



Trace configuration



Note

Enabling trace decreases system performance; therefore, enable trace only for troubleshooting purposes. For assistance in using trace, contact your technical support team.

This chapter contains the following topics:

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Configure trace parameters

This section describes how to configure trace parameters for feature and network services that you manage through Cisco Unified Serviceability.



Tip

For Cisco Unified CCX, you may need to run trace in Cisco Unified Serviceability and Cisco Unified CCX Serviceability to troubleshoot Cisco Unified CCX issues. To troubleshoot services that are supported in Cisco Unified Serviceability, you run trace in Cisco Unified Serviceability. Similarly, to troubleshoot Cisco Unified CCX components, you run trace in Cisco Unified CCX Serviceability. For information on how to run trace in Cisco Unified CCX, refer to the *Cisco Unified CCX Serviceability Administration Guide*.

Procedure

- Step 1** Choose **Trace > Configuration**.
The Trace Configuration window displays.

- Step 2** From the Server drop-down list box, choose the server that is running the service for which you want to configure trace; then, click **Go**.
- Step 3** From the Service Group drop-down list box, choose the service group for the service that you want to configure trace; then, click **Go**.
- Tip** [Table 1: Service groups in trace configuration, on page 3](#) lists the services and trace libraries that correspond to the options that display in the Service Group drop-down list box.
- Step 4** From the Service drop-down list box, choose the service for which you want to configure trace; then, click **Go**.
The drop-down list box displays active and inactive services.
- If you configured Troubleshooting Trace for the service, a message displays at the top of the window that indicates that the Troubleshooting Traces feature is set, which means that the system disables all fields in the Trace Configuration window except for Trace Output Settings. To configure the Trace Output Settings, go to [Table 1: Service groups in trace configuration, on page 3](#). To reset Troubleshooting Trace, see the [Configure troubleshooting trace settings, on page 7](#).
- The trace parameters display for the service that you chose. In addition, the Apply to All Nodes check box displays.
- Step 5** If you have a Cisco Unified CCX cluster, you can apply the trace settings for the service or trace library to all servers in the cluster by checking the Apply to All Nodes check box.
- Step 6** Check the **Trace On** check box.
- Step 7** From the Debug Trace Level drop-down list box, choose the level of information that you want traced, as described in [Table 1: Service groups in trace configuration, on page 3](#).
- Step 8** Check the **Trace Fields** check box for the service that you chose; for example, Cisco Log Partition Monitoring Tool Trace Fields.
- Step 9** If the service does not have multiple trace settings where you can specify the traces that you want to activate, check the Enable All Trace check box. If the service that you chose has multiple trace settings, check the check boxes next to the trace check boxes that you want to enable, as described in [Table 1: Service groups in trace configuration, on page 3](#).
- Step 10** To limit the number and size of the trace files, specify the trace output setting. See [Table 1: Service groups in trace configuration, on page 3](#) for descriptions and default values.
- Step 11** To save your trace parameters configuration, click **Save**.
The changes to trace configuration take effect immediately for all services. To set the default, click **Set Default**.
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Service groups in trace configuration

The table below lists the services and trace libraries that correspond to the options in the Service Group drop-down list box in the Trace Configuration window.

Table 1: Service groups in trace configuration

Service Group	Services and Trace Libraries	Notes
Performance and Monitoring Services	Cisco AMC Service, Cisco CCM NCS Web Library, Cisco Log Partition Monitoring Tool, Cisco RIS Data Collector, Cisco RTMT Web Service, Cisco Audit Event Service, and Cisco RisBean Library.	Choosing the Cisco RTMT Web Service option activates trace for the RTMT servlets; running this trace creates the server-side log for RTMT client queries.
Backup and Restore Services	Cisco DRF Local and Cisco DRF Master	For a description of these services, see the Understanding Services . You enable all trace for each service, instead of running trace for specific components.
System Services	Cisco CCMRealm Web Service, Cisco CCMSERVICE Web Service, Cisco Common User Interface, and Cisco Trace Collection Service	For a description of the Cisco Trace Collection service, see the Understanding Services . Choosing the Cisco CCMRealm Web Service option activates trace for login authentication. Choosing the Cisco Common User Interface option activates trace for the common code that multiple applications use; for example, Cisco Unified Operating System Administration and Cisco Unified Serviceability. Choosing the Cisco CCMSERVICE Web Service option activates trace for the Cisco Unified Serviceability web application (GUI). You enable all trace for each option/service, instead of running trace for specific components.
SOAP Services	Cisco SOAP Web Service and Cisco SOAPMessage Service	Choosing the Cisco SOAP Web Service option activates the trace for the AXL Serviceability API. You enable all trace for this service, instead of running trace for specific components.
Platform Services	Cisco Unified OS Admin Web Service	The Cisco Unified OS Admin Web Service supports Cisco Unified Operating System Administration, which is the web application that provides management of platform-related functionality such as certificate management, version settings, and installations and upgrades. You enable all trace for this service, instead of running trace for specific components.

Debug trace level settings

The table below describes the debug trace level settings for services.

Table 2: Debug trace levels for services

Level	Description
Error	Traces alarm conditions and events. Used for all traces that are generated in abnormal path. Uses minimum number of CPU cycles.
Special	Traces all Error conditions plus process and device initialization messages.
State Transition	Traces all Special conditions plus subsystem state transitions that occur during normal operation. Traces call-processing events.
Significant	Traces all State Transition conditions plus media layer events that occur during normal operation.
Entry/Exit	Note Not all services use this trace level. Traces all Significant conditions plus entry and exit points of routines.
Arbitrary	Traces all Entry/Exit conditions plus low-level debugging information.
Detailed	Traces all Arbitrary conditions plus detailed debugging information.

The table below describes the debug trace level settings for servlets.

Table 3: Debug trace levels for servlets

Level	Description
Fatal	Traces very severe error events that may cause the application to abort.
Error	Traces alarm conditions and events. Used for all traces that are generated in abnormal path.
Warn	Traces potentially harmful situations.
Info	Traces the majority of servlet problems and has a minimal effect on system performance.
Debug	Traces all State Transition conditions plus media layer events that occur during normal operation. Trace level that turns on all logging.

Trace specific components

For some services, you can activate trace for specific components, instead of enabling all trace for the service. The following list includes the services for which you can activate trace for specific components. Clicking one of the cross-references takes you to the applicable section where a description displays for each trace field for the service. If a service does not exist in the following list, the Enable All Trace check box displays for the service in the Trace Configuration window.

The following services are applicable to Cisco Unified CCX:

- [Cisco Database Layer Monitor trace fields, on page 5](#)
- [Cisco RIS Data Collector trace fields, on page 5](#)

Cisco Database Layer Monitor trace fields

The table below describes the Cisco Database Layer Monitor trace fields. The Cisco Database Layer Monitor service supports Cisco Unified CCX.

Table 4: Cisco Database Layer Monitor trace fields

Field Name	Description
Enable DB Library Trace	Activates database library trace for C++ applications.
Enable Service Trace	Activates service trace.
Enable DB Change Notification Trace	Activates the database change notification traces for C++ applications.
Enable Unit Test Trace	Do not check this check box. Cisco engineering uses it for debugging purposes.

Cisco RIS Data Collector trace fields

The table below describes the Cisco RIS Data Collector trace fields. The Cisco RIS Data Collector service supports Cisco Unified CCX.

Table 5: Cisco RIS Data Collector trace fields

Field Name	Description
Enable RISDC Trace	Activates trace for the RISDC thread of the RIS data collector service (RIS).
Enable System Access Trace	Activates trace for the system access library in the RIS data collector.

Field Name	Description
Enable Link Services Trace	Activates trace for the link services library in the RIS data collector.
Enable RISDC Access Trace	Activates trace for the RISDC access library in the RIS data collector.
Enable RISDB Trace	Activates trace for the RISDB library in the RIS data collector.
Enable PI Trace	Activates trace for the PI library in the RIS data collector.
Enable XML Trace	Activates trace for the input/output XML messages of the RIS data collector service.
Enable Perfmon Logger Trace	Activates trace for the troubleshooting perfmon data logging in the RIS data collector. Used to trace the name of the log file, the total number of counters that are logged, the names of the application and system counters and instances, calculation of process and thread CPU percentage, and occurrences of log file rollover and deletion.

Trace output settings

The table below contains the trace log file descriptions and defaults.



Caution

When you change either the Maximum No. of Files or the Maximum File Size settings in the Trace Configuration window, the system deletes all service log files except for the current file, that is, if the service is running; if the service has not been activated, the system deletes the files immediately after you activate the service. Before you change the Maximum No. of Files setting or the Maximum File Size setting, download and save the service log files to another server if you want to keep a record of the log files; to perform this task, use Trace and Log Central in RTMT.

Table 6: Trace output settings

Field	Description
Maximum number of files	This field specifies the total number of trace files for a given service. Cisco Unified Serviceability automatically appends a sequence number to the file name to indicate which file it is; for example, cus299.txt. When the last file in the sequence is full, the trace data begins writing over the first file. The default varies by service.
Maximum file size (MB)	This field specifies the maximum size of the trace file in megabytes. The default varies by service.

Configure troubleshooting trace settings

The Troubleshooting Trace Settings window allows you to choose the services for which you want to set predetermined troubleshooting trace settings.



Note Leaving Troubleshooting Trace enabled for a long time increases the size of the trace files and may impact the performance of the services.

Procedure

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- Step 1** In Cisco Unified Serviceability, choose **Trace > Troubleshooting Trace Settings**.
- Step 2** From the Server drop-down list box, choose the server where you want to troubleshoot trace settings; then, click **Go**.
- Note** A list of services displays. The services that are not activated display as N/A.
- Step 3** Perform one of the following:
- To check specific services for the server that you chose in the Server drop-down list box, check each service check box in the Services pane; for example, the Database and Admin Services, Performance and Monitoring Services, or the Backup and Restore Services pane and so on.
This task affects only the server that you chose in the Server drop-down list box.
 - Check one of the following check boxes:
 - **Check All Services**—Automatically checks all check boxes for the services on the current server that you chose in the Server drop-down list box.
 - **Check Selected Services on All Nodes**—Allows you to check specific service check boxes in the Troubleshooting Trace Setting window. This setting applies for all servers in the cluster where the service is activated.
 - **Check All Services on All Nodes**—Automatically checks all check boxes for all services for all servers in the cluster. When you check this check box, the Check All Services and Check Selected Services on All Nodes check boxes automatically get checked.
- Step 4** Click **Save**.
- Step 5** After you configure troubleshooting trace for one or more services, you can restore the original trace settings. If you want to restore the original trace settings, click one of the following buttons:
- Reset Troubleshooting Traces**—Restores the original trace settings for the services on the server that you chose in the Server drop-down list box; also displays as an icon that you can click.
After you click **Reset**, the window refreshes, and the service check boxes display as unchecked.
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