Trace

This chapter provides information on the Cisco Unified CallManager Serviceability trace tools and contains the following topics:

Understanding Trace

Cisco Unified CallManager Serviceability provides trace tools to assist the system administrator and support personnel in troubleshooting Cisco Unified CallManager problems. Cisco Unified CallManager Serviceability supports SDI (System Diagnostic Interface) trace, SDL (Signaling Distribution Layer) trace, and Log4J trace (for Java applications).

You use the Trace Configuration window to specify the level of information that you want traced as well the type of information that you want to trace to be included in each trace file. If the service is a call-processing application such as Cisco CallManager or Cisco CTIManager, you can configure a trace on devices such as phones and gateway.

You use the Alarm Configuration window to direct various levels of alarms to destinations, including SDI or SDL trace log files.

After you have configured information that you want to include in the trace files for the various services, you can collect and view trace files by using the trace and log central option in the Real-Time Monitoring Tool (RTMT).

Trace Configuration

You can configure trace parameters for any Cisco CallManager service that is available on any Cisco Unified CallManager server in the cluster. Use the Trace Configuration window to specify the parameters that you want to trace for troubleshooting Cisco Unified CallManager problems.

You can configure the level of information that you want traced (debug level), what information you want to trace (trace fields), and information about the trace files (such as number of files per service, size of file, and time that the data is stored in the trace files.) You can configure trace for a single service or apply the trace settings for that service to all servers in the cluster.

If the service is a call-processing application such as Cisco CallManager or Cisco CTIManager, you can configure a trace on devices such as phones and gateways; for example, you can narrow the trace to all enabled phones with a directory number beginning with 555.

If you want to use predetermined troubleshooting trace settings rather than choosing your own trace fields, you can use the Troubleshooting Trace window. For more information on troubleshooting trace, see the "Troubleshooting Trace Setting" section on page 4-2.

After you have configured information that you want to include in the trace files for the various services, you can collect trace files by using the trace and log central option in RTMT. For more information regarding trace collection, see the "Trace Collection" section on page 4-3.

Troubleshooting Trace Setting

The Troubleshooting Trace Setting window allows you to choose the services in Cisco Unified CallManager for which you want to set predetermined troubleshooting trace settings. Using this window, you can choose the required services on different Cisco Unified CallManager nodes in the cluster, so the trace settings of the chosen services get changed to reflect the predetermined trace settings.

Note The predetermined troubleshooting trace settings for a service include SDL, SDI, and Log4j trace settings. The system backs up the trace settings that were originally set before Cisco Unified CallManager applies the troubleshooting trace settings. The original trace settings get restored when you reset the troubleshooting trace settings.

After you apply troubleshooting trace settings to some services, subsequent requests to open the Troubleshooting Trace Setting window display the Troubleshooting Trace Setting window again and show the services that you have set for troubleshooting. You can reset the trace settings to the original settings by choosing the Reset Troubleshooting Traces button.

When you apply Troubleshooting Trace Setting to a service, the Trace Configuration window displays a message that states that troubleshooting trace has been set for the given service(s). A link to the Troubleshooting Trace Setting window displays, so you can reset the settings for the service, if necessary.

The Trace Configuration window displays all the settings as read-only, except for some parameters of trace output settings; for example, Maximum No. of Files. You can modify these parameters even when you have applied troubleshooting trace settings.

Trace Collection

Use trace and log central, an option within the real-time monitoring client-side plug-in, to collect, view, and zip various Cisco CallManager service traces and/or other Cisco CallManager log files. With the trace and log central option, you can collect Cisco CallManager SDL/SDI traces, Cisco CallManager Application Logs (such as Bulk Administration Tool logs), System Logs (such as Event View Application, Security, and System logs), and crash dump files.

The trace and log central option provides several methods to collect and view trace files, as described in the following list:

- Remote Browse—After the system has generated trace files, you can view them on the server by using the viewers within the real-time monitoring tool. You can also use the remote browse feature to download the traces to your PC.
- Collect Files—Collects and downloads traces for services, applications, and system logs on one or more servers in the cluster for an absolute date and time range (such as between July 8, 2004 at 12:30 and August 8, 2004 at 12:30) or for a relative time (such as, within the last 30 minutes).
- Query Wizard—Collects trace files for services, applications, and system logs for an absolute or relative time range that contain text strings that you specify. You can view the collected trace file and/or download the trace files to your PC. You can also save the trace collection query criteria for later use. If you save the query as a regular query, you can only run the query on the node on which it was created. If you save the query as a generic query, you can run it on any node in any cluster.
- Schedule Collection—Schedules a recurring trace collection and allows users to perform a specified action, including: run another query, generate a syslog, or download the trace files on a SFTP server.
- Local Browse—After you have collected trace files and downloaded them to your PC, you can view them with a text editor that can handle UNIX variant line terminators such as WordPad on your PC, or you can view them by using the viewers within the real-time monitoring tool.
- Collect Crash Dump—Collects a crash dump file for one or more servers on your network.
- Real Time Trace—Comprises two options: view real-time data and monitor user events. The view real-time data option allows you to view the current trace file that is being written on the server for an application. The monitor user event option enables the system to monitor real-time trace files and perform a specified action when a search string displays in the trace file. Actions include generating an alert, generating local or remote syslogs, or downloading trace files via SFTP.
- Job Status—Allows you to view the status of the trace collection jobs that are running on the system as well as recently processed jobs.

After the system has generated trace files, you can view them on the server by using the remote browse option.

You can collect individual traces files or zip multiple traces into a single file. You can manually delete the collected trace files from the server, or you can set the trace and log central option to delete the trace files from the server after collection.

After you collect the files, you can view them in the Local Browse option. The file displays in the appropriate viewer, such as the QRT Viewer, Q931 Translator, Log Viewer, or Generic Viewer.

Note For devices that support encryption, the SRTP keying material does not display in the trace file.

Trace Configuration and Collection Checklist

Table 4-1 provides an overview of the steps for configuring and collecting trace for Cisco Unified CallManager services.

Table 4-1 Trace Configuration and Collection Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Using Cisco Unified CallManager Administration **System > Enterprise Parameters**, configure the maximum number of devices that are available for tracing. Enter a value in the Max Number of Device Level Trace field. The default specifies 12.	*Cisco Unified CallManager Administration Guide*
Step 2	Configure the trace setting for the service for which you want to collect traces. You can configure trace for the service on one server or on all servers in the cluster. To configure trace settings, choose what information you want to include in the trace log by choosing the debug level and trace fields. You can also configure trace for specific devices if you are configuring trace for the Cisco CallManager service or the Cisco CTIManager service. If you want to run predetermined traces on services, set troubleshooting trace for those services.	Trace Configuration, *Cisco Unified CallManager Serviceability Administration Guide* Troubleshooting Trace Setting Configuration, *Cisco Unified CallManager Serviceability Administration Guide*
Step 3	Install the real-time monitoring tool on a local PC.	Real-Time Monitoring Configuration, *Cisco Unified CallManager Serviceability Administration Guide*
Step 4	If you want to generate an alarm when the specified search string exists in a monitored trace file, enable the TraceCollectionToolEvent alert.	Setting Alert Properties, *Cisco Unified CallManager Serviceability Administration Guide*
Step 5	If you want to automatically capture traces for alerts such as CriticalServiceDownand CodeYellow, check the **Enable TCT Download** check box in Set Alert/Properties dialog box for the alerts.	Setting Alert Properties, *Cisco Unified CallManager Serviceability Administration Guide*
Step 6	Collect Cisco Unified CallManager traces, applications, and system traces within the Cisco Unified CallManager cluster.	Trace Collection and Log Central in RTMT, *Cisco Unified CallManager Serviceability Administration Guide*

Table 4-1 Trace Configuration and Collection Checklist (continued)

Configuration Steps		Related Procedures and Topics
Step 7	View the log file in the appropriate viewer.	Using Local Browse, *Cisco Unified CallManager Serviceability Administration Guide* Using the Query Wizard, *Cisco Unified CallManager Serviceability Administration Guide* Using Q931 Translator, *Cisco Unified CallManager Serviceability Administration Guide* Displaying QRT Report Information, *Cisco Unified CallManager Serviceability Administration Guide*
Step 8	If you enabled troubleshooting trace, reset the trace settings services on the Cisco Unified CallManager nodes, so the original settings get restored. **Note** Leaving Troubleshooting trace enabled for a long time increases the size of the trace files and may impact the performance of the services.	Troubleshooting Trace Setting Configuration, *Cisco Unified CallManager Serviceability Administration Guide*

Where to Find More Information

Related Topics

- Alarm Configuration, page 3-2
- Alarm Configuration Checklist, page 3-3
- Alarm Configuration, *Cisco Unified CallManager Serviceability Administration Guide*
- Trace Configuration, *Cisco Unified CallManager Serviceability Administration Guide*
- Trace Collection and Log Central in RTMT, *Cisco Unified CallManager Serviceability Administration Guide*
- Setting Alert Properties, *Cisco Unified CallManager Serviceability Administration Guide*
- Using Q931 Translator, *Cisco Unified CallManager Serviceability Administration Guide*
- Troubleshooting Trace Setting Configuration, *Cisco Unified CallManager Serviceability Administration Guide*