Diagnostic Traces and Event Logs

In this chapter, you will find information about the diagnostic utilities that enable you to troubleshoot problems and to maintain Cisco Unity Connection, and instructions that will help you in reporting problems to Cisco Technical Assistance Center (Cisco TAC).

See the following sections:

About the Diagnostic Utilities for Cisco Unity Connection

Table 1-1 describes the diagnostic utilities available for Cisco Unity Connection.

Table 1-1 Diagnostic Utilities for Cisco Unity Connection

Utility	Uses
Event log	The Event log should be the first resource you search for information when troubleshooting a problem. The Event log is used by Windows applications to report information events, warnings, and errors. Reviewing the Event log for Connection events provides a good overview of how the system is functioning. For details, see the "Event Log" section on page 1-2.
Macro trace logs in the UDT	In the Cisco Unity Diagnostic tool (UDT), you can enable a preselected group of individual macro trace levels to obtain diagnostic trace output on several Connection components at once. For details, see the "Macro Trace Logs in the Cisco Unity Diagnostic Tool (UDT)" section on page 1-2.

Table 1-1 Diagnostic Utilities for Cisco Unity Connection (continued)

Utility	Uses
Micro trace logs in the UDT	The Cisco Unity Diagnostic tool (UDT) can enable most Connection components to write diagnostic traces to a log. The diagnostic trace output is essential to troubleshooting problems that involve individual components. For details, see the "Micro Trace Logs in the Cisco Unity Diagnostic Tool (UDT)" section on page 1-4.
Dr. Watson logs	The Dr. Watson utility is invoked by Windows 2000 when a serious problem occurs that is not handled by Connection. When invoked, the Dr. Watson utility displays a dialog box that contains an error message (for example, "Dr. Watson encountering an error in the AvCsMgr.exe process"). Dr. Watson errors may occur in other processes as well. For details, see the "Dr. Watson Logs" section on page 1-9.

Event Log

The Event log is the first resource you should search for information when troubleshooting a problem. Cisco Unity Connection components report information events, warnings, and errors in the Event log. Reviewing the Event log for Connection events provides a good overview of how the system is functioning.

Note The raw data within the files in the Event log is stamped with time stamps recorded in GMT (Greenwich mean time) rather than in the local time of the Connection server. The time stamps for the Event log files themselves, however, are in the local time of the Connection server. Using GMT for the time stamps of the raw data provides for an accurate comparison of events when Connection servers are not all in the same time zone. The Connection reports convert the GMT time stamps to local time.

To Obtain an Event Log Trace

Step 1 On the Windows Start menu, click **Programs > Administrative Tools > Event Viewer**.

Step 2 In the Tree pane, click **Application**.

Step 3 Search for Connection events.

Note For further instructions on Event Viewer functions, see the Event Viewer Help.

Macro Trace Logs in the Cisco Unity Diagnostic Tool (UDT)

The Cisco Unity Diagnostic tool (UDT) lets you create and view diagnostic trace logs for troubleshooting problems. Diagnostic trace logs of a problem that is occurring can be critical to determining the cause of the problem.

Macro traces in the UDT let you enable preselected groups of micro traces. For details on viewing, interpreting and gathering the micro traces that the macro traces use, see the "Micro Trace Logs in the Cisco Unity Diagnostic Tool (UDT)" section on page 1-4.

Caution Diagnostic traces that are set before a Cisco Unity Connection software upgrade are not preserved and must be reset after the upgrade.

See the following sections:

Available Macro Traces

Table 1-2 lists the macro traces that are available and what each macro trace analyzes.

Table 1-2 Macro Traces

Macro Trace Name	What the Trace Analyzes
Call Flow Diagnostics	The flow of a call through Connection
Message Objectid Tracking Traces	Message handing; the objects that handle messages from delivery to deletion
Call Control (Miu) Traces	Call control functions
Traces for MWI Problems	Turning message waiting indicators (MWIs) on and off
Traces for Other Notification Problems	Notification and outdial functions
Skinny TSP Traces	The Skinny networking layer; useful only when Connection is integrated with Cisco Unified CallManager
Unity Startup	Connection startup functions
Voice User Interface/Speech Recognition Traces	Voice User Interface (VUI)
Media (Wave) Traces 1 – High-Level	Basic media and WAV file usage
Media (Wave) Traces 2 – Medium-Level	Media and WAV file usage; logs more information than high-level traces
Media (Wave) Traces 3 – Low-Level	Media and WAV file usage; logs detailed information and should be used only when there is significant free hard drive space
Text to Speech (TTS) Traces	The Text to Speech (TTS) feature; also can log traces on other Connection components that interact with TTS

Enabling Macro Traces

Enable the macro trace diagnostics when you are troubleshooting problems with Cisco Unity Connection features. For example, if there are MWI problems, enable the Traces for MWI Problems macro trace. However, keep in mind that running diagnostics can affect system performance and hard drive space.

To Enable Macro Trace Diagnostics

Step 1 On the Windows Start menu, click **Programs > Cisco Unity > Cisco Unity Diagnostic Tool**. The Cisco Unity Diagnostic Viewer window appears.

Step 2 In the right pane of the Cisco Unity Diagnostic Viewer window, click Configure Macro Traces. The Configure Macro Traces wizard appears.

Step 3 On the Welcome page, click **Next**.

Step 4 On the Configure Macro Traces page, check the check boxes for the applicable traces.

Step 5 Click **Next**.

Step 6 On the Completing page, click **Finish**.

Step 7 In the right pane of the Cisco Unity Diagnostic Viewer window, click **Start New Log Files**.

Step 8 Reproduce the problem.

Note After obtaining the diagnostic trace logs that you want, disable the traces that you enabled.

Micro Trace Logs in the Cisco Unity Diagnostic Tool (UDT)

The Cisco Unity Diagnostic tool (UDT) lets you create and view diagnostic trace logs for troubleshooting problems. Diagnostic trace logs of a problem that is occurring can be critical to determining the cause of the problem.

Micro traces in the UDT let you enable specific Cisco Unity Connection components and trace levels, which makes the trace logs as precise as possible. This is particularly critical when the problem occurs seldom, such as only once a day, as it can be difficult to find the actual occurrence of the problem in a diagnostic trace log.

Caution Diagnostic traces that are set before a Cisco Unity Connection software upgrade are not preserved and must be reset after the upgrade.

See the following sections:

Available Micro Traces

Table 1-3 lists the micro traces that are available and describes what each micro trace analyzes.

Table 1-3 Micro Traces

Micro Trace Name	What the Trace Analyzes
Address Searcher (Address Searcher)	Addressing user-to-user messages
Arbiter (Arbiter)	Conversations, ports, and call routing rules that are used for calls
Bulk Administration Manager (BulkAdministrationManager)	Bulk Administration Manager for creating, updating, and deleting multiple users or system contacts
Certificate Manager (CuCertMgr)	Private secure messaging
Client Data Library (CDL)	
Common Messaging Layer (CML)	
CommServer Manager (AvCsMgr)	Main Cisco Unity Connection process; starting and stopping Connection
ConfigData (ConfigData)	
Conversation Development Environment (CDE)	Conversation engine and conversation events
Database SysAgent Tasks (DataSysAgentTasks)	SysAgent tasks
DbEvent Tasks (DbEvent)	Component notification of database changes
Encryption Library (CuEncrypt)	Encryption (except for messaging) and the encryption audit logs
Failure Conversation (FailureConv)	
GAL: Cache (CuGalCach)	
GAL: Data (CuGalData)	
GAL: Distributed Authoring and Versioning (CuGalDav)	
GAL: SQL (CuGalSql)	
GAL: Test (CuGalTest)	
Gateway (AvCsGateway)	Starting and stopping Cisco Unity Connection; access to AvCsMgr; access to Cisco Unity Connection components
Groupware Access Library (CuGal)	
Licensing (Licensing)	Licensing for per-seat licensed features
Log Manager (AvLogMgr)	Writing diagnostic traces and Event log
Media: Call (MiuCall)	The process between the Miu and conversations
Media: COM Methods (MiuMethods)	Handing of incoming calls; call control; turning messaging waiting indicators (MWIs) on and off; notification and outdial functions; media or WAV file usage
Media: Database (MiuDatabase)	
Media: General (MiuGeneral)	Tracking calls through the telephone user interface (TUI); call control functions; turning message waiting indicators (MWIs) on and off; notification and outdial functions; basic media or WAV file usage

Table 1-3 Micro Traces (continued)

Micro Trace Name	What the Trace Analyzes
Media: Input/Output (MiuIO)	Media or WAV file usage with TAPI (circuit-switched or Cisco Unified CallManager) integrations
Media: Integration (MiuIntegration)	Integrations with circuit-switched phone systems; call information in integrations with circuit-switched phone systems; turning message waiting indicators (MWIs) on and off in integrations with circuit-switched phone systems
Media: SC Bus (MiuSCBus)	Fax engine and fax tone detection
Message Transfer Agent (MTA)	Delivery of voice messages to the message store
Notifier and Notification Devices (Notifier)	Notification of messages and selected events; turning message waiting indicators (MWIs) on and off
Performance Monitor (PerfMonitor)	Performance of system objects that Cisco Unity Connection uses
PHGreeting Conversations (ConvPH Greeting)	Opening greeting and user greetings
PHInterview Conversations (ConvPH Interview)	Interview handler
Phrase Server (PhraseServer)	The prompts that play and the user DTMF input; the logs are written to a file
Phrase Server to Monitor (PhraseServer to Monitor)	The prompts that play and the user DTMF input; the logs are written to the monitor
PHTransfer Conversations (ConvPH Transfer)	Phone transfers
Report Data Library (RDL)	
Resource Loader (Resource Loader)	Using the selected language in the GUI; filling strings with product or message information
Resource Manager (Resource Manager)	Monitoring and providing available resources to the Arbiter as needed
Routing Rules (Routing Rules)	Call routing decisions
Routing Rules Conversation (ConvRoutingRules)	The conversation to which the Arbiter routes calls
Rules Engine (Rules Engine)	
Scheduler (Scheduler)	Currently active Cisco Unity Connection schedule (whether during normal business hours or during nonbusiness hours) or holiday
Server Roles Manager (SRM)	Server Role Manager, which monitors and manages all server roles
Server Status App (CuStatusTray)	The Cisco Unity Connection Server Status utility
Skinny TSP (SkinnyTSP)	*(Circuit-switched or Cisco Unified CallManager phone system integrations)* Media or WAV file usage *(Cisco Unified CallManager SCCP integrations only)* Skinny networking layer

Table 1-3 Micro Traces (continued)

Stream Server (StreamServer)	
Subscriber Conversations (Subscriber Conversation)	User activities and usage
System Agent (SysAgent)	System Agent role, which schedules system tasks that the administrator enters (such as resynchronizing MWIs)
Telephone Record and Playback (TRAP)	Telephone Record and Playback (TRAP), which lets clients use the phone as a recording and playback device
Text to Speech (Text to Speech)	Text to Speech feature
UMSS IMAP Server (UMSSIMAPServer)	Access to voice messages by IMAP clients
UMSS Messaging Abstraction Layer (CsMalUmss)	
UMSS SysAgent Tasks (UmssSysAgentTasks)	
Unity Reports Scavenger Service (Scavenger)	Report Data Collector role, which extracts data from log files and periodically cleans up the database
Virtual Queue (VirtualQueue)	Call queuing

Enabling Micro Traces

Enable the micro trace diagnostics when you are troubleshooting problems with specific Cisco Unity Connection components. For example, if there are notification errors in the Event log, enable the Notifier and Notification Devices (Notifier) diagnostics. However, keep in mind that running diagnostics can affect system performance and hard drive space.

To Enable Micro Trace Diagnostics

Step 1 On the Windows Start menu, click . The Cisco Unity Diagnostic Viewer window appears.

Step 2 In the right pane of the Cisco Unity Diagnostic Viewer window, click **Configure Micro Traces**. The Configure Micro Traces wizard appears.

On the Welcome page, click **Next**.

On the Configure Micro Traces page, check the check boxes to select the component traces and the trace levels that you want to enable.

Click **Next**.

On the Completing page, click **Finish**.

In the right pane of the Cisco Unity Diagnostic Viewer window, click **Start New Log Files**.

Reproduce the problem.

After obtaining the diagnostic trace logs that you want, disable the traces that you enabled.

Viewing Individual Micro Trace Logs

Do the following procedure to use the UDT to view individual micro trace logs. For information on interpreting the micro trace information in the UDT, see the "How to Interpret Micro Trace Information in the Cisco Unity Diagnostic Tool (UDT)" section on page 1-8. For instructions on gathering trace logs into files, see the "To Gather Micro Trace Logs into Files" procedure on page 1-9.

To View Individual Micro Trace Logs

Step 1 On the Windows Start menu, click **Programs > Cisco Unity > Cisco Unity Diagnostic Tool**. The Cisco Unity Diagnostic Viewer window appears.

Step 2 In the left pane of the Cisco Unity Diagnostic Viewer window, expand the **Processes** node.

Step 3 In the left pane, expand the process (or component) that you enabled traces for, and click the log file that you want to view. The log file is formatted and appears in the right pane.

How to Interpret Micro Trace Information in the Cisco Unity Diagnostic Tool (UDT)

When you open a trace log in the UDT, the information is formatted and displayed in columns in the right pane. Table 1-4 lists the information contained in each column of trace logs.

Table 1-4 Information in Trace Logs

Column Name	Information Contained in the Column
#	The line number in the trace log. This number is provided by the UDT and is not contained in the trace log.
Timestamp	The date and time of the trace log.
Source	The source of the trace log text.
Trace No.	The number of the message string that was used from the source identified in the Source column.
Component	The micro trace component that was selected in the Configure Micro Traces wizard.
Level	The trace level that was selected in the Configure Micro Traces wizard.
Trace	The raw data, delimited by commas, from the micro trace.

Gathering Micro Trace Logs into Files

When you are requested to send micro trace logs for examination, you must gather the logs into files. Do the following procedure.

To Gather Micro Trace Logs into Files

Step 1 On the Windows Start menu, click **Programs > Cisco Unity > Cisco Unity Diagnostic Tool**. The Cisco Unity Diagnostic Viewer window appears.

Step 2 In the right pane of the Cisco Unity Diagnostic Viewer window, click **Gather Log Files**. The Gather Logs wizard appears.

Step 3 On the Welcome page, click **Select Logs**.

Step 4 If you want to change the directory where the files are saved, do the following sub-steps. Otherwise, skip to Step 5.

a. Click **Browse** to select a destination for the files. The Browse for Folder dialog box appears.

b. Click the destination directory where you want the files to be saved, and click **OK**.

Step 5 On the Welcome page, click **Next**.

Step 6 On the Select Logs to Gather page, expand the micro trace processes that you enabled and check the check box for the most recent log for each micro trace.

Step 7 Click **Next**.

Step 8 On the Completing page (after the logs are gathered and formatted), click **View Directory** to open the directory where the files were saved.

Step 9 On the Completing page, click **Finish** to exit the wizard.

Step 10 Close the Cisco Unity Diagnostic Viewer window.

Dr. Watson Logs

Dr. Watson is a program invoked by Windows 2000 when a serious problem occurs that is not handled by Cisco Unity Connection. When Dr. Watson is invoked, a dialog box that contains an error message appears (for example, “Dr. Watson encountering an error in the CuCsMgr.exe process”).

To Obtain a Dr. Watson Log

Step 1 From a command prompt, enter **drwtsn32** and press **Enter**.

Step 2 In the Dr. Watson for Windows dialog box, in the Log File Path field, note the location of the log file.

Step 3 Browse to the Drwtsn32.log file and make a copy of the file in another location.

Step 4 In the Dr. Watson for Windows dialog box, in the Number of Instructions field, enter **50**.

Step 5 In the Number of Errors to Save field, enter the number of errors you want to record. The default is 10.

Step 6 Under Options, confirm that the **Dump All Thread Contexts**, **Append to Existing Log File**, **Visual Notification**, and **Create Crash Dump File** check boxes are checked.

Step 7 Click **OK** to close the dialog box.

Step 8 Reproduce the problem.

Step 9 Browse to the **Drwtsn32.log** file and make a copy of the file in another location.

Reporting Problems to Cisco TAC

When you report a problem to the Cisco Technical Assistance Center (Cisco TAC), you will be asked to provide information about your system and about the problem. This section provides procedures for gathering the system information and problem descriptions that may be requested.

System Information

Have the following system information ready when you call:

- The results from running the Gather Unity System Info utility. See the "To Collect the Cisco Unity Connection System Information" procedure on page 1-10.
- Number and type of voice ports installed.
- Number of users in the Cisco Unity Connection database.
- Number, type, and speed of processors.
- Memory and pagefile size.
- Hard disk size and free space available.
- Phone system integration, including the manufacturer, model, and version (if applicable).
- Other telephony software or hardware installed, such as fax.
- Microsoft Windows 2003 service packs installed.
- Approximate normal Connection server CPU utilization. (For example, does the Windows task manager often show 100 percent CPU utilization, or is it usually less than 80 percent?)

To Collect the Cisco Unity Connection System Information

Step 1 On the Windows Start menu, click **Programs > Cisco Unity > Gather Unity System Info**.

Step 2 In the Gather Unity System Info window, note the system information that is displayed.

Problem Description

Be prepared to give a complete description of the problem, including:

- Symptoms such as lost ports, Event log errors, or Dr. Watson errors.
- Problem frequency under normal load conditions (for example, every call, once per hour, or once only).
- Problem frequency when specific attempts are made to reproduce it.
- Detailed sequence of steps to reproduce the problem.

- Date and time of last known occurrence of the problem.
- Which digits were entered by the caller (for example, menu selections or user extensions, or the extension of the caller or called port), if known.
- Which port(s) were affected by the problem, if known.
- Applicable logs and traces. For information on how to obtain log and trace files, see the preceding sections of this chapter.