been identified as CAR administrators can access only designated CAR reports.



Note

An application user that acts as a CAR administrator can configure all reports except for the Individual Bill report. An application user that acts as a CAR administrator cannot access end user (CCM user) windows. CAR notifications are not sent to the application user because there is no mail ID for the application user.



Tip

To use CAR, ensure at least one CAR administrator exists in the Cisco Unified Communications Manager database.

Before you log in to CAR, you must configure at least one CAR user that has administrative privileges in CAR. To configure CAR administrators, managers, and users, perform the following procedure:

Procedure

- Step 1** In Cisco Unified Communications Manager Administration, add an end user by choosing **User Management > End User**. For information on how to perform this task, see the *Cisco Unified Communications Manager Administration Guide*. To create a manager, make sure that you enter a value in the Manager User ID field.



Note

After creating the End User, edit the user password credentials by clicking the button **Edit Credentials** near the password text box. Uncheck the **User Must Change at Next Login** check box. If this action is not taken, you will get IMS_ERROR_CODE_5 (See [Table 2-1](#) for the “**CAR Invalid Logon Messages**”) and will not be allowed to log in to CAR. Then you must log in to Cisco Unified Communications Manager Administration to manually reset the password.



Tip

Cisco recommends that you configure at least one CAR user that has administrative privileges in CAR before you start using CAR. If you have not configured a CAR administrator or want to configure another CAR administrator, continue with this procedure.

- Step 2** Choose **User Management > User Group**; click **Find**.
The Find and List User Groups window displays.
- Step 3** Click **Standard CAR Admin Users**.
The CAR User Group window displays.
- Step 4** Click the **Add End Users to Group** button.
- Step 5** Check the check box(es) for the users that you want to add to the group and click **Add Selected**.
The user displays in the Users in Group group box.

**Tip**

To revoke CAR administrative privileges, check the check box of the user in Users in Group group box and click **Delete Selected**. When the warning message displays, click **OK**. The system revokes the privileges immediately.

Additional Information

See the [“Related Topics” section on page 2-7](#).

Logging On to CAR

To log on to CAR, perform the following procedure:

Before you Begin

Perform the following tasks:

- Before you can log in to CAR, verify that the Cisco CAR Web Service and the Cisco CAR Scheduler service run on the first node. After you activate the services, the option CDR Analysis and Reporting displays under the Tools menu in Cisco Unified Serviceability. For information on how to activate services, see the [“Activating CAR” section on page 2-1](#).
- Configure CAR administrators, managers, and users as described in [“Configuring CAR Administrators, Managers, and Users” section on page 2-4](#).

Procedure

- Step 1** To log on to CAR, perform one of the following tasks:
- For CAR system administrators only—From Cisco Unified Serviceability, choose **Tools > CDR Analysis and Reporting**.
 - For CAR users or administrators—From the web browser, enter **https://<Server-ip/name>:8443/car/Logon.jsp**.
- Step 2** After the CAR logon window displays, enter your user ID in the User Name field.
- Step 3** In the Password field, enter your password. Click **Login**.

The CAR window displays.

If the user ID or password is invalid, CAR displays one of the Identity Management System (IMS) messages that are listed in [Table 2-1](#).

Table 2-1 CAR Invalid Logon Messages

Error Code	Message
IMS_ERROR_CODE 1	Either the User Name or the Password entered is invalid. Ensure that you are logging into CAR as a CAR administrator or a regular End User.
IMS_ERROR_CODE 2	The account has been locked by System Administrator. Please contact the administrator.

Table 2-1 CAR Invalid Logon Messages (continued)

Error Code	Message
IMS_ERROR_CODE 3	The account has been temporarily locked. Please contact the System Administrator or try after sometime.
IMS_ERROR_CODE 4	The account has been deactivated due to lack of activity. Please contact the System Administrator.
IMS_ERROR_CODE 5	The account has been locked as the password has expired. Please reset the password or contact the System Administrator.
IMS_ERROR_CODE 6	The account has been locked as the password has expired. Please contact the System Administrator.
IMS_ERROR_CODE 7 = ERROR: LDAP_INACTIVE	The system has changed over to using LDAP authentication and the user is still in the old database. Please contact the System Administrator.
IMS_ERROR_CODE 8	The account has been locked as the user needs to log in manually and change the credential first. Please reset the password from the Cisco Unified Communications Manager Administration page or contact the System Administrator.
IMS_ERROR_CODE UNKNOWN	System error. Please contact the System Administrator.
IMS_EXCEPTION (any exception returned by IMS) = AUTHENTICATION FAILURE	Unable to Authenticate User due to System Error. Please contact System Administrator.

Additional Information

See the [“Related Topics”](#) section on page 2-7.

Logging Out of CAR

This section describes how to log out of CAR.

Procedure

-
- Step 1** At the CAR window, choose **Logout**.
- Step 2** A prompt message “For security reasons, it is advisable to close the browser window on Logout. Do you want to close the browser window?” displays. To close the CAR window (browser), click **OK**; clicking Cancel displays the CAR Logon window.
-

Additional Information

See the [“Related Topics”](#) section on page 2-7.

Accessing CAR Documentation Online Help

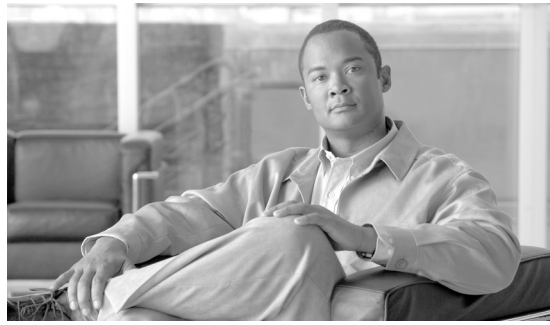
To access CAR documentation online help, choose **Help > Contents and Index** (for a list of contents) or **Help > For this page** (for information that is specific to the page that displays.)

Additional Information

See the [“Related Topics”](#) section on page 2-7.

Related Topics

- [Activating CAR, page 2-1](#)
- [Configuring CAR Administrators, Managers, and Users, page 2-4](#)
- [Logging On to CAR, page 2-5](#)
- [Logging Out of CAR, page 2-6](#)
- [Accessing CAR Documentation Online Help, page 2-7](#)
- [CDR Analysis and Reporting Overview, page 1-1](#)
- [CAR System Configuration, page 3-1](#)
- [CAR Report Configuration, page 4-1](#)
- [CAR User Reports Configuration, page 5-1](#)
- [CAR System Reports Configuration, page 6-1](#)
- [CAR Device Reports Configuration, page 7-1](#)
- [CDR Search Configuration, page 8-1](#)
- [Export CDR/CMR Records Configuration, page 9-1](#)
- [Understanding Cisco Call Detail Records, page 10-1](#)
- [CAR Report Results, page 11-1](#)



CHAPTER 3

CAR System Configuration

Before you start generating reports with CAR, configure the system. In most cases, CAR provides default values; however, review the topics in this chapter to learn more about customizing CAR.

This chapter contains the following topics:

- [Configuring CAR System Parameters, page 3-1](#)
- [Configuring CAR System Scheduler, page 3-6](#)
- [Configuring CAR System Database, page 3-12](#)
- [Generating the Event Log, page 3-15](#)
- [Related Topics, page 3-16](#)

Configuring CAR System Parameters

Unless you want to use the default values, you should customize a number of system parameters before you generate any reports. This section describes the system parameters that affect CAR. Because default values are provided for all system parameters, Cisco recommends customizing but does not require it.

This section contains the following topics:

- [Configuring Mail Server Parameters, page 3-1](#)
- [Configuring the Dial Plan, page 3-2](#)
- [Restoring the Default Values for the CAR Dial Plan, page 3-3](#)
- [Gateway Configuration, page 3-5](#)
- [Configuring System Preferences, page 3-6](#)

Configuring Mail Server Parameters

To send e-mail alerts and reports by e-mail, you must specify the mail server configuration information. CAR uses the configuration information to successfully connect to the e-mail server.

This section describes how to specify e-mail server information.

Procedure

-
- Step 1** Choose **System > System Parameters > Mail Parameters**.

The Mail Parameters window displays.

Step 2 In the Mail ID field, enter the e-mail identifier that will be used in the From field when e-mails are sent.

Step 3 In the Password field, enter the password that is used to access the server that is running the e-mail system.



Note CAR does not authenticate the user ID and password. You must disable authentication on the mail server or enter a valid user ID and password.

Step 4 In the Confirm Password field, enter the same password from [Step 3](#) to confirm.

Step 5 In the Mail Domain field, enter the domain name for the server that is running the e-mail system.

Step 6 In the Mail Server Name field, enter the name or IP address of the server that is running the e-mail system.

Step 7 To make the changes, click the **Update** button.

Additional Information

See the [“Related Topics”](#) section on page 3-16.

Configuring the Dial Plan

The default dial plan in CAR specifies the North American numbering plan (NANP). Make sure that the dial plan is properly configured, so call classifications display correctly in the reports.



Note If you have modified the default NANP that is provided in Cisco Unified Communications Manager Administration, or if you are outside the NANP, be sure to configure the dial plan in CAR according to your Cisco Unified Communications Manager dial plan. At least one condition must exist to configure the Dial Plan. See the *Cisco Unified Communications Manager Administration Guide* and the *Cisco Unified Communications Manager System Guide* for dial plan information.

To configure the dial plan, define the parameters for the outgoing call classifications. Call classifications include International, Local, Long Distance, On Net, and so on. For example, if local calls in your area equal six digits in length, you would specify a row in the dial plan as follows:

Condition	No of Digits	Pattern	Call Type
=	6	!	Local

This section describes how to update the CAR dial plan configuration.

Procedure

Step 1 Choose **System > System Parameters > Dial Plan Configuration**.

The Dial Plan Configuration window displays.

Step 2 In the Toll Free Numbers field, enter the numbers in your dial plan that can be placed without a charge.

- Step 3** Update the values in the table by using the following fields:
- **Condition**—Select the condition of the rule where > represents greater than, < represents less than, and = represents a value that is equal to the specified value in the No of Digits field.
 - **No Of Digits**—Choose the number of digits in the directory number to which this rule should be applied. If the number of digits does not impact the rule, specify NA.
 - **Pattern**—Enter the pattern that is used for the call classification, where
 - G—Signifies classified as specified in the rule (G equals a wildcard for the gateway area code that is specified in the “[Gateway Configuration](#)” section on page 3-5).
 - T—Retrieves the toll-free numbers that are configured in CAR.
 - !—Signifies multiple digits (any number that is more than 1 digit in length, such as 1234 or 5551234).
 - X—Signifies a single-digit number (such as 0, 1, or 9).
 - **Call Type**—Choose the call type if the condition is satisfied.
- Step 4** To add more rows, check the check box in the row below where you want to add rows and click the **Add Rows** link. The system adds a row above the row that you chose. To delete a row, check the check box by the row that you want to delete and click the **Delete Rows** link.



Note CAR classifies calls on the basis of the dialed number as stored in the CDRs. If the dialed digits differ from the digits that are written in CDRs (due to number transformations), configure the Dial Plan in CAR on the basis of how the digits show up in CDRs.

- Step 5** To make the changes, click the **Update** button.

Additional Information

See the “[Related Topics](#)” section on page 3-16.

Restoring the Default Values for the CAR Dial Plan

If you have modified the default dial plan in CAR, you can restore the default values that are based on the North American numbering plan (NANP).

[Table 3-1](#) provides the default NANP values.

Table 3-1 Default Values for CAR Dial Plan

Row	Condition	No of Digits	Pattern	Call Type
1	=	5	!	OnNet
2	=	7	!	Local
3	=	10	T!	Others
4	=	10	G!	Local
5	=	10	!	Long Distance
6	=	11	T!	Others
7	=	11	XG!	Local

Table 3-1 Default Values for CAR Dial Plan (continued) (continued)

Row	Condition	No of Digits	Pattern	Call Type
8	=	11	!	Long Distance
9	>	3	011!	International

The following information explains the default table values in [Table 3-1](#):

- Row 1—If the number of digits dialed equals 5 and the pattern is ! (more than one digit, in this case, 5 digits), the call gets classified as OnNet.
- Row 2—If the number of digits dialed equals 7 and the pattern is ! (more than one digit, in this case, 7 digits), the call gets classified as Local.
- Row 3—If the number of digits dialed equals 10 and the pattern is T! (more than one digit, in this case a 10-digit number that starts with a Toll Free number code), the call gets classified as Others.
- Row 4—If the number of digits dialed equals 10 and the pattern is G! (more than one digit, in this case a 10-digit number that starts with a gateway code), the call gets classified as Local.
- Row 5—If the number of digits dialed equals 10 and the pattern is ! (more than one digit, in this case a 10-digit number), the call gets classified as Long Distance.
- Row 6—If the number of digits dialed equals 11 and the pattern is T! (more than one digit, in this case an 11-digit number that starts with a toll-free number code), the call gets classified as Others.
- Row 7—If the number of digits dialed equals 11 and the pattern is XG! (more than one digit, in this case an 11-digit number that starts with any single digit followed by a gateway code), the call gets classified as Local.
- Row 8—If the number of digits dialed equals 11 and the pattern is ! (more than one digit, in this case an 11-digit number), the call gets classified as Long Distance.
- Row 9—If the number of digits dialed is greater than 3 and starts with 011, the call gets classified as International.

If none of the conditions gets satisfied, the call gets classified as Others. This section describes how to restore the NANP dial plan values in CAR.

Procedure

Step 1 Choose **System > System Parameters > Dial Plan Configuration**.

The Dial Plan Configuration window displays.

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

The restoration takes effect at midnight. To make changes take effect immediately, restart the Cisco CAR Scheduler service. For information on restarting services, see the *Cisco Unified Serviceability Administration Guide*.

Additional Information

See the [“Related Topics”](#) section on page 3-16.

Gateway Configuration

**Tip**

Configure the gateways in CAR for existing Cisco Unified Communications Manager system gateways. After you add gateways to Cisco Unified Communications Manager Administration, configure the new gateways in CAR. When gateways are deleted from the Cisco Unified Communications Manager system, the system automatically removes the gateways (and any configuration settings that you specified) from CAR.

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.

**Note**

“G” acts as a wildcard for the gateway area codes that are used in Dial Plan configuration.

This section describes how to configure gateways in CAR.

Procedure

Step 1 Choose **System > System Parameters > Gateway Configuration**.

The Gateway Configuration window displays.

**Note**

If you have not configured gateways in Cisco Unified Communications Manager Administration, a message displays that indicates that you have not configured gateways for the system.

Step 2 Perform one of the following tasks:

- To update the area code for all gateways, enter the area code in the Area Code field and click the **Set Area Code** button.

A message displays that indicates that you must click Update to save changes. Click **OK**.

- To update the area code for specific gateways, enter the area code for each gateway that you want to configure in the area code field for that gateway.

Step 3 In the Max No. of Ports field, enter the number of ports for each gateway that you want to configure. The Max No of Ports range goes from 1 to 1000.

**Note**

CAR uses the values that were provided for the gateway when it was added in Cisco Unified Communications Manager Administration. Therefore, some gateways will already have an area code setting or have a zero for maximum number of ports, depending on the details that were specified when the gateway was added in Cisco Unified Communications Manager Administration. CAR does not accept 0 as a value for the maximum number of ports; you may be prompted to change the maximum number of ports for all gateways with a value of zero.

Step 4 To make the changes, click the **Update** button.

You can run reports in CAR on any or all of the configured gateways.

Additional Information

See the “[Related Topics](#)” section on page 3-16.

Configuring System Preferences

CAR provides default system preferences; however, you may customize the system by specifying values for the system parameters.

This section describes how to specify values for system preferences.

Procedure

Step 1 Choose **System > System Parameters > System Preferences**.

The System Preferences window displays. The list of available system parameters displays in the Parameter Name list.

Step 2 In the Parameter Value field, enter the desired value for the parameter as described in [Table 3-2](#).

Table 3-2 System Preferences Parameter

Parameter	Description
COMPANY_NAME	Enter the company name that is used as header information in reports.

Step 3 Click the **Update** button.

Configuring CAR System Scheduler

The CAR System Scheduler allows you to perform the following functions:

- [Configuring the CDR Load Schedule](#), page 3-7
- [Scheduling Daily Reports](#), page 3-9
- [Scheduling Weekly Reports](#), page 3-10
- [Scheduling Monthly Reports](#), page 3-11

**Note**

Loading CDR data can cause performance degradation on Cisco Unified Communications Manager. Cisco recommends that you use the default loading time or schedule the loading to occur at a time when Cisco Unified Communications Manager performance will be least affected.

Additional Information

See the “[Related Topics](#)” section on page 3-16.

Configuring the CDR Load Schedule

By default, CDR data loads every day from midnight to 5 a.m. This section describes how to customize the loading schedule, how to restore the default loading schedule if it was customized, and how to disable CDR loading.

Disable CDR loading when you are installing or upgrading the system in the same off-hours during which CDR loading normally occurs. Because loading CDRs causes a resource drain on Cisco Unified Communications Manager resources, you can suspend CDR loads until other operations complete. Of course, the CDR data does not get updated when CDR loading is disabled. Be sure to enable CDR loading again as soon as possible. The CAR tool does not affect the CDR generation in Cisco Unified Communications Manager.

**Tip**

To manually delete the CAR data and reload the database with CDRs, see the [“Manually Purging or Reloading the CAR Database”](#) section on page 3-13.

Procedure

Step 1 Choose **System > Scheduler > CDR Load**.

The CDR Load window displays.

Step 2 Choose one of the following options:

- a. **Disable Loader**—To disable CDR data loading, check the **Disable Loader** check box and click the **Update** button.

CDR data will not load into CAR until you enable CDR loading. Changes take effect at midnight. You can force the change to take effect immediately by stopping and restarting the CAR Scheduler service.

To enable CDR data loading, uncheck the **Disable Loader** check box and continue with [Step 3](#) to configure the load parameters.

- b. **Continuous Loading 24/7**—To enable the CDR Loader to run continuously 24 hours a day, 7 days a week to load CDRs/CMRs into the CAR database, check the **Continuous Loading 24/7** check box and click the **Update** button.

The CAR Scheduler service stops, and the CAR Loader is configured to run immediately (within 1 to 2 minutes). The CAR Scheduler service restarts. If no new files for processing exist, the CDR Loader sleeps and then checks periodically for new files to be loaded.

**Note**

If this option is chosen, it takes precedence over and ignores the other CDR and CMR load parameters on the screen, such as Time, Loading Interval, Duration, and Uninhibited Loading.

- c. **Load CDR Only**—To load only CDR records into the CAR database, check the **Load CDR only** check box and click the **Update** button. Continue to [Step 3](#) to configure the load parameters. With this option, CMR records do not load into the CAR database.

**Note**

To restore the default loading schedule, so CDR data loads every day from midnight to 5 a.m., click the **Restore Defaults** button. Changes take effect at midnight. For the change to take effect immediately, stop and restart the Cisco CAR Scheduler service in the Control Center—Feature Services window.

Step 3 In the Load CDR & CMR area, complete the fields as described in [Table 3-3](#).

Table 3-3 Load CDR & CMR Values

Field	Value
Time	Choose the hour and minute that you want CAR to begin loading CDR data from the CDR flat files.
Loading Interval	Choose the interval at which you want records loaded. The interval can range from every 15 minutes to every 24 hours.
Duration	Enter the number of minutes that you want to allow CDR data to load. Depending on the size of the CDR flat files, CAR performance may degrade when CDRs load. You can limit the time that is allowed for loading, but in doing so, the possibility exists that only a portion of the CDR data will be loaded in the time that you set. Be sure to reconcile the duration limit that you place with the interval. For example, if you load CDR data every 15 minutes, the duration of loading cannot exceed 15 minutes.

Uninhibited loading allows you to set a time during which CDR data will load continuously. CDR data does not load **automatically** in the duration that is specified. The CDR data loads uninhibited in the specified duration only if loading starts at the duration that is specified in the Load CDR and CMR area settings. If CDR data loading starts at an uninhibited loading interval, loading continues to the end of the uninhibited loading interval, plus the time in the duration field that is set in the Load CDR and CMR area, or until no new files to process exist.

Uninhibited loading take precedence over any values that are set for scheduled loading. If you do not want uninhibited loading of CDR data, set the From and To values at 00:00.

Step 4 In the Uninhibited Loading of CDR area, complete the fields as described in [Table 3-4](#):

Table 3-4 Uninhibited Loading of CDR Values

Field	Value
From	Choose the hour and minute that you want continuous loading of CDR data to begin.
To	Choose the hour and minute that you want continuous loading of CDR data to end.

Step 5 Click the **Update** button.

CAR will load CDR data based on the time, interval, and duration that you have specified. Changes take effect at midnight. You can force the change to take effect immediately by stopping and restarting the CAR Scheduler service.



Note If Continuous Loading 24/7 is selected, the CAR Scheduler service restarts automatically when the **Update** button is clicked. CAR will load CDR data immediately (within 1 to 2 minutes).

Additional Information

See the [“Related Topics” section on page 3-16](#).

Scheduling Daily Reports

The Daily Report Scheduler schedules the time and duration of CAR daily reports.



Note Report generation can degrade the performance of the Cisco Unified Communications Manager; schedule reports when performance will be least affected.

Before You Begin

Specify the reports to be generated by using the Automatic Generation/Alert Option. See the [“Configuring Automatic Report Generation/Alert” section on page 4-6](#), for more information.

This section describes how to schedule the time and duration of the automatic daily reports.

Procedure

- Step 1** Choose **System > Scheduler > Daily**.
The Daily Scheduler window displays.
- Step 2** From the Time drop-down list box, choose the hour and minute that you want daily reports to be generated.
A 24-hour clock represents time, where 0 equals midnight, and 1 through 11 represent a.m. hours, and 12 through 23 represent the p.m. hours of 1 p.m. through 11 p.m., respectively.
- Step 3** From the Life drop-down list box, choose the duration of the report from the range of 0 to 12 days.



Tip If you set the life of the report to 00, the report does not generate.

- Step 4** Click the **Update** button.
Reports with report generation interval of Daily in the Automatic Generation/Alert Option, and enabled, automatically generate every day at the time that you specify and are deleted after the number of days that you specify.
Changes take effect at midnight. You can force the change to take effect immediately by stopping and restarting the CAR Scheduler service.

**Tip**

To restore the defaults, click the **Restore Defaults** button. By default, the daily reports run at 1 a.m. every day and get purged after two days.

Additional Information

See the [“Related Topics”](#) section on page 3-16.

Scheduling Weekly Reports

The Weekly Report Scheduler schedules the day, time, and duration of the automatic weekly reports.

**Note**

Report generation can degrade Cisco Unified Communications Manager performance; schedule reports when performance will be least affected.

Before You Begin

Use the Automatic Generation/Alert Option to specify the reports to be generated. See the [“Configuring Automatic Report Generation/Alert”](#) section on page 4-6, for more information.

This section describes how to schedule the day, time, and duration of the automatic weekly reports.

Procedure

Step 1 Choose **System > Scheduler > Weekly**.

The Weekly Scheduler window displays.

Step 2 From the Day of Week drop-down list box, choose the day that you want reports to be generated.

Step 3 From the Time drop-down list box, choose the hour and minute that you want reports to be generated.

A 24-hour clock represents time, where 0 equals midnight, and 1 through 11 represent a.m. hours, and 12 through 23 represent the p.m. hours of 1 p.m. through 11 p.m., respectively.

Step 4 From the Life drop-down list box, choose the duration of the report from the range of 00 to 12 weeks. The option that you choose indicates how many weeks the report remains on the disk before the report gets deleted.

**Tip**

If you set the life of the report to 00, the report does not generate.

Step 5 Click the **Update** button.

Reports with report generation interval of Weekly in the Automatic Generation/Alert Option, and enabled, automatically generate every week at the time that you specify and are deleted after the number of weeks that you specify.

Changes take effect at midnight. For the changes to take effect immediately, stop and restart the CAR Scheduler service in the Control Center—Feature Services window.

**Tip**

To restore the defaults, click the **Restore Defaults** button. By default, weekly reports run at 4 a.m. every Sunday and get purged after four weeks.

Additional Information

See the [“Related Topics” section on page 3-16](#).

Scheduling Monthly Reports

The Monthly Report Scheduler schedules the day, time, and duration of CAR monthly reports.

**Note**

Report generation can degrade Cisco Unified Communications Manager performance; schedule reports when performance will be least affected.

Before You Begin

Use the Automatic Generation/Alert Option to specify the reports to be generated. See the [“Configuring Automatic Report Generation/Alert” section on page 4-6](#) for more information.

This section describes how to schedule the day, time, and duration of the automatic monthly reports.

Procedure

Step 1 Choose **System > Scheduler > Monthly**.

The Monthly Scheduler window displays.

Step 2 From the Day of Month drop-down list box in the Monthly Bill Generation row, choose the day of the month on which you want the report to be generated.

If you set the value to a day that does not occur in a given month (such as 29, 30, or 31), the report generates on the last day of that month.

Step 3 From the Time drop-down list box in the Monthly Bill Generation row, choose the hour and minute that you want the report to be generated.

A 24-hour clock represents time, where 0 equals midnight, and 1 through 11 represent a.m. hours, and 12 through 23 represent the p.m. hours of 1 p.m. through 11 p.m., respectively.

Step 4 From the Life drop-down list box in the Monthly Bill Generation row, choose the duration of the report from the range of 00 to 12 months. The option that you choose indicates how many months the report remains on the disk before the report gets deleted.

**Tip**

If you set the life of the report to 00, the report does not generate.

Step 5 From the Day of Month drop-down list box in the Other Monthly Reports row, choose the day of the month on which you want the reports generated.

If you set this value to a day that does not occur in a given month (such as 29, 30, or 31), the report generates on the last day of that month.

Step 6 From the Time drop-down list box in the Other Monthly Reports row, choose the hour and minute that you want reports to be generated.

A 24-hour clock represents time, where 0 equals midnight, and 1 through 11 represent a.m. hours, and 12 through 23 represent the p.m. hours of 1 p.m. through 11 p.m., respectively.

Step 7 From the Life drop-down list box in the Other Monthly Reports row, choose the life of the report from the range of 00 to 12 months. The option that you choose indicates how many months the report remains on the disk before the report gets deleted.



Tip If you set the life of the report to 00, the report does not generate.

Step 8 Click the **Update** button.

Reports with report generation interval of Monthly in Automatic Generation/Alert Option, and enabled, automatically generate every month at the time that you specify and are deleted after the number of months that you specify.

Changes take effect at midnight. For the changes to take effect immediately, stop and restart the CAR Scheduler service in the Control Center—Feature Services window.



Tip To restore the defaults, click the **Restore Defaults** button. By default, monthly bill reports run at 3 a.m. on the first day of every month and get purged after two months, and other monthly reports run at 2 a.m. on the first day of every month and get purged after two months.

Additional Information

See the [“Related Topics”](#) section on page 3-16.

Configuring CAR System Database

You can configure CAR to notify you when the CAR database size exceeds a percentage of the maximum number of records. You can set the message and the maximum number of records and specify the alert percentage.

You can configure the system to maintain the CAR database size between the low water mark and the high water mark values that you configure through the Configure Automatic Database Purge window. When the database size reaches the low water mark, CAR sends an alert to the user. When the database size reaches the high water mark, the system deletes records based on the deletion age and sends an e-mail.

See the following sections to configure system database information:

- [Manually Purging or Reloading the CAR Database, page 3-13](#)
- [Configuring Automatic Database Purge, page 3-14](#)

Manually Purging or Reloading the CAR Database

This section describes how to manually purge selected records from the CAR database and how to delete all of the CAR data and reload the database with new CDR data. You may want to reload the database to reclassify calls after dial-plan updates, user-device association changes, call rate changes, and so on.

Procedure

Step 1 Choose **System > Database > Manual Purge**.

The Manual Database Purge window displays.

Step 2 Choose one of the following actions:

- To delete the existing CAR data and reload the CAR database, click the **Reload All Call Detail Records** button.

The system displays a message that indicates that deleting the records may impact system performance. To continue the reload process, click **OK**.

The system begins loading the CDRs into the CAR database within 5 minutes and continues uninterrupted for up to 6 hours. To monitor the progress of the reload, generate the CDR Load event log, as described in the [“Generating the Event Log” section on page 3-15](#).

After the system loads the new records, the system loads the records according to the schedule that is configured in the [“Configuring the CDR Load Schedule” section on page 3-7](#). By default, CDR data loads every day from midnight to 5 a.m.

- To manually purge selected CAR records, continue with [Step 3](#).

Step 3 In the Select Table field, choose the table in the database that you want purged.

To view the tables for which manual purge is permitted, the total number of records in the table, and the latest record and oldest record in the table, click the **Table Information** button.

The Table Information window displays. To return to the Manual Database Purge window, click the **Close** button.

Step 4 In the Delete records field, choose a date that will determine which records will be purged by clicking one of the following radio buttons:

- Older than—Choose a date for which all records before that date will be deleted.
- Between—Choose a range of dates between which all records will be deleted.

Step 5 Choose the date range of the CAR records that you want to delete.

Step 6 To delete all records older than or between the dates that you specified, click the **Purge** button.

A prompt advises you that you are about to permanently delete the specified records.

Step 7 To purge the records, click the **OK** button or click the **Cancel** button to abort the purge operation.

If you click **OK**, the records get purged from the selected table. After successful deletion of records, the status message shows the number of records that were deleted from the table.

Additional Information

See the [“Related Topics” section on page 3-16](#).

Configuring Automatic Database Purge

This section describes how to schedule and disable automatic purging of the CAR database. By default, the system enables automatic database purge.

Procedure

Step 1 Choose **System > Database > Configure Automatic Purge**.

The Configure Automatic Database Purge window displays.



Note To restore the default values for the fields in this window, click the **Restore Defaults** button.



Tip From the Low Water Mark drop-down list box, choose the minimum percentage of the maximum CAR database size that you want the system to use for CAR data. The maximum CAR database size equals 6 GB. The system notifies you when the CAR database size reaches the low or the high water mark; it also notifies you when the CAR database size exceeds two million records. For information on configuring an e-mail alert, see the [“Enabling or Disabling Alerts by Mail” section on page 4-8](#), for instructions.

Step 2 From the High Water Mark drop-down list box, choose the maximum percentage of the maximum CAR database size that you want the system to use for CAR data. The maximum database size equals 6 GB.

Step 3 In the Min Age of Call Detail Records field, enter the minimum number of days that you want CAR to use when it purges CDRs from the CAR database. Enter a number between 1 and 180.

When the database size exceeds the high water mark or the number of CDRs in the CAR database exceeds two million records, CAR deletes the CDRs that are older than the number of days that you specified in this field.

Step 4 In the Max Age of Call Detail Records field, enter the maximum number of days that you want to keep the CDRs in the CAR database. Enter a number between 1 and 180.

CAR deletes all CDRs that are older than the specified number of days.

Step 5 Click the **Update** button.

The changes take effect at midnight. To make changes take effect immediately, restart the Cisco CAR Scheduler service.



Tip When CAR loads the CDRs into the CAR database, the CAR Scheduler checks the low and high water marks and the two million record limit. If any threshold is breached, CAR immediately deletes records that are older than the number of days that you specify in [Step 3](#).

Additional Information

See the [“Related Topics” section on page 3-16](#).

Generating the Event Log

CAR provides logs that you can use to 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, report deletions, and database purging.

The event log provides a report on the status of the activities that the CAR scheduler controls. The event log report shows whether the tasks started, completed successfully, or are in progress.

This section describes how to generate the event log report.

Procedure

-
- Step 1** Choose **System > Log Screens > Event Log**.
- The Event Log window displays.
- Step 2** Click the **Daily** radio button to choose daily jobs, the **Weekly** radio button to choose weekly jobs, or the **Monthly** radio button to choose monthly jobs.
- Step 3** In the List of Jobs area, choose the tasks for which you want information.
- Step 4** To add the chosen task to the Selected Jobs area, click the right arrow icon.
- Step 5** To remove tasks from the Selected Jobs area, choose the task that you want removed and click the left arrow icon.
- Step 6** To add tasks with a different frequency, repeat [Step 2](#) through [Step 4](#). For example, you can have daily reports and reports that include monthly or weekly tasks.
- Step 7** Choose the status to include in the report. You must choose at least one status as described in [Table 3-5](#).



Note The system chooses the status of each event log report by default.

Table 3-5 *Event Log Report Status*

Status	Description
Completed	If this check box is checked, the event log report includes tasks that have completed.
In Progress	If this check box is checked, the event log report includes tasks that are currently in progress.
Unsuccessful	If this check box is checked, the event log report includes tasks that have failed.

- Step 8** Choose a date range by choosing From and To values.
- Step 9** To generate the event log report, click the **OK** button.
- The event log displays information about the chosen tasks.
- [Table 3-6](#) describes the event log report output.

Table 3-6 Event Log Report Output Parameters

Parameter	Description
SI No	Serial number
Jobs	Name of the task
Start Time	Time the task starts
End Time	Time the task ends
Status	Unsuccessful, in progress, completed
Date	Date the task is scheduled

Step 10 Print the log by right-clicking on the screen and choosing **Print**.

Additional Information

See the “Related Topics” section on page 3-16.

Related Topics

- [Configuring Mail Server Parameters, page 3-1](#)
- [Configuring the Dial Plan, page 3-2](#)
- [Restoring the Default Values for the CAR Dial Plan, page 3-3](#)
- [Configuring the CDR Load Schedule, page 3-7](#)
- [Scheduling Daily Reports, page 3-9](#)
- [Scheduling Weekly Reports, page 3-10](#)
- [Scheduling Monthly Reports, page 3-11](#)
- [Configuring CAR System Database, page 3-12](#)
- [Configuring Automatic Database Purge, page 3-14](#)
- [Generating the Event Log, page 3-15](#)
- [Configuring Automatic Report Generation/Alert, page 4-6](#)
- [Configuring Notification Limits, page 4-8](#)
- [QoS by Gateway Report Configuration, page 6-6](#)
- [Gateway Detail Report Configuration, page 7-1](#)
- [Gateway Summary Report Configuration, page 7-4](#)
- [Gateway Utilization Report Configuration, page 7-6](#)



CHAPTER 4

CAR Report Configuration

Use CAR report configuration to define the following parameters:

- Rating parameters for calls—duration, time of day, voice quality



Note Rating parameters for calls get used during CAR loading. If you want old CDR records in the CAR database to use new values for these parameters, you must reload all the CDRs in the CAR database.

- Quality of service
- Automatic generation of reports with alerts
- Notification limits

This chapter contains the following topics:

- [Configuring the Rating Engine, page 4-1](#)
- [Defining the Quality of Service \(QoS\) Values, page 4-5](#)
- [Configuring Automatic Report Generation/Alert, page 4-6](#)
- [Configuring Notification Limits, page 4-8](#)
- [Related Topics, page 4-9](#)

Before You Begin

Before you start generating reports with CAR, configure the system. See the “[CAR System Configuration](#)” section on page 3-1.

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, Top N by Duration, and Top N by Number of Calls.

**Note**

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

The charge of any call comprises 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** window. See the following list:

- Basic charge = cost, or number of units, applied to the duration block that is specified in the Number of Blocks section.
- Number of blocks = total duration of call, in seconds, for which you want the base charge to be applied.

You can set the multiplication factor for time of day through the **Report Config > Rating Engine > Time of Day** window. The basis of the settings provides the connect time of the call.

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

This section contains the following topics:

- [Setting the Base Rate and Duration, page 4-2](#)
- [Factoring Time of Day into Call Cost, page 4-3](#)
- [Factoring Voice Quality into Call Cost, page 4-4](#)

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. The system provides default values, 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**.

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 that are 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 lasts 7 seconds would cost 0.012. Rationale: Each 6-second increment costs 0.006, and two blocks from 0 to 6 seconds occurred.

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 three blocks of 1 minute occurred.

Step 4 Click the **Update** button.



Tip To restore the default setting, click the **Restore Defaults** button. By restoring the default value of 0 for the call charge/block, you effectively disable the other factors that are used in determining call cost.

Additional Information

See the [“Related Topics” section on page 4-9](#).

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 specifies 1, 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.

The system adds a row between 00:00:00 and 23:59:59.

Step 3 To add additional rows, check the check box for the row above which you want to add a new row and click the **Add Rows** link.



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

Step 4 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 to 23:59:59.



Note You must use Coordinated Universal Time (UTC), rather than a 12-hour clock when factoring Time of Day into Call Cost.

- 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 that are placed between 8 a.m. and 5 p.m., the multiplication factor is 2.00. A multiplication factor of 1.00 does not affect the cost of the call.
- Step 6** To add the time-of-day and multiplication factors, click the **Update** button.



Tip To restore the default setting, click the **Restore Defaults** button.

Additional Information

See the [“Related Topics” section on page 4-9](#).

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 equals 1.00, so no increase in call cost occurs 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. The [“Defining the Quality of Service \(QoS\) Values” section on page 4-5](#), 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 gets charged 1.2 times that of an acceptable or fair call. A poor call gets charged 0.8 times that of an acceptable or 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.



Tip To restore the default setting, click the **Restore Defaults** button.

Additional Information

See the [“Related Topics”](#) section on page 4-9.

Defining the Quality of Service (QoS) Values

CAR generates Quality of Service reports. To qualify the data that is 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 that are set for any of the four voice-quality categories, it receives a classification of NA (not applicable); likewise, if the system is not configured to generate CMR data (or if the CMR is bad), the CMR 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, which 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.



Note Be aware that the classifications of “NA” and “Infinity” are case-sensitive.

This section describes how to define the QoS values.

Procedure

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

The Define Quality of Service window displays. [Table 4-1](#) describes the QoS default values.

Table 4-1 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	No default values apply.

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.



Tip To restore the default QoS values, click the **Restore Defaults** button.

Additional Information

See the [“Related Topics” section on page 4-9](#).

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, and so on, that you may want to view on a regular basis.



Note

In large setups, with a large number of gateways, route groups, route lists, and route patterns, enabling all the Utilization reports (Gateway Utilization, Line Group Utilization, Route Group Utilization, Route List Utilization, and Route Pattern Utilization) increases the CPU usage of the system, therefore increasing the time in which reports are generated. This also affects system performance. Cisco recommends that you enable only Gateway Utilization reports for automatic generation, due to the number of gateways that are typically found in a large system. You can generate all Utilization reports on demand by selecting five or less gateways, route groups, route lists, or route groups.

Automatically generating reports involves a two-step process:

- First, enable the reports that you want to generate unless they are enabled by default. See the [“Enabling or Customizing Reports for Automatic Generation” section on page 4-7](#).
- 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 to generate automatically.) See the [“Configuring CAR System Scheduler” section on page 3-6](#).

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. See the [“Enabling or Disabling Alerts by Mail” section on page 4-8](#).

- Second, configure the e-mail that is sent when the alert criteria are met. See the [“Enabling or Disabling Alerts by Mail”](#) section on page 4-8

Additional Information

See the [“Related Topics”](#) section on page 4-9.

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. When the report gets mailed, CAR generates the e-mail address by using the mail ID for the CAR administrator(s) and the mail domain that is configured in the Mail Parameters window; that is, CAR uses <mail ID for the CAR administrator> @ <domain that is configured in the mail parameters window>.

The [“Automatically Generated Reports Schedule”](#) section on page 1-11 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 the [“Configuring CAR System Scheduler”](#) section on page 3-6.

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.

Step 5 Choose the CSV or PDF radio button, depending on the type of report that you want the system to mail.

Step 6 To have the report mailed to all CAR administrators, check the **Mailing Option** check box.

Step 7 To save the values that you specified, click the **Update** button.

The Customize Parameters window closes.

Step 8 To enable or customize other reports, repeat [Step 4](#) through [Step 7](#).

Step 9 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.

Additional Information

See the [“Related Topics”](#) section on page 4-9.

Enabling or Disabling Alerts by Mail

This section describes how to enable alerts to be mailed to users.

**Note**

For the QoS and Charge Limit Notifications, see the [“Configuring Notification Limits” section on page 4-8](#).

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** To enable or disable alerts by mail, repeat [Step 2](#) and [Step 4](#).

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

Additional Information

See the [“Related Topics” section on page 4-9](#).

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 users that are designated as CAR Administrators through Cisco Unified Communications Manager Administration. See the [“Configuring CAR Administrators, Managers, and Users” section on page 2-4](#).

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 an e-mail alert to the administrator.
- Step 4** Click the **Update** button.

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

Additional Information

See the “[Related Topics](#)” section on page 4-9.

Related Topics

- [Configuring CAR System Parameters, page 3-1](#)
- [Enabling or Customizing Reports for Automatic Generation, page 4-7](#)
- [Configuring Mail Server Parameters, page 3-1](#)
- [Enabling or Disabling Alerts by Mail, page 4-8](#)
- [Configuring Mail Server Parameters, page 3-1](#)
- [Configuring CAR System Scheduler, page 3-6](#)
- [Configuring the Rating Engine, page 4-1](#)
- [Defining the Quality of Service \(QoS\) Values, page 4-5](#)
- [Configuring CAR System Database, page 3-12](#)
- [Setting the Base Rate and Duration, page 4-2](#)
- [Factoring Time of Day into Call Cost, page 4-3](#)
- [Factoring Voice Quality into Call Cost, page 4-4](#)



CHAPTER 5

CAR User Reports Configuration

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 their calls.

This chapter contains the following topics:

- [Configuring Bills Reports, page 5-1](#)
- [Configuring Top N Reports, page 5-4](#)
- [Configuring Cisco Unified Communications Manager Assistant Usage Reports, page 5-11](#)
- [Configuring Cisco IP Phone Services Reports, page 5-13](#)
- [Mailing a Report, page 5-14](#)
- [Searching for Users, page 5-15](#)
- [Related Topics, page 5-16](#)



Note

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

Configuring Bills Reports

Individual bills provide call information for the date range that you specify. You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. If you are an administrator, see the “[Configuring CAR System Scheduler](#)” section on page 3-6, for more information.

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 all users who report to you made, 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 made. This report helps you keep track of all calls on a user-level basis for the entire system.


This section contains the following procedures:

- [Configuring Individual Bills Reports, page 5-2](#)
- [Configuring Department Bills Reports, page 5-3](#)

Configuring Individual Bills Reports

This section describes how to view, or mail, summary or detail information reports about users, managers, and administrators. Administration users do not get access to this report.

Procedure

-
- Step 1** Perform one of the following tasks:
- If you are a user or manager, choose **Bills > Individual**.
 - If you are a CAR administrator, choose **User Reports > Bills > Individual**.
- The Individual Bill window displays.
- Step 2** In the Report Type field, choose **Summary** or **Detail**.
- Summary reports provide a summary of all calls for a chosen period, including the call classification (Internal, Local, Long Distance, International, or On Net), the QoS information, the total number of calls that were made, and the charges that were incurred. Detailed reports provide the date of the call, origination time of the call, origination number (calling number), destination number (called number), call classification (On Net, Internal, Local, Long Distance, International, Incoming, Tandem, or Others), QoS information, duration of time for which the call lasted (in seconds), and the charge for the call, based on the rating engine configuration in CAR for all calls over a chosen period.
- Step 3** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 6](#), or use the default Generate New Report and go to [Step 4](#).
-  **Note** You can only choose the automatically generated report if you are logged in as CAR administrator. The automatically generated reports do not display in the drop-down list box if you are logged in as a manager or individual user.
-
- Step 4** Choose the date range for the period for which you want to see call information.
- 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, follow the procedure that is described in the [“Mailing a Report” section on page 5-14](#).
-

Additional Information

See the [“Related Topics” section on page 5-16](#).

Configuring Department Bills Reports

**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 summary or detail information about departmental bills.

Procedure**Step 1**

Perform one of the following tasks:

- If you are a manager, choose **Bills > Department**.
- If you are a CAR administrator, choose **User Reports > Bills > Department**.

The Department Bill window displays.

Step 2

In the Report Type field, choose **Summary** or **Detail**.

Summary reports provide a summary of all calls for a chosen period, including the call classification (On Net, Internal, Local, Long Distance, International, Incoming, Tandem, or Others), the QoS information, the total number of calls that were made, and the charges that were incurred. Detailed reports provide the date of the call, origination time of the call, origination number (calling number), destination number (called number), call classification (On Net, Internal, Local, Long Distance, International, Incoming, Tandem, or Others), QoS information, duration for which the call lasted (in seconds), and the charge for the call, based on the rating engine configuration in CAR for all calls over a chosen period.

Step 3

In the Available Reports field, choose an automatically generated report (if available) and go to [Step 13](#), or use the default Generate New Report and go to [Step 4](#).

**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 4

Choose the date range for the period for which you want to see call information.

Step 5

If you are a manager, continue with [Step 6](#); otherwise, if you are a CAR administrator, continue with [Step 10](#).

Step 6

To choose all of your direct reports, check the **Select All Reportees** check box.

The List of Reportees shows your direct reports.

Step 7

To choose individual reportees, choose the reports that are shown in the List of Reportees.

Step 8

Click the **Add** button.

The department bill includes only users who are listed in the Selected Reportees box.

Step 9

To see the reportees under a particular user, choose the user and click the Down button.

All reportees to the chosen user display.

Step 10

If you are a CAR administrator, check the **Select All Users** check box to include all users. If you are a manager, proceed to [Step 12](#).

- Step 11** To specify individual users, enter the user ID of the individual that you want to include in the report in the User ID field. Click the **Add** button.
- You can also use a provided search function. See the [“Searching for Users”](#) section on page 5-15, for instructions on using the search feature.
- Step 12** 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 13** Click the **View Report** button.
- The report displays.
- Step 14** 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 5-14.
-

Additional Information

See the [“Related Topics”](#) section on page 5-16.

Configuring Top N Reports

Top N Charge reports the users who made the maximum charge for the specified date range. If you are a manager, the report includes the top charges for all calls that users who report to you made during the specified period. If you are a CAR administrator, the report includes the top charges for all calls that all users on the system made for the specified period. You can generate each Top N Charge report with options to show the information by individual Users, by destinations, or by all calls.

Top N Duration reports the top number of users that incurred a maximum time on calls during a period that you specify. If you are a manager, the report lists the top number of users who report to you that incurred a maximum time for calls that were 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. You can generate each Top N Duration report with options to show the information by individual users, by destinations, or by all calls.

Top N Number of Calls reports the top number of calls that were made and received by users during a period that you specify. If you are a manager, the report lists the top number of calls by users 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 in the system. You can generate each Top N Number of Calls report with options to show the information by individual users and by extensions.

This section contains the following topics:

- [Configuring Top N by Charge Reports, page 5-4](#)
- [Configuring Top N by Duration Reports, page 5-7](#)
- [Configuring Top N by Number of Calls Reports, page 5-9](#)

Configuring Top N by Charge Reports

This section describes how to generate, view, or mail reports about the top calls when classified by cost.

**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 Perform one of the following tasks:

- If you are a manager, choose **Top N > By Charge**.
- If you are a CAR administrator, choose **User Reports > Top N > By Charge**.

The Top N Charge 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. These boxes display only when you choose Generate New Report from the Available Reports drop-down list box, as described in [Step 4](#). [Table 5-1](#) describes the call types.

**Tip**

To check all check boxes, click **Select All**; to uncheck the check boxes, click **Clear All**.

Table 5-1 *Top N by Charge 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, 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 3-2.
Internal	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 going out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network going out through the PSTN.
Incoming	Inbound calls that originate outside the Cisco Unified Communications Manager network and enter the Cisco Unified Communications Manager network through a gateway.

Table 5-1 Top N by Charge Call Types (continued)

Call Type	Description
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 3 In the Report Type field, choose a report type as described in [Table 5-2](#).

Table 5-2 Top N by Charge Report Types

Report Type	Description
By Individual Users	This report lists the users who incurred the maximum charges.
By Destinations	This report lists the destinations that incurred the maximum charges.
By All Calls	This default report lists the calls that incurred the maximum charges.



Note Top N Destination by Charge reports display the Top destinations based on the charge incurred. If the same destination number comprises different call classifications (for example, some are Internal and some are Incoming), they get treated and listed separately in these reports.

Step 4 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 8](#) or use the default setting, Generate New Report, and go to [Step 5](#).



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

Step 5 Enter the number (n) of records to display in the report in the No of Records field. The default designates five.

Step 6 Choose the date range for the period for which you want to generate the report.

Step 7 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 8 Click the **View Report** button.
The report displays.

Step 9 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 5-16.

Configuring Top N by Duration Reports

This section describes how to generate, view, or mail reports about the top calls when they are classified by duration.

**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**

Perform one of the following tasks:

- If you are a manager, choose **Top N > By Duration**.
- If you are a CAR administrator, choose **User Reports > Top N > By Duration**.

The Top N by Duration window displays.

Step 2

In the Select Call Types area, check the check boxes for the types of calls that you want included in the report. These boxes display only when you choose Generate New Report from the Available Reports drop-down list box, as described in [Step 4](#). [Table 5-3](#) describes the call types.

Table 5-3 *Top N by Duration 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, 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 3-2.
Internal	Intracenter 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 going out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network going 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.

Table 5-3 Top N by Duration Call Types (continued)

Call Type	Description
Tandem	Inbound calls that originate outside the Cisco Unified Communications Manager network, enter the Cisco Unified Communications Manager network through a gateway, and then 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 Report Type field, choose a report type as described in [Table 5-4](#).

Table 5-4 Top N by Duration Report Types

Report Type	Description
By Individual Users	This report lists the users who incurred the maximum duration.
By Destinations	This report lists the destinations that incurred the maximum duration.
By All Calls	This report lists the calls that incurred the maximum duration.



Note Top N Destinations by Duration reports display the Top destinations based on the duration of the calls. If the same destination number comprises different call classifications (for example, some are Internal and some are Incoming), they get treated and listed separately in these reports.

Step 4 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 8](#) or use the default setting, Generate New Report, and go to [Step 5](#).



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 5 Enter the number (n) of records to display in the report in the No of Records field. The default designates five.

Step 6 Choose the date range for the period for which you want to generate the report.

Step 7 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 8 Click the **View Report** button.
The report displays.

- Step 9** 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 5-16.

Configuring Top N by Number of Calls Reports

This section describes how to generate, view, or mail reports about the top calls when classified by volume.



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** Perform one of the following tasks:
- If you are a manager, choose **Top N > By Number of Calls**.
 - If you are a CAR administrator, choose **User Reports > Top N > By Number of Calls**.
- The Top N by Number of Calls window displays.
- Step 2** In the Select Call Types area, check the check boxes for the types of calls that you want included in the report. These boxes display only when you choose Generate New Report from the Available Reports drop-down list box, as described in [Step 4](#). [Table 5-5](#) describes the call types.

Table 5-5 Top N by Number of Calls 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, 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 3-2.
Internal	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 going out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network going out through the PSTN.

Table 5-5 Top N by Number of Calls Call Types (continued)

Call Type	Description
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 3 In the Report Type field, choose a report type as described in [Table 5-6](#).

Table 5-6 Top N by Number of Calls Report Types

Report Type	Description
By Individual Users	This report lists the users who incurred the maximum number of calls.
By Extensions	This report lists the extensions that have placed or received the greatest number of calls in your group (managers) or the system (CAR administrators).

Step 4 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 8](#) or use the default Generate New Report and go to [Step 5](#).



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 5 Enter the number (n) of records that display in the report in the No of Records field. The default designates five.

Step 6 Choose the date range for the period for which you want to generate the report.

Step 7 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 8 Click the **View Report** button.

The report displays.

Step 9 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 5-14.

Additional Information

See the [“Related Topics”](#) section on page 5-16.

Configuring Cisco Unified Communications Manager Assistant Usage Reports

CAR provides call completion usage reports for the following Cisco Unified Communications Manager Assistant users: manager(s) and the configured/assigned assistant(s) that manage the calls of the manager(s). Only CAR administrators can generate Cisco Unified Communications Manager Assistant reports. The Cisco Unified Communications Manager Assistant menu allows you to choose all or a subset of managers or assistants by using simple search functionality that is based on partial or complete first or last name. You can generate these reports on demand in either PDF or CSV format and e-mail them. In addition, you can choose the time range and generate either detailed or summary level reports.

The manager reports can include calls that only managers handle for themselves, calls that only assistants handle for managers, and calls that qualify in either case. The summary report for a manager shows the number of calls of each call classification type, the total number of calls, and the total duration of all calls (in seconds) for each manager and/or assistant. The detail report for a manager shows the date, origination time, origination number (calling number), destination (called number), call classification, and duration (in seconds) for each call for each manager and/or assistants, and the cumulative duration total for the manager.

The assistant reports can include calls that only assistants handle for themselves, or calls that only assistants handle for managers, and calls that qualify in either case. The summary report for an assistant shows the number of calls of each type and total of them apart from duration for each manager (and/or assistant). The detail assistant report shows the date, origination time, origination (calling number), destination (called number), call classification, and duration (in seconds) for each call for all the managers (and/or assistant) and the cumulative duration total for the assistant.

This section contains the following procedures:

- [Configuring Manager Call Usage for Cisco Unified Communications Manager Assistant Reports, page 5-11](#)
- [Configuring Assistant Call Usage for Cisco Unified Communications Manager Assistant Reports, page 5-12](#)

Configuring Manager Call Usage for Cisco Unified Communications Manager Assistant Reports

This section describes how to generate a manager call usage report for Cisco Unified Communications Manager Assistant. Only CAR administrators can generate Cisco Unified Communications Manager Assistant reports.

**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 **User Reports > Cisco Unified Communications Manager Assistant > Manager Call Usage**. The Call Usage for Manager window displays.
- Step 2** From the Report Type drop-down list, choose either **Summary** or **Detail**.

- Step 3** From the Calls handled by drop-down list, choose **Manager, Assistant for Manager, or Manager & Assistant for Manager**.
- Step 4** Choose the date range for the period for which you want to see call information.
- Step 5** In the Select Manager(s) box, either check the **Select All Manager(s)** check box and enter a manager's ID or click the **Select Manager(s)** link to search for a manager's ID and enter the ID(s) in the Manager Id field.
- Step 6** Click **Add**.
The ID that you chose displays in the Selected Manager(s) box.
- Step 7** 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.
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 5-14.



Note To remove a manager from the Selected Manager(s) list, highlight the ID and click **Remove**. To remove all managers from the list, click **Remove All**.

Additional Information

See the "[Related Topics](#)" section on page 5-16.

Configuring Assistant Call Usage for Cisco Unified Communications Manager Assistant Reports

This section describes how to generate an assistant call usage report for Cisco Unified Communications Manager Assistant. Only CAR administrators can generate these reports.



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 **User Reports > Cisco Unified Communications Manager Assistant > Assistant Call Usage**.
The Call Usage for Assistant window displays.
- Step 2** From the Report Type drop-down list, choose either **Summary** or **Detail**.
- Step 3** From the Calls handled by drop-down list, choose **Assistant, Assistant for Manager, or Assistant & Assistant for Manager**.
- Step 4** Choose the date range for the period for which you want to see call information.

- Step 5** In the Select Assistant(s) box, either check the **Select All Assistant(s)** check box and enter an assistant's ID or click the **Select Assistant(s)** link to search for an assistant's ID and enter the ID(s) in the Assistant Id field.
- Step 6** Click **Add**.
The ID that you chose displays in the Selected Assistant(s) box.
- Step 7** 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 8** Click the **View Report** button.
The report displays.
- Step 9** 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 5-14](#).



Note To remove a manager from the Selected Assistant(s) list, highlight the ID and click **Remove**. To remove all assistants from the list, click **Remove All**.

Additional Information

See the [“Related Topics” section on page 5-16](#).

Configuring Cisco IP Phone Services Reports

Only CAR administrators can generate the Cisco Unified IP Phone Services report. You can generate a report that shows chosen Cisco Unified IP Phone services, the number of users who are subscribed to each of the chosen services, and the subscription percentage for each of the chosen services.

Use the following instructions to generate a report that shows the usage of specific Cisco Unified IP Phone services.



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 **User Reports > Cisco Unified IP Phone**.
The Cisco Unified IP Phone window displays a list of all Cisco Unified IP Phone services that have been configured in the system.
- Step 2** In the List of Cisco Unified IP Phone area, choose the services that you want to include in the report.
- Step 3** Click the right arrow to add the chosen service to the Selected Cisco Unified IP Phone box.
The report will include all services that are listed in this box when you generate it.

- Step 4** 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.
- The report displays.
- Step 5** 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 5-14](#).
-

Additional Information

See the [“Related Topics” section on page 5-16](#).

Mailing a Report

You can e-mail all reports in CAR. You can send a report by mail from any report window in CAR. You can also view the report first and then send it.

Before You Begin

To e-mail reports, first configure valid Mail Parameters. The Mail Parameters allow CAR to send e-mail by using the e-mail server in your system. See the [“Configuring Mail Server Parameters” section on page 3-1](#), for more information. Also, set up the details of the report that you want generated. See the following sections:

- [Configuring Bills Reports, page 5-1](#)
- [Configuring Top N Reports, page 5-4](#)
- [Configuring Cisco IP Phone Services Reports, page 5-13](#)
- [Configuring Cisco Unified Communications Manager Assistant Usage Reports, page 5-11](#)
- [CAR System Reports Configuration, page 6-1](#)
- [CAR Device Reports Configuration, page 7-1](#)
- [CDR Search Configuration, page 8-1](#)

This section describes how to mail a CAR report.

Procedure

- Step 1** Within any CAR Reports window or after viewing the report, click the **Send Report** button.
- The Mail To window displays.
- Step 2** Enter the e-mail ID for the user to whom you want to send the report.
- Step 3** You can search for a user by clicking the **To** button.
- A User Search window displays.
- Step 4** In the First Name and Last Name fields, enter characters of the first or last name of the user and click the **Search** button.
- A User Search Results window displays in the same page and lists all users who matched the search criteria that you entered.

- Step 5** In the row for the user to whom you want to send the report, click the **Select** link.
The user that you chose gets added to the To field of the Mail To window. Repeat this step to add more users to the list of people who will be e-mailed a copy of this report.
- Step 6** When you have added all users, click the **Close** button in the User Search window.
The users who are listed in the Search Users window get copied to the To field of the Mail To window.
- Step 7** To add a user to the Cc field, click the **Cc** button and follow the same instructions as described in [Step 4](#) through [Step 6](#).
- Step 8** In the Subject field, enter a subject message (optional).
- Step 9** In the Message area, enter a message (optional).
- Step 10** To send the report, click the **Send** button.
-

Additional Information

See the [“Related Topics” section on page 5-16](#).

Searching for Users

Many of the reports in CAR provide a search function, so you can look for users. The following CAR reports support search by user:

- User Reports—Department and individual bills, Top N by charge, duration, and number of calls, Cisco Unified Communications Manager Assistant, and Cisco Unified IP Phone
- System Reports—QoS details, Traffic Summary (Extn)
- All reports that can be generated can be mailed via the Send Report button

Before You Begin

You must use the window in User Reports or System Reports that allows you to search for users. This section describes how to search for a user.

Procedure

- Step 1** Click the **Search Users** link.
A User Search window displays.
- Step 2** In the First Name and Last Name fields, enter characters of the first or last name of the user and click the **Search** button.
A User Search Results window displays in the same window and lists all users who matched the search criteria that you entered.
- Step 3** In the row for the user that you want, click the **Select** link.
The user that you chose gets added to the List of Users in the User Search window. Repeat this step to add more users.
- Step 4** When you have added all users, click the **Close** button in the User Search window.
-

Additional Information

See the “Related Topics” section on page 5-16.

Related Topics

- [CAR User Reports Configuration, page 5-1](#)
- [CAR System Reports Configuration, page 6-1](#)
- [CAR System Configuration, page 3-1](#)
- [CAR Device Reports Configuration, page 7-1](#)
- [CDR Search Configuration, page 8-1](#)
- [Cisco IP Phone Services Report Results, page 11-16](#)
- [Configuring Cisco Unified Communications Manager Assistant Usage Reports, page 5-11](#)
- [Configuring Manager Call Usage for Cisco Unified Communications Manager Assistant Reports, page 5-11](#)
- [Configuring Assistant Call Usage for Cisco Unified Communications Manager Assistant Reports, page 5-12](#)
- [Top N By Number of Calls Report Results, page 11-8](#)
- [Configuring Top N by Charge Reports, page 5-4](#)
- [Configuring Top N by Duration Reports, page 5-7](#)
- [Top N By Charge or Duration Report Results, page 11-6](#)
- [Configuring Top N by Number of Calls Reports, page 5-9](#)
- [Bill Summary Report Results, page 11-2](#)
- [Bill Detail Report Results, page 11-4](#)
- [Configuring Individual Bills Reports, page 5-2](#)



CHAPTER 6

CAR System Reports Configuration

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 each user's calls.

This chapter contains the following topics:

- [Configuring QoS Reports, page 6-1](#)
- [Configuring Traffic Reports, page 6-10](#)
- [Configuring Client Matter Code Reports, page 6-16](#)
- [Configuring Malicious Call Details Reports, page 6-19](#)
- [Configuring Precedence Call Summary Reports, page 6-20](#)
- [Configuring System Overview Reports, page 6-21](#)
- [Configuring CDR Error Reports, page 6-22](#)
- [Related Topics, page 6-23](#)



Note

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

Configuring QoS Reports

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 [“Defining the Quality of Service \(QoS\) Values” section on page 4-5](#) 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 the “[Configuring CAR System Scheduler](#)” section on page 3-6, for more information.

QoS Parameter Operators

Table 6-1 describes the QoS parameter operators that you use in generating the QoS reports.

Table 6-1 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.

The following sections describe how to configure QoS detail, summary, gateway, and call types reports:

- [QoS Detail Report Configuration, page 6-2](#)
- [QoS Summary Report Configuration, page 6-4](#)
- [QoS by Gateway Report Configuration, page 6-6](#)
- [QoS by Call Types Report Configuration, page 6-8](#)

QoS Detail Report Configuration



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 detailed information about the system QoS.

Procedure

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 6-2](#) describes the call types.

Table 6-2 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, 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 3-2.
Internal	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 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 [“Defining the Quality of Service \(QoS\) Values”](#) section on page 4-5, provide the basis for all voice-quality categories.

Table 6-3 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	QoS for these calls is degraded, although it still falls 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 5-15](#).

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 5-14](#).

Additional Information

See the [“Related Topics” section on page 6-23](#).

QoS Summary Report Configuration



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 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 6-4](#) describes the call types.

Table 6-4 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, 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 3-2.
Internal	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.

Table 6-4 QoS Summary Report Call Types (continued)

Call Type	Description
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. 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. 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 5-14.

QoS by Gateway Report Configuration

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 [“Gateway Configuration”](#) section on page 3-5.

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 6-5](#).

Table 6-5 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 6-2](#), 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 6-2](#), 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 6-2](#), 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, choose 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 5-14.
-

Additional Information

See the “[Related Topics](#)” section on page 6-23.

QoS by Call Types Report Configuration

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 6-6](#).

Table 6-6 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 6-2 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 6-2 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 6-2 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 6-7](#) describes the call types.

Table 6-7 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, 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 3-2.
Internal	Intracenter 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.

Table 6-7 QoS Parameters by Call Types (continued)

Call Type	Description
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 5-14.

Additional Information

See the [“Related Topics”](#) section on page 6-23.

Configuring Traffic Reports

Only CAR administrators can generate the traffic summary report. The 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.

**Tip**

When you configure CAR to generate a traffic summary report, you can choose different call types (On Net, Internal, Local, Long Distance, and so on). CAR compares the traffic volume for every hour interval and identifies the hour with the highest traffic volume (the Busy Hour Call Completion [BHCC] number). To obtain the overall BHCC number, choose all call types when you configure CAR. Under the report title, a separate line displays the BHCC number for that day.

Only CAR administrators can generate the traffic summary by extensions report. The 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.

**Tip**

You can use this report to track call usage by a specified group of users, by a department, or by another criteria, such as lobby phones or conference room phones. You can set up this report to generate on a weekly basis. This report helps you determine high-usage users or groups by aggregating the usage level across the users that you specify.

The following sections describe how to configure traffic summary and traffic summary by extensions reports:

- [Configuring Traffic Summary Reports, page 6-11](#)
- [Configuring Traffic Summary by Extensions Reports, page 6-14](#)

Configuring Traffic Summary Reports

Only CAR administrators generate the Traffic Summary report. The report provides information about the call volume for a period that you specify.

You can either view reports that the system automatically generates or generate new reports. See [Configuring CAR System Scheduler, page 3-6](#), for more information.

**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 summary information about system traffic.

Procedure

- Step 1** Choose **System Reports > Traffic > Summary**.
The Traffic Summary window displays.
- Step 2** In the Generate Report field, choose a time as described in [Table 6-8](#).

Table 6-8 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the average number of calls in the system for the period that you specify in Step 4 , the call types that you specify in Step 5 , and the QoS values that you specify in Step 6 for hour of day. If the period that you specify in Step 4 is within one day, the system compares the traffic volume for every hour interval and identifies the hour with the highest traffic volume as the BHCC number for that day.
Day of Week	Displays the average number of calls in the system for the period that you specify in Step 4 , the call types that you specify in Step 5 , and the QoS values that you specify in Step 6 for day of the week.
Day of Month	Displays the average number of calls in the system for the period that you specify in Step 4 , the call types that you specify in Step 5 , and the QoS values that you specify in Step 6 for day of month.

- Step 3** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 8](#) or use the default setting, Generate New Report, and go to [Step 4](#).
- Step 4** Choose the date range for the period for which you want to generate the report.
- Step 5** In the Select Call Types area, check the check boxes for the types of calls that you want to include in the report. To obtain the overall BHCC number for a particular hour or 24-hour period, choose all call types. [Table 6-9](#) describes the call types.

Table 6-9 *Traffic Summary 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, 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 3-2.
Internal	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 6-9 Traffic Summary by Call Types (continued)

Call Type	Description
Local	Local calls that route 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.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.

**Note**

The calls that the chart/table shows comprise an average number of calls per day. If the data that is generated is less and you have chosen a wide date range, the report shows negligible values, that are treated as 0, and the graph does not display. For example, if a Day of Week report gets generated for eight days that comprise two Mondays, the data that is shown for Monday represents the average number of calls for both the Mondays (the sum of all the calls in each Monday divided by 2). Similarly, in an Hour of Day report, the data that displays against 05-06 will be the average number of calls per day between the time 05 and 06 of the date range that was chosen for the report.

- Step 6** In the Select QoS area, check the check boxes for the voice-quality categories that you want to include in the report. The parameters that are set in the [“Defining the Quality of Service \(QoS\) Values”](#) section on page 4-5 provide the basis for all voice-quality categories.

Table 6-10 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 falls within an acceptable range.
Fair	QoS for these calls, although degraded, still remains within a usable range.
Poor	Poor voice quality indicates that QoS for these calls is unsatisfactory.
NA	These calls did not match any criteria for the established QoS categories.

- Step 7** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.
- Step 8** Click the **View Report** button.
The report displays.
- Step 9** 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 6-23.

Configuring Traffic Summary by Extensions Reports

Only CAR administrators generate the Traffic Summary by Extensions report. The report provides information about the call volume for a period and set of extensions that you specify.

This section describes how to generate, view, or mail a traffic summary report based on user extensions.



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 > Traffic > Summary By Extension**.
The Traffic Summary that is based on Extension(s) window displays.
- Step 2** In the Generate Report field, choose a time as described in [Table 6-11](#).

Table 6-11 Generate Report Fields

Parameter	Description
Hour of Day	Displays the average number of calls in the system for the chosen extension numbers for the date range that was chosen for hour of day. Note Ensure that the date and time range does not exceed one month.
Day of Week	Displays the average calls in the system for the selected extension numbers for the date range that was chosen for day of week. Note Ensure that the date and time range does not exceed one month.
Day of Month	Displays the average calls in the system for the selected extension numbers for the date range that was chosen for day of month. Note Ensure that the date and time range does not exceed one month.

- Step 3** In the Select Call Types area, check the check boxes for the types of calls that you want to include in the report. [Table 6-12](#) describes the call types.

Table 6-12 Traffic Summary (Extn) 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, 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 3-2.
Internal	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.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.



Note The calls that the chart/table shows comprise an average number of calls per day. If the data that is generated is less and you have chosen a wide date range, the report shows negligible values, that are treated as 0, and the graph does not display. For example, if a Day of Week report gets generated for eight days that comprise two Mondays, the data that is shown for Monday represents the average number of calls for both the Mondays (the sum of all the calls in each Monday divided by 2). Similarly, in an Hour of Day report, the data that displays against 05-06 will be the average number of calls per day between the time 05 and 06 of the date range that was chosen for the report.

- Step 4** In the Select Extensions group box, you can either choose all extensions or search for extensions based on users.



Note You can enter a wildcard pattern like "!" or "X" to search on extensions. The "!" represents any n digit that has 0-9 as each of its digits, and the "X" represents a single digit in the range 0-9.

To choose all extensions, check the **Select All Extensions** check box. To choose extensions based on users, enter the extension number of the individual in the Extension field and click the **Add Extension** button. You can also use a provided search function, as described in the “[Searching for Users](#)” section on page 5-15.

- Step 5** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.
- 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 6-23.

Configuring FAC/CMC Reports

Only CAR administrators can generate Forced Authorization Code (FAC)/Client Matter Code (CMC) reports.

The following sections describe how to configure FAC/CMC reports:

- [Configuring Client Matter Code Reports](#), page 6-16
- [Configuring Authorization Code Name Reports](#), page 6-17
- [Configuring Authorization Level Reports](#), page 6-18

Configuring Client Matter Code Reports

Only CAR administrators can generate the Client Matter Code report. You can generate a report that shows the origination (calling number), destination (called number), origination date time (the date and time that the call originated), duration (call duration in seconds), and the call classification that relates to each CMC.

The following procedure describes how to generate a report that shows the usage of specific client matter codes.



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 > FAC/CMC > Client Matter Code**.

The Call Details for Client Matter Code window displays a list of all client matter codes that are configured in the system.

Step 2 In the List of Client Matter Codes box, choose the codes that you want included in the report.



Note You can choose up to 100 client matter codes.

Step 3 To add the chosen code(s) to the Selected Client Matter Codes box, click the down arrow.

The report will include all codes, for which data is available, that are listed in this box.

Step 4 In the From Date and To Date pull-down list boxes, enter the date range of the period for which you want to see client matter code information.

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 **View Report**.

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 [“Mailing a Report” section on page 5-14](#).

Configuring Authorization Code Name Reports

Only CAR administrators can generate the Authorization Code Name report. You can generate a report that shows the origination (calling number), destination (called number), origination date time (the date and time that the call originated), duration (call duration in seconds), and the call classification that relates to each chosen authorization code name.



Note For security purposes, the authorization code does not display; instead, the authorization code name (description) displays.

The following procedure describes how to generate a report that shows the usage of specific authorization code names.



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 > FAC/CMC > Authorization Code Name**.

The Call Details for Authorization Code Name window displays a list of all authorization code names that are configured in the system.

Step 2 In the List of Authorization Code Names box, choose the code names that you want included in the report.



Note You can choose up to 30 code names.

- Step 3** To add the chosen code name(s) to the Selected Authorization Code Names box, click the down arrow. The report will include all code names, for which data is available, that are listed in this box.
- Step 4** In the From Date and To Date drop-down list boxes, enter the date range of the period for which you want to see authorization code name information.
- 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 **View Report**.
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 “[Mailing a Report](#)” section on page 5-14.
-

Additional Information

See the “[Related Topics](#)” section on page 6-23.

Configuring Authorization Level Reports

Only CAR administrators can generate the Authorization Level report. You can generate a report that shows the origination (calling number), destination (called number), origination date time (the date and time that the call originated), duration (call duration in seconds), and the call classification that relate to each chosen authorization level.

The following procedure describes how to generate a report that shows the usage of specific authorization levels.



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 > FAC/CMC > Authorization Level**.
The Call Details by Authorization Level window displays a list of all authorization levels that are configured in the system.
- Step 2** In the List of Authorization Levels box, choose the levels that you want included in the report.
- Step 3** To add the chosen level(s) to the Selected Authorization Levels box, click the down arrow.
The report will include all levels, for which data is available, that are listed in this box.



Note Only FAC authorization levels reports that are associated with Route Patterns will get generated.

- Step 4** In the From Date and To Date drop-down list boxes, enter the date range of the period for which you want to see authorization level information.
- 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 **View Report**.
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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 6-23.

Configuring Malicious Call Details Reports

Only CAR administrators generate the Malicious Call Details report. The report displays the following details about malicious calls for a particular date range: origination time, termination time, duration (in seconds), origination (calling number), destination (called number), origination device, destination device, and call classification.

This section describes how to generate, view, or mail a malicious call detail report.

**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 > Malicious Call Details**.
The Malicious Call Details window displays.
- Step 2** In the From Date drop-down list boxes, choose the month, day, and year from which you want malicious call details.
- Step 3** In the To Date drop-down list boxes, choose the month, day, and year to which you want malicious call details.
- Step 4** 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 5** To view the report, click **View Report**.
The report displays.
- Step 6** To mail the report to an e-mail recipient, see the “[Mailing a Report](#)” section on page 5-14.

Additional Information

See the “[Related Topics](#)” section on page 6-23.

Additional Documentation

- *Cisco Unified Communications Manager Features and Services Guide*

Configuring Precedence Call Summary Reports

Only CAR administrators generate the Call Summary by Precedence report. The report displays the Call Summary for the precedence values that you choose by Hour of Day, Day of Week, or Day of Month.

This section describes how to generate, view, or mail a Call Summary by Precedence report.

**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 > Precedence Call Summary**.

The Call Summary by Precedence window displays.

Step 2 In the Generate Reports field, choose a time as described in [Table 6-13](#).

Table 6-13 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the average number of calls in the system for the chosen extension numbers for the date range that was chosen for hour of day. Note Ensure that the date and time range does not exceed one month.
Day of Week	Displays the average number of calls in the system for the chosen extension numbers for the date range that was chosen for day of week. Note Ensure that the date and time range does not exceed one month.
Day of Month	Displays the average number of calls in the system for the chosen extension numbers for the date range that was chosen for day of month. Note Ensure that the date and time range does not exceed one month.

Step 3 In the Select Precedence Levels field, check a precedence level that you want in the report or click **Select All** to check all precedence levels.

Table 6-14 Call Precedence Levels

Voice Quality	Description
Flash Override	Highest precedence setting for MLPP calls.
Flash	Second highest precedence setting for MLPP calls.
Immediate	Third highest precedence setting for MLPP calls.
Priority	Forth highest precedence setting for MLPP calls.
Routine	Lowest precedence setting for MLPP calls.



Note To uncheck the precedence level check boxes, click **Clear All**.

- Step 4** In the From Date drop-down list boxes, choose the month, day, and year from which you want precedence summary information.
- Step 5** In the To Date drop-down list boxes, choose the month, day, and year for which you want precedence summary information.
- Step 6** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.
- Step 7** To view the report, click **View Report**.
The report displays.
- Step 8** To mail the report to an e-mail recipient, see the [“Mailing a Report” section on page 5-14](#).

Additional Information

See the [“Related Topics” section on page 6-23](#).

Configuring System Overview Reports

Only CAR administrators generate the System Overview report that provides the entire set of system reports in one report.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the [“Configuring CAR System Scheduler” section on page 3-6](#), for more information.




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 summary information about the Cisco Unified Communications Manager system.

Procedure

-
- Step 1** Choose **System Reports > System Overview**.
The System Overview 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](#).
- Step 3** Choose the date range for the period for which you want to generate the report.
- Step 4** From the List of Reports, choose the reports that you want generated by highlighting the report and clicking the right arrow.
The reports that you chose appear in the Selected Reports list box.
-  **Tip** You can highlight more than one report at a time by pressing the **Ctrl** key on your keyboard while clicking the reports.
-
- 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 [Mailing a Report, page 5-14](#).
-

Additional Information

See the [“Related Topics” section on page 6-23](#).

Configuring CDR Error Reports

Only CAR administrators generate the CDR Error report. The report provides statistics for the number of error records in the CAR Billing_Error table and the reason for the errors.

This section describes how to generate, view, or mail information about CDR errors.

**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 > CDR Error**.
The CDR Error window displays.
- Step 2** Choose the date range of the period for which you want to generate the report.

- Step 3** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.
- Step 4** Click the **View Report** button.
The report displays.
- Step 5** 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 5-14.
-

Additional Information

See the [“Related Topics”](#) section on page 6-23.

Related Topics

- [CDR Error Report Results](#), page 11-32
- [System Overview Report Results](#), page 11-31
- [Enabling or Customizing Reports for Automatic Generation](#), page 4-7
- [Precedence Call Summary Report Results](#), page 11-29
- [CDR Analysis and Reporting Overview](#), page 1-1
- [Traffic Summary Report Results](#), page 11-22
- [Configuring Traffic Summary Reports](#), page 6-11
- [Configuring Traffic Summary by Extensions Reports](#), page 6-14
- [QoS by Call Types Report Results](#), page 11-20
- [QoS by Gateway Report Configuration](#), page 6-6
- [QoS by Gateways Report Results](#), page 11-19
- [QoS by Call Types Report Configuration](#), page 6-8
- [QoS Detail Report Configuration](#), page 6-2
- [QoS Summary Report Results](#), page 11-18
- [Defining the Quality of Service \(QoS\) Values](#), page 4-5
- [QoS Detail Report Results](#), page 11-16
- [QoS Summary Report Configuration](#), page 6-4



CHAPTER 7

CAR Device Reports Configuration

CAR provides reporting capabilities for three levels of users: administrators, managers, and individual users. Only administrators generate device reports.

Device reports track the load and performance of Cisco Unified Communications Manager related devices, such as conference bridges, voice-messaging servers, and gateways.

This chapter contains the following topics:

- [Configuring Gateway Reports, page 7-1](#)
- [Configuring Route Plan Reports, page 7-8](#)
- [Configuring Conference Bridge Reports, page 7-13](#)
- [Configuring Voice Messaging Utilization Reports, page 7-16](#)
- [Related Topics, page 7-18](#)

Configuring Gateway Reports

Only CAR administrators generate the gateway reports. The following sections describe how to configure gateway detail, summary, and utilization reports:

- [Gateway Detail Report Configuration, page 7-1](#)
- [Gateway Summary Report Configuration, page 7-4](#)
- [Gateway Utilization Report Configuration, page 7-6](#)

Gateway Detail Report Configuration

Only CAR administrators generate the Gateway Detail report. Use the Gateway Detail report to track issues with specific gateways.

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

Procedure

Step 1 Choose **Device Reports > Gateway > Detail**.

The Gateway Detail window displays.

Step 2 To display the list of gateways in the List of Gateways box that you can include in the report, perform one of the following tasks:

- To display all gateways in the List of Gateways box, click **Gateway Types** in the column on the left side of the window.
- To display gateways for a particular gateway type in the List of Gateways box, click the icon next to **Gateway Types** in the column on the left side of the window. The tree structure expands, and a list of gateway types displays. Choose a gateway type from the list, and the gateway name displays in the List of Gateways box.



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

- To display all gateways that are associated with configured route patterns/hunt pilots, click the **Route/Patterns/Hunt Pilots** in the column on the left side of the window.
- To display gateways that use a particular route pattern, rather than a gateway type, click the icon next to **Route Patterns/Hunt Pilots** in the column on the left side of the window. The tree structure expands and displays a list of route patterns/hunt lists. Choose a route pattern/hunt pilot from the list, and the gateway name displays in the List of Gateways box.



Note You can also search for specific route patterns/hunt lists by entering part of the name of the route pattern(s)/hunt list(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 list(s) that matches the search string.

Step 3 In the List of Gateways box, choose the gateways that you want to include in the report.



Note You can generate a report for up to five gateways at a time.

Step 4 To move the chosen gateway to the list of Selected Gateways box, click the down arrow.

The gateway(s) that you chose displays in the Selected Gateways box.

Step 5 In the Select Call Types area, check the check boxes for the types of calls that you want to include in the report. [Table 7-1](#) describes the call types.

Table 7-1 Gateway Details 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, 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 3-2 .
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 6** In the Select QoS area, check the check boxes for the voice-quality categories that you want to include in the report. The parameters that are set in the [“Defining the Quality of Service \(QoS\) Values” section on page 4-5](#) provide the basis for all voice-quality categories.

Table 7-2 Gateway Detail Voice Quality

Voice Quality	Description
Good	QoS for these calls represents the highest possible quality.
Acceptable	QoS for these calls, although slightly degraded, still falls within an acceptable range.
Fair	QoS for these calls represents degraded quality but still within a usable range.

Table 7-2 Gateway Detail Voice Quality (continued)

Voice Quality	Description
Poor	QoS for these calls represents unsatisfactory quality.
NA	These calls did not match any criteria for the established QoS categories.

Step 7 Choose the date range for the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

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, follow the procedure that is described in the [“Mailing a Report”](#) section on page 5-14.

Additional Information

See the [“Related Topics”](#) section on page 7-18.

Gateway Summary Report Configuration

Only CAR administrators generate the Gateway Summary report. This report provides a summary of all the calls that went through the gateways. You can use this information for monitoring the traffic and QoS for calls through the gateways.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the [“CAR System Configuration”](#) section on page 3-1, for more information.



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 summary information about gateways.

Procedure

Step 1 Choose **Device Reports > Gateway > Summary**.

The Gateway 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](#).
- Step 3** In the Select Call Types area, check the check boxes for the types of calls that you want to include in the report. [Table 7-3](#) describes the call types.



Tip To check all check boxes, click **Select All**; to uncheck the check boxes, click **Clear All**.

Table 7-3 Gateway Summary 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, 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 3-2 .
Internal	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, choose the date range of 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 7-18.

Gateway Utilization Report Configuration

Only CAR administrators generate the Gateway Utilization report. The report provides an estimate of the utilization percentage of the gateway for the period and not the exact utilization. For example, the system calculates the utilization of a gateway between 11hrs-12hrs, as the (sum of the duration of the calls that used the gateway in that hour / (maximum duration seconds in an hour * maximum number of ports in a gateway * number of days between the fromDate and toDate selected) * 100). Similarly, to get a utilization for the whole day, the system calculates the utilization as mentioned for each hour. You can examine the usage based on each hour of a day or on a specified number of days for each week or month.

In the case of weekly utilization reports, the system calculates the utilization as ((sum of the duration of the calls that used the gateway in a day) / (maximum duration seconds in each day * number of each day between the fromDate and toDate selected * maximum number of ports in a gateway) * 100).

In case of monthly utilization reports, the system calculates the utilization as ((sum of the duration of the calls that used the gateway in a day) / (maximum duration seconds in each day * number of each day between the fromDate and toDate selected * maximum number of ports in a gateway) * 100).

Reports generate for each gateway that is chosen.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the “[CAR System Configuration](#)” section on page 3-1, for more information.



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 Gateway Utilization reports.

Procedure

- Step 1** Choose **Device Reports > Gateway > Utilization**.
The Gateway Utilization window displays.
- Step 2** In the Generate Reports field, choose a time as described in [Table 7-4](#).

Table 7-4 Generate Report Fields

Parameter	Description
Hour of Day	Displays the utilization for each hour in a 24-hour period for the period that you specify in Step 8 .
Day of Week	Displays the utilization for the days of the week that occur within the period that you specify in Step 8 .
Day of Month	Displays the utilization for the days of the month that occur within the period that you specify in Step 8 .

Step 3 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 10](#), or use the default Generate New Report and go to [Step 4](#).

Step 4 To display the list of gateways that you can include in the report in the List of Gateways box, perform one of the following tasks:

- To display all gateways in the List of Gateways box, click **Gateway Types** in the column on the left side of the window.
- To display gateways for a particular gateway type in the List of Gateways box, click the icon next to **Gateway Types** in the column on the left side of the window. The tree structure expands and a list of gateway types displays. Choose a gateway type from the list, and the gateway name displays in the List of Gateways box.



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

- To display all gateways that are associated with configured route patterns/hunt pilots, click the **Route Patterns/Hunt Pilots** in the column on the left side of the window.
- To display gateways that use a particular route pattern, rather than a gateway type, click the icon next to **Route Patterns/Hunt Pilots** in the column on the left side of the window. The tree structure expands and displays a list of route patterns/hunt lists. Choose a route pattern/hunt pilot from the list, and the gateway name displays in the List of Gateways box.



Note You can also search for specific route patterns/hunt lists by entering part of the name of the route pattern(s)/hunt list(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 list(s) that matches the search string.

Step 5 Choose a gateway type from the list.
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 6 In the List of Gateways box, choose the gateways that you want to include in the report.



Note You can generate a report for up to five gateways at a time.

Step 7 Click the down arrow to move the chosen gateway to the list of Selected Gateways box.
The gateway(s) that you chose displays in the Selected Gateways box.

Step 8 If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

Step 9 If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.

Step 10 Click the **View Report** button.
The report displays.

Step 11 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 5-14.

Additional Information

See the [“Related Topics”](#) section on page 7-18.

Configuring Route Plan Reports

Only CAR administrators generate the route plan reports. The following sections describe how to configure route and line group, route/hunt list, and route pattern/hunt pilot utilization reports:

Configure the following device reports for route plans:

- [Route and Line Group Utilization Reports Configuration, page 7-8](#)
- [Route/Hunt List Utilization Report Configuration, page 7-10](#)
- [Route Pattern/Hunt Pilot Utilization Report Configuration, page 7-12](#)

Route and Line Group Utilization Reports Configuration

Only CAR administrators generate the Route and Line Group Utilization report. This report provides an estimate of the maximum utilization percentage of the route and line group (cumulative utilization of all the gateways under the route and line group) for the period and not the exact utilization. The system calculates the utilization in the same manner as is done for Gateway Utilization, but this calculation gives cumulative utilization of all the gateways under the route groups and all the lines under the line groups. You can examine the usage based on each hour of a day or on a specified number of days for each week or month. Reports generate for each of the selected route and line groups.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the [“CAR System Configuration”](#) section on page 3-1, for more information.

**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 Route and Line Group Utilization reports.

Procedure

Step 1 Choose **Device Reports > Route Plan > Route and Line Group Utilization**.

The Route and Line Group Utilization window displays.

Step 2 In the Generate Reports field, choose a time as described in [Table 7-5](#).

Table 7-5 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the cumulative utilization for each hour in a 24-hour period for the period that you specify in Step 8 .
Day of Week	Displays the cumulative utilization for the days of the week that occur within the period that you specify in Step 8 .
Day of Month	Displays the cumulative utilization for the days of the month that occur within the period that you specify in Step 8 .

Step 3 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 10](#), or use the default setting, Generate New Report, and go to [Step 4](#).

Step 4 To choose only those route and line groups that use a particular route pattern, click **Route Patterns/Hunt Pilots** in the column on the left side of the window.

The tree structure expands and displays the route patterns/hunt lists that you chose.

**Note**

You can also search for specific route patterns/hunt lists by entering part of the name of the route pattern(s)/hunt list(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 list(s) that matches the search string.

Step 5 Choose a route pattern/hunt list from the list.

The route and line groups for this route pattern/hunt list display in the List of Route/Line Groups box.

**Note**

The List of Route/Line Groups box will display up to 200 route groups.

Step 6 In the List of Route/Line Groups box, choose the route/line groups that you want to include in the report.

**Note**

You can generate a report for up to five route/line groups at a time.

Step 7 To move the chosen gateway to the list of Selected Route/Line Groups box, click the down arrow.

The route/line groups that you chose display in the Selected Route Groups box.

- Step 8** If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

- Step 9** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.

- Step 10** Click the **View Report** button.

The report displays.

- Step 11** If you want to mail the report, click the **Send Report** button. To send the report, follow the procedure that is described in the “[Mailing a Report](#)” section on page 5-14.

Additional Information

See the “[Related Topics](#)” section on page 7-18.

Route/Hunt List Utilization Report Configuration

Only CAR administrators generate the Route/Hunt List Utilization report. The Route/Hunt List Utilization report provides an estimate of the maximum utilization percentage of the route/hunt list (cumulative utilization of all the gateways under the route/hunt list) for the period and not the exact utilization. The system calculates the cumulative utilization of all the gateways under the route lists and all the lines under the hunt lists.

You can examine the usage based on each hour of a day or on a specified number of days for each week or month. Reports generate for each of the selected route/hunt lists.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the “[Configuring CAR System Scheduler](#)” section on page 3-6, for more information.



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 route/hunt list utilization reports.

Procedure

- Step 1** Choose **Device Reports > Route Plan > Route/Hunt List Utilization**.

The Route/Hunt List Utilization window displays.

- Step 2** In the Generate Report field, choose a time as described in [Table 7-6](#).

Table 7-6 Generate Report Fields

Parameter	Description
Hour of Day	Displays the cumulative utilization for each hour in a 24-hour period for the period that you specify in Step 8 .
Day of Week	Displays the cumulative utilization for the days of the week that occur within the period that you specify in Step 8 .
Day of Month	Displays the cumulative utilization for the days of the month that occur within the period that you specify in Step 8 .

Step 3 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 10](#), or use the default setting, Generate New Report, and go to [Step 4](#).

Step 4 To choose the route/hunt lists that you want to include in the report, click **Route Patterns/Hunt Pilots** in the column on the left side of the window. The tree structure expands and displays the route patterns/hunt pilots that you chose.



Note You can also search for specific route patterns/hunt lists by entering part of the name of the route pattern(s)/hunt lists 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 list(s) that matches the search string.

Step 5 Choose a route/hunt list from the list.
The route/hunt list name displays in the List of Route/Hunt Lists box.



Note The List of Route/Hunt Lists box will display up to 200 route/hunt lists.

Step 6 In the List of Route/Hunt Lists box, choose the route/hunt lists that you want to include in the report.



Note You can generate a report for up to five route/hunt lists at a time.

Step 7 To move the chosen route/hunt lists to the list of Selected Route/Hunt Lists box, click the down arrow.
The route/hunt lists that you chose display in the Selected Route/Hunt Lists box.

Step 8 If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

Step 9 If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.

Step 10 Click the **View Report** button.
The report displays.

- Step 11** 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 7-18.

Route Pattern/Hunt Pilot Utilization Report Configuration

Only CAR administrators generate the Route Pattern/Hunt Pilot Utilization report. The report provides an estimate of the maximum utilization percentage of the route pattern/hunt pilot (cumulative utilization of all the gateways under the route pattern/hunt pilot) for the period and not the exact utilization. The system calculates the utilization of all the gateways under the route patterns and all the lines under the hunt pilots. You can examine the usage based on each hour of a day or on a specified number of days for each week or month. Reports generate for each of the selected route patterns/hunt pilots.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the “[Configuring CAR System Scheduler](#)” section on page 3-6, for more information.



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 Route Pattern/Hunt Pilot Utilization reports.

Procedure

- Step 1** Choose **Device Reports > Route Plan > Route Pattern/Hunt Pilot Utilization**.

The Route Pattern/Hunt Pilot Utilization window displays.

- Step 2** In the Generate Report field, choose a time as described in [Table 7-7](#).

Table 7-7 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the cumulative utilization for each hour in a 24-hour period for the period that you specify in Step 8 .
Day of Week	Displays the cumulative utilization for the days of the week that occur within the period that you specify in Step 8 .
Day of Month	Displays the cumulative utilization for the days of the month that occur within the period that you specify in Step 8 .

- Step 3** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 10](#), or use the default Generate New Report and go to [Step 4](#).

Step 4 To choose the route pattern(s)/hunt list(s) that you want to include in the report, click **Route Patterns/Hunt Pilots** in the column on the left side of the window.

The tree structure expands and displays the route pattern(s)/hunt list(s) that you chose.



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

Step 5 Choose a route pattern/hunt pilot from the list.

The route pattern/hunt pilot name displays in the List of Route Patterns/Hunt Pilots box.



Note The List of Route Patterns/Hunt Pilots box will display up to 200 route patterns/hunt lists.

Step 6 In the List of Route Patterns/Hunt Pilots box, choose the route patterns/hunt lists that you want to include in the report.



Note You can generate a report for up to five route patterns/hunt pilots at a time.

Step 7 Click the down arrow to move the chosen route pattern/hunt pilot to the list of Selected Route Patterns/Hunt Pilots box.

The route pattern/hunt pilot that you chose displays in the Selected Route Patterns/Hunt Pilots box.

Step 8 If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

Step 9 If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.

Step 10 Click the **View Report** button.

The report displays.

Step 11 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 5-14.

Additional Information

See the [“Related Topics”](#) section on page 7-18.

Configuring Conference Bridge Reports

Only CAR administrators generate the conference bridge reports. The following sections describe how to configure Conference Call Detail and Conference Bridge Utilization reports:

- [Configuring Conference Call Details, page 7-14](#)

- [Configuring Conference Bridge Utilization Reports, page 7-15](#)

Configuring Conference Call Details

Only CAR administrators generate the Conference Call Details report. The Conference Call Details report allows you to generate and view details about conference calls.



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 a Conference Call Details report.

Procedure

- Step 1** Choose **Device Reports > Conference Bridge > Call Details**.
The Conference Call Details window displays.
- Step 2** In the Report Type pull-down menu, choose either **Summary** or **Detail**.
- Step 3** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 7](#) or use the default setting, Generate New Report, and go to [Step 4](#).
- Step 4** In Select Conference Types, check the check box of the conference type that you want to include in the report as described in [Table 7-8](#).

Table 7-8 Conference Calls Detail Fields

Parameter	Description
Ad-Hoc	Ad hoc conferences allow the conference controller to let only certain participants into the conference.
Meet-Me	Meet-me conferences allow users to dial in to a conference.

- Step 5** If you chose Generate New Report, enter the date range of the period for which you want to see conference call details.



Note Ensure the date and time range does not exceed one month.

- 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 5-14.

Additional Information

See the “[Related Topics](#)” section on page 7-18.

Configuring Conference Bridge Utilization Reports

Only CAR administrators generate the Conference Bridge Utilization report. The report provides an estimate of the utilization percentage of the conference bridges (cumulative utilization of all the conference bridges that are selected for OnDemand reports) for the period and not the exact utilization. For example, the system calculates the utilization of a conference bridge between 11hrs and 12hrs as the ((Sum of duration of the calls that used the conference bridge in that hour) / (Number of days between the fromDate and toDate selected * Maximum number of streams in the conference bridge * Maximum number of duration in seconds in an hour) * 100)). The value that is calculated will display in the report as the utilization for the time between 11hrs and 12hrs. You can examine the usage based on each hour of a day or on a specified number of days for each week or month.

You can either view reports that the system automatically generates or generate new reports. Only CAR administrators can schedule reports for automatic generation. See the “[Configuring CAR System Scheduler](#)” section on page 3-6, for more information.



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 Conference Bridge Utilization reports for each conference bridge type.

Procedure

- Step 1** Choose **Device Reports > Conference Bridge > Utilization**.
The Conference Bridge Utilization window displays.
- Step 2** In the Generate Report field, choose a time as described in [Table 7-9](#).

Table 7-9 *Generate Report Fields*

Parameter	Description
Hour of Day	Displays the cumulative utilization for each hour in a 24-hour period for the period that you specify in Step 6 .
Day of Week	Displays the cumulative utilization for the days of the week that occur within the period that you specify in Step 6 .
Day of Month	Displays the cumulative utilization for the days of the month that occur within the period that you specify in Step 6 .

Step 3 In the Available Reports field, choose an automatically generated report (if available) and go to [Step 8](#) or use the default Generate New Report and go to [Step 4](#).

Step 4 From the Conference Bridge Types column in the left pane, choose the conference bridge type(s) that you want to include in the utilization report.

The conference bridges of the particular conference bridge type that you chose display in the List of Devices box.



Note For this report, choose a maximum of five conference bridges.

Step 5 When you have chosen all the conference bridges that you want to include in the report, click the down arrow to add them to the Selected Devices box.

Step 6 If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

Step 7 If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.

Step 8 Click the **View Report** button.

The report displays.

Step 9 If you want to mail the report, click the **Send Report** button. To send the report, perform the procedure described in the [“Mailing a Report”](#) section on page 5-14.

Additional Information

See the [“Related Topics”](#) section on page 7-18.

Configuring Voice Messaging Utilization Reports

Only CAR administrators generate the Voice Messaging Utilization report. The report provides an estimate of the maximum utilization percentage of the voice-messaging devices for the period and not the exact utilization. For example, the system calculates the utilization of a voice-messaging port/voice-messaging DNs between 11hrs and 12hrs by using the duration of the calls that used the voice-messaging port/voice messaging DNs. The system calculates utilization for the voice-messaging port as the (sum of duration of calls that used the voice-messaging port in that hour*100) / (maximum duration seconds in an hour * number of days between the fromDate and toDate selected). The utilization calculation for voice-messaging DNs represents the (sum of duration of calls that used the voice-messaging DNs in that hour * 100) / (maximum duration seconds in an hour * number of days between the fromDate and toDate selected * maximum number of ports in a gateway that is connected to the voice-messaging DN). The same value will display in the report as the utilization for the time between 11hrs and 12hrs.

You can review the Voice Messaging Utilization report for Voice Messaging Ports only as a newly generated report, and not as a report that the system automatically generates.

You can automatically generate the Voice Messaging Utilization report for Voice Messaging DN, or you can generate it as a new report. Only CAR administrators can schedule reports for automatic generation. See the “[Configuring CAR System Scheduler](#)” section on page 3-6 for more information.

**Note**

The CAR Voice Messaging Utilization report supports the Cisco Unity and Cisco Unity Connection voice-messaging systems.

**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, mail, or view Voice Messaging Utilization reports.

Procedure

- Step 1** Choose **Device Reports > Voice Messaging > Utilization**.
The Voice Messaging Utilization window displays.
- Step 2** In the Generate Report field, choose a time as described in [Table 7-10](#).

Table 7-10 **Generate Report Fields**

Parameter	Description
Hour of Day	Displays the utilization results for each hour in a 24-hour period for the period that you specify in Step 10 .
Day of Week	Displays the utilization for the days of the week that occur within the period that you specify in Step 10 .
Day of Month	Displays the utilization for the days of the month that occur within the period that you specify in Step 10 .

- Step 3** In the Available Reports field, choose an automatically generated report (if available) and go to [Step 12](#), or use the default setting, Generate New Report, and go to [Step 4](#).
- Step 4** To choose a voice-messaging DN, click **Voice Messaging DNs** in the left pane.
The previously configured voice-messaging DN displays.

**Note**

The Voice Messaging DN that displays in this window represents the Voice Messaging DN that you configure in the VoiceMailDn service parameter, which supports the Cisco Messaging Interface service. Set the parameter name VoiceMailDn to the routing pattern that you have created on the machine. Configure this by opening Cisco Unified Communications Manager Administration and clicking on **System**. Click **Service Parameters**; then, select the service **Cisco Messaging Interface**.

- Step 5** Choose the voice messaging DN.
The DN that you chose displays in the List of DNs/Ports list box.

- Step 6** To choose a voice messaging port, click **Voice Messaging Ports** in the left pane.
A list of configured voice messaging ports displays.
- Step 7** From the list of ports, choose a voice messaging port.
The port that you chose displays in the List of DNs/Ports list box.
- Step 8** In Select Voice Messaging DNs/Ports, click the down arrow.
The port that you chose displays in the Selected DNs/Ports list box.
- Step 9** Repeat [Step 7](#) and [Step 8](#) until you have chosen the ports that you want to include in the report.



Note For this report, you can choose a maximum of five Voice Messaging Ports/Voice Messaging DNs. You can choose the default Voice Messaging DN and four Voice Messaging Ports, or you can choose five Voice Messaging Ports.

- Step 10** If you chose Generate New Report, enter the date range of the period for which you want to see call information.



Note Ensure the date and time range does not exceed one month.

- Step 11** If you want the report in CSV format, choose **CSV** (comma separated value) in the Report Format area. If you want the report in PDF format, choose **PDF** (portable document format) in the Report Format area.
- 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 described in the [“Mailing a Report”](#) section on page 5-14.
-

Additional Information

See the [“Related Topics”](#) section on page 7-18.

Related Topics

- [Voice Messaging Utilization Report Results, page 11-46](#)
- [Conference Bridge Utilization Report Results, page 11-44](#)
- [Conference Call Detail Report Results, page 11-42](#)
- [Gateway and Route Utilization Report Results, page 11-38](#)
- [Gateway Detail Report Results, page 11-33](#)



CHAPTER 8

CDR Search Configuration

CAR provides reporting capabilities for three levels of users: administrators, managers, and individual users. Only CAR administrators can use CDR Search.

This chapter contains the following topics:

- [Configuring CDR Search by User Extension, page 8-1](#)
- [Configuring CDR Search by Gateway, page 8-3](#)
- [Configuring CDR Search by Cause for Call Termination, page 8-4](#)
- [Viewing Call Termination Details, page 8-5](#)
- [Configuring CDR Search By Call Precedence Levels, page 8-6](#)
- [Configuring CDR Search for Malicious Calls, page 8-7](#)
- [Related Topics, page 8-8](#)

Before You Begin

Make sure that you set the Cisco Unified Communications Manager service parameters CDR Enabled Flag and Call Diagnostics Enabled to true (enabled), so the system can generate CDR/CMR data. By default, the system disables these service parameters. For more information about these service parameters, see the [“Configuring CDR Service Parameters” section on page 2-2](#).

All CAR reports use CDR data. Be sure to have the most current CDR data from which your reports are built. By default, CDR data loads daily from midnight to 5 a.m. However, you can set the loading time, interval, and duration as needed. See the [“Configuring CAR System Scheduler” section on page 3-6](#) for more information.



Note

After you log in to the CAR main window, the following warning may display if Cisco Unified Communications Manager is also activated: “Warning: In some servers in this cluster the CDR Enabled Flag is false and so CDR entries may not be generated for all the calls made in this cluster.” Some clusters have multiple nodes where some of the nodes do not run Cisco Unified Communications Manager services. This warning checks all nodes in the cluster regardless of Cisco Unified Communications Manager service activation status. Ignore the warning after manually checking the CDR Enabled Flag parameter settings for all the Cisco Unified Communications Manager service subscribers.

Configuring CDR Search by User Extension

Only CAR administrators use the CDR Search by User Extension feature.

This section describes how to show the details of CDR data based on a user or extension. You can search CDR data by user or directory number (calling, original called, or final called) to analyze call details for the oldest 100 records that satisfy the search criteria. If more than 100 records are returned, the system truncates the results. 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, mobility, silent monitoring and recording, and conference calls, appear together as a logical group.

**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 **CDR > Search > By User Extension**.

The CDR Search by User Extension window displays.

**Note**

You can enter a wildcard pattern like “!” or “X” to search on extensions. The “!” represents any digit that has 0-9 as each of its digits, and the “X” represents a single digit in the range 0-9.

Step 2 Perform one of the following tasks:

- To search CDRs based on extensions, enter the extension number in the Extension field and click the **Add Extension** button.
- To search CDRs based on user, click the **Search Extension(s) based on User(s)** link, enter the first few letters of the first and/or last name in the First Name and/or Last Name fields, and click the **Search** button. When the results display, click the **Select** link next to the result that you want to include. Click the **Close** button.

The extension displays in the Selected Extension(s) box.

**Note**

To delete an item from the Report Criteria box, click the **Remove Extension(s)** button. You can delete all items from the Report Criteria box by clicking the **Remove All Extensions** button.

Step 3 Choose the date and time range of the period for which you want to see CDR data for the specified user or extension. When you configure the time range, use Coordinated Universal Time (UTC).**Step 4** Choose whether to run the CDR Search report with grouping or without grouping. If you chose with grouping, check the check box beside **With Grouping**. The default is specified without grouping**Note**

With Grouping choice means that the system returns CDR records that match the date and time range for the search are returned and groups them with their associated records. Without Grouping returns all the CDR records that match the date and time range without grouping all the associated records for each call together.

Step 5 Click the **OK** button.

The CDR-CMR Search Results window displays. The system only displays the oldest 100 records that fall into the date range that you configured in [Step 3](#).

- Step 6** To view the CMR data, click the **Others** button. To view both the CDR and CMR data fields, click the **View** button.
- Step 7** To mail the report to e-mail recipient(s), follow the steps in the [“Mailing a Report” section on page 5-14](#).
-

Additional Information

See the [“Related Topics” section on page 8-8](#).

Configuring CDR Search by Gateway

Only CAR administrators use the CDR Search by Gateway feature.

This section describes how to search CDR data based on a specific gateway type or on those gateways that use a chosen route pattern.



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 **CDR > Search > By Gateway**.
- The CDR Search by Gateway window displays.
- Step 2** 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 gateways that are associated to the configured Route Patterns/Hunt Pilots display.
 - 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 lists 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 list(s) that matches the search string.

- Step 3** Choose a gateway type from the list.
- 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 4** In the List of Gateways box, choose 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 choose more than 15 gateways, you will receive a message that states “Select 15 or fewer gateways to generate new report.”

- Step 5** To move the chosen gateway to the list of Selected Gateways box, click the down arrow.
The gateway that you chose displays in the Selected Gateways box.
- Step 6** Choose the date and time range of the period during which you want to search CDR data. When you configure the time range, use UTC.
- Step 7** Choose whether to run the CDR Search report with grouping or without grouping. If you chose with grouping, check the check box beside **With Grouping**. The default specifies Without Grouping



Note With Grouping means that the system returns CDR records that match the date and time range for the search are returned and grouped with their associated records. Without Grouping returns all the CDR records that match the date and time range without grouping all the associated records for each call together.

- Step 8** Click the **OK** button.
The CDR-CMR Results window displays. The system only displays the oldest 100 records that fall into the date and time range that you configured in [Step 6](#). If more than 100 records are returned, the system truncates the results.
- Step 9** To view the CMR data, click the **Others** button. To view both the CDR and CMR data fields, click the **View** button.
- Step 10** To mail the report to e-mail recipient(s), follow the steps in the [“Mailing a Report”](#) section on page 5-14.
-

Additional Information

See the [“Related Topics”](#) section on page 8-8.

Configuring CDR Search by Cause for Call Termination

Only CAR administrators use the CDR Search by Cause for Call Termination feature.
This section describes how to search for information about the cause for termination of a call.

Procedure

-
- Step 1** Choose **CDR > Search > By Cause for Call Termination**.
The Cause for Call Termination window displays.
- Step 2** To search for the cause(s) of the termination of a call, highlight the cause(s) in the list of call termination causes.



Tip You can select more than one cause by clicking the causes that you want while holding down the Ctrl key on your keyboard. You can also select all causes in the list by holding down the Shift key while clicking all causes.

Step 3 With the desired cause(s) highlighted, click the down arrow above the Selected Call Termination Causes box.

The cause(s) that you chose displays in the Selected Call Termination Causes list box.



Note To view a complete list of Call Termination Causes, see the [“Call Termination Cause Codes” section on page 10-110](#)

Step 4 Choose the date and time range of the period during which you want to search CDR data. When you configure the time range, use UTC.

Step 5 Choose whether to run the CDR Search report with grouping or without grouping. If you chose with grouping, check the box beside **With Grouping**. The default specifies Without Grouping



Note With Grouping means that the system returns CDR records that match the date and time range for the search and groups them with their associated records. Without Grouping returns all the CDR records that match the date and time range without grouping all the associated records for each call together.

Step 6 Click **OK**.

The Call Termination Details window displays the report criteria for which the report was generated, along with the total number of calls that were placed during the given time range as well as how many call legs and the percentage of call legs for each cause code that is selected. The system displays only the oldest 100 records that fall into the date and time ranges that you configured in [Step 4](#). If more than 100 records are returned, the system truncates the results.

Step 7 To view CDRs, see the [“Viewing Call Termination Details” section on page 8-5](#).

Additional Information

See the [“Related Topics” section on page 8-8](#).

Viewing Call Termination Details

This section describes how to view the call termination details.

Before You Begin

Follow the steps in the [“Configuring CDR Search by Cause for Call Termination” section on page 8-4](#) to display the Call Termination Details window.

Procedure

Step 1 In the Select CDRs field, check the check box beside the individual CDRs that you want to view or, if you want to view all CDRs in the list, check the **Select CDRs** check box.

Step 2 After you have chosen the CDRs that you want to view, click **View CDRs**.

The CDR-CMR Search Results window displays.

To view the media information and the CDR-CMR dump records, click the **Others** and **View** links. See the “[Understanding the CDR Search Results](#)” section on page 11-48 for information on how to read CDR search results reports.

- Step 3** To print information that displays on the window, click the **Edit** button in your browser. Right-click the **Select All** button to highlight the section of the report that you want to print. Click the **Print** button.
- Step 4** To mail the report in an e-mail, click **Send Report** and follow the procedure that is described in the “[Mailing a Report](#)” section on page 5-14.

Additional Information

See the “[Related Topics](#)” section on page 8-8.

Configuring CDR Search By Call Precedence Levels

Only CAR administrators use the CDR Search by Call Precedence Levels feature.

This section describes how to search for calls according to call precedence.

Procedure

- Step 1** Choose **CDR > Search > By Call Precedence Level**.
- The CDR Search by Precedence Levels window displays.
- Step 2** In Select Precedence Levels, check the check box(es) for the call precedence level(s) on which you want to search as described in [Table 8-1](#).

Table 8-1 Call Precedence Levels

Voice Quality	Description
Flash Override	Highest precedence setting for MLPP calls.
Flash	Second highest precedence setting for MLPP calls.
Immediate	Third highest precedence setting for MLPP calls.
Priority	Fourth highest precedence setting for MLPP calls.
Routine	Lowest precedence setting for MLPP calls.



Note To check the check boxes of every precedence level, click **Select All**. To clear the check boxes, click **Clear All**.

- Step 3** In the From Date field, choose the date and time from which you want CDRs searched. When you configure the time range, use UTC.
- Step 4** In the To Date field, choose the date and time to which you want CDRs searched.
- Step 5** Choose whether to run the CDR Search report With Grouping or Without Grouping. If you chose With Grouping, check the check box beside **With Grouping**. The default specifies Without Grouping



Note With Grouping means that the system returns CDR records that match the date and time range for the search are returned and groups them with their associated records. Without Grouping returns all the CDR records that match the date and time range without grouping all the associated records for each call together.

Step 6 Click **OK**.

The Call Precedence Details window displays and shows the call precedence levels and values, number of call legs, and percentage of call legs.

Step 7 In the Select CDRs column, check the check box(es) of the CDR(s) at which you want to look.

Step 8 Click **View CDRs**.

The CDR-CMR Search by Precedence Levels - CDR-CMR Search Results window displays. The system displays only the oldest 100 records that fall into the date and time ranges that you configured in [Step 3](#) and [Step 4](#). If more than 100 records are returned, the system truncates the results.

Step 9 To view the CMR data, click the **Others** button. To view both the CDR and CMR data fields, click the **View** button.

Step 10 To mail the report to e-mail recipient(s), click **Send Report** and follow the steps in the [“Mailing a Report”](#) section on page 5-14.

Additional Information

See the [“Related Topics”](#) section on page 8-8.

Configuring CDR Search for Malicious Calls

Only CAR administrators use the CDR Search for Malicious Calls feature.

This section describes how to search for malicious calls.

Procedure

Step 1 Choose **CDR > Search > Malicious Calls**.

The CDR Search for Malicious Calls window displays.

Step 2 Perform one of the following tasks:

- In the Select Extension(s) box, enter an extension in the Extension field and click **Add Extension**. The extension of the user displays in the Selected Extension(s) box.
- To search for a user extension, click the **Search Extension(s) based on User(s)** link, enter the first few letters of the first and/or last name in the First Name and/or Last Name fields, and click the **Search** button. When the results display, click the **Select** link next to the result that you want to include. The extension number that is associated with the user appears in the Selected Extension(s) box. Click the **Close** button.



Note To remove an extension, highlight the extension(s) that you want removed and click **Remove Extension(s)**. To remove all extensions, click **Remove All Extensions**.

Step 3 Choose the date and time range of the period when you want to search CDR data. When you configure the time range, use UTC.

Step 4 Choose whether to run the CDR Search report With Grouping or Without Grouping. If you chose with grouping, check the box beside **With Grouping**. The default is Without Grouping



Note With Grouping means that the system returns CDR records that match the date and time range for the search and groups them with their associated records. Without Grouping returns all the CDR records that match the date and time range without grouping all the associated records for each call together.

Step 5 Click **OK**.

The CDR-CMR Search Results window displays. The system only displays the oldest 100 records that fall into the date and time ranges that you configured in [Step 3](#). If more than 100 records are returned, the system truncates the results.

Step 6 To view the CMR data, click the **Others** button. To view both the CDR and CMR data fields, click the **View** button.

Step 7 To mail the report to e-mail recipient(s), follow the steps in the [“Mailing a Report”](#) section on page 5-14.

Additional Information

See the [“Related Topics”](#) section on page 8-8.

Related Topics

- [Understanding the CDR Search Results, page 11-48](#)
- [Media Information, page 11-49](#)
- [CDR and CMR Dump Tables, page 11-49](#)
- [Mailing a Report, page 5-14](#)
- [Configuring CDR Search by User Extension, page 8-1](#)
- [Configuring CDR Search by Gateway, page 8-3](#)
- [Configuring CDR Search by Cause for Call Termination, page 8-4](#)
- [Viewing Call Termination Details, page 8-5](#)
- [Configuring CDR Search By Call Precedence Levels, page 8-6](#)
- [Configuring CDR Search for Malicious Calls, page 8-7](#)
- [Call Termination Cause Codes, page 10-110](#)



CHAPTER 9

Export CDR/CMR Records Configuration

This chapter describes how to export CDR/CMR records and how to view the exported records.

Using Export CDR/CMR in the CDR menu in Cisco Unified Communications Manager CDR Analysis and Reporting, you can export CDR/CMR dump information to the location of your choice on your computer. The CDR/CMR dump exists in the CSV format. You can also view the dump of the exported records.

This chapter contains the following topics:

- [Exporting CDR/CMR Records, page 9-1](#)
- [Viewing Export CDR/CMR Records Results, page 9-2](#)
- [Related Topics, page 9-2](#)

Exporting CDR/CMR Records

The following procedure describes how to export CDR/CMR record results.

Procedure

- Step 1** From CDR Analysis and Reporting, choose **CDR > Export CDR/CMR**.
The Export CDR/CMR records window displays.
- Step 2** In the From Date and To Date drop-down list boxes, choose a date range for the CDR/CMR dump.
- Step 3** In Select records, check the CDR records and/or CMR records check box.
- Step 4** Click **Export to File**.
The Export CDR/CMR records Result window displays. See the [“Viewing Export CDR/CMR Records Results”](#) section on page 9-2.
-

Additional Information

See the [“Related Topics”](#) section on page 9-2.

Viewing Export CDR/CMR Records Results

The following procedure describes how to view Export CDR/CMR record results.

Before You Begin

Before you begin the following procedure, perform all the steps in the [“Export CDR/CMR Records Configuration”](#) section on page 9-1.

Procedure

-
- Step 1** From the Export CDR/CMR Record Results window, right-click either the **CDR Dump** or **CMR Dump** link.
- A pop-up window that comprises the following options displays:
- **Open**—This option allows you to open the web page that contains the CDR/CMR dump in the same window.
 - **Open in a New Window**—This option allows you to open the web page that contains the CDR/CMR dump in a new window.
 - **Save Target As...**—This option allows you to save the CDR/CMR dump to a location on your computer.
 - **Print Target**—This option allows you to print the CDR/CMR dump information.
 - **Copy Shortcut**—This option allows you to copy the web page shortcut to paste in another file.
 - **Add to Favorites**—This option allows you to add the CDR/CMR dump to your Favorites folder.
 - **Properties**—This option provides the properties of the CDR/CMR dump file.
- Step 2** From the pop-up window, choose one of the options.
- Step 3** If you chose to save the CDR/CMR dump to your computer, choose a location in which to save the dump and click **Save**. After the download is complete, you can locate the file wherever you downloaded it to open it.
- Step 4** To delete the CDR and/or CMR dump, check the **Delete File** check box and click either **Back** or **Close**. The files get deleted.



Note If you do not check the Delete File check box(es) (for example, if the CDR or CMR dump files get left undeleted), the background process deletes the files on a daily basis. Because the CDR and CMR dump files are large in size, Cisco recommends that you download the file to a local disk and delete them from the server to avoid disk usage on the server side.

Additional Information

See the [“Related Topics”](#) section on page 9-2.

Related Topics

- [Export CDR/CMR Records Configuration, page 9-1](#)

- [CDR Search Configuration, page 8-1](#)
- [CDR Analysis and Reporting Configuration Checklist, page 1-15](#)
- [Viewing Export CDR/CMR Records Results, page 9-2](#)



CHAPTER 10

Understanding Cisco Call Detail Records

This chapter describes the format and logic of the call detail records (CDRs) and call management records (CMRs) that the Cisco Unified Communications Manager Release 6.0(1) (and later) system generates. You can use this information for post-processing activities such as generating billing records and network analysis. The chapter describes how to access the CDR/CMR files and how to interpret fields in the files.

When you install your system, CDRs and CMRs remain disabled by default. You can enable or disable CDRs or CMRs at any time that the system is in operation. You do not need to restart Cisco Unified Communications Manager for the change to take effect. The system responds to all changes within a few seconds. The system enables CMR or diagnostic data separately from CDR data.

This chapter contains the following topics:

- [CDR Processing, page 10-2](#)
- [Cisco Unified Communications Manager CDR Overview, page 10-3](#)
- [Call Types, page 10-8](#)
- [Interpreting Cisco Personal Assistant Data in the CDRs, page 10-30](#)
- [Call Scenarios, page 10-36](#)
- [CDR Field Descriptions, page 10-84](#)
- [CMR Field Descriptions \(Diagnostic\), page 10-102](#)
- [K-Factor Data in CMRs, page 10-107](#)
- [Codec Types, page 10-108](#)
- [Call Termination Cause Codes, page 10-110](#)
- [Redirect Reason Codes, page 10-113](#)
- [OnBehalfof Codes, page 10-114](#)
- [Related Topics, page 10-115](#)
- [Related Documentation, page 10-116](#)

CDR Processing

Cisco Unified Communications Manager generates two different types of call information records: CDRs and CMRs. The CDR records store information about a call. The CMR records store information about the quality of the streamed audio of the call. The CDR records relate to the CMR records by way of two GlobalCallID columns: GlobalCallID callManagerId and GlobalCallID Called. Depending upon the call scenario, there may be more than one CMR for each CDR.

When Cisco Unified Communications Manager places or receives a call, the system generates a CDR record when the call terminates. The system writes the CDR to a flat file (text file). Inside the Cisco Unified Communications Manager, the Call Control process generates CDR records. The system writes records when significant changes occur to a given call, such as ending the call, transferring the call, redirecting the call, splitting the call, joining a call, and so forth.

When CDR records are enabled, Call Control generates one or more CDR records for each call. The system sends these records to EnvProcessCdr, where they are written to the flat files. The number of records that are written varies by type of call, and the call scenario. When Diagnostics are enabled, the device generates CMR records for each call. The system writes one CMR record for each IP phone that is involved in the call, or for each Media Gateway Control Protocol (MGCP) gateway. These records also get sent to EnvProcessCdr where they get written to flat files.

The Cisco Unified Communications Manager generates CDR and CMR records but does not perform any post-processing on the records. The system writes the records to comma-delimited flat files and periodically passes them to the CDR Repository. The CDR and CMR files represent a specific filename format within the flat file.

Filename Format

The following example shows the full format of the filename:

tag_clusterId_nodeId_datetime_seqNumber

- tag—Identifies the type of file, either CDR or CMR
- clusterId—Identifies the cluster
- nodeId—Identifies the node
- datetime—UTC time in yyymmddhhmm format
- seqnumber—Sequence number

Two examples of filenames follow:

- cdr_Cluster1_01_200404021658_1
- cmr_Cluster1_02_200404061011_6125

Flat File Format

The CDR and CMR flat files have the following format:

- Line 1—List of field names comma separated
- Line 2—List of field type comma separated
- Line 3—Data comma separated
- Line 4—Data comma separated

The following shows an example of a flat file:

```
Line1-"cdrRecordType","globalCallID_callManagerId","globalCallID_callId","origLegCallIdentifier",...
```



```
Line2-INTEGER, INTEGER, INTEGER, INTEGER, ...  
Line3-1, 1, 388289, 17586046, ...  
Line4-1, 1, 388293, 17586054, ...
```

**Note**

If the value of the CDR Log Calls With Zero Duration Flag parameter is True, the system writes all calls to a flat file. See the [“Configuring CDR Service Parameters”](#) section on page 2-2 for additional information about this parameter.

Cisco Unified Communications Manager CDR Overview

The following sections provide a brief description of how CDRs are generated and managed in Cisco Unified Communications Manager.

- [CDR Management, page 10-3](#)
- [Types of Call Information Records, page 10-5](#)

CDR Management

The CDR Management (CDRM) feature represents a background application that supports the following capabilities:

- Collects the CDR /CMR files from the Cisco Unified Communications Manager node to the CDR Repository node.
- Maintains the CDR/CMR files on the CDR Repository node.
- Allows third-party applications to retrieve CDR/CMR files on demand through a SOAP interface.
- Accepts on-demand requests for searching file names.
- Pushes CDR/CMR files from individual nodes within a cluster to the CDR Repository node.
- Sends CDR/CMR files from the CDR Repository node to up to three customer billing servers.
- Monitors disk usage of CDR/CMR files on the CDR Repository node.
- Periodically deletes CDR/CMR files that were successfully delivered. You can configure the amount of storage used to store flat files. The post-processing applications can later retrieve the buffered historical data to re-get any lost, corrupted, or missing data. The CDRM feature, which is not aware of the flat file format, does not manipulate the file contents.

CDRM comprises two default services, the CDR Agent and the CDR Repository Manager default services, and one activate service, CDR onDemand Service.

CDR Agent

As part of the CDRM feature, a resident component on every node within a Cisco Unified Communications Manager cluster acts as the CDR Agent. On a node where both Cisco Unified Communications Manager and the CDR Agent are running, Cisco Unified Communications Manager writes the CDRs into CDR flat files (CSV format) with a special control character (“_”) that is prefixed to the filename by the call-processing module and indicates that the file is not available for transfer. If this control character is not present, the system assumes the file to be available for transfer and sends the file to the designated CDR Repository node. Upon successful transfer, the system deletes the local copy of the file.

Reliability gets the highest priority for the CDRM feature. CDRs are very important financial data, so the goal of this feature is to guarantee that no CDR is lost. The Cisco Unified Communications Manager nodes within a cluster continuously write CDRs to flat files, close existing flat files, and open new ones. The number of records that are written varies by the type of call and significant changes that occur during a call, such as ending the call, transferring the call, redirecting the call, splitting the call, or joining the call.

CDR Repository Manager

Within a Cisco Unified Communications Manager cluster, one instance of the CDR Repository Manager runs on the CDR Repository node. It manages CDR files that are received from the Cisco Unified Communications Manager nodes and periodically sends the files to the specified customer/third party billing servers.

When the file arrives on the CDR Repository node, the CDR Repository Manager detects it. The file gets archived in a directory that is dedicated to the date that is indicated by the UTC timestamp that was placed in the file name when the file was created.

If any external billing server is specified in CDRM configuration, a soft link to the file gets created in a directory that is designated to the destination. The file sender component of the CDR Repository Manager detects this soft link and sends the file to the destination with the specified method. If the delivery is successful, the system removes the soft link in the destination directory.

Every Cisco Unified Communications Manager node can generate one CDR file and one CMR file every minute for up to 1 hour. You can configure the maximum disk space that is used for storage of CDR files on the CDR Repository node through provisioning. The File Manager component of the CDR Repository Manager runs hourly. When the File Manager runs, it deletes files with dates outside the configured preservation duration. It also checks whether disk usage has exceeded the high water mark. If so, the system deletes the processed CDR files until the low water mark is reached, starting with the oldest files. However, if any CDR file to be deleted was not successfully sent to the specified billing server, the system leaves it in the CDR Repository and a notification or alarm gets raised. The system creates a flag file during the configured maintenance window, which denies access to the CDR files for the CDR onDemand Service. The system removes the flag file after the maintenance window expires.

For detailed procedures for configuring the CDR Repository Manager and customer billing servers, see the “CDR Repository Manager Configuration” section in the *Cisco Unified Serviceability Administration Guide*.

CDR onDemand Service

The CDR onDemand Service, is a SOAP/HTTPS-based service, that runs on the CDR Repository node. It receives SOAP requests for CDR file name lists based on a user-specified time interval (up to a maximum of 1 hour) and returns all lists that fit the time duration that is specified in the request.

The CDR onDemand Service can also handle requests for delivering a specific CDR file to a specified destination through (s)FTP. The system can activate the CDR onDemand service on the CDR Repository node as it has to access the CDR files in the repository. The system prohibits service during the maintenance window. For detailed information on the CDR onDemand Service, see the *Cisco Unified Communications Manager Developers Guide for Release 6.0(1)*.

Types of Call Information Records

Cisco Unified Communications Manager generates two different types of call information records: Call Detail Records (CDRs) and Call Management Records (CMRs). CDRs store information about the endpoints of the call and other call control/routing aspects. CMRs contain diagnostic information about the quality of the streamed audio and/or video of the call. More than one CMR can exist per CDR.

The CDRs relate to the CMRs via the two globalCallID columns:

- globalCallID_callManagerId
- globalCallId_callId

When the Call Diagnostics service parameter is set to True, the system generates up to two CMRs for each call. Each type of call, such as conference calls, call transfers, forwarded calls, and calls through gateways, produce a set of records that get written to ASCII files at the end of the call. Only completed calls and failed calls generate CDRs and CMRs. Cisco Unified Communications Manager does not perform any post processing on CDRs or CMRs.

This section contains the following topics:

- [Global Call Identifier, page 10-5](#)
- [Number Translations, page 10-6](#)
- [Partitions and Numbers, page 10-6](#)
- [Timestamps, page 10-7](#)
- [Call Termination Cause Codes, page 10-8](#)

Global Call Identifier

The Cisco Unified Communications Manager allocates a global call identifier (GlobalCallID) each time that a Cisco Unified IP Phone is taken off hook or a call is received from a gateway.

The CDR table ([Table 10-1](#)) lists CDRs that are written to the CDR at the end of a call in the order that they are written. GlobalCallIDs for active calls do not appear in the CDR table. Other global IDs also may not appear in the CDR table. For example, each call leg in a conference call gets assigned a GlobalCallID that the conference GlobalCallID overwrites. The original GlobalCallID does not appear in the CDR.

Table 10-1 *Sample CDR Table*

GlobalCallID	Start Time	End Time
1	973795815	973795820
2	973795840	973795845
5	973795860	973795870
4	973795850	973795880

The CDR table does not contain an entry for GlobalCallID 3 because that call was active when this record was taken. The table shows GlobalCallID 5 listed before GlobalCallId 4 because the GlobalCallID 5 call ended before the GlobalCallID 4 call ended.

Number Translations

The Cisco Unified Communications Manager can perform translations on the digits that a user dials. The translated number, not the actual dialed digits, appears in the CDR.

For example, many companies translate “911” calls to “9-911,” so the caller does not need to dial an outside line in an emergency. In these cases, the CDR contains “9911” even though the user dials “911.”


Note

Gateways can perform further modifications to the number before the digits are actually output through the gateway. The CDR does not reflect these modifications.

Partitions and Numbers

Within a CDR, a combination of extension number and partition identifies each phone that is referenced, if partitions are defined. When partitions exist, fully identifying a phone requires both values because extension numbers may not be unique.

The Partition field stays empty when a call ingresses through a gateway. When a call egresses through a gateway, the Partition field shows the partition to which the gateway belongs.

If the dial plan allows callers to use the # key for speed dialing, the # key goes into the database when it is used. For example, the Called Party Number field may contain a value such as “902087569174#.”

In this release, the Party Number fields may include SIP URIs instead of the traditional calling/called party number.

CDRs use the Partition/Extension Numbers shown in [Table 10-2](#):

Table 10-2 Partition/Extension Numbers in CDRs

Phone Number	Description
callingPartyNumber	This party placed the call. For transferred calls, the transferred party becomes the calling party.
originalCalledPartyNumber	This number designates the originally called party, after any digit translations have occurred.
finalCalledPartyNumber	For forwarded calls, this number designates the last party to receive the call. For non-forwarded calls, this field shows the original called party.
lastRedirectDn	For forwarded calls, this field designates the last party to redirect the call. For non-forwarded calls, this field shows the last party to redirect (such as transfer and conference) the call.
callingPartyNumberPartition	This number identifies the partition name that is associated with the CallingPartyNumber field. This field uniquely identifies this number because the Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions. For calls that ingress through a gateway, this field remains blank.

Table 10-2 Partition/Extension Numbers in CDRs (continued)

Phone Number	Description
originalCalledPartyNumberPartition	This number identifies the partition name that is associated with the OriginalCalledPartyNumber field. This field uniquely identifies this number because the Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions. For calls that egress through a gateway, this field specifies the partition name that is associated with the route pattern that pointed to the gateway.
finalCalledPartyNumberPartition	This number identifies the partition name that is associated with the FinalCalledPartyNumber field. This field uniquely identifies this number because the Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions. For calls that egress through a gateway, this field specifies the partition name that is associated with the route pattern that pointed to the gateway.
lastRedirectDnPartition	This number identifies the partition name that is associated with the LastRedirectDn field. This field uniquely identifies this number because the Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions. For calls that egress through a gateway, this field specifies the partition name that is associated with the route pattern that pointed to the gateway.

Timestamps

Timestamps within a CDR appear in Universal Coordinated Time (UTC). This value remains independent of daylight saving time changes.

Unsigned 32-bit integers represent all time values. This unsigned integer value displays from the database as a single integer. The field specifies a time_t value that is obtained from the Linux operating system.

The CDR includes the UTC timestamps that are shown in [Table 10-3](#):

Table 10-3 UTC Timestamps in CDRs

Field	Description
dateTimeOrigination	For outgoing calls, this field designates the time the device goes off hook. For incoming calls, this field designates the time the SETUP message is received.
dateTimeConnect	This field designates the time the devices connect and speech begins. This field shows a zero if the call never connects.
dateTimeDisconnect	This field designates the time the call disconnects. This field shows a zero if the call never connects.

Call Termination Cause Codes

The CDR includes two call termination cause codes: OrigCause and DestCause. When the originating party releases the call, the OrigCause gets populated. When the terminating party releases the call, or the call is rejected, the DestCause gets populated. When unpopulated, the termination cause code value shows zero.

[Table 10-8 on page 10-110](#) lists the call termination cause code values per ITU specification Q.850. For On Net call legs, the Cisco Unified Communications Manager determines the call termination cause code value. For Off Net call legs, the far-end switch determines the call termination cause code value.

IP Addresses

The system stores IP addresses as unsigned integers. The CDR file displays IP addresses as signed integers. To convert the signed decimal value to an IP address, first convert the value to a hex number, taking into consideration that it is really an unsigned number. The 32-bit hex value represents four bytes in reverse order (Intel standard). To determine the IP address, reverse the order of the bytes and convert each byte to a decimal number. The resulting four bytes represent the four-byte fields of the IP address in dotted decimal notation.



Note

The file displays a negative number when the low byte of the IP address has the most significant bit set.

For example, the IP address 192.168.18.188 displays as -1139627840. To convert this IP address, perform the following procedure:

-
- Step 1** Convert the database display (-1139627840) to a hex value.
The hex value equals 0xBC12A8C0.
 - Step 2** Reverse the order of the hex bytes, as shown below:
CO A8 12 BC
 - Step 3** Convert the four bytes from hex to decimal, as shown below:
192 168 18 188
 - Step 4** The IP address displays in the dotted decimal format:
192.168.18.188
-

When working with CDRs, you may want to read other tables in the CAR database to obtain information about the type of device in each CDR because the correlation between devices in the Device table and the IP address that is listed in the CDR is not straightforward.

Call Types

A successful call between two parties logs one CDR. Each CDR contains all fields, but some fields may not get used. If a field is not used, see the default values in the CDR definitions table. When supplementary services are involved in a call, additional CDRs may get written.

In addition to the CDR, a call may involve one CMR per endpoint. In a successful call between two parties who are each using an IP phone, two CMRs get written: one for the originator and one for the destination of the call.

This section describes the CDRs that are written for different call types in the system.

- [Successful On Net Calls, page 10-9](#)
- [Abandoned Calls, page 10-9](#)
- [Calls with Busy or Bad Destinations, page 10-10](#)
- [Short Calls, page 10-11](#)
- [Forwarded or Redirected Calls, page 10-11](#)
- [Pickup Calls, page 10-12](#)
- [Transferred Calls, page 10-13](#)
- [Conference Calls, page 10-15](#)
- [Meet-Me Conferences, page 10-17](#)
- [Ad Hoc Conference Linking, page 10-18](#)
- [Precedence Calls \(MLPP\), page 10-20](#)
- [Malicious Calls, page 10-21](#)
- [Conference Drop Any Party, page 10-21](#)
- [Immediate Divert \(to Voicemail\), page 10-22](#)
- [Video Calls, page 10-22](#)
- [Call Monitoring and Call Recording, page 10-23](#)
- [AAC and iLBC Calls, page 10-25](#)
- [Mobility, page 10-27](#)
- [Intercom, page 10-29](#)
- [Original Calling Party on Transfer, page 10-30](#)

Successful On Net Calls

A successful call between two Cisco Unified IP Phones generates a single CDR at the end of the call.

Successful On Net Call CDR Examples

The following table contains two examples:

- A—A 60-second call that the caller terminates
- B—A 60-second call that the called party clears

	Calling Party	Calling Partition	Original Called Party	Original Called Partition	Orig Cause	Dest Cause	Duration
A	2001	Accounts	2309	Marketing	16	0	60
B	2001	Accounts	2309	Marketing	0	16	60

Abandoned Calls

The logging of calls with zero duration represents an optional action. If logging calls with zero duration is enabled, the following actions occur:

- All calls generate a CDR.
- If the call is abandoned, such as when a phone is taken off hook and placed back on hook, various fields do not contain data. In this case, the originalCalledPartyNumber, finalCalledPartyNumber, the partitions that are associated with them, the destIpAddr, and the dateTimeConnect fields all remain blank. All calls that are not connected have a duration of 0 second. When a call is abandoned, the cause code contains 0.
- If the user dials a directory number and abandons the call before it connects, the FirstDest and FinalDest fields and their associated partitions contain the directory number and the partition to which the call would have been extended. The DestIp field remains blank, and the duration specifies 0 second.

Abandoned Calls CDR Examples

The following table contains two examples:

- A—Extension 2001 goes off hook then on hook (when the CdrLogCallsWithZeroDurationFlag is set to **True**).
- B—Extension 2001 calls 2309, but 2001 hangs up (abandons) the call before it is answered.

	Calling Party	Calling Partition	Original Called Party	Original Called Partition	Orig Cause	Dest Cause	Duration
A	2001	Accounts			16	0	0
B	2001	Accounts	2309		16	0	0

Calls with Busy or Bad Destinations

The system logs all these calls as normal calls with all relevant fields containing data. The Calling or Called Party Cause fields contain a cause code that indicates why the call was not connected, and the Called Party IP and Date/Time Connect fields remain blank. The system logs all unsuccessful calls, even if zero duration calls are not being logged (CdrLogCallsWithZeroDurationFlag set at **True** or **False**, a duration of zero, and a DateTimeConnect value of zero).

Calls with Busy or Bad Destinations CDR Examples

The following table contains three examples:

- A—Call to PSTN number; party is engaged (cause 17 = user busy).
- B—Call to PSTN number; number does not exist (cause 1 = number unavailable).
- C—Call to PSTN fails because PSTN trunks are out of order (cause 38 = Network Out Of Order).

	Calling Party	Calling Partition	Original Called Party	Original Called Partition	Orig Cause	Dest Cause	Duration
A	2001	Accounts	902920262226	PSTN	0	17	0
B	2001	Accounts	902920100000	PSTN	0	1	0
C	2001	Accounts	902920262226	PSTN	0	38	0

Short Calls

A short call, with a `CdrLogCallsWithZeroDurationFlag` set at `True` and a duration of less than 1 second, appears as a zero duration call in the CDR. The `DateTimeConnect` field, which shows the actual connect time of the call, differentiates these calls from failed calls. For failed calls (which never connected), this value equals zero.

Short Call CDR Example

The following table contains an example of a successful On Net call with a duration of less than 1 second, that the called party cleared.

Calling Party	Calling Partition	Original Called Party	Original Called Partition	Orig Cause	Dest Cause	DateTime Connect	Duration
2001	Accounts	2309	Marketing	0	16	973795815	0

Forwarded or Redirected Calls

Forwarded calls generate a single CDR and show the Calling Party, Original Called Number, Last Redirecting Number, Final Called Number, and the associated partitions. If the call is forwarded more than twice, the intermediate forwarding parties do not populate in the CDR.

Call forwarding can occur on several conditions (always, on busy, and on no answer). The condition under which the call is forwarded does not populate in the CDR.

The CDRs for forwarded calls match those for normal calls, except for the `originalCalledPartyNumber` field and the `originalCalledPartyNumberPartition` field. These fields contain the directory number and partition for the destination that was originally dialed by the originator of the call. If the call gets forwarded, the `finalCalledPartyNumber` and `finalCalledPartyNumberPartition` fields differ and contain the directory number and partition of the final destination of the call.

Also, when a call is forwarded, the `lastRedirectDn` and `lastRedirectDnPartition` fields contain the directory number and partition of the last phone that forwarded or redirected the call.

Forward or Redirected Call CDR Examples

The following table contains two examples:

- A—Call from the PSTN to extension 2001, forwarded to 2309, where the call is answered
- B—Call from the PSTN to extension 2001, forwarded to 2309, which forwards to voice-messaging system

	Calling Party	Original Called Party	Original Called Partition	Final Called Party	Final Called Partition	Last Redirect Party	Last Redirect Partition	Duration	OriginalCalled Party Redirect OnBehalfOf	Last Redirect Redirect OnBehalfOf
A	02920262227	2001	ACNTS	2309	MKTG	2001	ACNTS	120	5	5
B	02920262227	2001	ACNTS	6000	VMAIL	2309	MKTG	60	5	5

Pickup Calls

Cisco Unified Communications Manager includes two pickup modes: Pickup and Auto Pickup. The following sections describe these calls:

- [Pickup, page 10-12](#)
- [Auto Pickup, page 10-12](#)

Pickup

Pickup calls work like forwarded calls. The CDRs for pickup calls match those for normal calls except for the originalCalledPartyNumber field and the originalCalledPartyNumberPartition field. These fields contain the Directory Number and partition for the destination that was originally dialed by the originator of the call.

If the call is picked up, the finalCalledPartyNumber and finalCalledPartyNumberPartition fields will differ and contain the Directory Number and partition of the phone that picked up the call. Also, when a call is picked up, the lastRedirectDn and lastRedirectDnPartition fields contain the directory number and partition of the last phone that redirected this call.

The origTermination, destTermination, lastRedirect, and Join OnBehalfOf fields contain 16 (Pickup) and the redirect reason field contains 5 (Pickup).

Pickup CDRs look the same for all types of pickup: Pickup, Group Pickup and Other Pickup.

Pickup Call CDR Example

1. A call comes in from the PSTN to extensions 2000, 2001, and 2002, which are in the same pickup group.
2. Extension 2002 picks up the call that is ringing on 2001.
3. Extension 2002 answers the call, and the call connects between the PSTN caller and extension 2002.

Call ID	Orig Cause	Calling Party	Dest Cause	Original Called Party	Final Called Party	Last Redirect Party	Orig Termination On BehalfOf	Dest Termination On BehalfOf	Last Redirect On BehalfOf	Last Redirect Reason	Join On BehalfOf
22	0	9728131234	16	2001	2002	2001	16	16	16	5	16

Auto Pickup

Auto Pickup works like call pickup with auto answer. The call connects automatically, so no need exists for the last answer softkey press. The system generates two CDRs for Auto Pickup, and these CDRs have the same Call ID.

The system generates the first CDR for the original call. This CDR will have the origTerminationOnBehalfOf and destTerminationOnBehalfOf fields equal to 16 (Pickup), which indicates that the call terminated on behalf of the pickup feature.

The second CDR represents the final call after it was picked up. This CDR will have the lastRedirectOnBehalfOf and the joinOnBehalfOf fields set to 16 (Pickup), which indicates that the system joined the call on behalf of the Pickup feature. The lastRedirectReason contains the redirect reason of 5 (Pickup).

Auto Pickup CDRs look the same for all types of auto pickup: Auto Pickup, Auto Group Pickup, and Auto Other Pickup.

Auto Pickup CDR Example

1. A call comes in from the PSTN to extension 2001; 2001 and 2002 reside in the same pickup group.
2. Extension 2002 picks up the call that is ringing on 2001.
3. The call automatically connects between the PSTN caller and extension 2002.

Call ID	Orig Cause	Calling Party	Dest Cause	Original Called Party	Final Called Party	Last Redirect Party	Orig Termination On BehalfOf	Dest Termination On BehalfOf	Last Redirect On BehalfOf	Last Redirect Reason	Join On BehalfOf
11	126	9728131234	126	2001	2001	2001	16	16	0	0	0
11	0	9728131234	16	2002	2002	2001	16	16	16	5	16

Transferred Calls

A single CDR cannot show all the data that is necessary for a call transfer because it is too complex. Each time that a call is transferred, the Cisco Unified Communications Manager terminates the CDR for that call and initiates a new CDR.

Calls that are transferred have multiple CDRs logged for them, as follows:

1. Original call from party A to party B.
2. Call from the transferring party (party A or B) to the transfer destination (party C).
3. Call from the transferred party (party A or B) to the destination (party C).

The first CDR represents the original placed call. The second CDR represents the setup call (consultative/announcement) that is used to initiate the transfer. The third CDR represents the transferred call itself. The first two CDRs have the origCause_value and destCause_value set to Split (126).

They also have the origCallTerminationOnBehalfOf and destCallTerminationOnBehalfOf fields set to Transfer (10) to indicate that these calls were involved in a transfer. The transferred leg of the call has the joinOnBehalfOf field set to Transfer (10) to indicate this call resulted from a transfer. Therefore, all legs of the transfer can be tied back to a single call.

Transferred Calls CDR Examples

The following examples which are not an exhaustive set, illustrate the records that would get generated under the stated circumstances. This example should help clarify what records get generated on transferred calls.

Example 1

A calls B, A transfers B to C. The following three calls get logged:

1. Call from A to B
2. Call from A to C
3. Call from B to C

If the call was a blind transfer, the call from A to C will have a duration of zero seconds. If the call was a consultation transfer, all calls will have non-zero durations. Original Called Party and Call Party Number fields register the same.

Example 2

A calls B; B transfers A to C. The following three calls get logged:

1. Call from A to B
2. Call from B to C
3. Call from A to C

If the call was a blind transfer, the call from B to C will have a duration of zero seconds. If the call was a consultation transfer, all calls will have non-zero durations. Original Called Party and Call Party Number fields register the same.

Example 3

A calls B, B transfers A to C on a blind transfer. C gets Call Forwarded on No Answer to D. The following calls get logged:

1. Call from A to B
2. Call from B to C
3. Call from A to D

Because the call was a blind transfer, the call from B to C has a duration of zero seconds. The call from A to D will have the Original Called Party field set to “C”, and the Called Party Number field gets set to “D”.

Transfer Without Consultation

The process of transferring a call, without consultation, involves the creation of three CDRs. The first CDR reflects the call between the original two parties (A and B), the second CDR represents the (zero length) call between the transferring party (A) and the new party (C), and the final CDR reflects the call between B and C.

No CDR reflects the time that a call is on hold. If a call is through a PSTN gateway, the call accrues charges that are not reflected in the CDRs while the call is on hold.

Transfer Without Consultation CDR Examples

The following table contains three examples:

- A—Call from extension 2001 to a PSTN number sustains talking for 120 seconds.
- B—Extension 2001 initiates a transfer without consultation (duration is zero) to extension 2002.
- C—Extension 2001 completes the transfer, dropping out of the call, and leaving a call between the other two parties.

	Calling Party	Calling Partition	Calling Leg	Original Called Party	Original Called Partition	Called Leg	Orig Cause	Dest Cause	OrigCall Term On BehalfOf	DestCall Term On BehalfOf	Join On BehalfOf	Duration
A	2001	ACNTS	101	3071111	PSTN	102	126	126	10	10	0	120
B	2001	ACNTS	103	2002	ACNTS	104	126	126	10	10	0	0
C	3071111	PSTN	102	2002	ACNTS	104	0	16	0	0	10	350

Transfer with Consultation

Transfer with Consultation essentially acts identical to Transfer Without Consultation, except the duration of the middle call is not zero.

As with a Transfer Without Consultation, Cisco Unified Communications Manager creates three CDRs. The first CDR reflects the call between the original two parties (A and B), the second CDR represents the consultation call between the transferring party (A) and the new party (C), and the final CDR reflects the call between B and C.

Transfer with Consultation CDR Examples

The following table contains three examples:

- A—Call from extension 2001 to a PSTN number sustains talking for 120 seconds.
- B—Extension 2001 places the PSTN call on hold and calls extension 2002, talking for 30 seconds.
- C—Extension 2001 completes the transfer, dropping out of the call, leaving a call between the other two parties.

	Calling Party	Calling Partition	Calling Leg	Original Called Party	Original Called Partition	Called Leg	Orig Cause	Dest Cause	OrigCall Term On BehalfOf	DestCall Term On BehalfOf	Join On BehalfOf	Duration
A	2001	ACNTS	101	3071111	PSTN	102	126	126	10	10	0	120
B	2001	ACNTS	103	2002	ACNTS	104	126	126	10	10	0	30
C	3071111	PSTN	102	2002	ACNTS	104	0	16	0	0	10	350

Conference Calls

Three major operational factors exist for conference call CDRs:

1. When the conference decreases to two parties, the two parties connect directly and release the conference resource. This change generates an additional CDR for the call between the last two parties in the conference call.

For example, if four people are connected in a conference call (Amy, Dustin, Spencer, Ethan), when Ethan hangs up, three people remain in the conference call that is connected to the conference bridge (Amy, Dustin, Spencer). When Spencer hangs up, only two people remain in the conference call (Amy and Dustin). The system joins Amy and Dustin directly, and the conference resource gets released. Directly joining Amy and Dustin creates an additional CDR between the last two parties in the conference.

2. The system adds the conference controller information to the comment field in the CDR. This information identifies the conference controller. No need now exists to examine the consultation call to determine who is the conference controller. The following example shows this information:

Comment field = "ConfControllerDn=1000;ConfControllerDeviceName=SEP0003E333FEBD"

- The conference controller DN + conference controller device name uniquely identify the conference controller. A need for the device name exists in the case of shared lines.
- If the call is involved in multiple conference calls, the comment field contains multiple conference controller information. This situation may occur when the conference goes down to two parties, and one of these parties starts another conference. If this is the case, the last conference controller information in the comment field identifies the conference controller.

3. The party that added the participant, known as the requestor party, appears in the CDR comment field. The tags for the requestor information include ConfRequestorDn and ConfRequestorDeviceName. The party that requested to remove a participant, known as the drop requestor, appears in the CDR comment field. The tags for the drop requestor information include DropConfRequestorDn and DropConRequestorDeviceName.

Calls that are part of a conference have multiple records that are logged for them. The number of CDRs that are generated depends on the number of parties in the conference. One CDR exists for each party in the conference, one CDR for the original placed call, and one CDR for each setup call that is used to join other parties to the conference. Therefore, for a three-party ad hoc conference, six CDRs exist:

- One CDR for the original call
- Three CDRs for the parties that are connected to the conference
- One CDR for each setup call
- One CDR for the final two parties in the conference

You can associate the setup calls with the correct call leg in the conference by examining the calling leg ID and the called leg ID.

The conference bridge device holds special significance to the Cisco Unified Communications Manager. Calls to the conference bridge appear as calls to the conference bridge device. A special number in the form “b0019901001” shows the conference bridge port. All calls get shown “into” the conference bridge, regardless of the actual direction. You can determine the original direction of each call by examining the setup call CDRs.

The call legs that are connected to the conference have the following values for these fields:

- finalCalledPartyNumber—Represents a conference bridge “b0019901001”
- origCalledPartyRedirectOnBehalfOf—Set to Conference (4)
- lastRedirectRedirectOnBehalfOf—Set to Conference (4)
- joinOnBehalfOf—Set to Conference (4)
- comment—Identifies the conference controller

The original placed call and all setup calls that were used to join parties to the conference have the following values for the fields:

- origCallTerminationOnBehalfOf—Set to Conference (4).
- destCallTerminationOnBehalfOf—Set to Conference (4).

Conference Calls CDR Examples

The following tables contain these examples:

- Call from 2001 to 2309.
- After 60 seconds, user 2001 presses the “conference” key on the Cisco Unified IP Phone and dials the PSTN number “3071111.”
- 3071111 answers and talks for 20 seconds; then, 2001 presses the conference key to complete the conference.
- The conference talks for 360 seconds.
- Each call leg shows as a call into the conference bridge. The call appears as a call *into* the bridge, regardless of the actual direction of the call.

- 3071111 hangs up and leaves 2001 and 2309 in the conference. Because only two participants remain in the conference, the conference features directly join the two, and they talk for another 55 seconds.

Calling Party	Calling Partition	Calling Leg	Original Called Party	Original Called Partition	Called Leg	Final Called Party	Final Called Partition	Last Redirect Party	Last Redirect Reason	Orig Conversation Id
2001	ACNTS	101	2309	MKTG	102	2309	MKTG	2001	0	0
2001	ACNTS	101	2309	MKTG	115	b0029901001		b0029901001	0	1
2309	ACNTS	101	b0029901001		116	b0029901001		b0029901001	0	1
3071111	PSTN	101	b0029901001		117	b0029901001		b0029901001	0	1
2001	ACNTS	105	3071111	PSTN	106	3071111	PSTN	3071111	0	0
2001	ACNTS	101	2309	MKTG	102	2309	MKTG	b0029901001	98	0v

OrigCall Termination OnBehalfOf	DestCall Termination OnBehalfOf	Original CalledParty Redirect OnBehalfOf	Last Redirect OnBehalfOf	Join OnBehalfOf	Duration	Comment
4	4	0	0	0	60	
12	0	4	4	4	360	ConfControllerDn=2001;ConfController DeviceName=SEP0003E333FE8D
12	0	4	4	4	360	ConfControllerDn=2001;ConfController DeviceName=SEP0003E333FE8D
4	4	4	4	4	360	ConfControllerDn=2001;ConfController DeviceName=SEP0003E333FE8D
4	4	0	0	0	20	
12	42	0	4	4	55	ConfControllerDn=2001;ConfController DeviceName=SEP0003E333FE8D

Meet-Me Conferences

A meet-me conference occurs when several parties individually dial into a conference bridge at a predetermined time.

The Cisco Secure Conference feature uses the existing callSecuredStatus field to display the highest security status that a call reaches. For meet-me conferences, the system clears calls that try to join the conference but do not meet the security level of the meet-me conference with a terminate cause = 58 (Bearer capability not presently available).

Meet-Me Conference CDR Examples

The following table contains an example CDR for the following scenario. 5001 specifies the dial-in number. The conference bridge device signifies special significance to the Cisco Unified Communications Manager, and calls to the conference bridge appear as forwarded calls; that is, User A phones the predetermined number (5001), and the call gets forwarded to a conference bridge port. The conference bridge port appears with a special number of the form “b0019901001.”

- User A (2001) calls into a meet-me conference bridge with the phone number 5001.
- User B (2002) calls into a meet-me conference bridge with the phone number 5001.
- User C (2003) calls into a meet-me conference bridge with the phone number 5001.

	Calling Party	Calling Partition	Original Called Party	Original Called Partition	Final Called Party	Final Called Partition	Last Redirect Party	Last Redirect Partition	Duration
A	2001	Accounts	5001		b0019901001		b0019901001		70
B	2002	Accounts	5001		b0019901001		b0019901001		65
C	2003	Accounts	5001		b0019901001		b0019901001		80

Ad Hoc Conference Linking

The advanced ad hoc conference linking feature allows you to link multiple ad hoc conferences together by adding an ad hoc conference to another ad hoc conference as if it were an individual participant. You can also use the methods that are available for adding individual participants to an ad hoc conference to add another conference to an ad hoc conference.

CDRs that the advanced ad hoc conference linking feature generates include a field called `OrigConversationId`. This field associates the conference bridges that are involved in a linked conference. The `Comment` field of the CDR adds the `ConfRequestorDN` and `ConfRequestorDeviceName` tags to indicate add/drop of participants of the conference by a non-controller of the conference.

Two types of conference linking exist:

- **Linear**—No more than two ad hoc conferences can link directly to any participating conference.
- **Nonlinear**—Three or more ad hoc conferences that link directly to another conference. The system does not permit this type of linking by default because potentially negative impact on conference resources exists.

Linear Ad Hoc Conference Linking Using Join CDR Example

The following table contains example CDRs for this scenario:

- Alice (1000) calls Bob (1001). This is an original call.
- Bob (1001) conferences in Carol (1002) This is a consultation call.
- Dave (1003) calls Carol (1002). This is an original call.
- Dave (1003) conferences in Ed (1004) This is a consultation call.
- Two separate conferences are created. Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.
- Carol (1002) joins the two conferences through a conference bridge (b002990122). At this point CDR5 is generated.
- Dave (1003) joins the two conferences through a conference bridge (b002990122). At this point CDR6 is generated.
- Ed (1004) leaves the conference. CDR7 is generated.
- Dave (b002990122) leaves the conference. CDR8 is generated.
- Alice (1000) leaves the conference. CDR9 is generated.
- Bob (1001) leaves the conference. CDR10 is generated.

- Carol (1002) leaves the conference. CDR11 is generated.

Calling Party Number	globalCallID-callid	Original Leg Call Identifier	Dest Leg Call Identifier	Original Called Party Number	Final Called Party Number	Last RedirectDn	OrigCall Termination OnBehalfOf
1000 (CDR1)	1	11	12	1001	1001	1001	4
1001 (CDR2)	2	13	14	1002	1002	1002	4
1003 (CDR3)	3	21	22	1002	1002	1002	4
1003 (CDR4)	4	23	24	1004	1004	1004	4
1002 (CDR5)	3	22	25	b0029901222	b0029901222	1003	4
1003 (CDR6)	3	21	26	b0029901222	b0029901222	1003	0
1004 (CDR7)	3	24	27	b0029901222	b0029901222	1003	0
b0029901222 (CDR8)	1	25	28	b0029901001	b0029901001	10020	0
1000 (CDR9)	1	11	15	b0029901001	b0029901001	1001	0
1001 (CDR10)	1	12	16	b0029901001	b0029901001	1001	0
1002 (CDR11)	1	14	17	b0029901001	b0029901001	1001	0

This is a continuation of the previous table.

Calling Party Number	DestCall Termination OnBehalfOf	LastRedirect Redirect Reason	LastRedirect Redirect OnBehalfOf	Original ConversationID	Destination Conversation ID	Comment
1000 (CDR1)	4	0	0	0	0	
1001 (CDR2)	4	0	0	0	0	
1003 (CDR3)	4	0	0	0	0	
1003 (CDR4)	4	0	0	0	0	

Calling Party Number	DestCall Termination OnBehalfOf	LastRedirect Redirect Reason	LastRedirect Redirect OnBehalfOf	Original ConversationID	Destination Conversation ID	Comment
1002 (CDR5)	4	98	4	0	2222	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1
1003 (CDR6)	0	98	4	0	2222	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1
1004 (CDR7)	0	98	4	0	2222	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1
B0029901222 (CDR8)	0	98	4	2222	1111	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1
1000 (CDR9)	0	98	4			
1001 (CDR10)	0	98	4			
1002 (CDR11)	0	98	4			

Precedence Calls (MLPP)

Precedence calls take place the same as other calls except the precedence level fields get set in the CDR. Also, when a higher level precedence call preempts a call, the cause codes indicate the reason for the preemption.

Precedence Calls CDR Example

The following table contains an example CDR for this scenario:

- User A (2001) calls another IP phone by dialing a precedence pattern (precedence level 2).
- User A (2001) calls another IP phone by dialing a precedence pattern (precedence level 3).
- User A receives a higher level precedence call from another network (precedence level 1).
- The higher precedence level call preempts the first call.

Calling Party	Calling Partition	Origin Precedence Level	Original Called Party	Original Called Partition	Dest Precedence Level	Orig Cause	Dest Cause
2001	CMD	2	826001	FIRE	2	0	16
2001	CMD	3	836001	FIRE	3	0	16
9728552001	GEN	1	6001	FIRE	1	16	0
2001	CMD	2	826001	FIRE	2	0	9
9728552001	GEN	1	826001	FIRE	1	0	16

Malicious Calls

When a call gets identified as a malicious call (button press), the local Cisco Unified Communications Manager network flags the call. The Comment field flags the malicious call.

Malicious Calls CDR Example

The following table contains an example CDR of a customer call that gets marked as malicious.

Calling Party	Calling Partition	Original Called Party	Original Called Partition	Orig Cause	Dest Cause	Comment
9728552001	CUST	5555	ACNTS	0	16	"callFlag=MALICIOUS"

Conference Drop Any Party

The Conference Drop Any Party feature terminates calls that look the same as other calls except for a new cause code. The cause code identifies calls that get terminated by this feature.

Conference Drop Any Party CDR Example

The following table contains an example CDR for a call that was connected to a conference and dropped by this feature.

Calling Party	Calling Partition	Original Called Party	Orig Cause	Original Called Partition	Called Leg	Dest Cause	Final Called Party	Final Called Partition	Last Redirect Party
2001	ACNTS	2309	0	MKTG	102	16	2309	MKTG	2001
2001	ACNTS	2309	16	MKTG	115	0	b0029901001		b0029901001
2309	ACNTS	b0029901001	0		116	128	b0029901001		b0029901001
3071111	PSTN	b0029901001	16		117	0	b0029901001		b0029901001
2001	ACNTS	2309	16	PSTN	106	0	3071111	PSTN	3071111

Orig Conversation ID	OrigCall Termination OnBehalfOf	DestCall Termination OnBehalfOf	OriginalCalled Pty Redirect OnBehalfOf	LastRedirect Redirect OnBehalfOf	Join OnBehalfOf	Duration
0	4	4	0	0	0	60
1	12	0	4	4	4	360
1	13	0	4	4	4	200
1	4	4	4	4	4	360
0	4	4	0	0	0	20

Immediate Divert (to Voicemail)

CDRs for Immediate Divert calls take place the same as forwarded calls except values exist for **origCalledPartyRedirectOnBehalfOf** and the **lastRedirectRedirectOnBehalfOf** fields.

Immediate Divert CDR Example

The following table contains an example CDR for this scenario:

Calling Party	Calling Partition	Original Called Party	Original Called Partition	Final Called Party	Final Called Partition	Last Redirect Party	Last Redirect Partition	Duration	OrigCalled Party Redirected OnBehalfOf	Last Redirect Redirect OnBehalfOf
02920262227		2001	ACNTS	2309	MKTG	2001	ACNTS	120	5	5
02920262227		2001	ACNTS	6000	VMAIL	2309	MKTG	60	5	5

Video Calls

The following table contains an example CDR for a video call for this scenario:

- Calling party 51234 calls the called party 57890.
- 100 = H.261
- 187962284 = 172.19.52.11
- 288625580 = 172.19.52.17
- 320 - 320

Video Calls CDR Example

- 2 = QCIF

Calling Party	Calling Partition	Calling Leg	Original Called Party	Original Called Partition	Called Leg	Orig VideoCap_ Codec	Orig VideoCap_ Bandwidth	Orig VideoCap_ Resolution	OrigVideo Transport Address_IP	OrigVideo Transport Address_Port
51234	CISCO	101	57890	CISCO	102	100	320	2	187962284	49208

Dest VideoCap_Codec	Dest VideoCap_Bandwidth	Dest VideoCap_Resolution	DestVideo Transport Address_IP	DestVideo Transport Address_Port
100	320	2	288625580	49254

Call Monitoring and Call Recording

The system generates CDRs for the Call Monitoring and Call Recording features by using existing CDR fields.

For both monitoring and recording, the monitoring calls and recording calls have one-way media. The media fields stay empty for one side of the call for one-way media CDRs.

The **destConversationID** field of the Call Monitoring CDR matches the agent call leg identifier in the CDR of the call that is monitored and links together the Call Monitoring CDR and the CDR of the monitored call.

The **origConversationID** field of the two Call Recording CDRs matches the agent call leg identifier in the Recording Call CDR and links together the Call Recording CDR and the CDR of the recorded call.

Call Monitoring CDR Examples

The following table contains example CDRs for a monitor call for the following scenarios:

- Example A—Customer 9728134987 calls the agent 30000, and the agent answers. Supervisor 40003 monitors the call. The **destConversationID** from the monitoring call matches the **destLegCallIdentifier** of the monitored call.
- Example B—Agent 30000 calls the customer 9728134987, and the customer answers. The supervisor 40003 monitors the call. The **destConversationID** from the monitoring call matches the **origLegCallIdentifier** of the monitored call.

	Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Last RedirectDn	Orig Cause Values
A—Monitored Call	7	16777230	16777231	9728134987	30000	30000	30000	16
A—Monitoring Call	10	16777232	16777235	4003	b001501001	b001501001	b001501001	0
B—Monitored Call	71	16777299	16777300	30000	9728134987	9728134987	9728134987	16
B—Monitoring Call	101	16777932	16777935	40003	b001501002	b001501002	b001501002	0

Dest Cause Value	Orig Called Party Redirect Reason	last Redirect Redirect Reason	Orig Called Party Redirect OnBehalfOf	last Redirect Redirect OnBehalfOf	dest Conversation ID
0	0	0			0
0	370	370	28	28	16777231

Dest Cause Value	Orig Called Party Redirect Reason	last Redirect Redirect Reason	Orig Called Party Redirect OnBehalfOf	last Redirect Redirect OnBehalfOf	dest Conversation ID
0	0	0			0
0	370	370	28	28	16777299

Call Recording CDR Examples

The following table contains example CDRs for recording calls for the following scenarios:

- Example A—Customer 9728134987 calls the agent 30000, and the agent answers. The recording feature creates two recording calls to the recording device. This action results in two additional CDRs: one for the agent voice and another for the customer voice. The **origConversationID** from the recording CDRs match the **destLegCallIdentifier** of the recorded CDR. In this example, the customer hangs up.
- Example B—Agent 30000 calls the customer 9728134987, and the customer answers. The recording feature creates two recording calls to the recording device. This action results in two additional CDRs: one for the agent voice and another for the customer voice. The **origConversationID** from the recording CDRs matches the **origLegCallIdentifier** of the recorded CDR. In this example, the agent hangs up.

	Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Last RedirectDn	Orig Cause Values
A—Recorded Call	7	16777110	16777111	9728134987	30000	30000	30000	16
A—Recording Call CDR1	10	16777120	16777121	30000	90000	90000	90000	0
A—Recording Call CDR2	11	16777122	16777123	30000	90000	90000	90000	0
B—Recorded Call	71	16777113	16777114	30000	9728134987	9728134987	9728134987	16
B—Recording Call CDR1	100	16777220	16777221	30000	90000	90000	90000	16
B—Recording Call CDR2	110	16777222	16777223	30000	90000	90000	90000	16

Dest Cause Value	Orig Called Party Redirect Reason	last Redirect Redirect Reason	Orig Called Party Redirect OnBehalfOf	last Redirect Redirect OnBehalfOf	Orig Conversation ID
0	0	0			0
0	354	354	27	27	16777111
0	354	354	27	27	16777111
0	0	0			0

Dest Cause Value	Orig Called Party Redirect Reason	last Redirect Redirect Reason	Orig Called Party Redirect OnBehalfOf	last Redirect Redirect OnBehalfOf	Orig Conversation ID
0	354	354	27	27	16777113
0	354	354	27	27	16777113

AAC and iLBC Calls

The Advanced Audio Codec (AAC) specifies a bandwidth voice codec that provides improved voice fidelity. This codec also provides equal or improved sound quality over older codecs with lower bit rates. AAC includes the following features:

- For AAC calls, the codec specifies Media_Payload_AAC 42.
- The maxFramesPerPacket specifies 1.
- Internet Low Bit Rate Codec (iLBC) enables graceful speech quality degradation in a lossy network where frames get lost. For iLBC calls, the codec specifies Media_Payload_ILBC = 86.

The system adds an audio bandwidth field to the CDR for AAC and iLBC calls.

Field Names	Definitions
origMediaCap_bandwidth	This integer field contains the audio bandwidth.
destMediaCap_bandwidth	This integer field contains the audio bandwidth.

The system populates the bandwidth fields based on the following table.

Codec	Bandwidth
G711Alaw64k	64
G711Alaw56k	56
G711Ulaw64k	64
G711Ulaw56k	56
G722_64k	64
G722_56k	56
G722_48k	48
G7231	7
G728	16
G729	8
G729AnnexA	8
G729AnnexB	8
G729AnnexAwAnnexB	8
XV150_MR_729A	8

Call Types

NSE_VBD_729A	8
GSM_Full_Rate	13
GSM-Half_Rate	7
GSM_Enhanced_Full_Rate	13
Wide_Band_256k	256
Is11172AudioCap	0
Is13818AudioCap	0
Data64	64
Data56	56
GSM	13
G7221_32K	32
G7221_24K	24
AAC	256
ILBC	15k or 13k

AAC Calls CDR Example

The following table contains an example CDR for a call with AAC codec.

Calling party 51234 calls the called party 57890.

Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Last RedirectDn	Orig Cause Values	Dest Cause Value	Orig MediaCap Payload Capability
121	101	102	51234	57890	57890	57890	0	16	42

Orig MediaCap Bandwidth	Dest MediaCap Payload Capability	Dest MediaCap Bandwidth
256	42	256

iLBC Calls CDR Example

The following table contains an example CDR for a call with iLBC codec.

Calling party 51234 calls the called party 57890.

Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Last RedirectDn	Orig Cause Values	Dest Cause Value	Orig MediaCap Payload Capability
121	101	102	51234	57890	57890	57890	0	16	86

Orig MediaCap Bandwidth	Dest MediaCap Payload Capability	Dest MediaCap Bandwidth
15	86	15

Mobility

The system supports the following Mobility features:

- Hand-In
- Hand-Out
- Cell Pickup
- Interactive Voice Response (IVR)

The system generates a standard CDR for every call that uses the Mobility feature. When a call is split, redirected, or joined by the Mobility feature, the corresponding OnBehalfOf code represents a new value that is designated to the Mobility feature. The CAR Loader checks the following OnBehalfOf fields:

- origCallTerminationOnBehalfOf
- destCallTerminationOnBehalfOf
- origCalledPartyRedirectOnBehalfOf
- lastRedirectRedirectOnBehalfOf
- joinOnBehalfOf

If any of the preceding OnBehalfOf codes has the Mobility code of 24, the CDR has the Mobility call type that is determined by the CAR Loader, four redirectResource codes apply for Mobility features, including Hand-In (code 303), Hand-Out (code 319), Cell Pickup (code 335), and IVR (code 399).

Mobility CDR Examples

A dual-mode phone with Enterprise number of 22285 and a cell number of 9728324124 exists. The following table contains example CDRs for mobility calls that use the dual-mode phone in the following scenarios:

- Example A—Mobility Follow Me: 22202 calls 22285, and both 22285 and 9728324124 ring. The cell phone answers the call. The parties talk for 80 seconds.
- Example B—Mobility HandIn: A call goes to the cell phone. The parties talk for 39 seconds; the dual-mode phone gets carried into the Enterprise network, and the call gets switched from the cell network to the Enterprise network. The call lasts for another 15 seconds.
- Example C—Mobility HandOut: The handout number (H-number) specifies 555123. A call gets made to the Enterprise number 22285. They talk for 21 seconds; the dual-mode phone then gets carried out of the Enterprise network and into the cell network. The call gets switched from the Enterprise network to the cell network (9728324124). The call lasts another 39 seconds.
- Example D—Mobility Cell Pickup: A call gets made and established to 22285. They talk for 40 seconds; then, Cell Pickup gets invoked. The call gets switched from the Enterprise phone to the cell phone. The call continues for another 111 seconds.

Call Types

- Example E—Mobility IVR: A call comes into the Cisco Unified Communications Manager with a string (DID#RemoteDest#TargetNum#). The call gets redirected to the TargetNum. 9728131234 calls into an IVR, and data gets collected. The target destination specifies 812345 and the call gets redirected to 812345. The call connects for 60 seconds.

	Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Last RedirectDn	Orig Cause Values
A—Follow Me Call CDR	861	22481077	22481078	22202	22285	9728324124	22285	16
B—Mobility HandIn - Call to cell #9728324214 CDR	864	22481083	22481085	22202	919728324124	919728324124	9199728324124	393216
B—HandIn Call to the Enterprise CDR	864	22481083	22481087	22202	22285	22285	22285	0
C—HandOut Enterprise Call to 22285 CDR	964	22481093	22481094	22202	22285	22285	22285	393216
C—HandOut Server Call from Cell Phone to H-Number CDR	965	22481095	22481096	9728324124	555123	555123	555123	393216
C—HandOut Call CDR	964	22481093	22481095	22202	9728324124	9728324124	9728324124	0
D—Mobility Cell Pickup Enterprise Call to 22285 CDR	555	22481111	22481112	22202	22285	22285	22285	393216
D—Mobility Cell Pickup Server Call to Cell Phone CDR	566	22481222	22481223		9728324124	9728324124	9728324124	0
D—Mobility Final Handout Call CDR	964	22481111	22481222	22202	9728324124	9728324124	0728324124	0
E—Mobility IVR CDR	12345	16677100	16677102	9728131234	8005559876	812345	8005559876	0

Dest Cause Value	Last Redirect Reason	Last Redirect OnBehalfOf	Orig Termination OnBehalfOf	Dest Termination OnBehalfOf	Joint OnBehalfOf	Duration
0	0	0			0	80
393216	0	0	24	24	0	39
16	303	24	24	12	24	15

Dest Cause Value	Last Redirect Reason	Last Redirect OnBehalOf	Orig Termination OnBehalOf	Dest Termination OnBehalOf	Joint OnBehalOf	Duration
393216	0	0	24	24	0	21
393216	0	0	24	24	0	0
16	319	24	24	12	24	39
393216	0	0	24	24	0	40
0	0	0	24	24	0	0
16	335	24	24	12	24	111
16	399	24	0	0	N/A	60

Intercom

The Intercom feature provides one-way audio; therefore, the CDR reflects one-way audio. For talk-back intercom, two-way audio exists, and the CDR reflects two-way audio.

The Intercom feature requires a partition (intercom partition) and existing CDR partition fields get used to identify intercom calls.

Intercom CDR Example

Phone 20000 invokes the intercom in the following scenarios:

- Example A—Whisper Intercom: The configured intercom partition specifies “intercom.”
- Example B—Talk-Back Intercom: Phone 20000 presses the Intercom button. 20001 invokes talk-back and talks to 20000. The configured intercom partition specifies “intercom.”

	Global Call ID callid	Orig Leg Call Identifier	Dest Leg Call Identifier	Calling Party Number	Orig Called Party Number	Final Called Party Number	Orig Cause Values	Dest Cause Value
A—Whisper Intercom CDR	1111000	21822467	21822468	20000	20001	20001	16	0
B—Talk-Back Intercom CDR	1111000	21822469	21822470	20000	20001	20001	16	0T

Orig Media Transport Address IP	Orig Media Transport Address Port	Dest Media Transport Address IP	Dest Media Transport Address Port	Orig Called Party Number Partition	Calling Party Number Partition	Final Called Party Number Partition	Duration
0	0	-47446006	28480	Intercom	Intercom	Intercom	5
-131332086	29458	-47446006	29164	Intercom	Intercom	Intercom	5

Original Calling Party on Transfer

This feature changes the calling party number for a consultation call of a Cisco Unity or Cisco Unity Connection-initiated call transfer. The CDR of the consultation call shows that the original caller calls the transfer destination, not that the Cisco Unity or Cisco Unity Connection port calls the transfer destination.

You must configure this feature in the service parameters in Cisco Unified Communications Manager. See additional information at [“Configuring CDR Service Parameters” section on page 2-2](#).

Original Calling Party on Transfer CDR Example

4001 calls 4002. 4002 transfers the call to 4003. The system generates three CDRs:

- The call between the original parties (4001 to 4002).
- The consultation call between the transferring party (4002) to the final transfer destination (4003).
- The call from the transferred party (4001) to the transfer destination (4003).

Call	CallingPartyNumber	originalCalledPartyNumber
1	4001	4002
2	4002	4003
3	4001	4003



Note

No originalCallingParty field exists in the CDR.

Interpreting Cisco Personal Assistant Data in the CDRs

The Cisco Personal Assistant application can selectively handle incoming calls and assist with outgoing calls. This section provides a brief overview of personal assistant and describes the personal assistant call types with example CDR scenarios.

Personal assistant provides the following features:

- **Rule-Based Call Routing**—Personal assistant can forward and screen incoming calls based on rules that users devise. Personal assistant can handle incoming calls according to caller ID, date and time of day, or the user meeting status based on the user calendar (such as office hours, meeting schedules, vacations, holidays, and so forth). Personal assistant can also selectively route calls to other telephone numbers.

Thus, personal assistant can route an incoming call to a desk phone, to a cell phone, home phone, or other phone, based on the call routing rules that users create. An incoming call can even generate an e-mail-based page.

- **Speech-Enabled Directory Dialing**—Personal assistant allows users to dial a phone number by speaking the name of the called person. Personal assistant then obtains the telephone number of that person from the corporate directory or personal address book.
- **Speech-Enabled Voice-Mail Browsing**—Users can use voice commands to browse, listen to, and delete voice-mail messages.
- **Speech-Enabled Simple Ad Hoc Conferencing**—Users can initiate conference calls by telling personal assistant to set up a conference call with the desired participants.

Personal assistant provides the following call types:

- [Personal Assistant Direct Call, page 10-31](#)
- [Personal Assistant Interceptor Going to Media Port and Transferring the Call, page 10-31](#)
- [Personal Assistant Interceptor Going Directly to Destination, page 10-32](#)
- [Personal Assistant Interceptor Going to Multiple Destinations, page 10-33](#)
- [Personal Assistant Conferencing, page 10-36](#)

Personal Assistant Direct Call

A personal assistant direct call acts similar to the Transfer without Consultation call type. See the [“Transfer Without Consultation” section on page 10-14](#).

Personal Assistant Direct Call CDR Example

The following table contains an example CDR for this scenario:

- User A (2101) calls Personal Assistant route point (2000) and says “call User B.”
- The call transfers to User B (2105). In this case, User B did not configure any rules.



Note

In the following example, 2000 represents the main personal assistant route point to reach personal assistant, 21XX represents the personal assistant interceptor route point, and 2001 - 2004 represents the media port.

In all cases, 2101 specifies the calling number.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2101	16777217	PAManaged	16777219	2004	Phones	2000	1023970182	2000	Phones	34
2004	16777221	Phones	16777222	2105	PAManaged	2105	1023970182	2105	PAManaged	0
2101	16777217	PAManaged	16777222	2105	PAManaged	2105	1023970191	2105	PAManaged	5

Personal Assistant Interceptor Going to Media Port and Transferring the Call

This scenario acts similar to Transfer without Consultation and Forwarded Calls actions. See the sections on [“Transfer Without Consultation” section on page 10-14](#) and [“Forwarded or Redirected Calls” section on page 10-11](#).

Personal Assistant Interceptor Going to Media Port and Transferring the Call CDR Example

The following table contains an example CDR for this scenario:

- User A (2101) dials 2105.
- The personal assistant interceptor (21XX) picks up the call and redirects it to a media port (2002).
- Personal assistant processes the call according to the rules (if any) and transfers the call to the destination (2105), which has not configured any rules.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2002	16777234	Phones	16777285	2105	PAManaged	2105	1023970478	2105	PAManaged	2
2101	16777230	PAManaged	16777232	2002	PA	2105	1023970478	21xx	“ “	9
2105	16777235	PAManaged	16777230	2101	“ “	“ “	1023970483	“ “	“ “	5

Personal Assistant Interceptor Going Directly to Destination

This scenario can have two different cases: with no rules and with rules.

Personal Assistant Going Directly to Destination with No Rules CDR Example

The following table contains an example CDR for this scenario:

- User A (2101) dials 2105.
- The personal assistant interceptor (21XX) picks up the call, processes it according to the rules (if any), and redirects the call to the destination (2105).

The following table contains an example CDR for this scenario:

Calling Party Number	OrigLeg Call Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Number	Final Called Party Number Partition	Original Called Party Number	Original Called Party Number Partition	Last Redirect DN	Last Redirect DN Partition	Duration (secs)
2101	16777240	PAManaged	16777242	2105	PA	2105	1023970710	21XX	“ “	8

Personal Assistant Going Directly to Destination with Rule to Forward Calls to a Different Destination CDR Example

The following table contains an example CDR for this scenario:

- User A (2101) dials 2105.
- The Personal Assistant interceptor (21XX) picks up the call and processes it according to the rules.
- The Personal Assistant interceptor then redirects the call to the final destination (2110). In this case, 2105 configured a rule to forward the call to extension 2110.

Calling Party Number	OrigLeg Call Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Number	Final Called Party Number Partition	Original Called Party Number	Original Called Party Number Partition	Last Redirect DN	Last Redirect DN Partition	Duration (secs)
2101	16777240	PAManaged	16777242	2110	PA	2105	1023970710	21XX	“ “	8

Personal Assistant Interceptor Going to Multiple Destinations

This scenario can have several different cases. In each case, User B (2105) configured a rule to reach him at extension 2110 or 2120. This rule could activate when a caller calls Personal Assistant route point (2000) and says “call User B” (direct case) or when the caller dials User B (2105) directly (interceptor case).

Personal Assistant Interceptor Going to Multiple Destinations CDR Examples

The following sections contain examples of each case. The tables contain example CDRs for each of these scenarios:

- [Personal Assistant Direct Multiple Destinations: 2110 and 2120 \(Call Accepted at First Destination\)](#), page 10-33
- [Personal Assistant Direct Multiple Destinations: 2110 and 2120 \(Call Accepted at Second Destination\)](#), page 10-33
- [Personal Assistant Direct Multiple Destinations: 2110 and 2120 \(Call Accepted at Third Destination\)](#), page 10-34
- [Personal Assistant Intercept Multiple Destinations: 2110 and 2120 \(Call Accepted at First Destination\)](#), page 10-34
- [Personal Assistant Intercept Multiple Destinations: 2110 and 2120 \(Call Accepted at Second Destination\)](#), page 10-35
- [Personal Assistant Intercept Multiple Destinations: 2110 and 2120 \(Call Accepted at Third Destination\)](#), page 10-35

Personal Assistant Direct Multiple Destinations: 2110 and 2120 (Call Accepted at First Destination)

- User A calls personal assistant and says “call User B.”
- User B answers the call at 2110 extension.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2004	16777262	Phones	16777263	2110	PAManaged	2110	1023971303	2110	PAManaged	6
2101	16777258	PAManaged	16777260	2004	Phones	2000	1023971303	2000	Phones	22
2110	16777263	PAManaged	16777258	2101	“ “	“ “	1023971312	“ “	“ “	9

Personal Assistant Direct Multiple Destinations: 2110 and 2120 (Call Accepted at Second Destination)

- User A calls personal assistant and says “call User B.”
- User B answers the call at 2120 extension.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2001	16777269	Phones	16777270	2110	PAManaged	2110	1023971456	2110	PAManaged	0
2001	16777272	Phones	16777273	2120	PAManaged	2120	1023971467	2120	PAManaged	4
2101	16777265	PAManaged	16777267	2001	Phones	2000	1023971467	2000	Phones	37
2120	16777273	PAManaged	16777265	2101	“ “	“ “	1023971474	“ “	“ “	7
2110	16777275	PAManaged	0	“ “	“ “	“ “	1023971476	“ “	“ “	0

Personal Assistant Direct Multiple Destinations: 2110 and 2120 (Call Accepted at Third Destination)

- User A calls personal assistant and says “call User B.”
- User B does not answer at either extension 2110 or 2120.
- Personal Assistant transfers the call to the original destination (2105), and User B then answers at that extension.



Note

2105 (the original destination) represents the third destination in this case.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2002	16777281	Phones	16777282	2110	PAManaged	2110	1023971602	2110	PAManaged	0
2002	16777284	Phones	16777285	2120	PAManaged	2120	1023971615	2120	PAManaged	0
2101	16777277	PAManaged	16777279	2002	Phones	2000	1023971619	2000	Phones	38
2002	16777287	Phones	16777288	2105	PAManaged	2105	1023971619	2105	PAManaged	0
2101	16777277	PAManaged	16777288	2105	PAManaged	2105	1023971627	2105	PAManaged	7
2105	16777289	PAManaged	0	“ “	“ “	“ “	1023971629	“ “	“ “	0

Personal Assistant Intercept Multiple Destinations: 2110 and 2120 (Call Accepted at First Destination)

- User A calls personal assistant and says “call User B.”
- User B answers the call at extension 2110.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2003	16777295	Phones	16777296	2110	PAManaged	2110	1023971740	2110	PAManaged	4

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2101	16777291	PAManaged	16777293	2003	PA	2105	1023971740	21XX	“ “	10
2110	16777296	PAManaged	16777291	2101	“ “	“ “	1023971749	“ “	“ “	9

Personal Assistant Intercept Multiple Destinations: 2110 and 2120 (Call Accepted at Second Destination)

- User A calls personal assistant and says “call User B.”
- User B answers the call at extension 2120.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2004	16777302	Phones	16777303	2110	PAManaged	2110	1023971815	2110	PAManaged	0
2004	16777305	Phones	16777306	2120	PAManaged	2120	1023971824	2120	PAManaged	3
2101	16777298	PAManaged	16777300	2004	PA	2105	1023971824	21XX	“ “	22
2120	16777306	PAManaged	16777298	2101	“ “	“ “	1023971832	“ “	“ “	8

Personal Assistant Intercept Multiple Destinations: 2110 and 2120 (Call Accepted at Third Destination)

- User A calls personal assistant and says “call User B.”
- User B does not answer at either extension 2110 or 2120.
- Personal assistant transfers the call to the original destination (2105), which User B then answers.



Note

2110 (the original destination) represents the third destination in this case.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition	Original Called Party Num	Original Called Party Number Partition	Last Redir DN	Last Redirect DN Partition	Duration (secs)
2001	16777312	Phones	16777313	2110	PAManaged	2110	1023971923	2110	PAManaged	0
2001	16777315	Phones	16777316	2120	PAManaged	2120	1023971936	2120	PAManaged	0
2101	16777308	PAManaged	16777310	2001	PA	2105	1023971940	21XX	“ “	30
2001	16777318	Phones	16777319	2105	PAManaged	2105	1023971940	2105	PAManaged	0
2101	16777308	PAManaged	16777319	2105	PAManaged	2105	1023971953	2105	PAManaged	12

Personal Assistant Conferencing

Personal assistant conferencing acts similar to the ad hoc conferences call type. For more information, see the [“Conference Calls” section on page 10-15](#).

Personal Assistant Conferencing CDR Example

The following table contains an example CDR for this scenario:

- User A calls personal assistant route point (2000) and says “conference User B (2105) and User C (2110).”
- Personal assistant conferences User B and C into User A conference.

Calling Party Num	Orig LegCall Identifier	Calling Party Number Partition	DestLeg Identifier	Final Called Party Num	Final Called Party Number Partition
2003	16777345	Phones	16777346	2105	PAManaged
2101	16777340	PAManaged	16777342	2003	Phones
2003	16777350	Phones	16777351	2002	PAManaged
2003	16777342	Phones	16777347	2110	“ “
2110	16777351	PAManaged	16777352	b00110201001	“ “
2105	16777346	PAManaged	16777349	b00110201001	“ “
2101	16777340	PAManaged	16777348	b00110201001	“ “

This table continues with this additional information.

Original Called Party Number	Original Called Party Number Partition	Last Redirect DN	Last Redirect DN Partition	Duration (seconds)
2105	1023972575	2105	PAManaged	6
2000	1023972576	2003	Phones	62
2110	1023972595	2110	PAManaged	39
b00110201001	1023972601	b00110201001	“ “	25
b00110201001	1023972609	b00110201001	“ “	14
b00110201001	1023972610	b00110201001	“ “	34
b00110201001	1023972610	b00110201001	“ “	34

Call Scenarios

Each normal call between two parties logs one CDR. Each CDR contains all fields that are identified in preceding scenarios, but some fields may not be used. If a field is not used, it stays blank if it is an ASCII string field or shows “0” if it is a numeric field. When supplementary services are involved in a call, more CDRs may get written.

In addition to the CDR, one CMR per endpoint may get involved in a call. In a normal call between two parties each using an IP phone, two CMRs get written, one for the originator and one for the destination of the call.

This section describes the records that are written for different call types, including all records for each call and important fields that are shown in summary tables for easy viewing and comparison.

- [Normal Calls \(IP Phone to IP Phone\), page 10-38](#)
- [Abandoned Calls, page 10-38](#)
- [Calls With Busy or Bad Destinations \(Unsuccessful Calls\), page 10-40](#)
- [Forwarded Calls, page 10-41](#)
- [Call Pickup, page 10-42](#)
- [Call Pickup, page 10-44](#)
- [Transferred Calls, page 10-45](#)
- [Conference Calls, page 10-48](#)
- [Secure Meet-Me Conference, page 10-50](#)
- [Ad Hoc Conference Linking, page 10-50](#)
- [Call Park, page 10-61](#)
- [Precedence Calls \(MLPP\), page 10-63](#)
- [Malicious Calls, page 10-64](#)
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- [Intercom Calls, page 10-83](#)

Normal Calls (IP Phone to IP Phone)

Normal calls log three records per call; one CDR and two CMRs, one for each endpoint. In the CDR, the “originalCalledPartyNumber” field contains the same Directory Number as the “finalCalledPartyNumber” field.

Examples of Successful Calls

A successful call between two Cisco Unified IP Phones generates a single CDR at the end of the call.

- The caller terminated a 60-second call. Because the calling party hangs up, the orig_CauseValue specifies 16 (Normal Clearing).

Field Names	CDR
globalCallID_callId	1
origLegCallIdentifier	100
destLegCallIdentifier	101
callingPartyNumber	2001
originalCalledPartyNumber	2309
finalCalledPartyNumber	2309
lastRedirectDn	2309
origCause_Value	16
dest_CauseValue	0
duration	60

- The called party clears a 60-second call. Because the called party hangs up, the dest_CauseValue specifies 16 (Normal Clearing).

Field Names	CDR
globalCallID_callId	1
origLegCallIdentifier	100
destLegCallIdentifier	101
callingPartyNumber	2001
originalCalledPartyNumber	2309
finalCalledPartyNumber	2309
lastRedirectDn	2309
origCause_Value	0
dest_CauseValue	16
duration	60

Abandoned Calls

Be aware that the logging of calls with zero duration is optional. Normally these records do not get logged. If logging calls with zero duration is enabled, all calls will generate a CDR.

If the call was abandoned, such as when a phone is taken off hook and placed back on hook, various fields will not contain data. In this case, the **originalCalledPartyNumber**, **finalCalledPartyNumber**, the partitions associated with them, **destIpAddr**, and the **dateTimeConnect** fields stay blank. All calls that were not connected will have a **duration** of zero seconds. When a call is abandoned, the cause code specifies “0”.

If the user dialed a Directory Number and then abandoned the call before it was connected, the **origCalledPartyNumber** and **finalcalledPartyNumber** fields and their associated partitions contain the directory number and partition to which the call would have been extended. The **destIPAddress** field stays blank and the **duration** specifies zero.

Examples of Abandoned Calls

- Extension 2001 goes off hook, then on hook.

Field Names	CDR
globalCallID_callId	1
origLegCallIdentifier	100
destLegCallIdentifier	0
callingPartyNumber	2001
originalCalledPartyNumber	
finalCalledPartyNumber	
lastRedirectDn	
origCause_Value	16
dest_CauseValue	0
duration	0

- Extension 2001 calls 2309, but 2001 hangs up (abandons) the call before it is answered.

Field Names	CDR
globalCallID_callId	2
origLegCallIdentifier	200
destLegCallIdentifier	201
callingPartyNumber	2001
originalCalledPartyNumber	2309
finalCalledPartyNumber	2309
lastRedirectDn	2309
origCause_Value	16
dest_CauseValue	0
duration	0

Calls With Busy or Bad Destinations (Unsuccessful Calls)

These calls will all get logged as a normal call with all relevant fields that contain data. The Calling or Called Party Cause field contains a cause code that indicates why the call was not connected, and the Called Party IP and Date/Time Connect fields stay blank. All unsuccessful calls get logged, even if zero duration calls are not being logged.

Examples of Unsuccessful Calls

- Call to PSTN number, party engaged (cause 17 = user busy)

Field Names	CDR
globalCallID_callId	3
origLegCallIdentifier	300
destLegCallIdentifier	301
callingPartyNumber	2001
originalCalledPartyNumber	9728134987
origCause_Value	0
dest_CauseValue	17
duration	0

- Call to PSTN number, number does not exist (cause 1 = number unavailable)

Field Names	CDR
globalCallID_callId	4
origLegCallIdentifier	302
destLegCallIdentifier	303
callingPartyNumber	2001
originalCalledPartyNumber	9728134987
origCause_Value	1
dest_CauseValue	0
duration	0

- Call to PSTN fails because PSTN trunks are out of order (cause 38 = Network Out Of Order).

Field Names	CDR
globalCallID_callId	5
origLegCallIdentifier	304
destLegCallIdentifier	305
callingPartyNumber	2001
originalCalledPartyNumber	9728134987
origCause_Value	0
dest_CauseValue	38
duration	0

Forwarded Calls

Call Forwarding uses the redirect call primitive to forward the call. Features that use the redirect call primitive will have similar CDRs. The following list gives some of the important CDR fields for forwarded calls.

- The **originalCalledPartyNumber** contains the number of the original called party.
- The **finalCalledPartyNumber** specifies the number that answered the call.
- The **lastRedirectDn** field specifies the number that performed the last redirect.
- The **origCalledPartyRedirectReason** specifies the reason that the call was redirected the first time. For call forwarding, this field can contain (**Call Forward Busy=1, Call Forward No Answer=2, Call Forward All=15**).
- The **lastRedirectRedirectReason** specifies the reason that the call was redirected the last time. For call forwarding, this field can contain (**Call Forward Busy=1, Call Forward No Answer=2, Call Forward All=15**).
- The **origCalledPartyRedirectOnBehalfOf** field identifies which feature redirects the call for the first redirect. For call forwarding, this field specifies 5 (Call Forward).
- The **lastRedirectRedirectOnBehalfOf** field identifies which feature redirects the call for the last redirect. For call forwarding, this field specifies 5 (Call Forward).

Forwarding Examples

- **CFA Example** - Call comes in from the PSTN to extension 2001, the call gets forwarded (CFA) to 2309, where the call is answered, and the call duration is 2 minutes.

Field Names	CDR
globalCallID_callId	12345
origLegCallIdentifier	100
destLegCallIdentifier	102
callingPartyNumber	9728134987
originalCalledPartyNumber	2001
finalCalledPartyNumber	2309
lastRedirectDn	2001
origCause_Value	0
dest_CauseValue	16
origCalledPartyRedirectReason	15
lastRedirectRedirectReason	15
origCalledPartyRedirectOnBehalfOf	5
lastRedirectRedirectOnBehalfOf	5
duration	120

- **Multiple Hop CFA & CFNA Example** - Call comes in from the PSTN to extension 1000, the call gets forwarded (CFA) to 2000; then, the call gets forwarded (CFNA) to voice mail (6000) where the caller leaves a message.

Field Names	CDR
globalCallID_callId	12346
origLegCallIdentifier	102
destLegCallIdentifier	105
callingPartyNumber	9728134987
originalCalledPartyNumber	1000
finalCalledPartyNumber	6000
lastRedirectDn	2000
origCause_Value	0
dest_CauseValue	16
origCalledPartyRedirectReason	15
lastRedirectRedirectReason	2
origCalledPartyRedirectOnBehalfOf	5
lastRedirectRedirectOnBehalfOf	5
duration	15

- **Multiple Hop CFNA & CFB Example** - Call comes in from the PSTN to extension 4444, the call gets forwarded (CFNA) to 5555; then, it gets forwarded (CFB) to 6666 where the call is answered and they talk for 30 seconds.

Field Names	CDR
globalCallID_callId	12347
origLegCallIdentifier	106
destLegCallIdentifier	108
callingPartyNumber	9728134987
originalCalledPartyNumber	4444
finalCalledPartyNumber	6666
lastRedirectDn	5555
origCause_Value	16
dest_CauseValue	0
origCalledPartyRedirectReason	2
lastRedirectRedirectReason	1
origCalledPartyRedirectOnBehalfOf	5
lastRedirectRedirectOnBehalfOf	5
duration	30

Call Pickup

The following two types of call pickup in Cisco Unified Communications Manager exist:

- [Pickup, page 10-43](#)
- [Auto Pickup, page 10-43](#)

The CDRs differ slightly for each type of call pickup.

Pickup

Pickup Call Example

Call comes in from the PSTN to extensions 2000, 2001, and 2002, which are in the same pickup group. Extension 2002 picks up the call that is ringing on 2001. Extension 2002 answers the call, and the call connects between the PSTN caller and extension 2002.

Field Names	Pickup Call CDR
globalCallID_callId	22
callingPartyNumber	9728131234
originalCalledPartyNumber	2001
finalCalledPartyNumber	2002
lastRedirectDn	2001
origCause_Value	0
dest_CauseValue	16
origTerminationOnBehalfOf	16
destTerminationOnBehalfOf	16
lastRedirectOnBehalfOf	16
lastRedirectReason	5
joinOnBehalfOf	16

Auto Pickup

Auto Pickup acts like call pickup with auto answer. It does not require the last answer softkey press. The call automatically connects. Two CDRs get generated for Auto Pickup. These CDR will have the same Call ID.

- The first CDR gets generated for the original call. This CDR will have the **origTerminationOnBehalfOf** and **destTerminationOnBehalfOf** fields equal to 16 (Pickup). This indicates that the call was terminated on behalf of the Pickup feature.
- The second CDR represents the final call after it was picked up. This CDR will have the **lastRedirectOnBehalfOf** and the **joinOnBehalfOf** fields set to 16 (Pickup). This indicates that the call was joined on behalf of the Pickup feature. The **lastRedirectReason** contains the redirect reason of 5 (Pickup).

Auto Pickup CDRs will look the same for all types of auto pickup: Auto Pickup, Auto Group Pickup and Auto Other Pickup.

Auto Pickup Example

- **Auto Pickup Example** - Call from the PSTN to extension 2001. 2001 and 2002 exist in the same pickup group. 2002 picks up the call that is ringing on 2001; the call automatically connects between the PSTN caller and 2002. They talk for 2 minutes.

Field Names	Original Call CDR	Pickup CDR
globalCallID_callId	11	11
origLegCallIdentifier	12345	12345
destLegCallIdentifier	12346	12347
callingPartyNumber	9728134987	9728134987
originalCalledPartyNumber	2001	2002
finalCalledPartyNumber	2001	2002
lastRedirectDn	2001	2001
origCause_Value	393216	16
dest_CauseValue	393216	0
origTerminationOnBehalfOf	16	12
destTerminationOnBehalfOf	16	16
lastRedirectRedirectReason	0	5
lastRedirectRedirectOnBehalfOf	0	16
joinOnBehalfOf	0	16
duration	0	120

Call Pickup

Legacy Call Pickup calls act very similar to forwarded calls. Legacy Call Pickup uses the redirect call control primitive just like call forwarding. The following list gives the important CDR fields for Legacy Call Pickup calls.

- The **originalCallPartyNumber** contains the number of the original called party.
- The **finalCalledPartyNumber** specifies the number of the party that picked up the call.
- The **lastRedirectDn** field specifies the number that was ringing when the call was picked up.
- The **origCalledPartyRedirectReason** specifies the reason that the call was redirected the first time. For call pickup calls this field can contain (**Call Pickup = 5**).
- The **lastRedirectRedirectReason** specifies the reason that the call was redirected the last time. For call pickup, this field can contain (**Call Pickup = 5**).
- The **origCalledPartyRedirectOnBehalfOf** field identifies which feature redirects the call for the first redirect. For call pickup, this field specifies (**Pickup = 16**).
- The **lastRedirectRedirectOnBehalfOf** field identifies which feature redirects the call for the last redirect. For call pickup, this field specifies (**Pickup = 16**).

Legacy Call Pickup Example

Call from the PSTN to extension 2001, 2001 and 2002 exist in the same pickup group. 2002 picks up the call ringing on 2001, 2002 answers the call, and the call connects between the PSTN caller and 2002. They talk for 2 minutes.

Field Names	CDR
globalCallID_callId	22
origLegCallIdentifier	1
destLegCallIdentifier	2
callingPartyNumber	9728134987
originalCalledPartyNumber	2001
finalCalledPartyNumber	2002
lastRedirectDn	2001
origCause_Value	0
dest_CauseValue	16
origCalledPartyRedirectReason	0
lastRedirectRedirectReason	5
origCalledPartyRedirectOnBehalfOf	16
lastRedirectRedirectOnBehalfOf	16
duration	120

Transferred Calls

Calls that are transferred generate multiple CDRs. One CDR occurs for the original call, one for the consultation call, and another for the final transferred call.

For the original call, the **origCause_value** and **destCause_value** gets set to (split = 393216), which indicates the call was split. The **origCallTerminationOnBehalfOf** and **destCallTerminationOnBehalfOf** fields get set to (Transfer = 10) to indicate that this call was involved in a transfer.

For the consultation call, the **origCause_value** and **destCause_value** gets set to (split = 393216), which indicates that the call was split. The **origCallTerminationOnBehalfOf** and **destCallTerminationOnBehalfOf** fields get set to (Transfer = 10) to indicate that this call was involved in a transfer.

For the final transferred call, the **joinOnBehalfOf** field gets set to (Transfer = 10) to indicate that this call resulted from a transfer.

Transfer Examples

The following examples do not represent an exhaustive set and are intended to illustrate the records that would be generated under the stated circumstances. These examples help clarify what records are generated on transferred calls.

- **Blind Transfer from the Calling Party** - Call from extension 2001 to a PSTN number, they talk for 120 seconds. 2001 initiates a blind transfer to 2002. **CDR 1** (original call) shows a call from extension 2001 to a PSTN number, talking for 120 seconds. **CDR 2** (consultation call) shows a call from 2001 to extension 2002. **CDR 3** is the final transferred call where 2001 completes the transfer, drops out of the call, leaving a call between the PSTN and 2002.

Field Names	Original Call CDR	Consultation Call CDR	Final Transferred CDR
globalCallID_callId	1	2	1
origLegCallIdentifier	101	103	102
destLegCallIdentifier	102	104	104
callingPartyNumber	2001	2001	3071111
originalCalledPartyNumber	3071111	2002	2002
finalCalledPartyNumber	3071111	2002	2002
lastRedirectDn	3071111	2002	2001
origCause_Value	393216	393216	16
dest_CauseValue	393216	393216	0
origTerminationOnBehalfOf	10	10	0
destTerminationOnBehalfOf	10	10	0
joinOnBehalfOf	0	0	10
duration	120	0	360

- **Consultation Transfer from the Calling Party** - Call from extension 2001 to a PSTN number; they talk for 60 seconds. 2001 initiates a consultation transfer to 2002 and talks for 10 seconds before the transfer completes. The final transferred call talks for 360 seconds. **CDR 1** (original call) shows a call from extension 2001 to a PSTN number, talking for 60 seconds. **CDR 2** (consultation call) shows a call from 2001 to extension 2002, talking for 10 seconds. **CDR 3** represents the final transferred call where 2001 completes the transfer, drops out of the call, leaving a call between the PSTN and 2002.

Field Names	Original Call CDR	Consultation Call CDR	Final Transferred Call CDR
globalCallID_callId	1	2	1
origLegCallIdentifier	111	113	112
destLegCallIdentifier	112	114	114
callingPartyNumber	2001	2001	3071111
originalCalledPartyNumber	3071111	2002	2002
finalCalledPartyNumber	3071111	2002	2002
lastRedirectDn	50001	50001	2001
origCause_Value	393216	393216	16
dest_CauseValue	393216	393216	0
origTerminationOnBehalfOf	10	10	0
destTerminationOnBehalfOf	10	10	0

joinOnBehalfOf	0	0	10
duration	60	10	360

- **Blind Transfer from the Called Party** - Call from 50000 to 50001, they talk for 120 seconds. 50001 initiates a blind transfer to 50002. **CDR 1** (original call) shows a call from extension 50001 to 50002, talking for 120 seconds. **CDR 2** (consultation call) shows a call from 50001 to extension 50002. **CDR 3** represents the final transferred call where 50001 completes the transfer, drops out of the call, leaving a call between 50000 and 50002.

Field Names	Original Call CDR	Consultation Call CDR	Final Transferred Call CDR
globalCallID_callId	1	2	1
origLegCallIdentifier	200	202	200
destLegCallIdentifier	201	203	203
callingPartyNumber	50000	50001	50000
originalCalledPartyNumber	50001	50002	50002
finalCalledPartyNumber	50001	50002	50002
lastRedirectDn	50001	50001	50001
origCause_Value	393216	393216	16
dest_CauseValue	393216	393216	0
origTerminationOnBehalfOf	10	10	0
destTerminationOnBehalfOf	10	10	0
joinOnBehalfOf	0	0	10
duration	120	0	360

- **Consultation Transfer from the Called Party** - Call from 50000 to 50001, they talk for 120 seconds. 50000 initiates a blind transfer to 50002. **CDR 1** (original call) shows a call from extension 50000 to a 50001, talking for 120 seconds. **CDR 2** (consultation call) shows a call from 50000 to extension 50002. **CDR 3** represents the final transferred call where 50000 completes the transfer, drops out of the call, leaving a call between 50001 and 50002.

Field Names	Original Call CDR	Consultation Call CDR	Final Transferred Call CDR
globalCallID_callId	1	2	1
origLegCallIdentifier	200	202	201
destLegCallIdentifier	201	203	203
callingPartyNumber	50000	50001	50000
originalCalledPartyNumber	50001	50002	50002
finalCalledPartyNumber	50001	50002	50002
lastRedirectDn	50001	50001	50001
origCause_Value	393216	393216	16
dest_CauseValue	393216	393216	0
origTerminationOnBehalfOf	10	10	0

destTerminationOnBehalfOf	10	10	0
joinOnBehalfOf	0	0	10
duration	120	0	360

Conference Calls

Calls that are part of a conference have multiple records that are logged for them. The number of CDR records that are generated depends on the number of parties in the conference. One CDR exists for each party in the conference, one CDR for the original placed call, one CDR for each setup call that was used to join other parties to the conference, and one CDR for the last two parties that connected in the conference. Therefore, for a three-party ad-hoc conference, six CDRs would exist: one CDR for the original call, three CDRs for the parties that connected to the conference, one CDR for each setup call, and one CDR for the final two parties in the conference. You can associate the setup calls with the correct call leg in the conference by examining the calling leg ID and called leg ID.

The conference bridge device has special significance to the Cisco Unified Communications Manager, and calls to the conference bridge appear as calls to the conference bridge device. A special number in the form “b0019901001” shows the conference bridge port. All calls get shown “into” the conference bridge, regardless of the actual direction; however, by examining the setup call CDRs, you can determine the original direction of each call.

You can find the conference controller information in the comment field of the CDR. The format of this information follows:

Comment field = “ConfControllerDn=1000;ConfControllerDeviceName=SEP0003”

- The conference controller DN + conference controller device name uniquely identify the conference controller. The system needs the device name in the case of shared lines.
- If the call is involved in multiple conference calls, the comment field contains multiple conference controller information. This situation could occur when the conference goes down to two parties, and one of these parties starts another conference. If this is the case, the **last** conference controller information in the comment field will identify the conference controller.

The call legs connected to the conference will have the following fields information:

- The **finalCalledPartyNumber** field contains the conference bridge number “b0019901001”.
- The **origCalledPtyRedirectOnBehalfOf** field gets set to (Conference = 4).
 - The **lastRedirectRedirectOnBehalfOf** field gets set to (Conference = 4).
 - The **joinOnBehalfOf** field gets set to (Conference = 4).
 - The **comment** field identifies the conference controller.
 - The **destConversationID** field remains the same for all members in the conference. You can use this field to identify members of a conference call.

The original placed call and all setup calls that were used to join parties to the conference will have the following characteristics:

- The **origCallTerminationOnBehalfOf** field gets set to (Conference = 4).
- The **destCallTerminationOnBehalfOf** field gets set to (Conference = 4).

Conference Example

Call from 2001 to 2309.

2309 answers and talks for 60 seconds.

2001 presses the “conference” softkey and dials 3071111.

307111 answers and talks for 20 seconds, then 2001 presses the conference softkey to complete the conference.

The three members of the conference talk for 360 seconds.

307111 hangs up, leaving 2001 and 2309 in the conference. Because there are only two participants left in the conference, the conference features joins these two directly together, and they talk for another 55 seconds.

**Note**

Each conference call leg gets shown as placing a call into the conference bridge. The system shows the call as a call *into* the bridge, regardless of the actual direction of the call.

Field Names	Orig Call CDR	Setup Call CDR	Conference CDR 1	Conference CDR 2	Conference CDR 3	Final CDR
globalCallID_callId	1	2	1	1	1	1
origLegCallIdentifier	101	105	101	102	106	101
destLegCallIdentifier	102	106	115	116	117	102
callingPartyNumber	2001	2001	2001	2309	3071111	2001
originalCalledPartyNumber	2309	3071111	b0029901001	b0029901001	b0029901001	2309
finalCalledPartyNumber	2309	3071111	b0029901001	b0029901001	b0029901001	2309
lastRedirectDn	2001	3071111	b0029901001	b0029901001	b0029901001	b0029901001
origCause_Value	393216	0	16	393216	393216	16
dest_CauseValue	393216	0	393216	393216	393216	0
origCalledPartyRedirectReason	0	0	0	0	0	0
lastRedirectRedirectReason	0	0	0	0	0	98
origTerminationOnBehalfOf	4	4	12	12	4	12
destTerminationOnBehalfOf	4	4	0	0	4	4
origCalledRedirectOnBehalfOf	0	0	4	4	4	0
lastRedirectRedirectOnBehalfOf	0	0	4	4	4	4
joinOnBehalfOf	0	0	4	4	4	4
Conversation ID	0	0	1	1	1	0
duration	60	20	360	360	360	55

Comment

Orig Call CDR

Setup Call CDR

ConfControllerDn=2001;ConfControlerDeviceName=SEP0003E333FEBD

Conference CDR 1

ConfControllerDn=2001;ConfControlerDeviceName=SEP0003E333FEBD

Conference CDR 2

ConfControllerDn=2001;ConfControlerDeviceName=SEP0003E333FEBD

Conference CDR 3

ConfControllerDn=2001;ConfControlerDeviceName=SEP0003E333FEED

Final CDR

Secure Meet-Me Conference

The following example shows a CDR for a meet-me secure conference. 35010 calls into a secure meet-me conference, but 35010 is a non-secure phone. Because 35010 does not meet the minimum security level of the meet-me conference, the call is cleared with the cause code of 58 (meet-me conference minimum security level not met).

Secure Conference Example

Field Names	Call to the Meet-Me Conference CDR
globalCallID_callId	5045247
origLegCallIdentifier	123456879
destLegCallIdentifier	123456999
callingPartyNumber	35010
originalCalledPartyNumber	50000
finalCalledPartyNumber	50000
lastRedirectDn	50000
origCause_Value	58
dest_CauseValue	0
origCalledPartyRedirectReason	0
lastRedirectRedirectReason	0
origCalledPartyRedirectOnBehalfOf	0
lastRedirectRedirectOnBehalfOf	0
origTerminationOnBehalfOf	6
destTerminationOnBehalfOf	6

Ad Hoc Conference Linking

The ad hoc conference linking feature generates many different CDRs depending on the circumstances of the conference. The following scenarios show some of the different CDRs:

- [Conference Linking using Join, page 10-51](#)
- [Conference Linking Using Transfer or Direct Transfer, page 10-52](#)
- [Removing a Party From a Linked Conference, page 10-54](#)
- [Removing a Party \(Controller\) From a Linked Conference, page 10-56](#)
- [Removing the Linked Conference, page 10-58](#)

Conference Linking using Join

The direction of the call between the bridges depends upon which of Carol's two calls is primary. The primary call survives and the secondary call is redirected to the conference.

Alice calls Bob, and Bob conferences in Carol (Conference 1). Dave calls Carol, and conferences in Ed (Conference 2). Two separate conferences are created. Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.

Carol joins the two conferences. At this point CDR5 is generated.

When the remaining parties hang up, the remaining CDRs are generated in the order that the parties leave the conference.

Conference Linking using Join Example

Field Names	CDR1: Alice -> Bob (original call)	CDR2: Bob -> Carol (consultation call)	CDR3: Dave -> Carol (original call)	CDR4: Dave -> Ed (consultation call)	CDR5: Carol -> Conference Bridge (conference call)	CDR6: Dave -> Conference Bridge (conference call)
globalCallID_callId	1	2	3	4	3	3
origLegCallIdentifier	11	13	21	23	22	21
destLegCallIdentifier	12	14	22	24	25	26
callingPartyNumber	1000	1001	1003	1003	1002	1003
originalCalledPartyNumber	1001	1002	1002	1004	b0029901222	b002990122 2
finalCalledPartyNumber	1001	1002	1002	1004	b0029901222	b002990122 2
lastRedirectDn	1001	1002	1002	1004	1003	1003
origTerminationOnBehalfOf	4	4	4	4	4	0
destTerminationOnBehalfOf	4	4	4	4	4	0
lastRedirectRedirectReason	0	0	0	0	98	98
lastRedirectRedirectOnBehalfOf	0	0	0	0	4	4
origConversationID	0	0	0	0	0	0
destConversationID	0	0	0	0	2222	2222
Comment					ConfControl lerDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto n-1003;Conf rDeviceName= SEP0003E333F AD1	ConfControl lerDn=1003; ConfControl lerDeviceNa me=SEP0003E 333FAD1;Con fRequestorD fRequestorD n-1003;Conf RequestorDe viceName=SE P0003E333FA D1

Field Names	CDR7: Ed -> Conference Bridge (conference call)	CDR8 Dave -> Conference Bridge (conference call)	CDR9: Alice -> Conference Bridge (conference call)	CDR10: Bob -> Conference Bridge (conference call)	CDR11: Carol -> Conference Bridge (conference call)
globalCallID_callId	3	1	1	1	1
origLegCallIdentifier	24	25	11	12	14
destLegCallIdentifier	27	28	15	16	17
callingPartyNumber	1004	b0029901222	1000	1001	1002
originalCalledPartyNumber	b0029901222	b0029901001	b0029901001	b0029901001	b0029901001
finalCalledPartyNumber	b0029901222	b0029901001	b0029901001	b0029901001	b0029901001
lastRedirectDn	1003	1002	1001	1001	1001
origTerminationOnBehalfOf	0	0	0	0	0
destTerminationOnBehalfOf	0	0	0	0	0
lastRedirectRedirectReason	98	98	98	98	98
lastRedirectRedirectOnBehalfOf	4	4	4	4	4
origConversationID	0	2222			
destConversationID	2222	1111			
Comment	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1			

Conference Linking Using Transfer or Direct Transfer

Alice calls Bob, and Bob conferences Carol (Conference 1). Dave calls Carol, and conferences in Ed (Conference 2) Two separate conferences are created; Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.

Carol presses the Direct Transfer (DirTrfr) softkey on the call to the first conference. Alice and Bob are in Conference 1 while Dave and Ed are in Conference 2. When the remaining parties hang up, the remaining CDRs are generated in the order the parties leave the conference.



Note

The direction of the call between the bridges depends on which of Carol's two calls is the primary call. The primary call side is the calling party of the transferred call.

Conference Linking Using Transfer or Direct Transfer Example

Field Names	CDR1: Alice -> Bob (original call)	CDR2: Bob -> Carol (consultation call)	CDR3: Dave -> Carol (original call)	CDR4: Dave -> Carol (consultation call)	CDR5: Carol -> Conference Bridge (conference call)	CDR6: Carol -> Conference Bridge (conference call)
globalCallID_callId	1	2	3	4	1	3
origLegCallIdentifier	11	13	21	23	14	22
destLegCallIdentifier	12	14	22	24	17	25
callingPartyNumber	1000	1001	1003	1003	1002	1002
originalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
finalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
lastRedirectDn	1001	1002	1002	1004	1001	1003
origTerminationOnBehalfOf	4	4	4	4	10	10
destTerminationOnBehalfOf	4	4	4	4	10	10
lastRedirectRedirectReason	0	0	0	0	98	98
lastRedirectRedirectOnBehalfOf	0	0	0	0	4	4
origConversationID	0	0	0	0	0	0
destConversationID	0	0	0	0	1111	2222
Comment					ConfControll erDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1

Field Names	CDR7: Dave-> Conference Bridge (conference call)	CDR8: Ed -> Conference Bridge (conference call)	CDR9: Conference Bridge-> Conference Bridge	CDR-10: Alice -> Conference Bridge (conference call)	CDR11: Bob-> Conference Bridge (conference call)
globalCallID_callId	3	3	1	1	1
origLegCallIdentifier	21	24	17	11	12
destLegCallIdentifier	26	27	28	15	16
callingPartyNumber	1003	1004	b0029901001	1000	1001

originalCalledPartyNumber	b0029901222	b0029901222	b0029901222	b0029901001	b0029901001
finalCalledPartyNumber	b0029901222	b0029901222	b0029901222	b0029901001	b0029901001
lastRedirectDn	1003	1003	1002	1001	1001
origTerminationOnBehalfOf	0	0	0	0	0
destTerminationOnBehalfOf	0	0	0	0	0
lastRedirectRedirectReason	98	98	4	98	98
lastRedirectRedirectOnBehalfOf	4	4	10	4	4
origConversationID	0	0	1111	0	0
destConversationID	2222	2222	2222	1111	1111
Comment	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn-1001;ConfRequestorDeviceName=SEP0003E333FEBD	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn-1001;ConfRequestorDeviceName=SEP0003E333FEBD

Removing a Party From a Linked Conference

CDRs are generated in the order the parties leave a conference. When the remaining conference only has two parties, the two parties are joined directly together.

Alice calls Bob, and Bob conferences Carol (Conference 1). Dave calls Carol, and conferences in Ed (Conference 2). Two separate conferences are created; Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.

Carol presses the Direct Transfer (DirTrfr) softkey on the call to the first conference. Alice and Bob are in Conference 1 while Dave and Ed are in Conference 2. Conference 1 and Conference 2 are transferred together. Carol hangs up, and leaves only two parties in Conference 1.

Because there are only two parties in the conference, Bob and the conference link are joined together. At this point, CDR7, CDR8, and CDR9 are generated. Because Bob is the controller in Conference 1, Bob is the calling party in the call between Bob and Conference 2. When the remaining parties hang up, the remaining CDRs are generated in the order the parties leave the conference.



Note

If Bob is not a controller and the chaining occurs before Bob joins Conference 1, the call between Bob and Conference 2 is generated in the opposite direction of what is shown in the CDRs.

The direction of the call between the final two parties of a conference depends on who has been in the conference the longest. The party that has been in the conference the longest becomes the calling party.

Removing a Party from Linked Conference Example

Field Names	CDR1: Alice -> Bob (original call)	CDR2: Bob -> Carol (consultation call)	CDR3: Dave -> Carol (original call)	CDR4: Dave -> Carol (consultation call)	CDR5: Carol -> Conference Bridge (conference call)	CDR6: Carol -> Conference Bridge (conference call)
globalCallID_callId	1	2	3	4	1	3
origLegCallIdentifier	11	13	21	23	14	22
destLegCallIdentifier	12	14	22	24	17	25
callingPartyNumber	1000	1001	1003	1003	1002	1002
originalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
finalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
lastRedirectDn	1001	1002	1002	1004	1001	1003
origTerminationOnBehalfOf	4	4	4	4	10	10
destTerminationOnBehalfOf	4	4	4	4	10	10
lastRedirectRedirectReason	0	0	0	0	98	98
lastRedirectRedirectOnBehalfOf	0	0	0	0	4	4
origConversationID	0	0	0	0	0	0
destConversationID	0	0	0	0	1111	2222
Comment					ConfControl lerDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControl lerDn=1003;Co nfController DeviceName=S EP0003E333FA BD;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1

Field Names	CDR7: Alice-> Conference Bridge (conference call)	CDR8: Bob-> Conference Bridge (conference call)	CDR9: Conference Bridge-> Conference Bridge	CDR-10: Bob -> Conference Bridge (conference call)	CDR11: Dave-> Conference Bridge (conference call)	CDR12: Ed -> Conference Bridge (conference call)
globalCallID_callId	1	1	3	3	3	3
origLegCallIdentifier	11	12	25	11	12	24
destLegCallIdentifier	15	16	28	15	16	27

callingPartyNumber	1000	1001	b0029901222	1000	1001	1004
originalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	b0029901222
finalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	b0029901222
lastRedirectDn	1001	1001	1002	b0029901001	1003	1003
origTerminationOnBehalfOf	16	4	4	4	0	0
destTerminationOnBehalfOf	0	4	4	4	0	0
lastRedirectRedirectReason	98	98	4	98	98	98
lastRedirectRedirectOnBehalfOf	4	4	10	4	4	4
origConversationID	0	0	2222	0	0	0
destConversationID	1111	1111	1111	2222	2222	2222
Comment	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn=1001;ConfRequestorDeviceName=SEP0003E333FEBD	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn=1001;ConfRequestorDeviceName=SEP0003E333FEBD	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn=1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn=1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn=1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn=1003;ConfRequestorDeviceName=SEP0003E333FAD1

Removing a Party (Controller) From a Linked Conference

CDRs are generated in the order the parties leave a conference. When the remaining conference only has two parties, these two parties are joined directly together.

Alice calls Bob, and Bob conferences Carol (Conference 1). Dave calls Carol, and conferences in Ed (Conference 2) Two separate conferences are created; Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.

Carol presses the Direct Transfer (DirTrfr) softkey on the call to the first conference. Alice and Bob are in Conference 1, while Dave and Ed are in Conference 2. Conference 1 and Conference 2 are transferred together. Bob hangs up, leaving only two parties connected to Conference 1.

Because there are only two parties in Conference1, Alice and the conference link are joined directly together. At this point, CDR7, CDR8, and CDR9 are generated. Because Alice has been in the conference longer, she becomes the calling party in the call between Alice and Conference 2. When the remaining parties hang up, the remaining CDRs are generated in the order the parties leave the conference.



Note

The direction of a call between the final two parties of a conference depends on who has been in the conference the longest. The party that has been in the conference the longest becomes the calling party.

Removing a Controller from a Linked Conference Example

Field Names	CDR1: Alice -> Bob (original call)	CDR2: Bob -> Carol (consultation call)	CDR3: Dave -> Carol (original call)	CDR4: Dave -> Carol (consultation call)	CDR5: Carol -> Conference Bridge (conference call)	CDR6: Carol -> Conference Bridge (conference call)
globalCallID_callId	1	2	3	4	1	3
origLegCallIdentifier	11	13	21	23	14	22
destLegCallIdentifier	12	14	22	24	17	25
callingPartyNumber	1000	1001	1003	1003	1002	1002
originalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
finalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
lastRedirectDn	1001	1002	1002	1004	1001	1003
origTerminationOnBehalfOf	4	4	4	4	10	10
destTerminationOnBehalfOf	4	4	4	4	10	10
lastRedirectRedirectReason	0	0	0	0	98	98
lastRedirectRedirectOnBehalfOf	0	0	0	0	4	4
origConversationID	0	0	0	0	0	0
destConversationID	0	0	0	0	1111	2222
Comment					ConfControl lerDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControl lerDn=1003;Co nfController DeviceName=S EP0003E333FA BD;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1

Field Names	CDR7: Conference Bridge -> Conference Bridge	CDR8: Alice-> Conference Bridge (conference call)	CDR9: Conference Bridge-> Conference Bridge	CDR-10: Alice -> Conference Bridge (conference call)	CDR11: Dave-> Conference Bridge (conference call)	CDR12: Ed -> Conference Bridge (conference call)
globalCallID_callId	1	1	3	3	3	3
origLegCallIdentifier	12	11	25	11	21	24
destLegCallIdentifier	16	15	28	25	26	27

callingPartyNumber	1001	1000	b0029901222	1001	1003	1004
originalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	b0029901222
finalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	b0029901222
lastRedirectDn	1001	1001	1002	b0029901001	1003	1003
origTerminationOnBehalfOf	4	16	4	4	0	0
destTerminationOnBehalfOf	4	0	4	4	0	0
lastRedirectRedirectReason	98	98	4	98	98	98
lastRedirectRedirectOnBehalfOf	4	4	10	4	4	4
origConversationID	0	0	2222	0	0	0
destConversationID	1111	1111	1111	2222	2222	2222
Comment	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn-1001;ConfRequestorDeviceName=SEP0003E333FEBD	ConfControllerDn=1001;ConfControllerDeviceName=SEP0003E333FEBD;ConfRequestorDn-1001;ConfRequestorDeviceName=SEP0003E333FEBD	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1	ConfControllerDn=1003;ConfControllerDeviceName=SEP0003E333FAD1;ConfRequestorDn-1003;ConfRequestorDeviceName=SEP0003E333FAD1

Removing the Linked Conference

Alice calls Bob, and Bob conferences Carol (Conference 1). Dave calls Carol, and conferences in Ed (Conference 2). Two separate conferences are created; Carol is in both conferences. At this point CDR1, CDR2, CDR3, and CDR4 are generated.

Carol presses the **Direct Transfer** (DirTrfr) softkey on the call to the first conference. Alice and Bob are in Conference 1, while Dave and Ed are in Conference 2. Conference 1 and Conference 2 are transferred together.

Bob presses the ConfList softkey and has Alice, Bob, and the conference link “Conference” shown in the list. Bob selects “Conference” and presses the **Remove** softkey. At this point, CDR7, CDR8, and CDR9 are generated. The conference link is removed, leaving two parties in the conference.

The remaining two parties are joined together. In Conference 1, Alice and Bob are joined together, and in Conference 2, Dave and Ed are joined together. When the remaining parties hang up, the remaining CDRs are generated in the order the parties leave the conference.

Removing the Linked Conference Example

Field Names	CDR1: Alice -> Bob (original call)	CDR2: Bob -> Carol (consultation call)	CDR3: Dave -> Carol (original call)	CDR4: Dave -> Carol (consultation call)	CDR5: Carol -> Conference Bridge (conference call)	CDR6: Carol -> Conference Bridge (conference call)
globalCallID_callId	1	2	3	4	1	3
origLegCallIdentifier	11	13	21	23	14	22
destLegCallIdentifier	12	14	22	24	17	25
callingPartyNumber	1000	1001	1003	1003	1002	1002
originalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
finalCalledPartyNumber	1001	1002	1002	1004	b0029901001	b0029901222
lastRedirectDn	1001	1002	1002	1004	1001	1003
origTerminationOnBehalfOf	4	4	4	4	10	10
destTerminationOnBehalfOf	4	4	4	4	10	10
lastRedirectRedirectReason	0	0	0	0	98	98
lastRedirectRedirectOnBehalfOf	0	0	0	0	4	4
origConversationID	0	0	0	0	0	0
destConversationID	0	0	0	0	1111	2222
Comment					ConfControll erDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1

Field Names	CDR7: Conference Bridge > Conference Bridge	CDR8: Alice-> Conference Bridge (conference call)	CDR9: Bob -> Conference Bridge	CDR-10: Dave-> Conference Bridge (conference call)	CDR11: Ed-> Conference Bridge (conference call)	CDR12: Bob -> Alice
globalCallID_callId	3	1	1	3	3	3
origLegCallIdentifier	25	11	12	21	24	21
destLegCallIdentifier	28	15	16	26	27	24

callingPartyNumber	b0029901222	1000	1001	1003	1004	1003
originalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	b0029901222
finalCalledPartyNumber	b0029901001	b0029901001	b0029901001	b0029901222	b0029901222	1004
lastRedirectDn	1002	1001	1001	1003	1003	b0029901222
origTerminationOnBehalfOf	4	4	4	16	0	0
destTerminationOnBehalfOf	4	4	4	0	0	0
lastRedirectRedirectReason	4	98	98	98	98	98
lastRedirectRedirectOnBehalfOf	10	4	4	4	4	4
origConversationID	2222	0	0	0	0	0
destConversationID	1111	1111	1111	2222	2222	0
Comment	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1	ConfControll erDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControll erDn=1001;Co nfController DeviceName=S EP0003E333FE BD;ConfReque storDn-1001; ConfRequesto rDeviceName= SEP0003E333F EBD	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1	ConfControll erDn=1003;Co nfController DeviceName=S EP0003E333FA D1;ConfReque storDn-1003; ConfRequesto rDeviceName= SEP0003E333F AD1

Field Names	CDR13: Dave -> Ed
globalCallID_callId	3
origLegCallIdentifier	21
destLegCallIdentifier	24
callingPartyNumber	1003
originalCalledPartyNumber	b0029901222
finalCalledPartyNumber	1004
lastRedirectDn	b0029901222
origTerminationOnBehalfOf	0
destTerminationOnBehalfOf	0
lastRedirectRedirectReason	98
lastRedirectRedirectOnBehalfOf	4
origConversationID	0

```

destConversationID      0
Comment                ConfControll
                       erDn=1003;Co
                       nfController
                       DeviceName=S
                       EP0003E333FA
                       D1;ConfReque
                       storDn-1003;
                       ConfRequesto
                       rDeviceName=
                       SEP0003E333F
                       AD1

```

Call Park

Call Park will generate two CDRs, one for the original call that is parked and another for the call that is picked up or reverted. These CDRs will have the same `globalCallID_callId`. This section contains the following CDR examples:

- [Call Park Pickup, page 10-61](#)
- [Call Park Reversion, page 10-62](#)

Call Park Pickup

When the call is parked, the call gets split. The original call generates a CDR. The **origTerminationOnBehalfOf** and **destTerminationOnBehalfOf** fields get set to (Call Park = 3) for this CDR.

When the parked call is retrieved, the user goes off hook and enters the park code. This call joins with the parked call. Because the user picking up is joined with the parked call, the system treats the user as the originator of the call, and the parked user gets treated as the destination. This means that the **callingPartyNumber** of the call contains the directory number of the user who is picking up the call and the **originalCalledNumber** and **finalCalledNumber** contain the directory number of the parked user. The **lastRedirectDn** contains the park code that is used to pick up the call. The **lastRedirectRedirectReason** specifies (Call Park Pickup = 8). The **lastRedirectRedirectOnBehalfOf** should specify (Call Park = 3).

Call Park Example

50003 calls 50002; 50002 presses the Park softkey. 50001 picks up the parked call by dialing the park code (44444).

Field Names	Original Call That Is Parked CDR	Parked Call That Is Picked Up CDR
<code>globalCallID_callId</code>	1	1
<code>origLegCallIdentifier</code>	20863957	20863961
<code>destLegCallIdentifier</code>	20863958	20863957
<code>callingPartyNumber</code>	50003	50001
<code>originalCalledPartyNumber</code>	50002	50003

finalCalledPartyNumber	50002	50003
lastRedirectDn	50002	44444
origCause_Value	393216	0
dest_CauseValue	393216	16
origCalledPartyRedirectReason	0	0
lastRedirectRedirectReason	0	8
origCalledPartyRedirectOnBehalfOf	0	0
lastRedirectRedirectOnBehalfOf	0	3
origTerminationOnBehalfOf	3	0
destTerminationOnBehalfOf	3	12
joinOnBehalfOf	0	3
duration	4	60

Call Park Reversion

When a call is parked and not picked up, the call park reversion timer will expire and redirect the call back to the called party. In this case, Two CDRs get generated. The first CDR acts the same as the Call Park Pickup scenario, but the second CDR slightly differs. When the Call Pickup Reversion timer expires, the call redirects to the called party.

When the call is parked, the call gets split. This action generates a CDR for the original call. The **origTerminationOnBehalfOf** and **destTerminationOnBehalfOf** fields get set to (Call Park = 3) for this CDR (same as Call Park Pickup scenario).

When the Call Park Reversion timer expires, the call gets redirected to the called party. The **origCalledPartyRedirectOnBehalfOf** and **lastRedirectRedirectOnBehalfOf** fields specify Call Park = 3. The **origCalledPartyRedirectReason** field specifies Call Park = 7, and the **lastRedirectRedirectReason** field specifies Call Park Reversion = 11.

Call Park Reversion Example

- **Call Park Reversion Example** – 50003 calls 50002, 50002 presses the Park softkey. Nobody picks up the parked call; it reverts to 50002, and 50002 answers.

Field Names	Original Call That Is Parked CDR	Reverted Call CDR
globalCallID_callId	2	2
origLegCallIdentifier	20863963	20863963
destLegCallIdentifier	20863964	20863967
callingPartyNumber	50003	50003
originalCalledPartyNumber	50002	50002
finalCalledPartyNumber	50002	50002
lastRedirectDn	50002	50002
origCause_Value	393216	0
dest_CauseValue	393216	16

origCalledPartyRedirectReason	0	7
lastRedirectRedirectReason	0	11
origCalledPartyRedirectOnBehalfOf	0	3
lastRedirectRedirectOnBehalfOf	0	3
origTerminationOnBehalfOf	3	3
destTerminationOnBehalfOf	3	12
joinOnBehalfOf	0	3
duration	7	60

Precedence Calls (MLPP)

With precedence calls, everything basically remains the same for all calls (normal calls, forwarded calls, transferred calls, and so forth). The difference occurs because the precedence level fields are set in the CDR. Also, when a call is preempted by a higher level precedence call, the cause codes indicate the reason for the preemption.

Precedence Call Examples

- Call to another IP phone by dialing a precedence pattern (precedence level 2).

Field Names	Precedence Call CDR
globalCallID_callId	100
origLegCallIdentifier	12345
destLegCallIdentifier	12346
callingPartyNumber	2001
origCalledPartyNumber	826001
origCause_Value	0
dest_CauseValue	16
origPrecedenceLevel	2
destPrecedenceLevel	2

- Received precedence call from another network (precedence level 1)

Field Names	Precedence Call CDR
globalCallID_callId	102
origLegCallIdentifier	11111
destLegCallIdentifier	11112
callingPartyNumber	9728552001
origCalledPartyNumber	6001
origCause_Value	16

dest_CauseValue	0
origPrecedenceLevel	1
destPrecedenceLevel	1

- Call gets preempted by a higher precedence level call.

Field Names	Original call CDR	Higher Level Call CDR
globalCallID_callId	10000	10001
origLegCallIdentifier	12345678	12345680
destLegCallIdentifier	12345679	12345681
callingPartyNumber	2001	9728551234
origCalledPartyNumber	826001	826001
origCause_Value	0	0
dest_CauseValue	9	16
origPrecedenceLevel	2	1
destPrecedenceLevel	2	1

Malicious Calls

When a call is identified as a malicious call (button press), the local network (CCM) flags the call. The “comment” field gets used to flag the malicious call.

Malicious Call Example

- Customer call marked as malicious.

Field Names	Original call CDR
globalCallID_callId	1
origLegCallIdentifier	100
destLegCallIdentifier	101
callingPartyNumber	9728552001
origCalledPartyNumber	5555
origCause_Value	0
dest_CauseValue	16
Comment	callFlag=MALICIOUS

Immediate Divert (to Voicemail)

Immediate Divert (IDivert) can get invoked in three different call states:

- The IDivert feature can get invoked while the incoming call is ringing. The CDR for the ringing case acts very similar to call forwarding, but the **origCalledPartyRedirectOnBehalfOf** and the **lastRedirectRedirectOnBehalfOf** specifies (Immediate Divert = 14).
- The IDivert feature can get invoked while the call is connected or on hold. These scenarios generate two CDRs. Both CDRs will have the same **globalCallID_CallId** field. The first CDR applies to the original connection, and the second CDR applies to the call redirected to voice-messaging system. The first call will have the **origTerminationOnBehalfOf** and **destTerminationOnBehalfOf** field set to (Immediate Divert = 14).
- The call that is redirected to the voice-messaging system will have the **origCalledPartyRedirectOnBehalfOf** and the **lastRedirectRedirectOnBehalfOf** set to (Immediate Divert = 14).

IDivert Examples

- **IDivert during Alerting** – 40003 calls 40001 and while 40001 is ringing, 40001 presses the IDivert button and call diverts to the voice-messaging system (40000).



Note If the call is redirected by IDivert in the Alerting state, only one CDR is generated.

Field Names	Original call CDR
globalCallID_callId	37
origLegCallIdentifier	16777327
destLegCallIdentifier	16777329
callingPartyNumber	40003
origCalledPartyNumber	40001
finalCalledPartyNumber	40000
lastRedirectDn	40001
origCause_Value	16
dest_CauseValue	0
origCalledPartyRedirectReason	50
lastRedirectRedirectReason	50
origCalledPartyRedirectOnBehalfOf	14
lastRedirectRedirectOnBehalfOf	14
joinOnBehalfOf	14

- **IDivert during Connect** – 40003 calls 40001, and 40001 answers the call. 40001 decides to divert the caller to the voice-messaging system and presses the IDivert softkey. 40003 gets diverted to the voice-messaging system (40000).

Because the call was connected before the redirect, two CDRs get generated: one for the original connected call and another for the call diverted to the voice-messaging system.

Field Names	Original Connected Call CDR	Diverted Call CDR
globalCallID_callId	38	38

origLegCallIdentifier	16777330	16777330
destLegCallIdentifier	16777331	16777332
callingPartyNumber	40003	40003
origCalledPartyNumber	40001	40001
finalCalledPartyNumber	40001	40000
lastRedirectDn	40001	40001
origCause_Value	0	16
dest_CauseValue	0	0
origCalledPartyRedirectReason	0	50
lastRedirectRedirectReason	0	50
origCalledPartyRedirectOnBehalfOf		14
lastRedirectRedirectOnBehalfOf		14
origTerminationOnBehalfOf	14	14
destTerminationOnBehalfOf	14	12
joinOnBehalfOf		14

Barge

When a shared line uses the barge feature, the **origCalledPartyNumber**, **finalCalledPartyNumber** and **lastRedirectDn** represent the conference bridge number 'b00...'. The redirect and join OnBehalfOf fields have a value of (Barge = 15), and the redirect reason fields specify (Barge = 114).

Barge Examples

- **Barge Example 1**– 40003 calls 40001 and 40001 answers. Shared line 40001' on another phone presses the Barge softkey. All the parties get conferenced together; then, 40003 hangs up.



Note Both CDRs have the same globalCallID_callId, and the conversationID field links back to the CI (call Identifier) of the barged call.

Field Names	Original Call CDR	Barge Call CDR
globalCallID_callId	7	7
origLegCallIdentifier	16777230	16777232
destLegCallIdentifier	16777231	16777235
callingPartyNumber	40003	40003
origCalledPartyNumber	40001	b001501001
finalCalledPartyNumber	40001	b001501001
lastRedirectDn	40001	b001501001
origCause_Value	16	0
dest_CauseValue	0	0
origCalledPartyRedirectReason	0	114

lastRedirectRedirectReason	0	114
origCalledPartyRedirectOnBehalfOf		15
lastRedirectRedirectOnBehalfOf		15
joinOnBehalfOf		15
destConversationID	0	16777231

- **Barge Example 2**– 40003 calls 40001, and 40001 answers. Shared line 40001' on another phone presses the Barge softkey. All the parties get conferenced together; then, 40001 hangs up.



Note Both CDRs have the same `globalCallID_callId`, and the `conversationID` field links back to the CI (call Identifier) of the barged call.

Field Names	Original Call CDR	Barge Call CDR	Final Call CDR
globalCallID_callId	9	9	9
origLegCallIdentifier	16777236	16777238	16777236
destLegCallIdentifier	16777237	16777241	16777238
callingPartyNumber	40003	40001	40003
origCalledPartyNumber	40001	b001501001	40001
finalCalledPartyNumber	40001	b001501001	40001
lastRedirectDn	40001	b001501001	40001
origCause_Value	0	393216	16
dest_CauseValue	16	393216	0
origCalledPartyRedirectReason	0	114	0
lastRedirectRedirectReason	0	114	0
origTerminationOnBehalfOf		15	12
destTerminationOnBehalfOf	12	15	12
lastRedirectRedirectOnBehalfOf		15	
joinOnBehalfOf		15	
destConversationID	0	16777237	0

- **Barge Example 3**– 40003 calls 40001, and 40001 answers. Shared line 40001' on another phone presses the Barge softkey. All the parties get conferenced together; then, 40001' (another shared line and phone) presses the Barge softkey. 40003 hangs up first.



Note All CDRs have the same `globalCallID_callId`, and the `conversationID` field links back to the CI (call Identifier) of the barged call.

Field Names	Original Call CDR	Barge Call 1 CDR	Barge Call 2 CDR
globalCallID_callId	14	14	14

origLegCallIdentifier	16777249	16777251	16777255
destLegCallIdentifier	16777250	16777254	16777258
callingPartyNumber	40003	40001	40001
origCalledPartyNumber	40001	b001501001	b001501001
finalCalledPartyNumber	40001	b001501001	b001501001
lastRedirectDn	40001	b001501001	b001501001
origCause_Value	16	0	0
dest_CauseValue	0	0	0
origCalledPartyRedirectReason	0	114	114
lastRedirectRedirectReason	0	114	114
origTerminationOnBehalfOf	12	15	15
destTerminationOnBehalfOf			
origRedirectOnBehalfOf		15	15
lastRedirectRedirectOnBehalfOf		15	15
joinOnBehalfOf		15	15
destConversationID	0	16777250	16777251

cBarge

The cBarge feature acts very similar to the conference feature. When a shared line uses the cBarge feature, the **origCalledPartyNumber**, **finalCalledPartyNumber** and **lastRedirectDn** represent the conference bridge number 'b00...'. The redirect and join **OnBehalfOf** fields have a value of (Conference = 4), and the **redirect reason** fields specify (Conference = 98).

cBarge Examples

- **cBarge Example** – 40003 calls 40001, and 40001 answers; 40001' (shared line) on another phone presses the cBarge button.

Field Names	Orig Call CDR	cBarge Call CDR 1	cBarge Call CDR 2	cBarge Call CDR 3	Final Call CDR
globalCallID_callId	49	49	49	49	49
origLegCallIdentifier	1677346	1677348	1677347	1677346	1677347
destLegCallIdentifier	1677347	1677353	1677351	1677352	1677346
callingPartyNumber	40003	40001	40001	40003	40001
originalCalledPartyNumber	40001	b0029901001	b0029901001	b0029901001	40003
finalCalledPartyNumber	40001	b0029901001	b0029901001	b0029901001	40003
lastRedirectDn	40001	b0029901001	40001	40001	b0029901001
origCause_Value	393216	16	393216	393216	16
dest_CauseValue	393216	0	393216	393216	0
origCalledPartyRedirectReason	0	98	98	98	0
lastRedirectRedirectReason	0	98	98	98	98

destTerminationOnBehalfOf	4		4	4	4
origCalledRedirectOnBehalfOf		4	4	4	
lastRedirectRedirectOnBehalfOf		4	4	4	4
joinOnBehalfOf		4	4	4	4
Conversation ID	0	16777220	16777220	16777220	1
duration	60	360		360	360

Comment

Orig Call CDR

cBarge Call CDR 1 ConfControllerDn=40003;ConfControlerDeviceName=SEP0003E333FEBD

cBarge Call CDR 2 ConfControllerDn=40003;ConfControlerDeviceName=SEP0003E333FEBD

cBarge Call CDR 3 ConfControllerDn=40003;ConfControlerDeviceName=SEP0003E333FEBD

Final Call CDR ConfControllerDn=40003;ConfControlerDeviceName=SEP0003E333FEBD

Video Calls

The following example shows a CDR for a video call.

Video Calls Example

- **Example** - Calling party 51234 calls the called party 57890. In the following example, let 100 = H.261, 187962284 = 172.19.52.11, 288625580 = 172.19.52.17, 320 = 320K, and 2 = QCIF.

Field Names	Video Call CDR
globalCallID_callId	121
origLegCallIdentifier	101
destLegCallIdentifier	102
callingPartyNumber	51234
origCalledPartyNumber	57890
finalCalledPartyNumber	57890
lastRedirectDn	57890
origCause_Value	0
dest_CauseValue	16
origVideoCap_Codec	100
origVideoCap_Bandwidth	320
origVideoCap_Resolution	2
origVideoTransportAddress_IP	187962284
origVideoTransportAddress_Port	49208
destVideoCap_Codec	100
destVideoCap_Bandwidth	320

destVideoCap_Resolution	2
destVideoTransportAddress_IP	288625580
destVideoTransportAddress_Port	49254

Forced Authorization Code (FAC)

When the FAC feature is invoked, the authorization description, authorization level, and authorization code value get written into the CDR.

- The **authCodeDescription** field contains the description of the authorization code.
- The **authorizationLevel** field contains the level of authorization that is associated with the authorization code.
- The **authorizationCodeValue** field contains the authorization code.



Note

The authorizationCodeValue field only displays in the CDR when the Display FAC in CDR service parameter is set to True. The default value of the parameter is False. See the [“Configuring CDR Service Parameters”](#) section on page 2-2

FAC Example

45000 calls 9728134987; the system prompts the user for an authorization code and enters 12345. FAC code 12345 gets configured as level 1 and name Legal1. The caller answers the call and talks for 2 minutes. The Display FAC in CDR service parameter is set to True.

Field Names	Values
globalCallID_callId	100
origLegCallIdentifier	16777123
destLegCallIdentifier	16777124
callingPartyNumber	45000
origCalledPartyNumber	9728134987
finalCalledPartyNumber	9728134987
lastRedirectDn	9728134987
origCause_Value	0
dest_CauseValue	16
authCodeDescription	Legal1
authorizationLevel	1
duration	120
authorizationCodeValue	12345

Client Matter Code (CMC)

When the CMC feature is invoked, the client matter code gets written into the CDR. The **clientMatterCode** field contains the client matter code that the caller entered.

CMC Example

- 10000 calls 2142364624; the user gets prompted for a client matter code and enters 11111. The caller answers the call and talks for 10 minutes.

Field Names	Values
globalCallID_callId	101
origLegCallIdentifier	16777130
destLegCallIdentifier	16777131
callingPartyNumber	10000
origCalledPartyNumber	2142364624
finalCalledPartyNumber	2142364624
lastRedirectDn	2142364624
origCause_Value	0
dest_CauseValue	16
clientMatterCode	11111
duration	600

Call Secured Status

This field identifies security status of the call. It contains the highest level of security that is reached during a call. For example, if the call is originally unsecured, then later the call changed to secured, the CDR contains 1 for “Secured” even though different portions of the call had different status values. The **callSecuredStatus** field will identify the security status of the call.

Call Secured Status Examples

- **Encrypted Call Example** - The system encrypts the call between 20000 and 20001. The parties talk for 5 minutes.

Field Names	CDR
globalCallID_callId	102
origLegCallIdentifier	16777140
destLegCallIdentifier	16777141
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
callSecuredStatus	2
duration	300

- **Authenticated Call Example** - The call between 20000 and 20001 gets authenticated (not encrypted). They talk for 10 minutes.

Field Names	CDR
globalCallID_callId	103
origLegCallIdentifier	16777142
destLegCallIdentifier	16777143
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
callSecuredStatus	1
duration	600

DTMF Method

These fields identify the DTMF method that is used for the call.

DTMF Call Examples

- **No Preference Example** - The DTMF method that is used during this call represents No Preference/Best Effort. This call stays connected for 1 minute.

Field Names	CDR
globalCallID_callId	200
origLegCallIdentifier	16777500
destLegCallIdentifier	16777501
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
origDTMFMethod	0
destDTMFMethod	0
duration	60

- **Preferred OOB Example** - The DTMF method that is used during this call represents OOB Preferred. This call remains connected for 1 minute.

Field Names	CDR
globalCallID_callId	201
origLegCallIdentifier	16777502
destLegCallIdentifier	16777503
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
origDTMFMethod	1
destDTMFMethod	1
duration	60

RSVP

These fields identify the status of RSVP reservation for the call. The Cisco Unified Communications Manager RSVP CDR status field value gets concatenated, and the system retains the last 32 status values for the call.

For example, if a call is established with “Optional” policy, and the initial RSVP reservation is successful, and then it subsequently loses its bandwidth reservation and then regains its bandwidth reservation after retry, for several times during middle of the call, the call ends with a successful RSVP reservation. The CDR shows the following string as the Unified Communication RSVP reservation status for that particular stream: “2:5:2:5:2:5:2” (success:lost_bw:success:lost_bw:success:lost_bw:success).

RSVP Call Examples

- A call gets established with “Optional” policy, and the initial RSVP reservation succeeds. The parties talk for 5 minutes.

Field Names	CDR
globalCallID_callId	300
origLegCallIdentifier	16777300
destLegCallIdentifier	16777301
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
origDTMFMethod	2

destDTMFMethod	2
duration	300

- The system establishes a call with “Optional” policy, and the initial RSVP reservation succeeds, then it loses its bandwidth reservation but regains it after a retry. The parties talk for 1 minute.

Field Names	CDR
globalCallID_callId	301
origLegCallIdentifier	16777302
destLegCallIdentifier	16777303
callingPartyNumber	20000
origCalledPartyNumber	20001
finalCalledPartyNumber	20001
lastRedirectDn	20001
origCause_Value	0
dest_CauseValue	16
origDTMFMethod	2:5:2
destDTMFMethod	2:5:2
duration	60

Redirection (3xx) Calls

The following example CDRs apply for a the redirection feature (3xx).

When a call is redirected by the Redirection Feature (3xx), the **origCalledPartyRedirectOnBehalfOf** and **lastRedirectRedirectOnBehalfOf** fields specify (Unified CM Redirection = 19). The **origCalledPartyRedirectReason** and the **lastRedirectRedirectReason** specify (Redirection = 162).

Redirection (3xx) Examples

- **Redirection Example** – Activate CFA on SIP phone 10010 (registered to Cisco Unified Communications Manager) with a CFA destination of 10000. 35010 calls 10010 which is CFA to 10000. The call gets redirected from 10010 to 10000. 10000 answers the call and talks for 1 minute.

Field Names	Original Call CDR
globalCallID_callId	11
origLegCallIdentifier	21832023
destLegCallIdentifier	21832026
callingPartyNumber	35010
originalCalledPartyNumber	10010
finalCalledPartyNumber	10000
lastRedirectDn	10010
origCause_Value	0
dest_CauseValue	16

origCalledPartyRedirectReason	162
lastRedirectRedirectReason	162
origCalledPartyRedirectOnBehalfOf	19
lastRedirectRedirectOnBehalfOf	19
origTerminationOnBehalfOf	0
destTerminationOnBehalfOf	12
joinOnBehalfOf	19
duration	60

Replaces Calls

The following examples display CDRs for various types of Replaces calls.

Replaces Examples

- **Invite with Replaces** – SIP phone 35010 calls SIP phone 35020. The transfer button gets pressed on 35010, and a call is placed to SCCP phone 3000, 3000 answers the call; then, SIP phone 35010 completes the transfer. The final transferred call occurs between 35020 and 3000.



Note When the transfer is complete, an Invite with Replaces is sent to Cisco Unified Communications Manager.

Field Names	Original Call CDR	Reverted Call CDR
globalCallID_callId	5045247	5045248
origLegCallIdentifier	21822467	21822469
destLegCallIdentifier	21822468	21822468
callingPartyNumber	35010	35020
originalCalledPartyNumber	3000	3000
finalCalledPartyNumber	3000	3000
lastRedirectDn	3000	35010
origCause_Value	393216	0
dest_CauseValue	393216	16
origCalledPartyRedirectReason	0	0
lastRedirectRedirectReason	0	146
origCalledPartyRedirectOnBehalfOf	0	0
lastRedirectRedirectOnBehalfOf	0	18
origTerminationOnBehalfOf	18	0
destTerminationOnBehalfOf	18	12
joinOnBehalfOf	0	18
duration	5	60

- **Refer with Replaces** – SIP phone 35010 calls SCCP 3000, the transfer button gets pressed on 35010, and a call is placed to SCCP 3001, 3001 answers the call; then, the SIP phone 35010 completes the transfer. The final transferred call occurs between 3000 and 3001.



Note When the transfer completes, a Refer with Replaces gets sent to Cisco Unified Communications Manager.

Field Names	Original Call CDR	Consultation Call CDR	Final Transferred Call CDR
globalCallID_callId	5045245	5045246	5045245
origLegCallIdentifier	21822461	21822463	21822462
destLegCallIdentifier	21822462	21822464	21822464
callingPartyNumber	35010	35010	3000
originalCalledPartyNumber	3000	3001	3001
finalCalledPartyNumber	3000	3001	3001
lastRedirectDn	3000	3001	35010
origCause_Value	393216	393216	16
dest_CauseValue	393216	393216	0
origCalledPartyRedirectReason	0	0	130
lastRedirectRedirectReason	0	0	146
origCalledPartyRedirectOnBehalfOf	0	0	17
lastRedirectRedirectOnBehalfOf	0	0	18
origTerminationOnBehalfOf	17	18	12
destTerminationOnBehalfOf	17	18	17
joinOnBehalfOf	0	0	18
duration	25	4	25

Refer Calls

See the “Replaces Calls” section on page 10-75 for an example of Refer with Replaces.

Monitor Calls

The following examples show CDRs for Monitor calls.

Monitor Examples

- **Monitor Example 1** – The customer (9728134987) calls the agent (30000), and the agent answers. The supervisor (40003) monitors the call. The **destConversationID** from the monitoring call matches the **destLegCallIdentifier** of the monitored call.

Field Names	Monitored Call CDR	Monitoring Call CDR
globalCallID_callId	7	10
origLegCallIdentifier	16777230	16777232
destLegCallIdentifier	16777231	16777235
callingPartyNumber	9728134987	40003
originalCalledPartyNumber	30000	b001501001
finalCalledPartyNumber	30000	b001501001
lastRedirectDn	30000	b001501001
origCause_Value	16	0
dest_CauseValue	0	0
origCalledPartyRedirectReason	0	370
lastRedirectRedirectReason	0	370
origCalledPartyRedirectOnBehalfOf		28
lastRedirectRedirectOnBehalfOf		28
destConversationID	0	16777231

- **Monitor Example 2** – The agent (30000) calls the customer (9728134987), and the customer answers. The supervisor (40003) monitors the call. The **destConversationID** from the monitoring call matches the **origLegCallIdentifier** of the monitored call.

Field Names	Monitored Call CDR	Monitoring Call CDR
globalCallID_callId	71	101
origLegCallIdentifier	16777299	16777932
destLegCallIdentifier	16777300	16777935
callingPartyNumber	30000	40003
originalCalledPartyNumber	9728134987	b001501002
finalCalledPartyNumber	9728134987	b001501002
lastRedirectDn	9728134987	b001501002
origCause_Value	16	0
dest_CauseValue	0	0
origCalledPartyRedirectReason	0	370
lastRedirectRedirectReason	0	370
origCalledPartyRedirectOnBehalfOf		28
lastRedirectRedirectOnBehalfOf		28
destConversationID	0	16777299

Recording Calls

The following examples show CDRs for Recording Calls.

Recording Calls Examples

- **Recording Calls Example 1** – The customer (9728134987) calls the agent (30000), and the agent answers. The recording feature creates two recording calls to the recording device and results in two additional CDRs: one for the agent voice and another for the customer voice. The **origConversationID** from the recording CDRs match the **destLegCallIdentifier** of the recorded call. In this example, the customer hangs up.

Field Names	Recorded Call CDR	Recording Call CDR1	Recording Call CDR2
globalCallID_callId	7	10	11
origLegCallIdentifier	16777110	16777120	16777122
destLegCallIdentifier	16777111	16777121	16777123
callingPartyNumber	9728134987	30000	30000
originalCalledPartyNumber	30000	90000	90000
finalCalledPartyNumber	30000	90000	90000
lastRedirectDn	30000	90000	90000
origCause_Value	16	0	0
dest_CauseValue	0	0	0
origCalledPartyRedirectReason	0	354	354
lastRedirectRedirectReason	0	354	354
origCalledPartyRedirectOnBehalfOf		27	27
lastRedirectRedirectOnBehalfOf		27	27
destConversationID	0	16777111	16777111

- **Recording Calls Example 2** – The agent (30000) calls the customer (9728134987), and the customer answers. The recording feature creates two recording calls to the recording device and results in two additional CDRs: one for the agent voice and another for the customer voice. The **origConversationID** from the recording CDRs matches the **origLegCallIdentifier** of the recorded call. In this example, the agent hangs up.

Field Names	Recorded Call CDR	Recording Call CDR1	Recording Call CDR2
globalCallID_callId	71	100	110
origLegCallIdentifier	16777113	16777220	16777222
destLegCallIdentifier	16777114	16777221	16777223
callingPartyNumber	30000	30000	30000
originalCalledPartyNumber	9728134987	90000	90000
finalCalledPartyNumber	9728134987	90000	90000
lastRedirectDn	9728134987	90000	90000
origCause_Value	16	16	16
dest_CauseValue	0	0	0
origCalledPartyRedirectReason	0	354	354

lastRedirectRedirectReason	0	354	354
origCalledPartyRedirectOnBehalfOf		27	27
lastRedirectRedirectOnBehalfOf		27	27
destConversationID	0	16777113	16777113

AAC and iLBC Calls

The following examples show CDRs for AAC and iLBC calls.

AAC Call Example

- This example applies to a call with AAC codec.

Field Names	AAC CDR
globalCallID_callId	121
origLegCallIdentifier	101
destLegCallIdentifier	102
callingPartyNumber	51234
originalCalledPartyNumber	57890
finalCalledPartyNumber	57890
lastRedirectDn	57890
origCause_Value	0
dest_CauseValue	16
origMediaCap_payloadCapability	42
origMediaCap_Bandwidth	256
destMediaCap_payloadCapability	42
destMediaCap_Bandwidth	256

iLBC Call Example

- This example applies to a call with iLBC codec.

Field Names	iLBC CDR
globalCallID_callId	121
origLegCallIdentifier	101
destLegCallIdentifier	102
callingPartyNumber	51234
originalCalledPartyNumber	57890
finalCalledPartyNumber	57890
lastRedirectDn	57890
origCause_Value	0

dest_CauseValue	16
origMediaCap_payloadCapability	86
origMediaCap_Bandwidth	15
destMediaCap_payloadCapability	86
destMediaCap_Bandwidth	15

Mobility

The following examples show CDRs for mobility calls.

Mobility Examples

- Mobility Follow Me Example** - A dual-mode phone with the Enterprise number of 22285 and the cell number of 9728324124. 22202 calls 22285, and both 22285 and 9728324124 ring. The cell phone answers the call. The system generates a single CDR for this Follow Me call. The parties talk for 80 seconds.

Field Names	Follow Me Call CDR
globalCallID_callId	861
origLegCallIdentifier	22481077
destLegCallIdentifier	22481078
callingPartyNumber	22202
originalCalledPartyNumber	22285
finalCalledPartyNumber	9728324124
lastRedirectDn	22285
origCause_Value	16
dest_CauseValue	0
lastRedirectRedirectReason	0
lastRedirectRedirectOnBehalfOf	0
origTerminationOnBehalfOf	
destTerminationOnBehalfOf	
joinOnBehalfOf	0
duration	80

- Mobility HandIn Example** - A dual-mode phone with the Enterprise number of 22285 and the cell number of 9728324124 establishes to the cell phone 9728324124. They talk for 39 seconds; then, the dual-mode phone gets carried into the Enterprise network, and the call gets switched from the cell network to the Enterprise network. The parties continue to talk for another 15 seconds.

Field Names	Call to cell #9728324214 CDR	HandIn Call to the Enterprise CDR
globalCallID_callId	864	864
origLegCallIdentifier	22481083	22481083
destLegCallIdentifier	22481085	22481087
callingPartyNumber	22202	22202
originalCalledPartyNumber	919728324124	22285
finalCalledPartyNumber	919728324124	22285
lastRedirectDn	919728324124	22285
origCause_Value	393216	0
dest_CauseValue	393216	16
lastRedirectRedirectReason	0	303
lastRedirectRedirectOnBehalfOf	0	24
origTerminationOnBehalfOf	24	24
destTerminationOnBehalfOf	24	12
joinOnBehalfOf	0	24
duration	39	15

- **Mobility HandOut Example** - A dual-mode phone has the Enterprise number of 22285 and the cell number of 9728324124. The handout number (H-number) specifies 555123. A call goes to the Enterprise number 22285. They talk for 21 seconds; then, the dual-mode phone gets carried out of the Enterprise network and into the cell network. The call gets switched from the Enterprise network to the cell network (9728324124). The parties continue to talk for another 39 seconds.

Field Names	Enterprise Call to 22285 CDR	Server Call from cell phone to H-Number CDR	Handout Call CDR
globalCallID_callId	964	965	964
origLegCallIdentifier	22481083	22481095	22481093
destLegCallIdentifier	22481094	22481096	22481095
callingPartyNumber	22202	9728324124	22202
originalCalledPartyNumber	22285	555123	9728324124
finalCalledPartyNumber	22285	555123	9728324124
lastRedirectDn	22285	555123	9728324124
origCause_Value	393216	393216	0
dest_CauseValue	393216	393216	16
lastRedirectRedirectReason	0	0	319
lastRedirectRedirectOnBehalfOf	0	0	24
origTerminationOnBehalfOf	24	24	24

destTerminationOnBehalfOf	24	24	12
joinOnBehalfOf	0	0	24
duration	21	0	39

- Mobility Call Pickup Example** - A dual-mode phone with the Enterprise number of 22285 and the cell number of 9728324124, establishes a call to the Enterprise number 22285. They talk for 40 seconds; then, call pickup gets invoked. The call gets switched from the Enterprise phone to the cell phone. The parties continue to talk for another 111 seconds.

Field Names	Enterprise Call to 22285 CDR	Server Call to Cell Phone CDR	Final Handout Call CDR
globalCallID_callId	555	566	964
origLegCallIdentifier	22481111	22481222	22481111
destLegCallIdentifier	22481112	22481223	22481222
callingPartyNumber	22202		22202
originalCalledPartyNumber	22285	9728324124	9728324124
finalCalledPartyNumber	22285	9728324124	9728324124
lastRedirectDn	22285	9728324124	9728324124
origCause_Value	393216	0	0
dest_CauseValue	393216	0	16
lastRedirectRedirectReason	0	0	335
lastRedirectRedirectOnBehalfOf	0	0	24
origTerminationOnBehalfOf	24	24	24
destTerminationOnBehalfOf	24	24	12
joinOnBehalfOf	0	0	24
duration	40	0	111

- Mobility IVR Example** - A call comes into the Cisco Unified Communications Manager with string (DID#RemoteDest#TargetNum#). The call gets redirected to the TargetNum. 9728131234 calls into an IVR, and data gets collected. The target destination specifies 812345 and the call gets redirected to 812345. The call remains connected for 60 seconds.

Field Names	Redirected Call CDR
globalCallID_callId	12345
origLegCallIdentifier	16677100
destLegCallIdentifier	16677102
callingPartyNumber	9728131234
originalCalledPartyNumber	8005559876
finalCalledPartyNumber	812345
lastRedirectDn	8005559876

origCause_Value	0
dest_CauseValue	16
lastRedirectRedirectReason	399
lastRedirectRedirectOnBehalfOf	24
origTerminationOnBehalfOf	0
destTerminationOnBehalfOf	0
duration	60

Intercom Calls

The following two examples show CDRs for intercom.

Intercom Examples

- **Whisper Intercom Example** - Phone 20000 invokes the intercom. The configured intercom partition name specifies “Intercom.”

Field Names	Original Call CDR
globalCallID_callId	1111000
origLegCallIdentifier	21822467
destLegCallIdentifier	21822468
callingPartyNumber	20000
originalCalledPartyNumber	20001
finalCalledPartyNumber	20001
origCause_Value	16
dest_CauseValue	0
origMediaTransportAddress_IP	0
origMediaTransportAddress_Port	0
destMediaTransportAddress_IP	-47446006
destMediaTransportAddress_Port	28480
origCalledPartyNumberPartition	Intercom
callingPartyNumberPartition	Intercom
finalCalledPartyNumberPartition	Intercom
duration	5

- **Talk-Back Intercom Example** - Phone 20000 presses the intercom button. 20001 invokes Talk-Back and talks to 20000. The configured intercom partition name specifies “Intercom.”

Field Names	Original Call CDR
globalCallID_callId	1111000

origLegCallIdentifier	21822469
destLegCallIdentifier	21822470
callingPartyNumber	20000
originalCalledPartyNumber	20001
finalCalledPartyNumber	20001
origCause_Value	16
dest_CauseValue	0
origMediaTransportAddress_IP	-131332086
origMediaTransportAddress_Port	29458
destMediaTransportAddress_IP	-47446006
destMediaTransportAddress_Port	29164
origCalledPartyNumberPartition	Intercom
callingPartyNumberPartition	Intercom
finalCalledPartyNumberPartition	Intercom
duration	5

CDR Field Descriptions

Table 10-4 defines all fields in the current CDRs in the order in which they appear in the CDR.

Table 10-4 CDR Field Descriptions

Field Name	Range of Values	Description
cdrRecordType	0, 1, 2	<p>Defines the type of record. The following valid values apply:</p> <ul style="list-style-type: none"> 0—Start call detail record (not used) 1—End call detail record (CDR) 2—CMR record <p>Default - For CDRs, this field always remains 1.</p>
globalCallID_callManagerId	Positive Integer	<p>Designates a unique Cisco Unified Communications Manager identity.</p> <p>The Global Call ID comprises two fields: globalCallID_callId globalCallID_callManagerId</p> <p>All records that are associated with a standard call have the same Global Call ID in them.</p> <p>Default -Ensure this field always is populated.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
globalCallID_callId	Positive Integer	<p>Designates unique call identity value that is assigned to each call. The system allocates this identifier independently on each call server. Values get chosen sequentially when a call begins. A value gets assigned for each call, successful or unsuccessful. When Cisco Unified Communications Manager restarts, this values resets to 1.</p> <p>The Global Call ID consists of two fields: globalCallID_callId globalCallID_callManagerId</p> <p>All records that are associated with a standard call have the same Global Call ID in them.</p> <p>Default - Ensure this field always is populated.</p>
origLegCallIdentifier	Positive Integer	<p>Identifies the originating leg of a call. Be aware that this value is unique within a cluster. If the leg of a call persists across several sub-calls, and consequently several CDRs (as during a call transfer), this value remains constant.</p> <p>Default - Ensure this field always is populated.</p>
dateTimeOrigination	Integer	<p>Identifies the date and time when the user goes off hook or the date and time that the H.323 Setup message is received for an incoming call. The time gets stored as UTC.</p> <p>Default - Ensure this field always is populated.</p>
origNodeId	Positive Integer	<p>Identifies the node within a cluster to which the originator of the call is registered at the time that the call is made.</p> <p>Default - Ensure this field always is populated.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
origSpan	0, Positive Integer	<p>For calls that originate at a gateway, this field indicates the B-channel number of the T1, PRI, or BRI trunk where the call originates, or a zero value for FXS or FXO trunks.</p> <p>For H.323 gateways, the span number is unknown, and this field contains the call leg ID of the originator.</p> <p>For calls that did not originate at a gateway, the value specifies zero.</p> <p>Default - Populated based on these rules.</p>
origIpAddr	Integer	<p>Identifies the IP address of the device that originated the call signaling.</p> <p>For Cisco Unified IP Phones, this field specifies the address of the phone.</p> <p>For PSTN calls, this field specifies the address of the H.323 gateway.</p> <p>For intercluster calls, this field specifies the address of the remote Cisco Unified Communications Manager.</p> <p>The “IP Addresses” section on page 10-8 describes the IP address format.</p> <p>Default - Populated based on these rules.</p>
callingPartyNumber	Text String	<p>Specifies numeric string of up to 25 characters.</p> <p>For calls that originate at a Cisco Unified IP Phone, this field shows the extension number of the line that is used.</p> <p>For incoming H.323 calls, this field specifies the value that is received in the Calling Party Number field in the Setup message. This field reflects any translations that are applied to the Calling Party Number before it arrives at the Cisco Unified Communications Manager (such as translations at the gateway).</p> <p>For server calls, where Cisco Unified Communications Manager originates a half call without a calling party, this field may remain empty.</p> <p>CallingPartyNumber could contain a SIP URI.</p> <p>Default - Populated based on these rules.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
callingPartyUnicodeLoginUserID	Unicode – UTF_8	Calling party login user ID. The format of this field specifies UTF_8. Default - Empty string “ “. If the user ID does not exist, this field stays empty.
origCause_location	0 to 15	For clearing causes that are received over ISDN signaling links, specifies the Location field that is indicated in the ISDN release message. The “Call Termination Cause Codes” section on page 10-110 lists the valid values per Q.850. For clearing causes that are created internally by the Cisco Unified Communications Manager, this value specifies zero. Default - 0.
origCause_value	0 to 129	For calls cleared by the originating party, this field reflects the reason for clearance. Cisco Unified Communications Manager currently uses the Q.850 codes and some Cisco Unified Communications Manager defined codes. The “Call Termination Cause Codes” section on page 10-110 lists these. Some nonstandard cause codes changed in this release. For calls that are cleared by the terminating party, this field specifies zero. In addition to the standard values that are described in Q.850, when a call is split by a feature (transfer/conference), the CDR terminates, and this field gets set to 393216. This represents a proprietary value for this field. Default - 0.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
origPrecedenceLevel	0 to 4	<p>For MLPP, each call leg includes a precedence level. This field represents the precedence level of the original leg.</p> <ul style="list-style-type: none"> • Precedence 0 = FLASH OVERRIDE/ EXECUTIVE OVERRIDE • Precedence 1 = FLASH • Precedence 2 = IMMEDIATE • Precedence 3 = PRIORITY • Precedence 4 = ROUTINE <p>Default - 4.</p>
origMediaTransportAddress_IP	0, Integer	<p>Identifies the IP address of the device that originates the media for the call.</p> <p>For Cisco Unified IP Phones, this field specifies the address of the phone.</p> <p>For PSTN calls, this field specifies the address of the H.323 gateway.</p> <p>For intercluster calls, this field specifies the address of the remote phone.</p> <p>The “IP Addresses” section on page 10-8 describes the IP address format.</p> <p>Default - 0. If media is not established, this field stays 0.</p>
origMediaTransportAddress_Port	0, Positive Integer	<p>Identifies the IP port number that is associated with the OrigMediaTransportAddress_IP field.</p> <p>Default - 0. If media is not established, this field stays 0.</p>
origMediaCap_payloadCapability	0, Positive Integer	<p>Identifies the codec type that the originator uses to transmit media.</p> <p>Cisco Unified Communications Manager currently uses the following payload capability values (0, 1-16, 18-20, 25, 32, 33, 81-86). The “Codec Types” section on page 10-108 lists the valid values.</p> <p>Default - 0. If media is not established, this field stays 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
origMediaCap_maxFramesPerPacket	0, Positive Integer	Identifies the number of milliseconds of data per packet that is sent by the originating party. This field is normally gets set to 10, 20, or 30 for G.729 or G.711 codecs, but the field can store any nonzero value. Default - 0. If media is not established, this field stays 0.
origMediaCap_g723BitRate	0	This field is not used in the current release of Cisco Unified Communications Manager. This field will remain 0.
origVideoCap_Codec	0, 100 = H.261, 101 = H.263, 102 = Vieo	Identifies the codec type that the originator uses to transmit video (H.261, H.263, or Vieo.) Default - 0. If media is not established, this field stays 0.
origVideoCap_Bandwidth	0, Positive Integer	Identifies the bandwidth measured in units of kbps. Default - 0. If media is not established, this field stays 0.
origVideoCap_Resolution	0, 1 = SQCIF, 2 = QCIF, 3 = CIF, 4 = CIF4, 5 = CIF16	Identifies the video resolution. Default - 0. If media is not established, this field stays 0.
origVideoTransportAddress_IP	0, Integer	Identifies the IP address of the device that originates the call. Default - 0. If media is not established, this field stays 0.
origVideoTransportAddress_Port	0, Positive Integer	Identifies the video RTP port that is associated with the origVideoTransportAddress_IP field. Default - 0. If media is not established, this field stays 0.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
origRSVPAudioStat	0 to 5	<p>Status of RSVP audio reservation from originator to terminator.</p> <p>0 – No reservation.</p> <p>1 – RSVP Reservation Failure condition at call setup or feature invocation.</p> <p>2 – RSVP Reservation Success condition at call setup or feature invocation.</p> <p>3 – RSVP Reservation No Response (RSVP Agent) condition at call setup or feature invocation.</p> <p>4 – RSVP Mid Call Failure Preempted condition (preempted after call setup).</p> <p>5 – RSVP Mid Call Failure Lost Bandwidth condition (includes all mid-call failures except MLPP preemption).</p> <p>Default – “0”.</p>
origRSVPVideoStat	0 to 5	<p>Status of RSVP video reservation from originator to terminator.</p> <p>0 – No reservation.</p> <p>1 – RSVP Reservation Failure condition at call setup or feature invocation.</p> <p>2 – RSVP Reservation Success condition at call setup or feature invocation.</p> <p>3 – RSVP Reservation No Response (RSVP Agent) condition at call setup or feature invocation.</p> <p>4 – RSVP MID Call Failure Preempted condition (preempted after call setup).</p> <p>5 – RSVP MID Call Failure Lost Bandwidth condition (includes all mid-call failures except MLPP preemption).</p> <p>Default – “0”.</p>
destLegCallIdentifier	0, Positive Integer	<p>Identifies the terminating leg of a call. This value remains unique within a cluster. If the leg of a call persists across several sub-calls and, consequently, several CDRs (as during a call transfer), this value remains constant.</p> <p>Default - 0. If the destination cannot be reached, this field stays 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
destNodeId	0, Positive Integer	Identifies the node within a cluster to which the terminating party of the call is registered at the time that the call is made. Default - 0. If the destination cannot be reached, this field stays 0.
destSpan	0, Positive integer	For calls that are received at a gateway, this field indicates the B channel number of the T1, PRI, or BRI trunk where the call is received, or a zero value for FXS or FXO trunks. For H.323 gateways, the span number remains unknown, and this field contains the call leg ID of the destination. For calls not terminating at a gateway, the value specifies zero. Default - 0. If the destination cannot be reached, this field stays 0.
destIpAddr	0, Integer	Identifies the IP address of the device that terminates the call signaling. For Cisco Unified IP Phones, this field specifies the address of the phone. For PSTN calls, this field specifies the address of the H.323 gateway. For intercluster calls, this field specifies the address of the remote Cisco Unified Communications Manager. The “ IP Addresses ” section on page 10-8 describes the IP address format. Default - 0. If the destination cannot be reached, this field stays 0.
originalCalledPartyNumber	Text String	Specifies number to which the original call was presented, prior to any call forwarding. If translation rules are configured, this number reflects the called number after the translations have been applied. Numeric string which could be either digits or a SIP URL. Default - empty string "". If destination cannot be reached, this field stays empty.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
finalCalledPartyNumber	Text String	<p>Specifies number to which the call finally gets presented, until it is answered or rings out. If no forwarding occurred, this number shows same number as originalCalledPartyNumber.</p> <p>For calls to a conference bridge, this field contains the actual identifier of the conference bridge, which is an alphanumeric string (for example, “b0019901001”).</p> <p>Numeric string that could be either digits or a SIP URL.</p> <p>Default - empty string “”. If destination cannot be reached, this field stays empty.</p>
finalCalledPartyUnicodeLoginUserID	Unicode – UTF_8	<p>Final called party specifies login user ID. The format of this field is UTF_8.</p> <p>Default - Empty string “”. If the user ID does not exist, this field stays empty.</p>
destCause_location	0 to 15	<p>For clearing causes that are received over ISDN signaling links, the ISDN release message indicates this location field. The “Call Termination Cause Codes” section on page 10-110 lists the valid values per Q.850. Some of the nonstandard cause codes changed in this release.</p> <p>For clearing causes that Cisco Unified Communications Manager creates internally, this value equals zero.</p> <p>Default - 0. If the destination cannot be reached, this field stays 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
destCause_value	0 to 129	<p>For calls that the destination party cleared, this field reflects the reason for the clearance. The “Call Termination Cause Codes” section on page 10-110 lists the valid values per Q.850. Some of the nonstandard cause codes changed in this release.</p> <p>For calls that the originating party clears, this field stays zero.</p> <p>In addition to the standard values that are described in Q.850, when a call gets split by a feature (transfer/conference), the CDR terminates, and this field gets set to 393216. This represents a proprietary value for this field.</p> <p>Default - 0. If the destination cannot be reached, this field stays 0.</p>
destPrecedenceLevel	0 to 4	<p>For MLPP, each call leg has a precedence level. This field represents the destination legs precedence level.</p> <ul style="list-style-type: none"> • Precedence 0 = FLASH OVERRIDE • Precedence 1 = FLASH • Precedence 2 = IMMEDIATE • Precedence 3 = PRIORITY • Precedence 4 = ROUTINE <p>Default - 4</p>
destMediaTransportAddress_IP	0, Integer	<p>Identifies the IP address of the device that terminates the media for the call.</p> <p>For Cisco Unified IP Phones, this field designates the address of the phone.</p> <p>For PSTN calls, this field designates the address of the H.323 gateway.</p> <p>For intercluster calls, this field shows the address of the remote phone.</p> <p>The “IP Addresses” section on page 10-8 describes the IP address format.</p> <p>Default - 0. If the destination cannot be reached, this field stays 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
destMediaTransportAddress_Port	0, Positive Integer	Identifies the IP port number that is associated with the DestMediaTransportAddress_IP field. Default - 0. If the destination cannot be reached, this field stays 0.
destMediaCap_payloadCapability	0, Positive Integer	Identifies the codec type that the terminating party used to transmit media. Cisco Unified Communications Manager currently uses the following payload capability values: 0, 1-16, 18-20, 25, 32, 33, 81-86. The “Codec Types” section on page 10-108 lists the valid values. Default - 0. If the destination cannot be reached, this field stays 0.
destMediaCap_maxFramesPerPacket	0, Positive Integer	Identifies the number of milliseconds of data per packet that the terminating party of the call sent. This field normally gets set to 10, 20, or 30 for G.729 or G.711 codecs but can store any nonzero value. This field can specify zero if the media is never established. Default - 0. If the destination cannot be reached, this field stays 0.
destMediaCap_g723BitRate	0	This field is not used in the current release of Cisco Unified Communications Manager. Default - This field stays 0.
destVideoCap_Codec	0, 100 = H.261, 101 = H.263, 102 = Vieo	Identifies the codec type that the terminating party used to transmit video (H.261, H.263, or Vieo). Default - 0. If the destination cannot be reached, this field stays 0.
destVideoCap_Bandwidth	0, Positive Integer	Identifies the bandwidth measured in units of kbps. Default - 0. If the destination cannot be reached, this field stays 0.
destVideoCap_Resolution	0, 1 = SQCIF, 2 = QCIF, 3 = CIF, 4 = CIF4, 5 = CIF16	Identifies the video resolution. Default - 0. If the destination cannot be reached, this field stays 0.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
destVideoTransportAddress_IP	0, Integer	Identifies the IP address of the device that receives the call. Default - 0. If the destination cannot be reached, this field stays 0.
destVideoTransportAddress_Port	0, Positive Integer	Identifies the video RTP port that is associated with the destVideoTransportAddress_IP field. Default - 0. If the destination cannot be reached, this field stays 0.
destRSVPAudioStat	0 - 5	Status of RSVP audio reservation from terminator to originator. 0 – No reservation. 1 – RSVP Reservation Failure condition at call setup or feature invocation. 2 – RSVP Reservation Success condition at call setup or feature invocation. 3 – RSVP Reservation No Response (RSVP Agent) condition at call setup or feature invocation. 4 – RSVP Mid Call Failure Preempted condition (preempted after call setup). 5 – RSVP Mid Call Failure Lost Bandwidth condition (includes all mid call failures except MLPP preemption). Default – “0”
destRSVPVideoStat	0 - 5	Status of RSVP video reservation from terminator to originator. 0 – No reservation. 1 – RSVP Reservation Failure condition at call setup or feature invocation. 2 – RSVP Reservation Success condition at call setup or feature invocation. 3 – RSVP Reservation No Response (RSVP Agent) condition at call setup or feature invocation. 4 – RSVP Mid Call Failure Preempted condition (preempted after call setup). 5 – RSVP Mid Call Failure Lost Bandwidth condition (includes all mid call failures except MLPP preemption). Default – “0”

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
dateTimeConnect	0, Integer	Identifies the date and time that the call connects. The time gets stored as UTC. If the call is never answered, this value shows zero. Default - 0. If the call is never connected, this field stays 0.
dateTimeDisconnect	0, Integer	Identifies the date and time when the call is cleared. This field gets set even if the call never connects. The time gets stored as UTC. Default - 0. If the call is never connected, this field stays 0.
lastRedirectDn	Text String	Specifies a numeric string of up to 25 characters. Numeric string can hold the digits or a SIP URL. For forwarded calls, this field specifies the phone number of the next to last hop before the call reaches its final destination. If only one hop occurs, this number matches the OriginalCalledPartyNumber. For calls that are not forwarded, this field matches the OriginalCalledPartyNumber and the FinalCalledPartyNumber. For calls to a conference bridge, this field contains the actual identifier of the conference bridge, which is an alphanumeric string (for example, "b0019901001"). Default - empty string "". If call was never redirected, this field remains empty.
pkid	Text String	Identifies a text string that the database uses internally to uniquely identify each row. This text string provides no meaning to the call itself. Default - A unique ID should always populate this field.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
originalCalledPartyNumberPartition	Text String	<p>Uniquely identifies the partition name that is associated with the OriginalCalledPartyNumber field because Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions.</p> <p>For calls that egress through an H.323 gateway, this field uniquely specifies the partition name that is associated with the route pattern that points to the gateway.</p> <p>Default - empty string "". If the original called party does not have a partition, this field remains empty.</p>
callingPartyNumberPartition	Text String	<p>Uniquely identifies the partition name that is associated with the CallingPartyNumber field because Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions.</p> <p>For calls that ingress through an H.323 gateway, this field remains blank.</p> <p>Default - empty string "". If the original called party does not have a partition, this field remains empty.</p>
finalCalledPartyNumberPartition	Text String	<p>Uniquely identifies the partition name that is associated with the FinalCalledPartyNumber field because Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions.</p> <p>For calls that egress through an H.323 gateway, this field uniquely specifies the partition name that is associated with the route pattern that points to the gateway.</p> <p>Default - empty string "". If the final called party does not have a partition, this field remains empty.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
lastRedirectDnPartition	Text String	<p>Uniquely identifies the partition name that is associated with the LastRedirectDn field because Cisco Unified Communications Manager supports multiple Cisco Unified IP Phones with the same extension number in different partitions.</p> <p>For calls that egress through an H.323 gateway, this field specifies the partition name that is associated with the route pattern that points to the gateway.</p> <p>Default - empty string "". If the last redirecting Party does not have a partition or the call was never redirected, this field stays empty.</p>
duration	0, Positive integer	<p>Identifies the difference between the Connect Time and Disconnect Time. This field specifies the time that the call remains connected, in seconds. This field remains zero if the call never connects or if it connects for less than 1 second.</p> <p>Default - 0.</p>
origDeviceName	Text String	<p>Specifies text string that identifies the name of the originating device.</p> <p>Default - Ensure this field always is populated.</p>
destDeviceName	Text String	<p>Specifies text string that identifies the name of the destination device.</p> <p>Default - empty string "". If the original device does not have a name, this field stays empty.</p>
origCallTerminationOnBehalfOf	0, Positive Integer	<p>Specifies code that identifies why the originator was terminated.</p> <p>For example, if the originator of the call hangs up the phone, the OnBehalfOf code shows "12" for Device. If the call terminates because of a transfer, the OnBehalfOf code shows "10" for Transfer.</p> <p>See the "OnBehalfOf Codes" section on page 10-114 for a list of the codes. This release added new OnBehalfOf codes.</p> <p>Default - 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
destCallTerminationOnBehalfOf	0, Positive Integer	<p>Specifies code that identifies why the destination was terminated.</p> <p>For example, if the originator of the call hangs up the phone, the OnBehalfOf code shows “12” for Device. If the call terminates because of a transfer, the OnBehalfOf code shows “10” for Transfer.</p> <p>See the “OnBehalfOf Codes” section on page 10-114 for a list of the codes. This release added new OnBehalfOf codes.</p> <p>Default - 0.</p>
origCalledPartyRedirectOnBehalfOf	0, Positive Integer	<p>Specifies code that identifies the reason for redirection of the original called party.</p> <p>For example, if the original called party was redirected because of a conference, the OnBehalfOf code specifies “4.”</p> <p>See the “OnBehalfOf Codes” section on page 10-114 for a list of the codes. This release added new OnBehalfOf codes.</p> <p>Default - 0.</p>
lastRedirectRedirectOnBehalfOf	0, Integer	<p>Specifies code that identifies the reason for redirection of the last redirected party.</p> <p>For example, if the last redirected party was redirected on behalf of a conference, the OnBehalfOf code specifies “4.”</p> <p>See the “OnBehalfOf Codes” section on page 10-114 for a list of the codes. This release added new OnBehalfOf codes.</p> <p>Default - 0.</p>
origCalledPartyRedirectReason	0, Integer	<p>Identifies the reason for a redirect of the original called party.</p> <p>See the “Redirect Reason Codes” section on page 10-113 for a complete list of the codes. This release added new redirect reason values.</p> <p>Default - 0.</p>

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
lastRedirectRedirectReason	0, Integer	Identifies the last redirect reason for redirection. See the “Redirect Reason Codes” section on page 10-113 for a complete list of the codes. This release added new redirect reason values. Default: 0.
destConversationID	0, Integer	Specifies unique identifier that is used to identify the parties of a conference call. For conference chaining scenarios, the origConversationID and destConversationID fields identify which conferences are chained together. Default: 0.
globalCallId_ClusterId	Text String	Unique ID that identifies a cluster of Cisco Unified Communications Manager. The field is generated at installation and is not used by Cisco Unified Communications Manager. The fields globalCallId_ClusterId + globalCallId_CMId + globalCallId_CallId make up this unique key. Default: This field should always be populated.
joinOnBehalfOf	0, Integer	Specifies code that identifies the reason for a join. For example, if the join takes place on behalf of a transfer, the OnBehalfOf code specifies “10.” See the “OnBehalfOf Codes” section on page 10-114 for a list of the codes. This release added new OnBehalfOf codes. Default: 0
Comment	Text String	Allows features to add text to the CDRs. This text can describe details about the call. For example, the following field flags malicious calls: Tag—CallFlag Value—MALICIOUS Default: Empty string “”.
authCodeDescription	Text String	Description of the FAC. Default: Empty string “” or null.

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
authorizationLevel	0, Integer	Level of the FAC. Default: 0
clientMatterCode	Text String	Before the system extends a call, the user enters a client matter code that can be used for assigning account or billing codes to calls. Default: Empty string "" or null.
origDTMFMethod	0, Positive Integer	DTMF method that the originator uses. 0 - No DTMF - Use ANY matched DTMF. 1 - OOB - Use OOB if endpoints behind SIPTrunk support it. 2 - 2833 - Use RFC2833 if endpoints behind SIPTrunk support it. 3 - OOB and 2833 - Use both KPML and RFC2833 if endpoints behind SIPTrunk can support both. 4 - Unknown Default: 0 (No preference)
destDTMFMethod	0, Positive Integer	DTMF method that the destination uses. 0 - No DTMF - Use ANY matched DTMF. 1 - OOB - Use OOB if endpoints behind SIPTrunk support it. 2 - 2833 - Use RFC2833 if endpoints behind SIPTrunk support it. 3 - OOB and 2833 - Use both KPML and RFC2833 if endpoints behind SIPTrunk can support both. 4 - Unknown. Default: 0 (No preference)
callSecuredStatus	0, Positive Integer	The highest security status that is reached during a call. For example, if the call is originally unsecured, then later the call changes to secured, the CDR contains 1 for "Secured" even though different portions of the call had different status values. 0 - Non-secured 1 - Authenticated (not encrypted) 2 - Secured (encrypted) Default: 0 (Non-secured)

Table 10-4 CDR Field Descriptions (continued)

Field Name	Range of Values	Description
origConversationID	Integer	Identifies the conference ID that is associated with the originating leg of the call. In most cases, this field equals 0. For conference chaining scenarios, the origConversationID and destConversationID fields identify which conferences are chained together. Default: 0
origMediaCap_Bandwidth	0, Positive Integer	The media bandwidth that is used at the origination of the call. Default: 0
destMediaCap_Bandwidth	0, Positive Integer	The media bandwidth used at the destination of the call. Default: 0
authorizationCodeValue	Text String	Forced Authorization Code (FAC) that is associated with the call. Default: Empty string "" or null.

CMR Field Descriptions (Diagnostic)

Table 10-5 contains the fields, range of values, and field descriptions of the CMRs in the order in which they appear in the CMR.

Table 10-5 CMR Field Descriptions

Field Name	Range of Values	Description
cdrRecordType	0, 1, or 2	Specifies the type of this specific record. The following valid values apply: <ul style="list-style-type: none"> • 0—Start call detail record (not used) • 1—End call detail record • 2—CMR record Default - For CMRs, this field always specifies 2.

Table 10-5 CMR Field Descriptions (continued)

Field Name	Range of Values	Description
globalCallID_callManagerId	Positive Integer	<p>Specifies a unique Cisco Unified Communications Manager identity.</p> <p>This field makes up half of the Global Call ID. The Global Call ID comprises the following fields:</p> <ul style="list-style-type: none"> • globalCallId_callId • globalCallID_callManagerID <p>All records that are associated with a standard call have the same Global Call ID in them.</p> <p>Default - Ensure this field always is populated.</p>
globalCallId_callId	Positive Integer	<p>Specifies a unique call identity value that gets assigned to each call. The system allocates this identifier independently on each call server. Values get chosen sequentially when a call begins. Each call, successful or unsuccessful, receives value assignment.</p> <p>This field makes up half the Global Call ID. The Global Call ID comprises the following two fields:</p> <ul style="list-style-type: none"> • globalCallId_callId • globalCallID_callManagerID <p>All records that are associated with a standard call have the same Global Call ID in them.</p> <p>Default - Ensure this field always is populated.</p>
nodeId	Positive Integer	<p>Specifies the node within the Cisco Unified Communications Manager cluster where this record was generated.</p> <p>Default - Ensure this field always is populated.</p>
callIdentifier	Positive Integer	<p>Identifies the call leg to which this record pertains.</p> <p>Default - Ensure this field always is populated.</p>

Table 10-5 CMR Field Descriptions (continued)

Field Name	Range of Values	Description
directoryNumber	Integer	Specifies the directory number of the device from which these diagnostics were collected. Default - Ensure this field always is populated.
dateTimeStamp	Integer	Represents the approximate time that the device went on hook. Cisco Unified Communications Manager records the time when the phone responds to a request for diagnostic information. Default - Ensure this field always is populated.
numberPacketsSent	Integer	Designates the total number of Routing Table Protocol (RTP) data packets that the device transmitted since starting transmission on this connection. The value remains zero if the connection was set in “receive only” mode. Default - 0.
numberOctetsSent	Integer	Specifies the total number of payload octets (that is, not including header or padding) that the device transmitted in RTP data packets since starting transmission on this connection. The value remains zero if the connection was set in “receive only” mode. Default - 0.
numberPacketsReceived	Integer	Specifies the total number of RTP data packets that the device received since starting reception on this connection. The count includes packets that are received from different sources if this is a multicast call. The value remains zero if the connection was set in “send only” mode. Default - 0.

Table 10-5 CMR Field Descriptions (continued)

Field Name	Range of Values	Description
numberOctetsReceived	Integer	Specifies the total number of payload octets (that is, not including header or padding) that the device received in RTP data packets since starting reception on this connection. The count includes packets that are received from different sources if this is a multicast call. The value remains zero if the connection was set in “send only” mode. Default - 0.
numberPacketsLost	Integer	Designates the total number of RTP data packets that have been lost since the beginning of reception. This number designates the number of packets that were expected, less the number of packets that were actually received, where the number of packets that were received includes any that are late or duplicates. Thus, packets that arrive late do not get counted as lost, and the loss may be negative if duplicates exist. The number of packets that are expected designates the extended last sequence number that was received, as defined next, less the initial sequence number that was received. The value remains zero if the connection was set in “send only” mode. For detailed information, see RFC 1889. Default - 0.
jitter	Integer	Provides an estimate of the statistical variance of the RTP data packet interarrival time, measured in milliseconds and expressed as an unsigned integer. The interarrival jitter J specifies the mean deviation (smoothed absolute value) of the difference D in packet spacing at the receiver, compared to the sender for a pair of packets. RFC 1889 contains detailed computation algorithms. The value remains zero if the connection was set in “send only” mode. Default - 0.

Table 10-5 CMR Field Descriptions (continued)

Field Name	Range of Values	Description
latency	Integer	Designates value that is an estimate of the network latency, expressed in milliseconds. This value represents the average value of the difference between the NTP timestamp that the RTP Control Protocol (RTCP) messages indicates and the NTP timestamp of the receivers, measured when these messages are received. Cisco Unified Communications Manager obtains the average by summing all estimates then dividing by the number of RTCP messages that have been received. For detailed information, see RFC 1889. Default - 0.
pkid	Text String	Identifies a text string that the database uses internally to uniquely identify each row. This text string provides no meaning to the call itself. Default - The system always populates this field with a unique ID.
directoryNumberPartition	Text String	Identifies the partition of the directory number. Default - Empty string, "". This field may remain empty if no partition exists.
deviceName	Text String	Identifies the name of the device. Default - Empty string "". This field may remain empty if there is no device name.
globalCallId_ClusterId	Text String	Designates unique ID that identifies a cluster of Cisco Unified Communications Managers. The system generates this field during installation, but Cisco Unified Communications Manager does not use it: globalCallId_ClusterId + globalCallId_callId. Default - Ensure this field always is populated.

Table 10-5 CMR Field Descriptions (continued)

Field Name	Range of Values	Description
varVQMetrics	Text String	<p>This field contains a variable number of voice quality metrics. This field comprises a string of voice quality metrics that are separated by a semicolon.</p> <p>The format of the string follows: fieldName=value;fieldName=value.precision</p> <p>This example shows voice quality data, but the names may differ. "MLQK=4.5000;MLQKav=4.5000;MLQKmn=4.5000;MLQKmx=4.5000;MLQKvr=0.95;CCR=0.0000;ICR=0.0000;ICRmx=0.0000;CS=0;SCS=0"</p> <p>Note See Table 10-6 “K-Factor Data Stored in Cisco Unified Communications Manager CMRs” for a complete list of K-Factor data.</p>

K-Factor Data in CMRs

K-factor, an endpoint mean opinion score (MOS) estimation algorithm that is defined in ITU standard P.VTQ, serves as a general estimator and is used to estimate the mean value of a perceptual evaluation of speech quality (PESQ) population for a specific impairment pattern.

MOS relates to the output of a well designed listening experiment. All MOS experiments use a five point PESQ scale as defined in ITU standard P.862.1, which describes the PESQ as an objective method for end-to-end speech quality assessment of narrow-band telephone networks and speech codecs.

Be aware that the MOS estimate is a number that is inversely proportional to frame loss density. Clarity decreases as more frames are lost or discarded at the receiving end. The loss or discarding of these frames represents “concealment.” Concealment statistics measure packet (frame) loss and its effect on voice quality in an impaired network.

K-factor represents a weighted estimate of average user annoyance due to distortions that are caused by effective packet loss such as dropouts and warbles. It does not estimate the impact of delay-related impairments such as echo. It provides an estimate of listening quality (MOS-LQO) rather than conversational quality (MOS-CQO), and measurements of average user annoyance range from 1 (poor voice quality) to 5 (very good voice quality).

Because K-factor is trained or conditioned by speech samples from numerous speech databases, where each training sentence or network condition associated with a P.862.1 value has a duration of 8 seconds, for more accurate scores, the system generates k-factor estimates for every 8 seconds of active speech.

Consider K-factor and other MOS estimators to be secondary or derived statistics because they warn a network operator of frame loss only after the problem becomes significant. Packet counts, concealment ratios, and concealment second counters represent primary statistics because they alert the network operator before network impairment has an audible impact or is visible through MOS.

Table 10-6 displays the K-factor data that is stored in the Cisco Unified Communications Manager CMRs.

Table 10-6 K-Factor Data Stored in Cisco Unified Communications Manager CMRs

Field Name	Phone Display Name	D&I User Interface Text and Description
CCR	Cum Conceal Ratio	Cumulative Conceal Ratio specifies the cumulative ratio of concealment time over speech time that is observed after starting a call.
ICR	Interval Conceal Ratio	Interval Conceal Ratio specifies an interval-based average concealment rate that is the ratio of concealment time over speech time for the last 3 seconds of active speech.
ICRmx	Max Conceal Ratio	Interval Conceal Ratio Max specifies the maximum concealment ratio that is observed during the call.
CS	Conceal Secs	Conceal Secs specifies the duration of time during which some concealment is observed during a call.
SCS	Severely Conceal Secs	Severely Conceal Secs specifies the time during which a significant amount of concealment is observed. If the concealment that is observed is usually greater than 50 milliseconds or approximately 5 percent, the speech probably represents not very audible speech.
MLQK	MOS LQK	MOS Listening Quality K-factor provides an estimate of the MOS score of the last 9 seconds of speech on the reception signal path.
MLQKmn	Min MOS LQK	MOS Listening Quality K-factor Min specifies the minimum score that was observed since the beginning of a call and represents the worst sounding 8 second interval.
MLQKmx	Max MOS LQK	MOS Listening Quality K-factor Max specifies the maximum score that was observed since the beginning of a call and represents the best sounding 8 second interval.
MLQKav	Avg MOS LQK	MOS Listening Quality K-factor Avg8 specifies the running average of scores that were observed since the beginning of a call.

Codec Types

Table 10-7 contains the compression and payload types that may appear in the codec fields.

Table 10-7 *Codec Types*

Value	Description
1	NonStandard
2	G711Alaw 64k
3	G711Alaw 56k
4	G711mu-law 64k
5	G711mu-law 56k
6	G722 64k
7	G722 56k
8	G722 48k
9	G7231
10	G728
11	G729
12	G729AnnexA
13	Is11172AudioCap
14	Is13818AudioCap
15	G.729AnnexB
16	G.729 Annex AwAnnexB
18	GSM Full Rate
19	GSM Half Rate
20	GSM Enhanced Full Rate
25	Wideband 256K
32	Data 64k
33	Data 56k
40	G7221 32K
41	G7221 24K
42	AAC
80	GSM
81	ActiveVoice
82	G726_32K
83	G726_24K
84	G726_16K
86	iLBC
100	H261
101	H263
102	Vieo
103	H264
106	H224

Call Termination Cause Codes

The following tables contain call termination cause codes that may appear in the Cause fields in CDRs.

- “[Call Termination Cause Codes](#)”
- “[Cisco-Specific Call Termination Cause Codes](#)”

Table 10-8 Call Termination Cause Codes

Code	Description
0	No error
1	Unallocated (unassigned) number
2	No route to specified transit network (national use)
3	No route to destination
4	Send special information tone
5	Misdialed trunk prefix (national use)
6	Channel unacceptable
7	Call awarded and being delivered in an established channel
8	Preemption
9	Preemption—circuit reserved for reuse
16	Normal call clearing
17	User busy
18	No user responding
19	No answer from user (user alerted)
20	Subscriber absent
21	Call rejected
22	Number changed
26	Non-selected user clearing
27	Destination out of order
28	Invalid number format (address incomplete)
29	Facility rejected
30	Response to STATUS ENQUIRY
31	Normal, unspecified
34	No circuit/channel available
38	Network out of order
39	Permanent frame mode connection out of service
40	Permanent frame mode connection operational
41	Temporary failure
42	Switching equipment congestion
43	Access information discarded
44	Requested circuit/channel not available

Table 10-8 Call Termination Cause Codes (continued)

Code	Description
46	Precedence call blocked
47	Resource unavailable, unspecified
49	Quality of Service not available
50	Requested facility not subscribed
53	Service operation violated
54	Incoming calls barred
55	Incoming calls barred within Closed User Group (CUG)
57	Bearer capability not authorized
58	Meet-Me secure conference minimum security level not met
62	Inconsistency in designated outgoing access information and subscriber class
63	Service or option not available, unspecified
65	Bearer capability not implemented
66	Channel type not implemented
69	Requested facility not implemented
70	Only restricted digital information bearer capability is available (national use).
79	Service or option not implemented, unspecified
81	Invalid call reference value
82	Identified channel does not exist.
83	A suspended call exists, but this call identity does not.
84	Call identity in use
85	No call suspended
86	Call having the requested call identity has been cleared.
87	User not member of CUG (Closed User Group)
88	Incompatible destination
90	Destination number missing and DC not subscribed
91	Invalid transit network selection (national use)
95	Invalid message, unspecified
96	Mandatory information element is missing.
97	Message type nonexistent or not implemented
98	Message not compatible with the call state, or the message type nonexistent or not implemented
99	An information element or parameter non-existent or not implemented
100	Invalid information element contents
101	Message not compatible with the call state
102	Call terminated when timer expired; a recovery routine executed to recover from the error.
103	Parameter nonexistent or not implemented - passed on (national use)

Table 10-8 Call Termination Cause Codes (continued)

Code	Description
110	Message with unrecognized parameter discarded
111	Protocol error, unspecified
122	Precedence Level Exceeded
123	Device not Preemptable
125	Out of bandwidth (Cisco specific)
126	Call split (Cisco specific)
127	Interworking, unspecified
129	Precedence out of bandwidth

Table 10-9 Cisco-Specific Call Termination Cause Codes

Code	Description
262144	Conference Full (was 124)
393216	Call split (was 126) This code applies when a call terminates during a transfer operation because it was split off and terminated (was not part of the final transferred call). This can help determine which calls terminated as part of a feature operation.
458752	Drop any party/drop last party (was 128)
16777257	CCM_SIP_400_BAD_REQUEST
33554453	CCM_SIP_401_UNAUTHORIZED
50331669	CCM_SIP_402_PAYMENT_REQUIRED
67108885	CCM_SIP_403_FORBIDDEN
83886081	CCM_SIP_404_NOT_FOUND
100663359	CCM_SIP_405_METHOD_NOT_ALLOWED
117440591	CCM_SIP_406_NOT_ACCEPTABLE
134217749	CCM_SIP_407_PROXY_AUTHENTICATION_REQUIRED
150995046	CCM_SIP_408_REQUEST_TIMEOUT
184549398	CCM_SIP__410_GONE
201326719	CCM_SIP_411_LENGTH_REQUIRED
234881151	CCM_SIP_413_REQUEST_ENTITY_TOO_LONG
251658367	CCM_SIP_414_REQUEST_URI_TOO_LONG
268435535	CCM_SIP_415_UNSUPPORTED_MEDIA_TYPE
285212799	CCM_SIP_416_UNSUPPORTED_URI_SCHEME
83886207	CCM_SIP_420_BAD_EXTENSION
369098879	CCM_SIP_421_EXTENSION_REQUIRED
402653311	CCM_SIP_423_INTERVAL_TOO_BRIEF
1073741842	CCM_SIP_480_TEMPORARILY_UNAVAILABLE

Table 10-9 Cisco-Specific Call Termination Cause Codes (continued)

Code	Description
1090519081	CCM_SIP_481_CALL_LEG_DOES_NOT_EXIST
1107296281	CCM_SIP_482_LOOP_DETECTED = 0x42000000 + EXCHANGE_ROUTING_ERROR
1124073497	CCM_SIP_483_TOO_MANY_HOOPS
1140850716	CCM_SIP_484_ADDRESS_INCOMPLETE
1157627905	CCM_SIP_485_AMBIGUOUS
1174405137	CCM_SIP_486_BUSY_HERE
1191182367	CCM_SIP_487_REQUEST_TERMINATED
1207959583	CCM_SIP_488_NOT_ACCEPTABLE_HERE
1258291217	CCM_SIP_491_REQUEST_PENDING
1291845649	CCM_SIP_493_UNDECIPHERABLE
1409286185	CCM_SIP_500_SERVER_INTERNAL_ERROR
1442840614	CCM_SIP_502_BAD_GATEWAY
1459617833	CCM_SIP_503_SERVICE_UNAVAILABLE
1476395110	CCM_SIP_504_SERVER_TIME_OUT
1493172351	CCM_SIP_505_SIP_VERSION_NOT_SUPPORTED
1509949567	CCM_SIP_513_MESSAGE_TOO_LARGE
2701131793	CCM_SIP_600_BUSY_EVERYWHERE
2717909013	CCM_SIP_603_DECLINE
2734686209	CCM_SIP_604_DOES_NOT_EXIST_ANYWHERE
2751463455	CCM_SIP_606_NOT_ACCEPTABLE

Redirect Reason Codes

Table 10-10 contains the available Redirect Reason Codes that may appear in a record.

Table 10-10 Redirect Reason Codes

Q.931 Standard Redirect Reason Codes	
Value	Description
0	Unknown
1	Call Forward Busy
2	Call Forward No Answer
4	Call Transfer
5	Call Pickup
7	Call Park
8	Call Park Pickup

Table 10-10 *Redirect Reason Codes (continued)*

9	CPE Out of Order
10	Call Forward
11	Call Park Reversion
15	Call Forward All
Nonstandard Redirect Reason Codes	
18	Call Deflection
34	Blind Transfer
50	Call Immediate Divert
66	Call Forward Alternate Party
82	Call Forward On Failure
98	Conference
114	Barge
129	Aar
130	Refer
146	Replaces
162	Redirection (3xx)
177	SIP-forward busy greeting
207	Follow Me (SIP-forward all greeting)
209	Out of Service (SIP-forward busy greeting)
239	Time Of Day (SIP-forward all greeting)
242	Do Not Disturb (SIP-forward no answer greeting)
257	Unavailable (SIP-forward busy greeting)
274	Away (SIP-forward no answer greeting)
303	Mobility HandIn
319	Mobility HandOut
335	Mobility Cell Pickup
354	Recording
370	Monitoring
399	Mobility IVR

OnBehalfof Codes

Table 10-11 contains the available OnBehalfof Codes that may appear in a CDR record.

Table 10-11 *OnBehalfof Codes*

Value	Description
0	Unknown
1	CctiLine
2	Unicast Shared Resource Provider
3	Call Park
4	Conference
5	Call Forward
6	Meet-Me Conference
7	Meet-Me Conference Intercepts
8	Message Waiting
9	Multicast Shared Resource Provider
10	Transfer
11	SSAPI Manager
12	Device
13	Call Control
14	Immediate Divert
15	Barge
16	Pickup
17	Refer
18	Replaces
19	Redirection
20	Callback
21	Path Replacement
22	FacCmc Manager
23	Malicious Call
24	Mobility
25	Aar
26	Directed Call Park
27	Recording
28	Monitoring

Related Topics

- [CDR Analysis and Reporting Overview, page 1-1](#)
- [Getting Started with CDR Analysis and Reporting, page 2-1](#)
- [CAR System Configuration, page 3-1](#)

- [CAR Report Configuration, page 4-1](#)
- [CAR User Reports Configuration, page 5-1](#)
- [CAR System Reports Configuration, page 6-1](#)
- [CAR Device Reports Configuration, page 7-1](#)
- [CDR Search Configuration, page 8-1](#)
- [Export CDR/CMR Records Configuration, page 9-1](#)
- [CAR Report Results, page 11-1](#)

Related Documentation

The following documents contain additional information related to CDRs:

- *Cisco Unified Serviceability Administration Guide*
- *Cisco Communications Manager System Guide*



CHAPTER 11

CAR Report Results



Tip

When a logged-in Cisco Extension Mobility user makes a call, CAR uses the user ID that is configured for the Cisco Extension Mobility user in all reports that display a user ID. When the call is made by a non-Cisco Extension Mobility user (or logged-out Cisco Extension Mobility user) or when the call is made with a device that does not have a configured Owner User ID, CAR uses the default user ID, `_unspecifieduser`, in the report.

This chapter describes report output information for each CAR report type:

- [Bill Summary Report Results, page 11-2](#)
- [Bill Detail Report Results, page 11-4](#)
- [Top N By Charge or Duration Report Results, page 11-6](#)
- [Top N By Number of Calls Report Results, page 11-8](#)
- [Call Usage for Assistant—Detail Report Results, page 11-10](#)
- [Call Usage for Assistant—Summary Report Results, page 11-11](#)
- [Call Usage for Manager—Detail Report Results, page 11-13](#)
- [Call Usage for Manager—Summary Report Results, page 11-14](#)
- [Cisco IP Phone Services Report Results, page 11-16](#)
- [QoS Detail Report Results, page 11-16](#)
- [QoS Summary Report Results, page 11-18](#)
- [QoS by Gateways Report Results, page 11-19](#)
- [QoS by Call Types Report Results, page 11-20](#)
- [Traffic Summary Report Results, page 11-22](#)
- [Authorization Code Name Call Details Report Results, page 11-25](#)
- [Authorization Level Call Details Report Results, page 11-26](#)
- [Client Matter Code Details Report Results, page 11-27](#)
- [Malicious Call Details Report Results, page 11-27](#)
- [Precedence Call Summary Report Results, page 11-29](#)
- [System Overview Report Results, page 11-31](#)
- [CDR Error Report Results, page 11-32](#)

- [Gateway Detail Report Results, page 11-33](#)
- [Gateway Summary Report Results, page 11-35](#)
- [Gateway and Route Utilization Report Results, page 11-38](#)
- [Conference Call Detail Report Results, page 11-42](#)
- [Conference Bridge Utilization Report Results, page 11-44](#)
- [Voice Messaging Utilization Report Results, page 11-46](#)
- [Understanding the CDR Search Results, page 11-48](#)

Bill Summary Report Results

The report groups information by the user name in ascending order. The summary report includes the following fields (see [Table 11-1](#)).

Table 11-1 Summary Report Fields

Field	Description
Call Classification—Call	categories specify classes.
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, 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 3-2 .
Internal	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.
QoS	The number of calls for each Quality of Service category. Parameters that the CAR administrator sets provided basis for QoS categories; see the “Defining the Quality of Service (QoS) Values” section on page 4-5 and the “QoS by Gateway Report Configuration” section on page 6-6 .

Table 11-1 Summary Report Fields (continued)

Field	Description
Good	QoS for these calls designates the highest possible quality.
Acceptable	QoS for these calls shows them slightly degraded but still falls within an acceptable range.
Fair	QoS for these calls, although degraded, still fall within a usable range.
Poor	QoS for these calls was unsatisfactory.
NA	These calls did not match any criteria for the established QoS categories.
Calls—Indicates the number of calls for each call classification.	
Charge—Indicates the charge that is associated with each call. Call charge information that the CAR administrator provides for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.	

Figure 11-1 and Figure 11-2 display sample output from the Individual Bill and Department Bill Summary reports.

Figure 11-1 Individual Bill Summary Report Sample

Figure 11-2 Department Bill Summary Report Sample



Bill Detail Report Results

The report groups information by the user name in ascending order. The detail report includes the following fields (see [Table 11-2](#)).

Table 11-2 Detail Report Fields

Field	Description
Date	The date that the call originated.
Orig. Time	The time that the call originated.
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Call Classification—Call categories specify classes.	
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, 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 3-2 .

Table 11-2 *Detail Report Fields (continued)*

Field	Description
Internal	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.
QoS—The number of calls for each Quality of Service category. Parameters that the CAR administrator sets provided basis for QoS categories; see the “Defining the Quality of Service (QoS) Values” section on page 4-5 and the “QoS by Gateway Report Configuration” section on page 6-6.	
Good	QoS for these calls designates the highest possible quality.
Acceptable	QoS for calls that are slightly degraded but still within an acceptable range.
Fair	QoS for calls, that although degraded, still within a usable range.
Poor	QoS for calls that are unsatisfactory.
NA	Calls that did not match any criteria for the established QoS categories.
Duration(s)	The time, in seconds, that the call remained connected.
Charge	The charge that is associated with each call. Call charge information that the CAR administrator provided for the CAR rating engine provides the basis for charges. See the “Configuring the Rating Engine” section on page 4-1.

Figure 11-3 and Figure 11-4 displays sample output from the Individual Bill and Department Bill Detail reports.

Figure 11-3 Individual Bill Detail Sample Report

cisco
Individual Bill - Detail

From Date:Feb 1, 2008
To Date:Feb 10, 2008

Date:Feb 10, 2008
Page:1 of 1

Date	Orig. Time	Orig.	Dest.	Call Classification	QoS	Duration (sec)	Charge
Bill for CARuser1							
Feb 8, 2007	3:25:22 PM	1001	1003	Internal	Good	10	192.00
Feb 8, 2007	3:25:50 PM	1001	1003	Internal	Good	6	96.00
Feb 8, 2007	3:25:58 PM	1001	1003	Internal	Good	7	192.00
Feb 8, 2007	3:26:09 PM	1001	1003	Internal	Good	14	288.00
Total for CARuser1						37	768.00

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Figure 11-4 Department Bill Detail Sample Report

cisco
Department Bill - Detail

From Date:Feb 1, 2008
To Date:Feb 10, 2008

Date:Feb 10, 2008
Page:1 of 6

Date	Orig. Time	Orig.	Dest.	Call Classification	QoS	Duration (sec)	Charge
Bill for CARuser1							
Feb 8, 2007	3:25:22 PM	1001	1003	Internal	Good	10	192.00
Feb 8, 2007	3:25:50 PM	1001	1003	Internal	Good	6	96.00
Feb 8, 2007	3:25:58 PM	1001	1003	Internal	Good	7	192.00
Feb 8, 2007	3:26:09 PM	1001	1003	Internal	Good	14	288.00
Total for CARuser1						37	768.00
Bill for CARuser2							
Feb 1, 2007	3:23:16 PM	1002	1003	Others	Good	167	2,688.00
Feb 1, 2007	3:29:16 PM	1002	1006	Others	Good	55	960.00
Feb 1, 2007	3:30:48 PM	1002	1001	Others	Good	37	672.00
Feb 1, 2007	3:36:58 PM	1002	1003	Others	Good	81	1,344.00

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Top N By Charge or Duration Report Results

The fields for the Top N by Charge and the Top N by Duration vary depending on the report type. The reports show only outgoing calls. See [Table 11-3](#).

Table 11-3 Top N by Charge and by Duration Report Fields

Field	Description
By Individual Users	
User	User names.
Calls	Total number of calls.
Duration(s)	The time, in seconds, that the call was connected.
Charge	The charge that is associated with each call. Call charge information that the CAR administrator provided for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.
By Destinations	
Dest	The destination of the calls.
Call Classification	The total number of calls for each call classification.
Calls	Total number of calls.
Duration	The time, in seconds, that the call was connected.
Charge	The charge that is associated with each call. Call charge information that the CAR administrator provided for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.
By Number of Calls	
User	User names.
Date	Date that the call occurred.
Orig Time	Time that the calls originated.
Orig	Origin of the calls.
Dest	Destination of the calls.
Call Classification	The total number of calls for each call classification.
Duration	The time, in seconds, that the call was connected.
Charge	The charge that is associated with each call. Call charge information that the CAR administrator provided for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.

Figure 11-5 and Figure 11-6 display sample reports.

Figure 11-5 Top N Charge by Destinations Sample Report

cisco
Top 5 Destinations based on Charge

From Date: Feb 1, 2008
To Date: Feb 10, 2008

Date: Feb 10, 2008
Page: 1 of 1

Report Generation Criteria-
Call Classification: On Net, Internal, Local, Long Distance, International, Incoming, Tandem, Others

Dest.	Call Classification	Calls	Duration (sec)	Charge
666	Internal	2	43213	172,872.00
1005	Incoming	12	2695	40,464.00
1004	Incoming	8	2527	38,808.00
1006	Incoming	12	2689	36,096.00
11006	On Net	6	2204	35,520.00

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Figure 11-6 Top N Duration by Destinations Sample Report

cisco
Top 5 Destinations based on Duration

From Date: Feb 1, 2008
To Date: Feb 10, 2008

Date: Feb 10, 2008
Page: 1 of 1

Report Generation Criteria-
Call Classification: On Net, Internal, Local, Long Distance, International, Incoming, Tandem, Others

Dest.	Call Classification	Calls	Charge	Duration (sec)
666	Internal	2	172,872.00	43213
1005	Incoming	12	40,464.00	2695
1006	Incoming	12	36,096.00	2689
1004	Incoming	8	38,808.00	2527
11006	On Net	6	35,520.00	2204

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Top N By Number of Calls Report Results

The fields for the Top N by Number of Calls report vary depending on the report type. The report shows both incoming and outgoing calls. See [Table 11-4](#).

Table 11-4 Top N by Number of Calls Report Fields

Field	Description
By Individual Users	
Users	User names.
Charge	The total amount of billing charges for all calls to that user. Call charge information that the CAR administrator provided for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.
Duration(s)	The time, in seconds, that the call connected.

Table 11-4 *Top N by Number of Calls Report Fields (continued)*

Field	Description
Calls Made	The total number of calls that the user placed.
Calls Received	The total number of calls that the user received.
Total Calls	The total number of incoming and outgoing calls.
By Extensions	
Extension No	The extension that originated/placed and received the call.
Charge	The total amount of billing charges for all calls to that user. Call charge information that the CAR administrator provided for the CAR rating engine provides basis for charges. See the “Configuring the Rating Engine” section on page 4-1.
Duration	The time, in seconds, that the call was connected.
Calls Made	The total number of calls that the user placed.
Calls Received	The total number of calls that the user received.
Total Calls	The total number of incoming and outgoing calls.

Figure 11-7 displays sample report output of Top N by Number of Calls by Individual Users in PDF format.

Figure 11-7 *Top N by Number of Calls Report Sample Output*

Call Usage for Assistant—Detail Report Results

The report, which supports Cisco Unified Communications Manager Assistant, shows the number of calls that assistants handled for themselves, that the assistant handled for each manager, and the total number of calls that the assistant handled. The report groups information about calls that the assistant handled and calls that the assistant handled for the manager. The detail report includes the following fields (see [Table 11-5](#)).

Table 11-5 *Detail Report Fields*

Field	Description
Date	The date that the call originated.
Orig. Time	The time that the call originated.
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Call Classification	The type of call (internal, incoming, and so on.)
Duration (sec)	The time, in seconds, that the call connected.

Figure 11-8 displays sample output from a Call Usage for Assistant Detail report in PDF format.

Figure 11-8 Call Usage for Assistant Detail Report

From Date: Mar 1, 2008
To Date: Mar 15, 2008
Report for Calls Handled by Assistant

cisco
Call Usage for Assistant - Detail

Date: Mar 15, 2008
Page: 1 of 2

Date	Orig. Time	Orig.	Dest.	Call Classification	Duration (sec)
Usage for Assistant					
14-3-2007	01:03:11	10001	66	Internal	17
14-3-2007	03:33:31	10001	66	Internal	32
14-3-2007	03:34:07	10001	66	Internal	24
14-3-2007	03:34:35	10001	66	Internal	19
14-3-2007	03:34:57	10001	66	Internal	31
14-3-2007	03:35:32	10001	66	Internal	17
14-3-2007	04:20:03	1234	10001	Internal	49
14-3-2007	04:21:03	1234	10001	Internal	54
14-3-2007	04:22:05	1234	10003	Internal	85
14-3-2007	04:24:41	1234	10001	Internal	36
14-3-2007	04:25:40	66	10001	Internal	45
14-3-2007	04:26:36	66	10001	Internal	42
14-3-2007	04:27:29	66	10001	Internal	27
14-3-2007	04:28:07	66	10003	Internal	44

201404

Call Usage for Assistant—Summary Report Results

The report, which supports Cisco Unified Communications Manager Assistant, shows information about calls that the assistant handled for themselves and that the assistant handled for the manager. The reports group call information by attendant name. The summary report includes the following fields (see Table 11-6).

Table 11-6 Summary Report Fields

Field	Description
Assistant-Extn/Manager	Shows the assistant name and directory number. If the assistant handles a call for a manager, the manager name displays.

Call Classification—Call categories specify classes.

Table 11-6 Summary Report Fields (continued)

Field	Description
Internal	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that 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.
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, 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 3-2.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.
Calls	The number of calls that the assistant handled or the assistant handled for the manager.
Duration (sec)	The total duration for all the calls for the particular call classification.

Figure 11-9 displays sample output of the Call Usage for Assistant Summary report in PDF format.

Figure 11-9 Call Usage for Assistant Summary Report

Assistant-Extn	Call Classification							Calls	Duration (sec)
	Internal	On Net	Local	Long Distance	International	Incoming	Others		
Usage for Assistant									
Assistant-1234	4	0	0	0	0	0	0	4	224
Assistant-66	5	0	0	0	0	0	0	5	211
Total for Assistant	9	0	0	0	0	0	0	9	435

201405

Call Usage for Manager—Detail Report Results

The report, which supports Cisco Unified Communications Manager Assistant, provides information about calls that managers handle for themselves and that assistants handle for managers. The report groups information by the assistant name and shows the total number of calls that the manager handles and that the assistant handles for the manager. The detail report includes the following fields (see Table 11-7).

Table 11-7 Detail Report Fields

Field	Description
Date	The date that the call originates.
Orig. Time	The time that the call originates.
Orig.	The originating number from which the call is placed.
Dest.	The destination number to which the call is directed.
Call Classification	The type of call (internal, incoming, and so on.)
Duration (sec)	The time, in seconds, that the call connects.

Figure 11-10 displays sample output from the Call Usage for Manager Detail report.

Figure 11-10 Call Usage for Manager Detail Report

cisco
Call Usage For Manager - Detail

From Date: Feb 1, 2008
To Date: Feb 10, 2008

Date: Feb 10, 2008
Page: 1 of 4

Report for Calls Handled by Manager

Date	Orig. Time	Orig.	Dest.	Call Classification	Duration (sec)
Usage for CARuser1					
1-2-2007	15:23:10	1001	1004	Others	170
1-2-2007	15:23:13	1001	1004	Incoming	170
1-2-2007	15:26:24	1001	1002	Others	142
1-2-2007	15:26:31	1001	1002	Incoming	142
1-2-2007	15:29:26	1001	1004	Others	41
1-2-2007	15:29:31	1001	1004	Incoming	41
1-2-2007	15:30:48	1002	1001	Others	37
1-2-2007	15:30:50	1002	1001	Incoming	37

210730

Call Usage for Manager—Summary Report Results

The report, which supports Cisco Unified Communications Manager Assistant, shows information about calls that the managers handle for themselves and that the assistants handle for the managers. The report groups information by the manager name and shows the total number of calls that are handled for each manager. The report includes the following fields (see Table 11-8).

Table 11-8 Summary Report Fields

Field	Description
Manager-Extn/Assistant	Shows the manager name and directory number. If the assistant handles a call for a manager, the assistant name displays.
Call Classification—Call categories specify classes.	
Internal	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 which include one of the local area codes.

Table 11-8 Summary Report Fields (continued)

Field	Description
Long Distance	Long-distance calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that 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.
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, 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 3-2.
Others	All other outgoing calls, such as toll-free numbers or emergency calls such as 911.
Calls	The number of calls that the assistant or the manager handles.
Duration	The total duration for all the calls for the particular call classification.

Figure 11-11 displays sample output of the Call Usage for Manager Summary report in PDF format.

Figure 11-11 Call Usage for Manager Summary Report

cisco
Call Usage for Manager - Summary

From Date:Feb 1, 2008
To Date:Feb 10, 2008

Date:Feb 10, 2008
Page:1 of 1

Report for Calls Handled by Manager

Manager-Extn	Call Classification							Calls	Duration (sec)
	Internal	On Net	Local	Long Distance	International	Incoming	Others		
	Usage for CARuser1								
CARuser1-1001	12	4	0	0	0	11	7	34	6695
CARuser1-666	0	0	0	0	0	0	0	0	0
Total for CARuser1	12	4	0	0	0	11	7	34	6695

21.0729

Cisco IP Phone Services Report Results

The Cisco IP Phone Services report includes the following fields. See [Table 11-9](#).

Table 11-9 Cisco Unified IP Phone Services Report Fields

Field	Description
Cisco IP Phone Services	The name of the selected service.
Number of Subscribers	The total number of subscribers for a given service.
% Subscription	The percentage of users who are subscribed to a given service, out of the total number of subscriptions for all services.

[Figure 11-12](#) displays sample output from the Cisco IP Phone Services Report in PDF format.

Figure 11-12 Cisco IP Phone Services Report Sample Output



QoS Detail Report Results

The QoS Detail report includes the following fields. See [Table 11-10](#).

Table 11-10 QoS Detail Report Fields

Field	Description
Orig. Time	The time that the call was placed, in 24-hour, minute, and second format.
Term. Time	The time that the call disconnected, in 24-hour, minute, and second format.
Duration(s)	The amount of time, in seconds, that the call was connected.
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Call Classification—Call categories specify classes.	

Table 11-10 QoS Detail Report Fields (continued)

Field	Description
Internal	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
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, 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 3-2 .
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.
Orig. Codec	The codec that the originating device uses.
Dest. Codec	The codec that the destination device uses.
Orig. Device	The name of the device that placed the call.
Dest. Device	The name of the device that received the call.
Orig. QoS	The voice quality that the device that placed the call experienced.
Dest. QoS	The voice quality that the device that received the call experienced.

Figure 11-13 displays sample output of the QoS Detail report in PDF format.

Figure 11-13 QoS Detail Report



QoS Summary Report Results

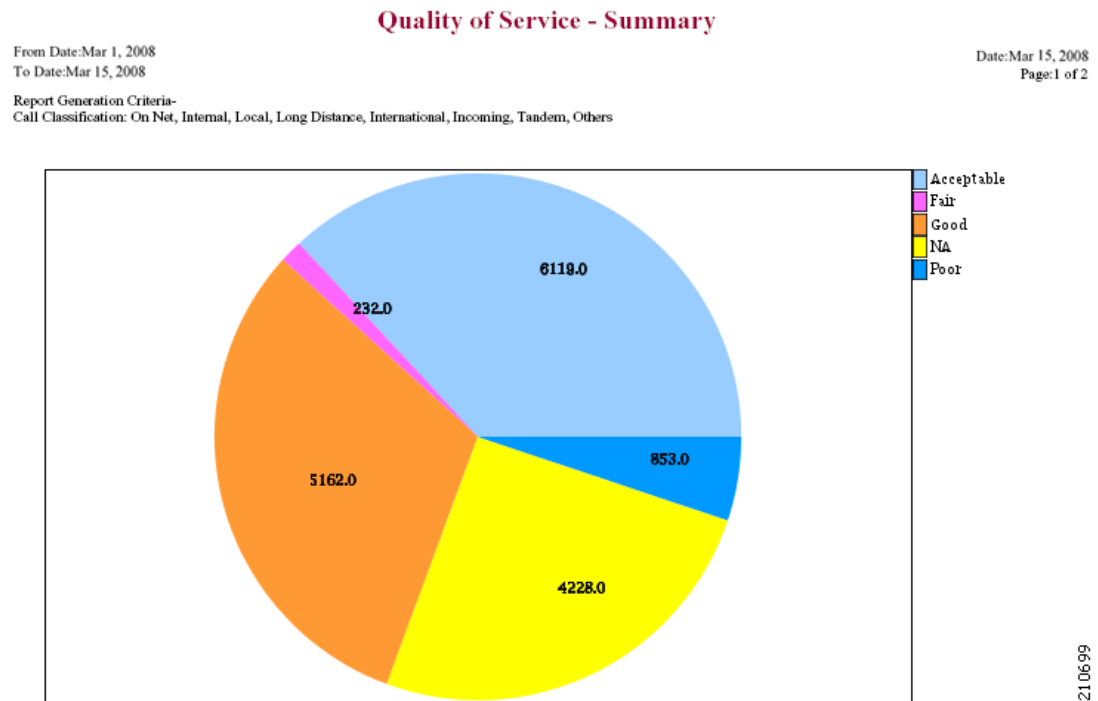
The QoS Summary report includes the following fields. See Table 11-11. If you select PDF format for the report output, the report shows a pie chart that displays the QoS of the total number of calls.

Table 11-11 QoS Summary Report Fields

Field	Description
Quality of Service	The quality of service of the calls.
Call Legs	Number of call legs with the quality of service that the Quality of Service field specified.

Figure 11-14 displays sample output of the QoS Summary Report in PDF format.

Figure 11-14 QoS Summary Report in PDF Format



QoS by Gateways Report Results

The QoS by Gateways report provides the following information. See [Table 11-12](#).

Table 11-12 QoS by Gateways Report Fields

Field	Description
Time/Day	Indicates the cumulative hours of the day(s), the days of the week, or the days of the month for the selected date range.
% of Call Legs	Displays the percentage of calls for each gateway for the hours of the day, the days of the week, or the days of the month for the selected date range.

Figure 11-15 displays sample output of the QoS by Gateways report in PDF format.

Figure 11-15 QoS by Gateways Report



QoS by Call Types Report Results

The QoS by Call Types report provides the following information. See [Table 11-13](#).

Table 11-13 QoS by Call Types Report Fields

Field	Description
Time/Day	The cumulative hours of the day(s), the days of the week, or the days of the month for the selected date range.
% of Call Legs	The percentage of calls for each gateway for the hours of the day, the days of the week, or the days of the month for the selected date range.

Table 11-13 QoS by Call Types Report Fields (continued)

Field	Description
Internal	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
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, 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 3-2 .
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.

Figure 11-16 displays sample output of the QoS by Call Types report in PDF format.

Figure 11-16 QoS by Call Types Report



Traffic Summary Report Results

The Traffic Summary and Traffic Summary by Extension reports contain the same information and include some or all the following fields. See Table 11-14. A separate line displays under the report title for the Busy Hour Call Completion (BHCC) number for that day.

Table 11-14 Traffic Summary Report Fields

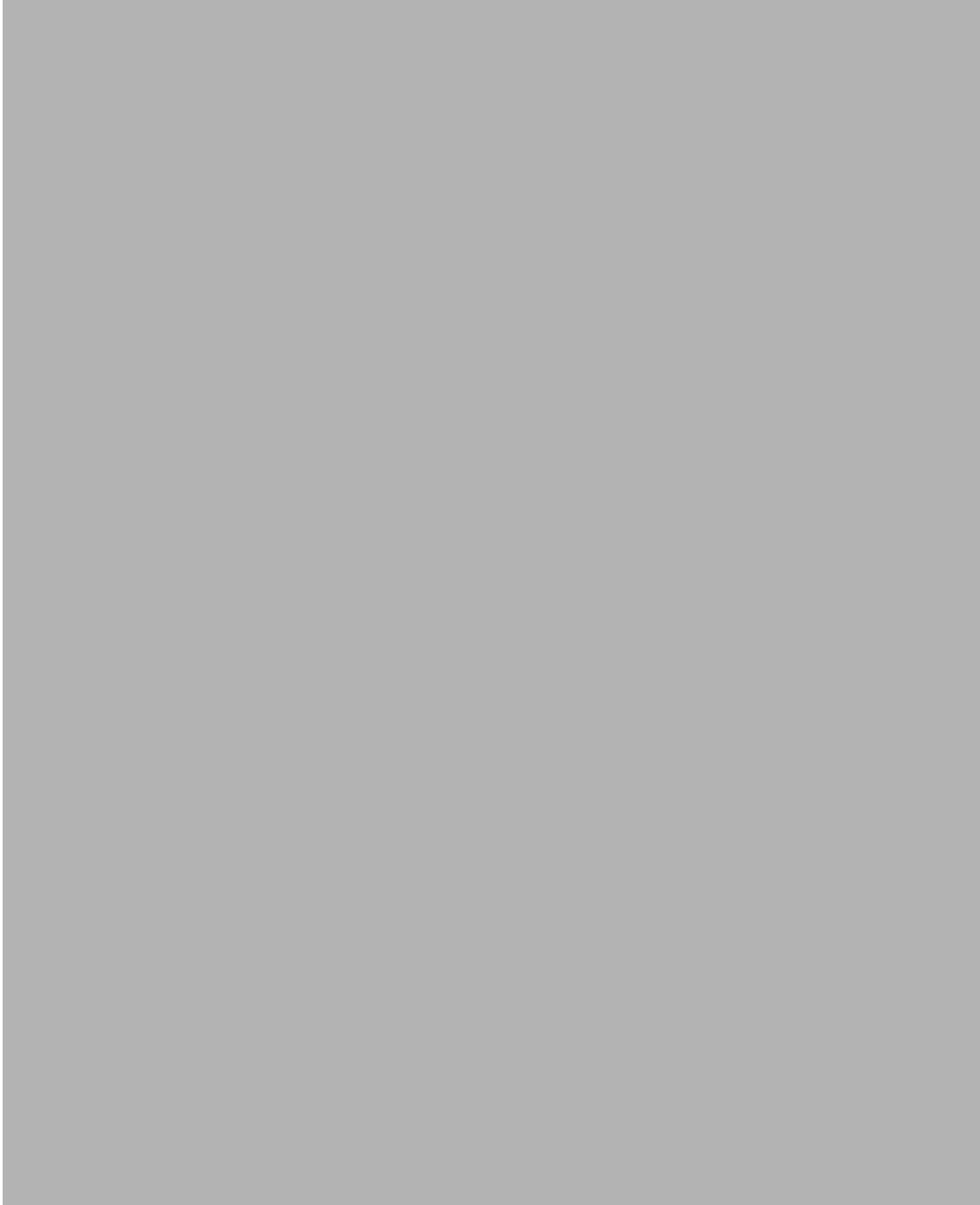
Field	Description
Time/Day	The cumulative hours of the day(s), the days of the week, or the days of the month for the selected date range.
Average Number of Calls	The percentage of calls for each gateway for the hours of the day, the days of the week, or the days of the month for the selected date range.
Internal	Intracuster 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 11-14 Traffic Summary Report Fields (continued)

Field	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 that go out through the PSTN.
International	International calls that originate in the Cisco Unified Communications Manager network that go out through the PSTN.
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, 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 3-2.
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.
Total	The total number of calls for each hour or day.

Figure 11-17 displays sample output of the Traffic Summary Report results in PDF format.

Figure 11-17 *Traffic Summary Report Results*



Authorization Code Name Call Details Report Results

This report shows the usage of specific authorization code names. For security purposes, the authorization code name (description) displays and not the authorization code. The detail report includes the following fields (see [Table 11-15](#)).

Table 11-15 Authorization Code Name Call Details Report Fields

Field	Description
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Orig. Date Time	The date and time that the call originated.
Duration (sec)	The time, in seconds, that the call connected.
Call Classification	The type of call (internal, incoming, on so on.)
Authorization Level	The authorization level for calls for each chosen authorization code name.

[Figure 11-18](#) displays sample output of the Authorization Code Name Call Details report in PDF format.

Figure 11-18 Authorization Code Name Call Details Report



Authorization Level Call Details Report Results

This report shows the usage of specific authorization levels. The detail report includes the following fields (see [Table 11-16](#)).

Table 11-16 Authorization Level Call Details Report Fields

Field	Description
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Orig. Date Time	The date and time that the call originated.
Duration (sec)	The time, in seconds, that the call connected.
Call Classification	The type of call (internal, incoming, and so on.)
Authorization Code Name	The authorization code name for each authorization level that you chose.

[Figure 11-19](#) displays sample output of the Authorization Level Call Details report in PDF format.

Figure 11-19 Authorization Level Call Details Report



Client Matter Code Details Report Results

The report shows the usage of specific client matter codes. The detail report includes the following fields (see [Table 11-17](#)).

Table 11-17 *Detail Report Fields*

Field	Description
Orig.	The originating number from which the call was placed.
Dest.	The destination number to which the call was directed.
Orig. Date Time	The date and time that the call originated.
Duration (sec)	The time, in seconds, that the call connected.
Call Classification	The type of call (internal, incoming, and so on.)

[Figure 11-20](#) displays sample output of the Client Matter Code Details report in PDF format.

Figure 11-20 *Client Matter Code Details Report*



Malicious Call Details Report Results

The Malicious Call Details report provides information about malicious calls. The report provides the following fields. See [Table 11-18](#).

Table 11-18 Malicious Call Details Report Fields

Field	Description
Orig. Time	Time at which the malicious call originated.
Term. Time	Time at which the malicious call terminated.
Duration	Total time of malicious call in seconds.
Orig.	Originating DN.
Dest.	Destination DN.
Orig. Device	Name of the originating device.
Dest. Device	Name of the destination device.
Call Classification	Classification of the malicious call.

Figure 11-21 displays sample output of the Malicious Calls Detail report in PDF format.

Figure 11-21 Malicious Calls Detail Report

Precedence Call Summary Report Results

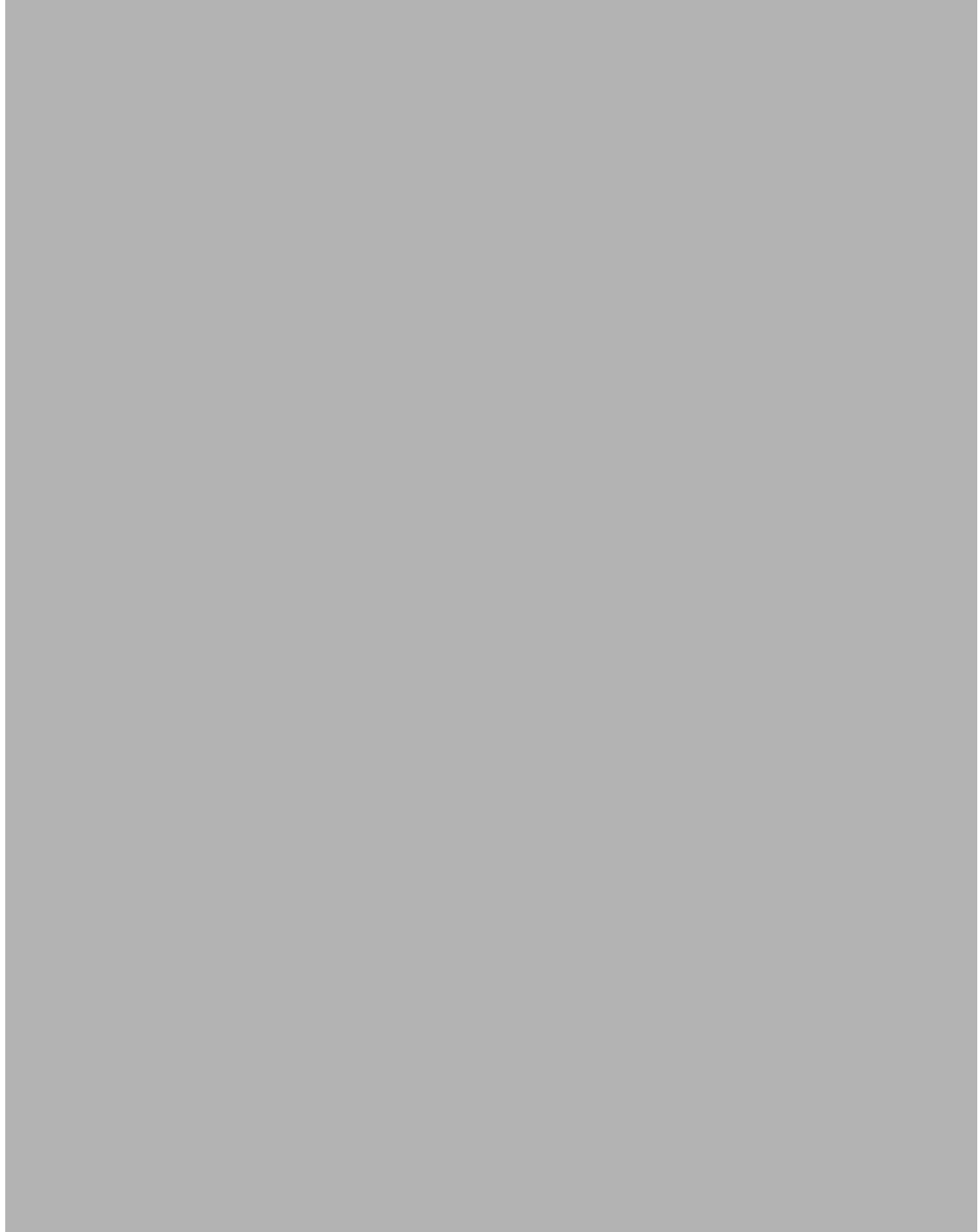
The Precedence Call Summary report provides information about calls based on precedence levels. The report displays the call summary for the precedence values in the form of a bar chart on an “Hour of Day,” “Day of Week,” or “Day of Month” basis for each precedence level that you choose. If you choose to display the report in PDF format, two tables, one reflecting the bar chart, and the other listing the “Number of Calls” and “Percentage” for each precedence level that was chosen, display in the report. See [Table 11-19](#).

Table 11-19 **Precedence Call Summary Report Fields**

Field	Description
Time/Day	Indicates the cumulative hours of the day(s), the days of the week, or the days of the month for the selected date range.
Call Legs	Number of calls for each precedence level by time/day.
Precedence Level	Precedence level value of the call.
No. of Call Legs	Number of call legs per each precedence level.
Percentage	Percentage of calls per each precedence level.

Figure 11-22 displays sample output of the Precedence Call Summary by Hour of Day report in PDF format.

Figure 11-22 *Precedence Call Summary Report*



System Overview Report Results

The system overview provides information about all parts of the Cisco Unified Communications Manager network. The report provides the following sections. See [Table 11-20](#).

Table 11-20 **System Overview Report**

Field	Description
Top 5 Users based on Charge	Details the five users who have incurred the highest charges for calls that occurred during the specified date range. See the “ Top N By Charge or Duration Report Results ” section on page 11-6 for details about this section of the system overview report.
Top 5 Destinations based on Charge	Details the five called numbers that have incurred the highest charges for calls during the specified date range. See the “ Top N By Charge or Duration Report Results ” section on page 11-6 for details about this section of the system overview report.
Top 5 Calls based on Charge	Details the five calls that have incurred the highest charges for calls during the specified date range. See the “ Top N By Charge or Duration Report Results ” section on page 11-6 for details about this section of the system overview report.
Top 5 Users based on Duration	Details the five users who have spent the most time on calls during the specified date range. See Top N By Charge or Duration Report Results , page 11-6 for details about this section of the system overview report.
Top 5 Destinations based on Duration	Details the five called numbers that have been engaged in calls for the longest time during the specified date range. See the “ Top N By Charge or Duration Report Results ” section on page 11-6 for details about this section of the system overview report.
Top 5 Calls based on Duration	Details the five longest calls for the specified date range. See the “ Top N By Charge or Duration Report Results ” section on page 11-6 for details about this section of the system overview report.
Traffic Summary Report - Hour of Day	Shows the volume of calls during the specified date range based on each hour of the day. If the date range is within one day, the system identifies the hour with the highest traffic volume (the BHCC number). See the “ Traffic Summary Report Results ” section on page 11-22 for details about this section of the system overview report.

Table 11-20 System Overview Report (continued)

Field	Description
Traffic Summary Report - Day of Week	Shows the volume of calls during the specified date range based on each day of the week. See the “Traffic Summary Report Results” section on page 11-22 for details about this section of the system overview report.
Traffic Summary Report - Day of Month	Shows the volume of calls during the specified date range based on each day of the month. See the “Traffic Summary Report Results” section on page 11-22 for details about this section of the system overview report.
Quality of Service Report - Summary	Shows the number of calls that fell within each voice-quality category during the specified date range. See the “QoS Summary Report Results” section on page 11-18 for details about this section of the system overview report.
Gateway Summary Report	Shows the summary of the call classification for each gateway along with the QoS, the number of calls, and the duration for each classification for the gateway during the specified date range. See the “QoS by Gateways Report Results” section on page 11-19 for details about this section of the system overview report.

CDR Error Report Results

The CDR Error report provides the following information. See [Table 11-21](#).

Table 11-21 CDR Error Report Fields

Field	Description
Time	The hour for the specified day that the error occurred.
No of Error CDRs	The total number of CDR data records that were not processed during loading into CAR due to an error.
No of Valid CDRs	The total number of CDR data records that were successfully load into CAR.
% of Error CDRs	The percentage of failed CDR data records out of all the CDR data records to be loaded.

Figure 11-23 displays sample output of the CDR Error report in PDF format.

Figure 11-23 CDR Error Report



Gateway Detail Report Results

The Gateway Detail report includes the following fields. See [Table 11-22](#).

Table 11-22 Gateway Detail Report Fields

Field	Description
Date	The date when the call went through the gateway.
Orig. Time	The time when the call went through the gateway.
Term. Time	The time that the call terminated.
Duration(s)	The duration, in seconds, that the call was connected. The duration specifies the difference between the Dest Connect and the Dest Disconnect times.

Table 11-22 Gateway Detail Report Fields (continued)

Field	Description
Orig	The directory number from which the call was placed.
Dest	The directory number to which the call was originally placed. If the call was not forwarded, this directory number should match the Final Destination number. If the call was forwarded, this field contains the original destination number of the call before it was forwarded.
Orig. Codec	The codec code (compression or payload code) that the call originator used on its sending side during this call. This code may differ from the codec code that was used on its receiving side.
Dest. Codec	The codec code (compression or payload code) that the destination used on its sending side during this call. This code may differ from the codec code that was used on its receiving side.
Orig. Device	The device name of the device that placed the call. For incoming and tandem calls, this field specifies the device name of the gateway.
Dest Device	The device name of the device that received the call. For outgoing and tandem calls, this field specifies the device name of a gateway. For conference calls, this field specifies the device name of the conference bridge.
Orig QoS	QoS shows the voice-quality grade that was achieved for the calls.
Dest QoS	The QoS category that was experienced by the receiver of the call.

Figure 11-24 displays sample output of the Gateway Detail Report in PDF format.

Figure 11-24 Gateway Detail Report



Gateway Summary Report Results

The Gateway Summary report includes the following fields. See [Table 11-23](#).



Note

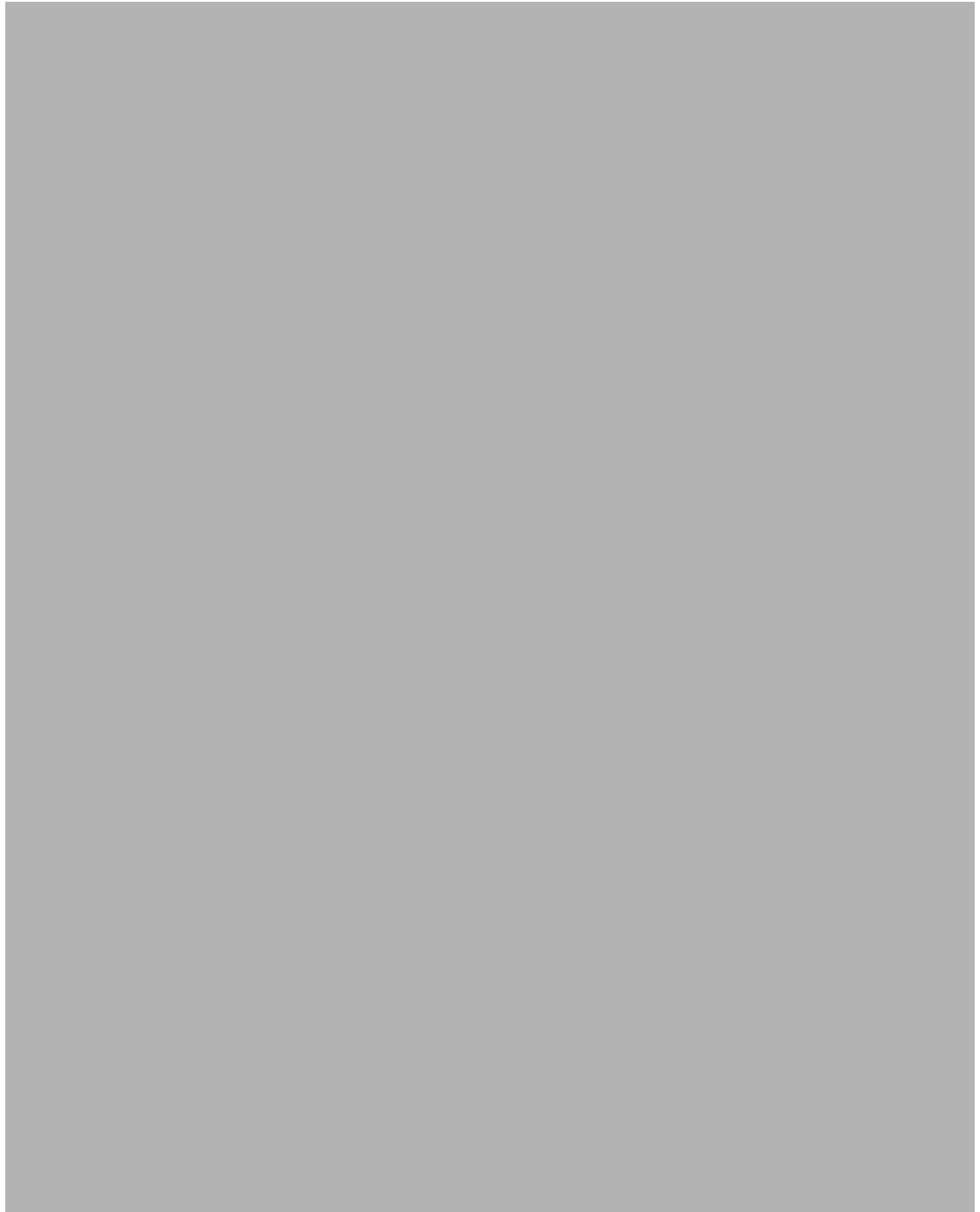
The Gateway Summary report segregates calls for each call classification that the user selects and divides the calls based on QoS type.

Table 11-23 Gateway Summary Report Fields

Field	Description
Call Classification	Shows the type of call (internal, incoming, and tandem.)
Quality of Service	Shows a summary of the performance of the various gateways with the total number of calls for each voice-quality category. The parameters set in the “Defining the Quality of Service (QoS) Values” section on page 4-5 provide the basis for all voice-quality categories. <ul style="list-style-type: none"> • Good—QoS for these calls specifies the highest possible quality. • Acceptable—QoS for these calls, although slightly degraded, still falls within an acceptable range. • Fair—QoS for these calls, although degraded, still falls within a usable range. • Poor—QoS for these calls was unsatisfactory. • NA—These calls did not match any criteria for the established QoS categories.
Calls	Shows the total calls for the particular call classification.
Duration (sec)	Shows the total duration for all the calls for the particular call classification.

Figure 11-25 displays sample output of the Gateway Summary Report in PDF format.

Figure 11-25 Gateway Summary Report



Gateway and Route Utilization Report Results

The Gateway, Route Group, Route List, and Route Pattern Utilization reports provide similar output. If you choose to display the report in PDF format, the report shows the utilization as a bar chart. A graph displays for each selected gateway or route group. See [Table 11-24](#).

Table 11-24 Gateway and Route Utilization Report Fields

Field	Description
Time/Day	Time in one-hour blocks if you chose Hourly or one-day blocks if you chose weekly or monthly. The results show the utilization for each hour or day for the entire period that is shown in the from and to dates.
%	Gateway, route group, route list, or route pattern utilization percentage. This field gives the estimated utilization percentage of the gateways or route groups or route lists or route patterns relative to the total number of calls that all the gateways put together can support at any one time.

Figure 11-26 displays sample output of the Gateway Utilization Report in PDF format.

Figure 11-26 Gateway Utilization Report



Figure 11-27 displays sample output of the Route/Hunt List Utilization report in PDF format.

Figure 11-27 *Route/Hunt List Utilization Report*



Figure 11-28 displays sample output from the Route and Line Group Utilization report in PDF format.

Figure 11-28 *Route and Line Group Utilization Report*

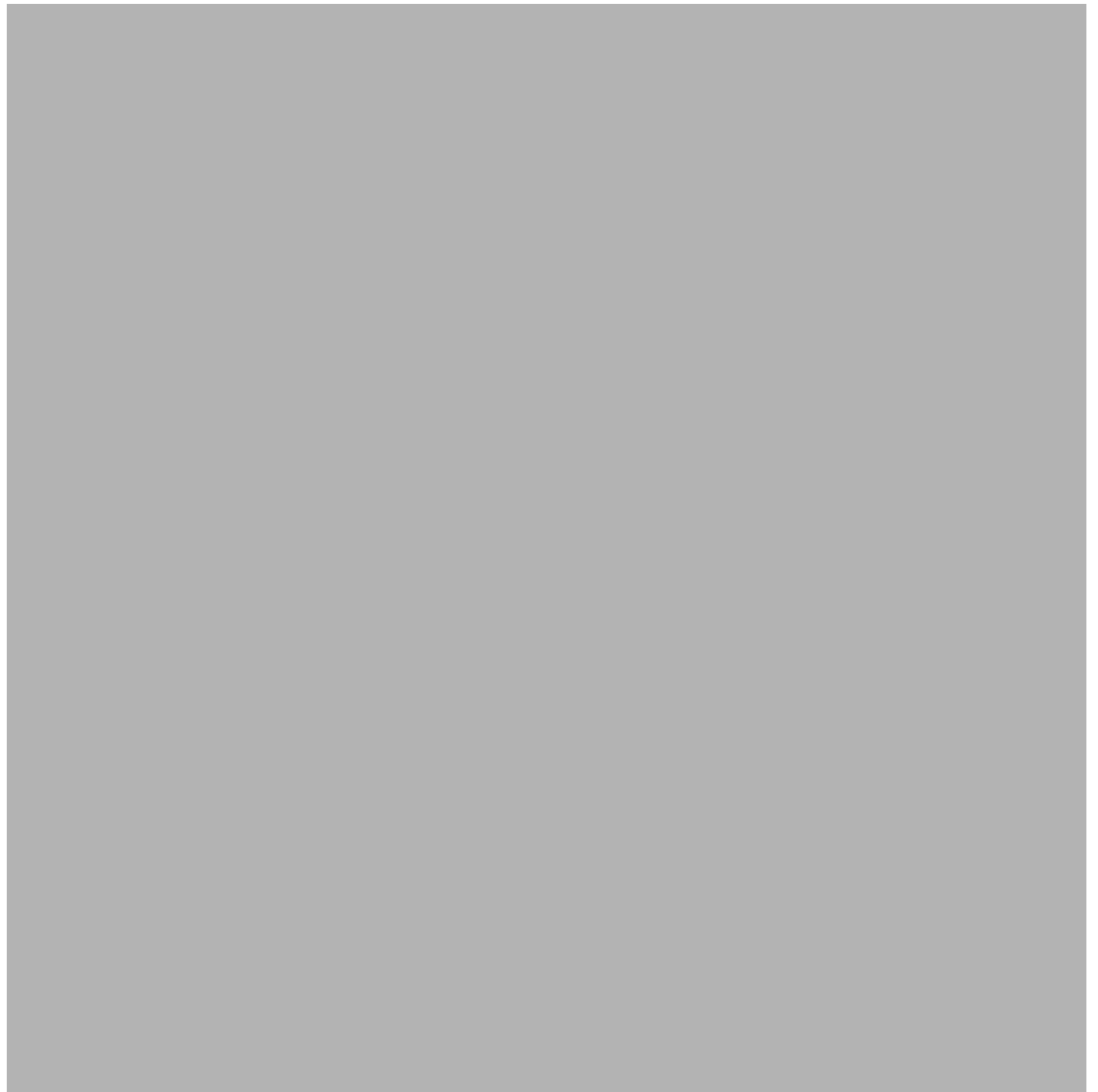


Figure 11-29 displays sample output of the Route Pattern/Hunt Path Utilization report in PDF format.

Figure 11-29 Route Pattern/Hunt Path Utilization Report



Conference Call Detail Report Results

You can choose to generate Conference Call information in either a summary or a detailed report. The reports display the call details in a table when you generate the report in PDF format. The following tables show the fields in the Conference Call Detail and Summary reports. See [Table 11-26](#) and [Table 11-25](#).



Note

The report criteria include the type of conference (ad hoc and/or meet-me) and the From and To date range.

Table 11-25 Conference Call Detail Report Fields

Field	Description
Conference Start Time	Time at which conference started.
Conference End Time	Time at which conference ended.
Connect Time	Time at which conference participants connected to conference.

Table 11-25 *Conference Call Detail Report Fields (continued)*

Field	Description
Disconnect Time	Time at which conference participants disconnected from conference.
Duration	Total time of conference.
Directory Number	Directory number of participants.
Call Classification	Call types of conference (internal, incoming, and so on.)
Device Name	Names of the conference devices that were used.
QoS	Quality of service.

Table 11-26 *Conference Call Detail Summary Report Fields*

Field	Description
Orig. Time	Time that the first participant enters the conference.
Term. Time	Time that the last participant leaves the conference.
No. of Participants	Number of participants in the conference.
Duration	Sum of the duration of individual participants in the conference in seconds.
Device Name	Names of the conference devices that were used.

Figure 11-30 displays sample output of the Conference Call Details Summary report in PDF format.

Figure 11-30 Conference Call Details Summary Report

Conference Call Details - Summary

From Date: Feb 1, 2007
To Date: Feb 24, 2007

Date: Feb 24, 2007
Page: 1 of 6

Report Generation Criteria:
Conference Types : Ad-Hoc, Meet-Me

Orig. Time	Term. Time	No. of Participants	Duration (sec)	Device Name(s)
Conference Type:		Ad-Hoc		
Feb 7, 2007 9:13:34 AM	Feb 7, 2007 9:13:41 AM	54	378	CFB_2
Feb 7, 2007 10:03:07 AM	Feb 7, 2007 10:03:13 AM	54	288	CFB_2
Feb 7, 2007 10:03:33 AM	Feb 7, 2007 10:03:39 AM	54	324	CFB_2
Feb 7, 2007 10:04:00 AM	Feb 7, 2007 10:04:06 AM	54	306	CFB_2
Feb 7, 2007 10:04:36 AM	Feb 7, 2007 10:04:43 AM	54	288	CFB_2
Feb 7, 2007 10:04:58 AM	Feb 7, 2007 10:05:08 AM	36	360	CFB_2
Feb 7, 2007 10:16:36 AM	Feb 7, 2007 10:16:41 AM	36	180	CFB_2
Feb 7, 2007 10:16:58 AM	Feb 7, 2007 10:17:04 AM	18	108	CFB_2
Feb 7, 2007 10:17:23 AM	Feb 7, 2007 10:17:29 AM	36	216	CFB_2
Feb 7, 2007 10:17:47 AM	Feb 7, 2007 10:17:54 AM	36	252	CFB_2
Feb 7, 2007 10:20:55 AM	Feb 7, 2007 10:21:05 AM	36	360	CFB_2
Feb 7, 2007 10:29:10 AM	Feb 7, 2007 10:29:16 AM	54	324	CFB_2

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Conference Bridge Utilization Report Results

The Conference Bridge Utilization report provides the following fields. If you choose PDF format, the report shows the utilization as a table. See [Table 11-27](#).

Table 11-27 Conference Bridge Utilization Report Fields

Field	Description
Time/Day	Time in one-hour blocks if you chose Hourly or one-day blocks if you chose day of week or daily.
% Usage	Conference bridge utilization percentage.
Conf. Bridge	The conference bridge device that is used to hold conference calls.
Type	Either hardware or software conference bridge.
Max Streams	The number of conferences that can be held at a time along with the number of people per conference.

Figure 11-31 displays sample output of the Conference Bridge Utilization report in PDF format.

Figure 11-31 Conference Bridge Utilization Report

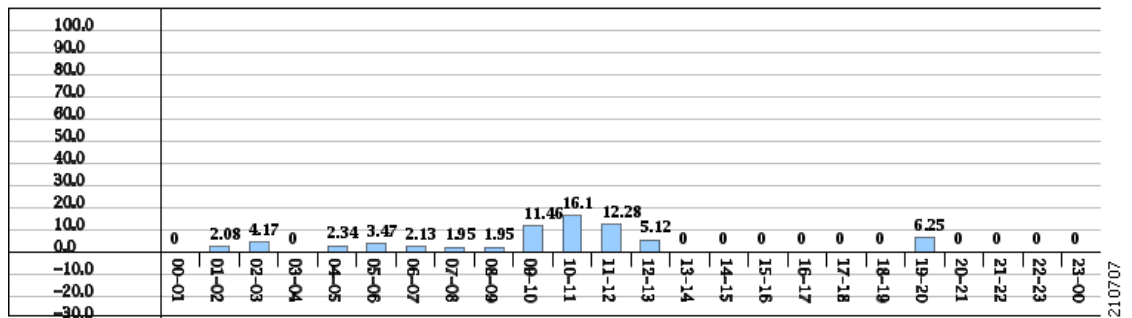
Conference Bridge Utilization - Hour of Day

From Date: Feb 1, 2007 Date: Feb 24, 2007
 To Date: Feb 24, 2007 Page: 1 of 2

Time	% Usage
00-01	0.00
01-02	2.08
02-03	4.17
03-04	0.00
04-05	2.34
05-06	3.47
06-07	2.13
07-08	1.95
08-09	1.95
09-10	11.46
10-11	16.10
11-12	12.28
12-13	5.12
13-14	0.00
14-15	0.00
15-16	0.00
16-17	0.00
17-18	0.00
18-19	0.00
19-20	6.25
20-21	0.00
21-22	0.00
22-23	0.00
23-00	0.00

The Total Number of Streams is 96

Conf. Bridge	Type	Max. Streams
CFB_2	Cisco Conference Bridge Software	48
CFB_3	Cisco Conference Bridge Software	48
Total Capacity:		96



Voice Messaging Utilization Report Results

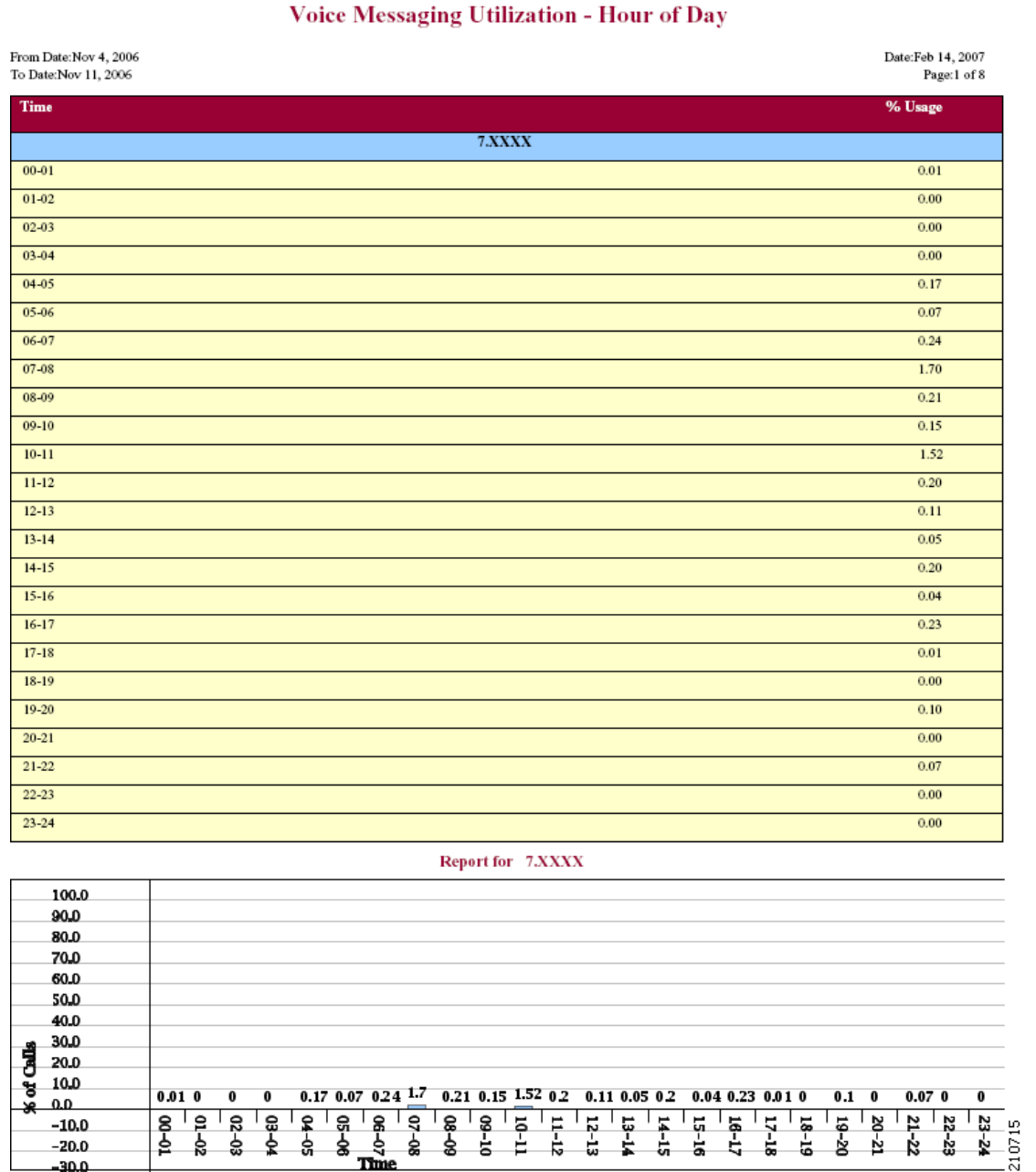
The Voice Messaging Utilization report provides the following fields. See [Table 11-28](#).

Table 11-28 *Voice Messaging Utilization Report Fields*

Field	Description
Time/Day	Time in one-hour blocks if you chose Hourly or one-day blocks if you chose day of week or daily.
% Usage	Voice-messaging percentage.
Voice Messaging Ports	The sum of the maximum number of ports for all the gateways under the route patterns that are configured for the voice messaging systems and the entries in the Device table of Cisco Unified Communications Manager that have type Class as 8.
Voice Messaging Gateways	The originating or destination device name as the gateways under the route patterns that are configured for the voice-messaging systems.
Number of Ports	The number of ports that the voice messaging gateway supports.

Figure 11-32 displays sample output of the Voice Messaging Utilization report in PDF format.

Figure 11-32 Voice Messaging Utilization Report



Understanding the CDR Search Results

The following sections describe CDR search results:

- [Understanding the Results for CDR Search, page 11-48](#)
- [Media Information, page 11-49](#)
- [CDR and CMR Dump Tables, page 11-49](#)

Understanding the Results for CDR Search

The CDR search allows users to view the CDR/CMR fields as described in “[CDR and CMR Dump Tables](#)” section on page 11-49. The CDR search retrieves the CDR/CMR files from the tbl_billing_data and tbl_billing_error tables of the CAR database.

See [Table 11-29](#).

Table 11-29 CDR Search Results

Field	Description
SI No	This field specifies the serial or record number.
Call Type	This field specifies the type of call: simple, transfer, forward, pickup, conference, refer, replaces, or redirection.
GCID_CMId GCID_CallId	This field specifies the call identifiers that are associated with all the records for the entire call.
Orig Node Id Dest Node Id	This field specifies the node within the Cisco Unified Communications Manager cluster where the call originator/destination was registered at the time of the call.
Orig Leg Id Dest Leg Id	This field specifies the unique identifiers (within a cluster) to the originating/destination leg of a call.
Calling No Calling No Partition	The calling number specifies the directory number where the call originated. The calling partition specifies the partition that is associated with the calling party.
Called No Called No Partition	The called number specifies the directory number from which the call was initially placed and is the same as the Dest No when the call is not transferred or forwarded. The called partition specifies the partition that is associated with the called party.
Dest No Dest No Partition	The destination number specifies the directory number where the call finally terminated and is the same as the called number when the call is not transferred or forwarded. The destination number partition specifies the partition that is associated with the destination number.

Table 11-29 CDR Search Results (continued)

Field	Description
Last Rd No Last Rd No Partition	The last redirected number specifies the directory number from which the call was finally redirected. The last redirected number partition specifies the partition that is associated with the last redirected number.
Media Info Orig Pkts Rcd Dest Pkts Rcd Orig Pkts Lost Dest Pkts Lost	This field specifies the packets that were received or lost for the origination or destination leg of a call and a link to the media information. See the “ CDR and CMR Dump Tables ” section on page 11-49 for information about the CDR and CMR Dump tables.
CDR - CMR Dump	This field specifies a link to the CDR and CMR dump tables. This link allows the users to view the values in the CDR/CMR fields. See the “ CDR and CMR Dump Tables ” section on page 11-49 for information about the CDR and CMR Dump tables.

Media Information

The media information table provides the following information. See [Table 11-30](#).

Table 11-30 CDR Media Information

Field	Description
Origination Leg	A unique identifier (within a cluster) for the originating leg of a call.
Destination Leg	A unique identifier (within a cluster) for the destination leg of a call.
Parameter	The media parameters MediaTransportAdd_Ip, PayloadCapability, MediaCap_g723BitRate, Packets Sent, Octets Sent, Packets Received, Octets Received, Packets Lost, Jitter, Latency, QoS, VideoCap_Codec, VideoCap_Bandwidth, VideoCap_Resolution, VideoTransportAddress_IP, and VideoTransportAddress_Port
Origination	The value for all the preceding parameters for the origination leg of the call.
Destination	The value for all the preceding parameters for the destination leg of the call.

CDR and CMR Dump Tables

The CDR and CMR dump tables provide the following information. See [Table 11-31](#).

**Note**

You can view the content of the voice quality metrics field, varVQMetrics, in the Origination CMR and Destination CMR fields.

Table 11-31 CDR and CMR Dump Tables

Field	Description
CDR	This field specifies the call detail record fields.
Origination CMR	Only a single set of fields for origination and destination exists. You can find the origination or destination CMR by using the leg IDs. If the leg IDs of the CMR match the Orig/Dest leg ID of the CDR, the following record represents Orig/Dest CMR.
Destination CMR	Only a single set of fields for origination and destination exists. You can find the origination or destination CMR by using the leg IDs. If the leg IDs of the CMR match the Orig/Dest leg ID of the CDR, the following record represents Orig/Dest CMR.

The following example displays output from a CDR dump file:

CDR Dump File Output Example

```
cdrRecordType,globalCallID_callManagerId,globalCallID_callId,orignodeId,destnodeId,origleg
callIdentifier,destlegidentifier,orignumberPacketsSent,orignumberOctetsSent,orignumberPack
etsReceived,orignumberOctetsReceived,orignumberPacketsLost,destnumberPacketsSent,destnumbe
rOctetsSent,destnumberPacketsReceived,destnumberOctetsReceived,destnumberPacketsLost,origj
itter,destjitter,origlatency,destlatency,pkid,origdeviceName,destdeviceName,origvarVQMetri
cs,destvarVQMetrics,globalCallId_ClusterID,callingPartyNumber,finalCalledPartyNumber,calli
ngPartyNumberPartition,finalCalledPartyNumberPartition
1,1,233,1,1,31565399,31565400,2159941,371509852,2158009,371177548,0,0,0,0,0,0,0,0,0,1020
e21e-111d-4171-b778-fd7e54c2283d,SEP001955098750,9.9.1.95,MLQK=4.5000;MLQKav=4.4270;MLQKmn
=3.6833;MLQKmx=4.5000;MLQKvr=0.95;CCR=0.0018;ICR=0.0000;ICRmx=0.0668;CS=3000;SCS=441,,Stan
dAloneCluster,1006,1002,,
1,1,234,1,1,31565401,31565402,2159930,371507960,2158063,371186836,2,0,0,0,0,0,0,0,0,16ba
f132-4c6a-4ad9-bf4b-ac560d2a4cf1,SEP00192F74C18F,9.9.1.95,MLQK=4.4438;MLQKav=4.4274;MLQKmn
=3.7094;MLQKmx=4.5000;MLQKvr=0.95;CCR=0.0018;ICR=0.0000;ICRmx=0.0697;CS=2943;SCS=436,,Stan
dAloneCluster,1005,1003,,
```



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