



Trace

This chapter provides information on the Cisco CallManager Serviceability Trace tool and contains the following topics:

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Understanding Trace

Cisco CallManager Serviceability provides a web-based trace tool to assist the system administrator and support personnel in troubleshooting Cisco CallManager problems.

Refer to the following sections for more information on the main trace functions:

- [Trace Configuration, page 8-2](#)
- [Trace Collection Tool, page 8-4](#)
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The Trace and Alarm tools work together. You configure trace and alarm settings for Cisco CallManager services. A Cisco TAC engineer receives the results. You can direct alarms to the Win2000 event viewer, CiscoWorks2000 Syslog, SDI or SDL trace log files, or to all destinations. You can base traces for Cisco CallManager services on debug levels, specific trace fields, and Cisco CallManager devices such as phones or gateways. You can perform a trace on the alarms that are sent to the SDI or SDL trace log files.

Trace Configuration

You configure trace parameters for Cisco CallManager services that are available on any Cisco CallManager server in the cluster. The following configurable services for trace exist:

- Cisco CallManager
- Cisco CDR Insert
- Cisco Certificate Authority Proxy Function
- Cisco CTIManager
- Cisco CTL Provider
- Cisco Database Layer Monitor
- Cisco Extended Functions
- Cisco Extension Mobility

- Cisco IP Manager Assistant
- Cisco IP Voice Media Streaming Application
- Cisco Messaging Interface
- Cisco MOH Audio Translator
- Cisco RIS Data Collector
- Cisco Telephony Call Dispatcher
- Cisco TFTP
- Cisco WebDialer

Use the Trace Configuration tool to specify the parameters that you want to trace for troubleshooting Cisco CallManager problems. The Trace Configuration window provides two types of settings: trace filter and trace output.

Specify the following trace parameters:

- Cisco CallManager server (within the cluster)
- Cisco CallManager service on the server
- Debug level
- Specific trace fields
- Output settings

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.

**Note**

To log alarms in the SDI trace log file, check two check boxes in Trace configuration and one check box in Alarm configuration: the Trace on check box in Trace configuration, the Enable trace file log check box in Trace configuration, and the SDI alarm destination check box in Alarm configuration.

Trace Collection Tool

Use the Trace Collection Tool, a client-side plugin, to collect and zip various Cisco CallManager service traces and/or other Cisco CallManager log files in the form of a single/multiple zip file(s). The traces and/or log files collected include:

- Cisco CallManager SDL/SDI traces—The list comprises Cisco CallManager SDL/SDI traces that are obtained from the server to which the tool gets connected.
- Cisco CallManager Application Logs—The following list comprises Cisco CallManager Application Logs that get collected:
 - Bulk Administration Tool (BAT)
 - CDR Analysis and Reporting (CAR)
 - Cisco Serviceability Reporter
 - Cisco Tomcat
 - Install Logs
 - Multi Level Administration (MLA)
 - Quality Report Tool (QRT)
 - Tool for Auto-Registered Phone Support (TAPS)
- System Logs in the form of a single/multiple zip file(s)—The following list comprises System Logs:
 - Event Viewer—Application Log
 - Event Viewer—Security Log
 - Event Viewer—System Log
 - Dr. Watson
 - IIS Logs
 - SQL Logs
 - Directory Logs
 - System Performance Logs
 - Prog Logs

**Note**

The Trace Collection Tool will run only on Windows XP/98/2000-based machines that have Visual Basic 6.0 Runtime Libraries/DLLs installed. To avoid any CPU spiking on the server while collecting and zipping files, you should not install it in the server. You do not need to apply troubleshooting traces to collect traces by using this tool. The tool works for resolutions 800*600 and above.

You can download the Trace Collection Tool from the Install Plugins window in Cisco CallManager Administration and Cisco CallManager Serviceability Administration and follow the installation prompts. Refer to [“Trace Collection Configuration”](#) in the *Cisco CallManager Serviceability Administration Guide*.

Launching the trace collection tool results in the display of a separate Trace Collection Tool window. If you open the executable file when another instance is open on the same machine, a message box displays that states that another instance is already open and only one instance can be running at any time on a given machine.

**Note**

At the user authentication prompt, use the same username and password that you used to connect to a particular Cisco CallManager node in the cluster. If the authentication fails or if the server is not available, the system prompts you to reenter the server and authentication details.

You can choose one of the following options:

- Use IP Address (Convert DNS Names of CallManager Servers to IP Address)
- Use DNS Names (Convert IP Address of CallManager Servers to DNS Names)

The option to use IP address represents the default selection as long as no Network Address Translation (NAT) is used between the machine where Trace Collection Tool is running and the Cisco CallManager servers, regardless whether they are running on the same subnet.

Trace Analysis

The Trace Analysis tool, a post-processing tool that displays XML files, provides greater trace detail to help narrow system problems. Using the Trace Analysis tool, you can specify an SDI or SDL trace, a device name, or an IP address for a Cisco CallManager service.

**Note**

Enabling Trace decreases system performance; therefore, enable Trace only for troubleshooting purposes. For assistance on using Trace, contact Cisco TAC.

Cisco CallManager system administrators and Cisco engineers use Trace Analysis to debug system problems. After the trace is configured and collected, you request a list of SDI or SDL log files. From the list, you can choose a specific log file and request information from that log file such as host address, IP address, trace type, and device name.

An SDL Trace log file contains call-processing information from services such as Cisco CallManager, Cisco CTIManager, and Cisco TFTP. The system traces the signal distribution layer of the call and logs state transitions into a log file.

An SDI Trace log file contains information for all Cisco CallManager services. The system traces system diagnostic interface information from the services and logs run-time events and traces to a log file.

The easy-to-read SDI and SDL log files display in XML format. The format for contents of log files looks like a table with headings, rows, and columns of information.

Q931 Translator

Use Q931 Translator to translate ISDN/Q931 messages in the SDI trace files to IOS message format. Q931 Translator supports text and XML trace files. You can save the translated trace files to any destination on the network.

Using the message translator tool, Cisco Support Engineers translate your incoming debugging information into familiar Cisco IOS-equivalent messages.

The message translator works by filtering incoming data from Cisco CallManager SDI log files, then parsing and translating them into Cisco IOS-equivalent messages. Message translator supports XML and text files.

TroubleShooting Trace Setting

The TroubleShooting Trace Setting tool allows you to choose the services in Cisco CallManager for which you want to set predetermined troubleshooting trace settings. Using this tool, you can choose the required services on different Cisco CallManager nodes in the cluster, so the trace settings of the chosen services are changed to reflect the predetermined trace settings. See [Figure 8-1](#).

Figure 8-1 TroubleShooting Trace Setting Window

Status: Ready

Apply TroubleShooting Traces *

Services	Select all Nodes for a Service	DLS2-CM102-CM4
Check all Services for a Node	<input type="checkbox"/>	<input type="checkbox"/>
Cisco CallManager	<input type="checkbox"/>	<input type="checkbox"/>
Cisco Tftp	<input type="checkbox"/>	<input type="checkbox"/>
Cisco Messaging Interface	<input type="checkbox"/>	<input type="checkbox"/>
Cisco IP Voice Media Streaming App	<input type="checkbox"/>	<input type="checkbox"/>
Cisco CTIManager	<input type="checkbox"/>	<input type="checkbox"/>
Cisco Telephony Call Dispatcher	<input type="checkbox"/>	<input type="checkbox"/>
Cisco MOH Audio Translator	<input type="checkbox"/>	<input type="checkbox"/>
Cisco RIS Data Collector	<input type="checkbox"/>	<input type="checkbox"/>
Cisco Database Layer Monitor	<input type="checkbox"/>	<input type="checkbox"/>
Cisco CDR Insert	<input type="checkbox"/>	<input type="checkbox"/>

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**Note**

The predetermined troubleshooting trace settings for a service include SDL and SDI trace settings. The system backs up the trace settings that were originally set before Cisco 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 shows the services that you have set for troubleshooting. See [Figure 8-2](#).

Figure 8-2 TroubleShooting Trace Setting Window

Alarm Trace Tools Application Help

Cisco CallManager Serviceability
For Cisco IP Telephony Solutions

CISCO SYSTEMS

TroubleShooting Trace Setting

Status: TroubleShooting Trace enabled since "Tue Aug 12 18:06:09 2003"

Apply TroubleShooting Traces * Reset TroubleShooting Traces **

Services	Select all Nodes for a Service	DLS2-CM102-CM4
Check all Services for a Node	<input type="checkbox"/>	<input type="checkbox"/>
Cisco CallManager	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco Tftp	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco Messaging Interface	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco IP Voice Media Streaming App	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco CTIManager	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco Telephony Call Dispatcher	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco MOH Audio Translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco RIS Data Collector	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cisco Database Layer Monitor	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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From this window, you can choose the Reset TroubleShooting Traces button to reset the trace settings to the original settings.

**Note**

The services that are not activated on a Cisco CallManager node display as N/A.

When you apply TroubleShooting Trace Setting to a service, the Serviceability Trace Configuration window in Serviceability Administration displays as shown in [Figure 8-3](#).

Figure 8-3 Trace Configuration Window with TroubleShooting Traces

On the top of the pane, a message 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 traces configuration window displays all the settings as read-only, except for some parameters of trace output settings; for example, File Name, Maximum No. of Files, Maximum No. of Lines per file, and Maximum No. of Minutes per file. You can modify these parameters even when you have applied troubleshooting trace settings.

**Note**

The changes to the parameter File Name, if modified when you apply the troubleshooting trace settings, do not get restored, because this value does not get stored while traces are applied.

Trace Filter Settings

Use the trace filter settings to set the type of trace that you want ([Table 8-1](#)). Check the Trace On check box to access the trace filter settings.

Table 8-1 Trace Configuration Filter Settings

Filter Setting	Description
Debug trace level	Setting specifies the level of information that you want traced. Levels range from error to detailed.
Trace fields	Each Cisco CallManager service provides specific trace fields. The configuration procedures for each service describes the trace fields.
Device Name Based Trace Monitoring	Setting applies to only Cisco CallManager and Cisco CTIManager services. This filter setting configures trace for devices such as phones and gateways.

Trace Output Settings

Use the trace output settings to specify the output log file and its format ([Table 8-2](#)).



Note Trace Configuration automatically provides the time and date of the trace.

Table 8-2 Trace Configuration Output Settings

Filter Setting	Description
Enable file trace log	This setting enables sending the output of the trace to a log file (either the default log file or one that you choose). Each Cisco CallManager service includes a default log file.
Enable XML formatted output	This setting formats the output of the trace in XML format. Trace Analysis requires XML format. Cisco CallManager, CTIManager, and Cisco TFTP services support this setting.
Enable debug output string	Cisco engineers use this setting.

Trace Configuration Checklist

[Table 8-3](#) provides an overview of the steps for configuring trace for Cisco CallManager services.

Table 8-3 Trace Configuration Checklist

Configuration Steps	Related Procedures and Topics
Step 1 Choose the Cisco CallManager server and service that you want to trace.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 2 Turn trace on by checking the Trace On check box.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 3 Determine whether you want to trace the service on the chosen server or on all servers in the network.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>

Table 8-3 Trace Configuration Checklist (continued)

Configuration Steps	Related Procedures and Topics
Step 4 Choose the trace debug level.	Debug Trace Level Settings , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 5 Choose the specific trace fields that you want traced for the service that you chose; for example, enable MTP device trace.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 6 Choose device-name-based tracing, if appropriate (applies to Cisco CallManager and CTIManager only). Choose the devices to be traced.	Configuring Device Name Based Trace Monitoring Trace Parameters , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 7 Choose the log file that receives the trace data. Use the default or specify a filename.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 8 Choose enable XML formatted output if the trace information will be analyzed (only applies to Cisco CallManager, CTIManager, and Cisco TFTP).	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 9 View the contents of the trace log when complete. To view specific information about an SDI or SDL trace, collect the parameters (optional).	Viewing Trace Log Files , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 10 Specify criteria for an SDI or SDL trace file and view in XML format (optional).	Specifying Criteria for an SDI Trace Analysis , <i>Cisco CallManager Serviceability Administration Guide</i> Specifying Criteria for an SDL Trace Analysis , <i>Cisco CallManager Serviceability Administration Guide</i>

Trace Collection Configuration Checklist

Table 8-4 provides an overview of the steps for configuring trace collection.

Table 8-4 Trace Collection Configuration Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Install the Trace Collection Tool.	Loading the Trace Collection Tool , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 2	Collect Cisco CallManager traces, applications, and system traces within the Cisco CallManager cluster.	Collecting Traces by Using Trace Collection Tool , <i>Cisco CallManager Serviceability Administration Guide</i>

Trace Analysis Configuration Checklist

Table 8-5 provides an overview of the steps for configuring trace analysis.

Table 8-5 Trace Analysis Configuration Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Run the trace for a server and service (only applies to Cisco CallManager, CTIManager, and Cisco TFTP). Check the enable XML trace check box.	Trace Configuration , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 2	Specify the SDI or SDL trace analysis search criteria.	Specifying Criteria for an SDI Trace Analysis , <i>Cisco CallManager Serviceability Administration Guide</i> Specifying Criteria for an SDL Trace Analysis , <i>Cisco CallManager Serviceability Administration Guide</i>

Q931 Translator Configuration Checklist

Table 8-6 provides an overview of the steps for configuring Q931 translation.

Table 8-6 Q931 Translator Configuration Checklist

Configuration Steps		Related Procedures and Topics
Step 1	Choose a server where the Q931 messages reside.	Using the Message Translator, Cisco CallManager Serviceability Administration Guide
Step 2	Choose an XML or text-based file format.	Using the Message Translator, Cisco CallManager Serviceability Administration Guide
Step 3	Search for the file to be translated.	Using the Message Translator, Cisco CallManager Serviceability Administration Guide
Step 4	Save the translated log file.	Using the Message Translator, Cisco CallManager Serviceability Administration Guide

TroubleShooting Trace Setting Configuration Checklist

Table 8-6 provides an overview of the steps for setting and resetting troubleshooting trace setting.

Table 8-7 *TroubleShooting Trace Setting Configuration Checklist*

Configuration Steps		Related Procedures and Topics
Step 1	Choose the services on the Cisco CallManager nodes on which you want to set troubleshooting trace.	Setting TroubleShooting Trace , <i>Cisco CallManager Serviceability Administration Guide</i>
Step 2	Reset the services on the Cisco CallManager nodes, so the original settings will get restored.	Resetting TroubleShooting Trace , <i>Cisco CallManager Serviceability Administration Guide</i>

Where to Find More Information

Related Topics

- [Alarm Configuration](#), page 7-2
- [Alarm Configuration Checklist](#), page 7-11
- [Alarm Configuration](#), *Cisco CallManager Serviceability Administration Guide*
- [Trace Configuration](#), *Cisco CallManager Serviceability Administration Guide*
- [Trace Collection Configuration](#), *Cisco CallManager Serviceability Administration Guide*
- [Trace Analysis Configuration](#), *Cisco CallManager Serviceability Administration Guide*
- [Q.931 Translator](#), *Cisco CallManager Serviceability Administration Guide*
- [TroubleShooting Trace Setting Configuration](#), *Cisco CallManager Serviceability Administration Guide*

Additional Cisco Documentation

- *Troubleshooting Guide for Cisco CallManager*