



Configuring Cisco Mediatrace

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This chapter contains information about and instructions for configuring Cisco Mediatrace.

Cisco Mediatrace enables you to isolate and troubleshoot network degradation problems for data streams. Although it can be used to monitor any type of flow, it is primarily used with video flows. It can also be used for non-flow related monitoring along a media flow path.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the “[Feature Information for Cisco Mediatrace](#)” section on page 31.

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

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Overview of Cisco Mediatrace

Cisco Mediatrace helps to isolate and troubleshoot network degradation problems by enabling a network administrator to discover an IP flow's path, dynamically enable monitoring capabilities on the nodes along the path, and collect information on a hop-by-hop basis. This information includes, among other things, flow statistics, and utilization information for incoming and outgoing interfaces, CPUs, and memory, as well as any changes to IP routes or the Cisco Mediatrace monitoring state.

This information can be retrieved in either of two ways:

- By issuing an exec command to perform an on-demand collection of statistics from the hops along a media flow. During this one-shot operation, the hops along the media flow are discovered and shown to you, along with a set of other specified information.
- By configuring Cisco Mediatrace to start a recurring monitoring session at a specific time and on specific days. The session can be configured to specify which metrics to collect, and how frequently they are collected. The hops along the path are automatically discovered as part of the operation.

After collecting the metrics you specified, you can view a report on the metrics.

Metrics You Can Collect Using Cisco Mediatrace

You can collect the following categories of metrics using Mediatrace:

- Common Metrics for Each Responder
- System Metrics: TCP Profile
- System Metrics: RTP Profile
- System Metrics: INTF Profile
- System Metrics: CPU Profile
- System Metrics: MEMORY Profile
- App-Health Metrics: MEDIATRACE-HEALTH Profile
- Metrics for the Mediatrace Request Summary from Initiator

The individual metrics under each of these categories are listed the appropriate section below.

Metrics for Mediatrace Request Summary from Initiator

- Request Timestamp
- Request Status
- Number of Hops Responded
- Number of Hops with Valid Data
- Number of Hops with Error
- Number of hops with no data record
- Last Route Change Timestamp
- Route Index

Common Metrics for Each Responder

- Metrics Collection Status
- Reachability address
- Ingress Interface
- Egress Interface
- Mediatrace IP TTL
- Hostname
- Mediatrace Hop Count

Perf-Monitor Metrics: TCP Profile

- Flow Sampling Start Timestamp
- Loss of measurement confidence
- Media Stop Event Occurred
- IP Packet Drop Count
- IP Byte Count
- IP Packet Count
- IP Byte Rate
- IP DSCP
- IP TTL
- IP Protocol
- Media Byte Count
- TCP Connect Round Trip Delay
- TCP Lost Event Count

Perf-Monitor Metrics: RTP Profile

- Flow Sampling Start Timestamp
- Loss of measurement confidence
- Media Stop Event Occurred
- IP Packet Drop Count
- IP Byte Count
- IP Packet Count
- IP Byte Rate
- Packet Drop Reason
- IP DSCP
- IP TTL
- IP Protocol
- Media Byte Rate Average
- Media Byte Count
- Media Packet Count

- RTP Interarrival Jitter Average
- RTP Packets Lost
- RTP Packets Expected (pkts):
- RTP Packet Lost Event Count:
- RTP Loss Percent

System Metrics: INTF Profile

- Collection timestamp
- Octet input at Ingress
- Octet output at Egress
- Packets received with errors at Ingress
- Packets with errors at Egress
- Packets discarded at Ingress
- Packets discarded at Egress
- Ingress interface speed
- Egress interface speed

System Metrics: CPU Profile

- CPU Utilization (1min)
- CPU Utilization (5min)
- Collection timestamp

System Metrics: MEMORY Profile

- Processor memory utilization %
- Collection timestamp

App-Health Metrics: MEDIATRACE-HEALTH Profile

- Requests Received
- Time Last Request Received
- Initiator of Last Request
- Requests Dropped
- Max Concurrent Sessions supported
- Sessions currently active
- Sessions Teared down
- Sessions Timed out
- Hop Info Requests Received
- Performance Monitor Requests Received
- Performance Monitor Requests failed
- Static Policy Requests Received
- Static Policy Requests Failed

- System Data Requests Received
- System Data Requests Failed
- Application Health Requests Received
- Local route change events
- Time of last route change event
- Number of unknown requests received

Overview of Configuring Cisco Mediatrace

Information can be retrieved from Mediatrace by using either:

- A pre-scheduled, recurring monitoring session.
- An one-shot, on-demand collection of statistics, known as a Mediatrace poll.

Before you can implement a Mediatrace session or poll, you enable Mediatrace on each network node that you want to collect flow information from. You must enable the Mediatrace Initiator on the network node that you will use to configure, initiate, and control the Mediatrace sessions or polls. On each of the network nodes that you want to collect information from, you must enable the Mediatrace Responder.

To configure a Cisco Mediatrace session, you can set session parameters by associating either of two types of pre-packaged profiles with the session:

- video-monitoring profiles
- system-data profiles

You can also configure your own parameters for a Cisco Mediatrace session by configuring the following types of profiles and associating them with the session:

- Path-specifier profile
- Flow-specifier profile
- Sessions-parameters profile

Therefore, the next section describes how to perform the following tasks in order to configure a Cisco Mediatrace session:

1. Enable mediatrace
2. Setup a video-monitoring profile
3. Setup a system-data profile
4. Setup a path-specifier profile
5. Setup a flow-specifier profile
6. Setup a sessions-params profile
7. Associate profiles with a mediatrace session
8. Schedule a mediatrace session

The next section also describes how to execute a mediatrace poll, which is an on-demand fetch of data from the hops on a specific path.

In addition, the next section describes how to manage mediatrace sessions by performing the following tasks:

- Clear incomplete Cisco Mediatrace sessions
- Troubleshoot a Cisco Mediatrace session

How to Configure Cisco Mediatrace

Use the following tasks to configure Cisco Mediatrace session:

- [How to Enable Cisco Mediatrace, page 6](#)
- [How to Configure a Cisco Mediatrace Video Profile on the Mediatrace Initiator, page 7](#)
- [How to Configure a Cisco Mediatrace System Profile, page 9](#)
- [How to Configure a Cisco Mediatrace Path-Specifier Profile, page 10](#)
- [How to Configure a Cisco Mediatrace Flow-Specifier Profile, page 12](#)
- [How to Configure a Cisco Mediatrace Session Parameters Profile, page 13](#)
- [How to Configure a Cisco Mediatrace Session, page 15](#)
- [How to Schedule a Cisco Mediatrace Session, page 16](#)
- [How to Clear a Cisco Mediatrace Session, page 17](#)
- [How to Execute a Cisco Mediatrace Poll, page 19](#)
- [How to Troubleshoot and Monitor a Cisco Mediatrace Session, page 22](#)

How to Enable Cisco Mediatrace

For each node you want to monitor using Cisco Mediatrace, you must enable at least the Cisco Mediatrace Responder. You must also enable the Cisco Mediatrace Initiator for all nodes that you want to initiate Mediatrace sessions or polls.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediatrace initiator {source-ip *ip-address* | source-interface *interface-name*} [force] [max-sessions *number*]**
4. **mediatrace responder [max-sessions *number*]**
5. **end**

DETAILED STEPS

Command or Action	Purpose
Step 1 <code>enable</code> Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2 <code>configure terminal</code> Example: Router# configure terminal	Enters global configuration mode.
Step 3 <code>mediatrace initiator {source-ip ip-address source-interface interface-name} [force] [max-sessions number]</code> Example: Router(config)# mediatrace initiator source-ip 10.10.1.1 max-sessions 4	Enables the Cisco Mediatrace or initiator. You can also use the following keywords: <ul style="list-style-type: none"> <i>ip-address</i>—Any reachable IP address. <i>interface-name</i>—Any local interface that connects to the initiator. max-sessions—Sets the number of Cisco Mediatrace sessions.
Step 4 <code>mediatrace responder [max-sessions number]</code> Example: Router(config)# mediatrace responder max-sessions 4	Enables the Cisco Mediatrace responder. You can also use the following keywords: <ul style="list-style-type: none"> max-sessions—Sets the number of Cisco Mediatrace sessions.
Step 5 <code>end</code> Example: Router(config)# end	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

Use the **show mediatrace responder app-health** command to verify whether the responder is collecting events, requests, and other Cisco Mediatrace related statistics properly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace Video Profile on the Mediatrace Initiator

Cisco Mediatrace provides pre-packaged video-monitoring profiles that contain all of the parameter settings you need to start a video media monitoring session. You can also configure your own video-monitoring profiles on the Mediatrace Initiator.

To initiate a new video media monitoring session, you can associate one of these profiles with a Cisco Mediatrace session when you configure it.

SUMMARY STEPS

1. `enable`

2. **configure terminal**
3. **mediatrace profile perf-monitor *name***
4. **admin-params**
5. **sampling-interval *seconds***
6. **exit**
7. **metric-list {tcp | rtp}**
8. **clock-rate {*type-number* | *type-name*} *rate***
9. **max-dropout *number***
10. **max-reorder *number***
11. **min-sequential *number***
12. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	mediatrace profile perf-monitor <i>name</i>	Enters perf-prof configuration mode so that you can configure parameters for a Cisco Mediatrace pre-packaged video-monitoring profile.
	Example: Router(config)# mediatrace profile perf-monitor vprofile-2	
Step 4	admin-params	Enters admin parameters configuration mode so that you can configure video-monitoring admin parameters.
	Example: Router(config-mt-prof-perf)# admin-params	
Step 5	sampling-interval <i>seconds</i>	Specifies the interval, in seconds, between samples taken of video-monitoring metrics.
	Example: Router(config-mt-prof-perf-params)# sampling-interval 40	
Step 6	exit	Exits the current configuration mode and returns to perf-prof configuration mode.
	Example: Router(config-mt-prof-perf-params)# exit	

Command or Action	Purpose
Step 7 <code>metric-list {tcp rtp}</code>	Specifies whether the metrics being monitored are for TCP or RTP.
Example: Router(config-mt-prof-perf)# metric-list rtp	
Step 8 <code>clock-rate {type-number type-name} rate</code> Example: Router(config-mt-prof-perf-rtp-params)# clock-rate 64	(Optional) Specifies the clock rate used to sample RTP video-monitoring metrics. Each payload type has a specific clock rate associated with it and is can specified with either a type number or type name. For the available values of the payload type name, see the <i>Cisco Media Monitoring Command Reference</i> .
Step 9 <code>max-dropout number</code> Example: Router(config-mt-prof-perf-rtp-params)# max-dropout 2	(Optional) Specifies the maximum number of dropouts allowed when sampling RTP video-monitoring metrics. Dropouts are the number of packets to ignore ahead the current packet in terms of sequence number.
Step 10 <code>max-reorder number</code> Example: Router(config-mt-prof-perf-rtp-params)# max-reorder 4	(Optional) Specifies the maximum number of reorders allowed when sampling RTP video-monitoring metrics. Reorders are the number of packets to ignore behind the current packet in terms of sequence number.
Step 11 <code>min-sequential number</code> Example: Router(config-mt-prof-perf-rtp-params)# min-sequential 2	(Optional) Specifies the minimum number of packets in a sequence used to classify a RTP flow .
Step 12 <code>end</code> Example: Router(config-mt-prof-perf-rtp-params)# end	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

Use the **show mediatrace profile perf-monitor** command to verify that the parameter values for your pre-packaged video-monitoring profiles are set correctly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace System Profile

Cisco Mediatrace provides pre-packaged system-data monitoring profiles that contain all of the parameter settings you need to start a system-data monitoring session. You can also configure your own system-data monitoring profiles. To initiate a new system-data monitoring session, you can associate one of these profiles with a Cisco Mediatrace session when you configure it.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediatrace profile system *name***
4. **metric-list {intf | cpu | memory}**
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	mediatrace profile system <i>name</i>	Enters system profile configuration mode so that you can configure parameters for a Cisco Mediatrace system profile.
	Example: Router(config)# mediatrace profile system system-2	
Step 4	metric-list {intf cpu memory}	Specifies whether the metrics being monitored are for interfaces, the CPU, or the memory.
	Example: Router(config-sys)# metric-list memory	
Step 5	end	Exits the current configuration mode and returns to privileged EXEC mode.
	Example: Router(config-sys)# end	

Troubleshooting Tips

Use the **show mediatrace profile system** command to verify that the parameter values for your pre-packaged system-data profiles are set correctly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace Path-Specifier Profile

A Cisco Mediatrace session configuration requires a path-specifier profile which defines the parameters that are used to discover the network hops that will be monitored for troubleshooting. The RSVP transport protocol, specified by optional **disc-proto** keyword, is used to do this hop discovery. The parameter values for the flow-specifier should match the values for the media flow that will be traced.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediatrace path-specifier name [disc-proto rsvp] destination ip ip-address [port nnnn]**
4. **source ip ip-address [port nnnn]**
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	mediatrace path-specifier name disc-proto rsvp destination ip ip-address port nnnn	Enters path-specifier configuration mode so that you can configure parameters for a Cisco Mediatrace path-specifier profile. This command requires the name, destination address, and port of the path.
	Example: Router(config)# mediatrace path-specifier path-4 disc-proto rsvp destination ip 10.1.1.1 port 400	
Step 4	source ip ip-address port nnnn	Specifies the IP address of the source of the metrics being monitored.
	Example: Router(config-mt-path)# source ip 10.1.1.2 port 600	
Step 5	end	Exits the current configuration mode and returns to privileged EXEC mode.
	Example: Router(config-mt-path)# end	

Troubleshooting Tips

Use the **show mediatrace path-specifier** command to verify that the parameter values for your path-specifier profiles are set correctly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace Flow-Specifier Profile

A Cisco Mediatrace session configuration requires a flow-specifier profile which defines the source IP address, destination IP address, source port, destination port, and protocol that identifies a flow. You can associate a profile with an actual Cisco Mediatrace session later when you configure it.

For RTP media flows, select UDP as protocol.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediatrace flow-specifier *name***
4. **source-ip *ip-address* source-port *port***
5. **dest-ip *ip-address* dest-port *port***
6. **ip-protocol {tcp | udp}**
7. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	mediatrace flow-specifier <i>name</i>	Enters flow-specifier configuration mode so that you can configure parameters for a Cisco Mediatrace flow-specifier profile.
	Example: Router(config)# mediatrace flow-specifier flow-6	
Step 4	source-ip <i>ip-address</i> source-port <i>port</i>	Specifies the IP address of the source of the metrics being monitored.
	Example: Router(config-mt-flowspec)# source-ip 10.1.1.2 source-port 600	
Step 5	dest-ip <i>ip-address</i> dest-port <i>port</i>	Specifies the IP address of the destination of the metrics being monitored.
	Example: Router(config-mt-flowspec)# dest-ip 10.1.1.2 dest-port 600	

Command or Action	Purpose
Step 6 <code>ip-protocol {tcp udp}</code> Example: Router(config-mt-flowspec)# ip-protocol tcp	Specifies whether the metrics being monitored are for TCP or UDP.
Step 7 <code>end</code> Example: Router(config-mt-flowspec)# end	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

Use the **show mediatrace flow-specifier** command to verify that the parameter values for your flow-specifier profiles are set correctly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace Session Parameters Profile

A Cisco Mediatrace session configuration requires a session-params profile, which defines the characteristics of a Cisco Mediatrace session and help it to operate smoothly. You can associate a profile with an actual Cisco Mediatrace session later when you configure it

SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `mediatrace session-params name`
4. `response-timeout seconds`
5. `frequency {frequency | on-demand} inactivity-timeout seconds`
6. `history buckets`
7. `route-change reaction-time seconds`
8. `end`

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	<code>configure terminal</code>	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	<code>mediatrace session-params name</code>	Enters session-params configuration mode so that you can configure parameters for a Cisco Mediatrace session-params profile.
	Example: Router(config-mt-sesparam)# mediatrace session-params qos-2	
Step 4	<code>response-timeout seconds</code>	Specifies the amount of time, in seconds, the initiator will wait for a response from the responder.
	Example: Router(config-mt-sesparam)# response-timeout 8	
Step 5	<code>frequency {frequency on-demand}</code> <code>inactivity-timeout seconds</code>	Specifies the interval, in seconds, between samples taken of session-params metrics and the amount of time, in seconds, the initiator will remain active without any activity from the responder.
	Example: Router(config-mt-sesparam)# frequency 4 inactivity-timeout 2	
Step 6	<code>history buckets</code>	Specifies the number of historical data sets kept, up to a maximum of ten.
	Example: Router(config-mt-sesparam)# history 2	
Step 7	<code>route-change reaction-time seconds</code>	Specifies the amount of time, in seconds, the initiator will wait for the responder to react to its additional route changes. The range is seconds.
	Example: Router(config-mt-sesparam)# route-change reaction-time 8	
Step 8	<code>end</code>	Exits the current configuration mode and returns to privileged EXEC mode.
	Example: Router(config-mt-sesparam)# end	

Troubleshooting Tips

Use the **show mediatrace session-param** command to verify that the parameter values for your session-parameters profiles are set correctly.

For more information about this command, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Configure a Cisco Mediatrace Session

The Cisco Mediatrace session configuration links the various profiles to a session. Only one of each type of profile can be associated with a Cisco Mediatrace session.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mediatrace session-number**
4. **path-specifier name**
5. **session-params name**
6. **profile system name**
7. **profile perf-monitor name flow-specifier name**
8. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	mediatrace session-number	Enters session configuration mode.
	Example: Router(config)# mediatrace 8	
Step 4	path-specifier name	Associates a path-specifier profile with the Cisco Mediatrace session.
	Example: Router(config-mt-session)# path-specifier path-4	
Step 5	session-params name	Associates a session-parameters profile with the Cisco Mediatrace session.
	Example: Router(config-mt-session)# session-params session-6	
Step 6	profile system name	Associates a system profile with the Cisco Mediatrace session.
	Example: Router(config-mt-session)# profile system sys-2	

Command or Action	Purpose
Step 7 <code>profile perf-monitor name flow-specifier name</code> Example: Router(config-mt-session)# profile perf-monitor monitor-6 flow-specifier flow-4	Associates a perf-monitor profile and flow-specifier with the Cisco Mediatrace session.
Step 8 <code>end</code> Example: Router(config-mt-session)# end	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

Use the **show mediatrace session** command to display the parameter settings for a specific session or all sessions.

Use the **show mediatrace responder app-health** command and the **show mediatrace responder sessions** command to determine the status of the nodes being monitored.

If Cisco Mediatrace is not collecting all of the data that you want, use the **debug mediatrace** command.

For more information about these commands, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Schedule a Cisco Mediatrace Session

Once you have configured a Cisco Mediatrace session, you can schedule it to begin when you want to start collecting the data. If the Cisco Mediatrace session is designed to collect performance monitoring metrics, it goes out to enable the Performance Monitor when the session begins.

SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `mediatrace schedule session ID [life {forever | secs}] [start-time {hh:mm[:ss] [month day | day month] | pending | now | after hh:mm:ss}] [ageout secs] [recurring]`
4. `end`

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	<code>configure terminal</code>	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	<code>mediatrace schedule session ID [life {forever secs}] [start-time {hh:mm[:ss] [month day day month] pending now after hh:mm:ss}] [ageout secs] [recurring]</code>	Specifies when the session will occur. Use these settings: <ul style="list-style-type: none"> • session ID—Which session to run. • life—Amount of time the session lasts, either the number of seconds or forever. • start-time—When the session starts, whether it is at a specified time and date, pending an event, immediately, or after a specified time and date. • ageout—Timeout before removing the session configuration on the initiator. • recurring—Session reoccurs at the specified time.
	Example: Router(config)# mediatrace schedule 22 life 40 start-time 10:00:00 AUG 20 recurring	
Step 4	<code>end</code>	Exits the current configuration mode and returns to privileged EXEC mode.
	Example: Router(config-mt-sched) # end	

Troubleshooting Tips

Use the **show mediatrace session** command to verify that the intended values are set for the parameters for a specific session or all sessions.

Use the **show mediatrace responder app-health** command and the **show mediatrace responder sessions** command to determine the status of the nodes being monitored.

If Cisco Mediatrace is not collecting all of the data that you want, use the **debug mediatrace** command.

For more information about these commands, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Clear a Cisco Mediatrace Session

You can clear incomplete mediatrace sessions on the Initiator by using the **clear mediatrace incomplete-sessions** command as described below. This command also cleans up all Performance Monitor settings that were configured by Cisco Mediatrace. For sessions created by the config commands, use the **no mediatrace schedule** command. The cleanup triggers a “session teardown” message to RSVP followed by a cleanup of the local mediatrace sessions database.

SUMMARY STEPS

1. **enable**
2. **clear mediatrace incomplete-sessions**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	clear mediatrace incomplete-sessions Example: Router# clear mediatrace incomplete-sessions	Clears incomplete mediatrace sessions.
Step 3	end Example: Router# end	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

To check the status of your Cisco Mediatrace session, use the **show mediatrace responder sessions** command.

For more information about these commands, see the “[How to Troubleshoot and Monitor a Cisco Mediatrace Session](#)” section on page 22.

How to Execute a Cisco Mediatrace Poll

Cisco Mediatrace polls are used to perform an on-demand fetch of data from the hops on a specific path. Some examples of how it can be used are:

- To retrieve data using a pre-configured session. In this case, no other parameters have to be specified inline. The pre-configured session must be have the frequency type set to on-demand.
- To retrieve the system data, hop or video monitoring information from hops along the specified path. You can specify the path as a pre-configured path-specifier or an inline path specification, in case you do not have config mode privileges. Note that by default, Cisco Mediatrace tries to configure nodes along the path to report passive monitoring metrics, and then waits for a configurable amount of time before going out again to collect the data.
- The **configless** keyword can be used to fetch data from the nodes along a media path, which already have Performance Monitor policies configured using the Performance Monitor commands. Some key things to keep in mind when fetching data using this method are that:
 - The default perf-monitor profile or associated perf-monitor profile will have a sampling interval. If the sampling interval of the static policy does not match the one in the associated perf-monitor profile, no data is returned.
 - If there is no Performance Monitor policy configured on a Responder node, the Cisco Mediatrace responder does not try to configure Performance Monitor and simply reports error to the initiator.

SUMMARY STEPS

1. **enable**
2. **mediatrace poll {session number | {[timeout value] path-specifier {name path-name} | [disc-proto rsvp] destination ip ip-address [port nnnn]} [source ip ip-address [port nnnn]] [protocol {tcp | udp}] } {app-health | hops | system [profile system-profile-name] | [configless] perf-monitor [profile profile-name]} {flow-specifier name | source-ip ipaddress[source-port nnnn] dest-ip ipaddress [dest-port nnnnn] ip-protocol {tcp | udp}}}}**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	Example: <pre>Router> enable</pre> <code>mediatrace poll {session number {[timeout value] path-specifier {name path-name} [disc-proto rsvp] destination ip ip-address [port nnnn]} [source ip ip-address [port nnnnn]] [protocol {tcp udp}] } {app-health hops system [profile system-profile-name] [configless] perf-monitor [profile profile-name]}{flow-specifier name source-ip ipaddress [source-port nnnnn] dest-ip ipaddress [dest-port nnnnn] ip-protocol {tcp udp}}}</code> Example: <pre>Router# mediatrace poll session 22</pre>	Performs an on-demand fetch of data from the hops on a specific path. You can specify the hops using one of the following types of information: <ul style="list-style-type: none"> • A session definition or its constituent parameters • A system profile definition or its constituent parameters • A combination of a path-specifier profile definition and a perf-monitor profile definition or their constituent parameters
Step 3	<code>end</code>	Exits the current configuration mode and returns to privileged EXEC mode.

Troubleshooting Tips

If Cisco Mediatrace is not collecting all of the data that you want:

- Use the **show mediatrace session** command to verify that the intended values are set for the parameters for a specific session or all sessions.
- Use the **show mediatrace responder app-health** command and the **show mediatrace responder sessions** command to determine the status of the nodes being monitored.
- Use the **debug mediatrace** command to view error messages.

Configuration Examples



Tip

For examples of poll output, see [Configuration Example, page 29](#).

The following example shows how to fetch the default system metrics when the source IP address, source port, and destination port are not known. Cisco Mediatrace uses the best local IP address as source IP address to find which hops are using RSVP.

mediatrace poll path dest ip-address system

The following example shows how to fetch the default system metrics when the source and destination port numbers are not known. RSVP finds the hop between the specified source and destination.

mediatrace poll path source ip-address dest ip-address system

The following example shows how to fetch the default system metrics when the source and destination port numbers are known. RSVP finds the hop using this information.

```
mediatrace poll path source-ip ip-address source-port nnnn dest-ip ip-address dest-port nnnn  
ip-protocol udp system
```

The following example shows how to fetch the default set of RTP metrics when the source and destination port numbers are not known. Cisco Mediatrace uses the path source and destination IP addresses to find the hops as well as filter the Performance Monitor data.

```
mediatrace poll path source ip-address dest ip-address perf-monitor
```

The following example shows how to fetch the default set of RTP metrics. Cisco Mediatrace uses the path parameters to discover hops and uses the inline flow specifier profile as a filter for Performance Monitor data.

```
mediatrace poll path source ip-address dest ip-address perf-monitor source-ip ip-address  
source-port nnnn dest-ip ip-address dest-port nnnn ip-protocol udp
```

The following example shows how to fetch the default set of TCP metrics. Cisco Mediatrace uses the path parameters to discover hops and uses the inline flow-specifier profile as a filter for Performance Monitor data.

```
mediatrace poll path source ip-address dest ip-address perf-monitor source-ip ip-address  
source-port nnnn dest-ip ip-address dest-port nnnn ip-protocol tcp
```

The following example shows how to fetch the default set of RTP metrics. Cisco Mediatrace uses the best local IP address as source IP address for finding hops on the path and uses the inline flow specifier profile as a filter for Performance Monitor data.

```
mediatrace poll path dest ip-address perf-monitor source-ip ip-address source-port nnnn dest-ip  
ip-address dest-port nnnn ip-protocol udp
```

The following example shows how to fetch the default set of TCP metrics. Cisco Mediatrace uses the best local IP address as source IP address for finding hops on the path and uses the inline flow-specifier profile as a filter for Performance Monitor data.

```
mediatrace poll path dest ip-address perf-monitor source-ip ip-address source-port nnnn dest-ip  
ip-address dest-port nnnn ip-protocol tcp
```

The following example shows how to fetch the default set of RTP metrics from the static policy that is already configured on the hops. The command does not configure the Performance Monitor. Cisco Mediatrace uses the path parameters to discover hops and use the inline flow specifier profile as a filter for Performance Monitor data.

```
mediatrace poll path source ip-address dest ip-address configless perf-monitor flow-specifier source  
ip-address port nnnn dest ip-address port nnnn ip-protocol udp
```

Poll Output Example

This example shows the output produced by the following hops poll command:

```
mediatrace poll path-specifier source 10.10.130.2 destination 10.10.132.2 hops

Started the data fetch operation.
Waiting for data from hops.
This may take several seconds to complete...
Data received for hop 1
Data received for hop 2
Data fetch complete.
Results:
Data Collection Summary:
Request Timestamp: 22:47:56.788 PST Fri Oct 29 2010
Request Status: Completed
Number of hops responded (includes success/error/no-record): 2
Number of hops with valid data report: 2
Number of hops with error report: 0
Number of hops with no data record: 0
Detailed Report of collected data:
    Number of Mediatrace hops in the path: 2

    Mediatrace Hop Number: 1 (host=responder1, ttl=254)
        Reachability Address: 10.10.12.3
        Ingress Interface: Gi0/1
        Egress Interface: Gi0/2

    Mediatrace Hop Number: 2 (host=responder2, ttl=253)
        Reachability Address: 10.10.34.3
        Ingress Interface: Gi0/1
        Egress Interface: Gi0/2
```

How to Troubleshoot and Monitor a Cisco Mediatrace Session

Use the **show** commands described in this section to troubleshoot and monitor a Cisco Mediatrace session.



Tip For sample outputs, see [Output Examples, page 24](#).

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **show mediatrace profile perf-monitor [name]**
4. **show mediatrace profile system [name]**
5. **show mediatrace flow-specifier [name]**
6. **show mediatrace path-specifier [name]**
7. **show mediatrace initiator [name]**
8. **show mediatrace session-params [name]**
9. **show mediatrace session [config | data | stats | hops]brief**
10. **show mediatrace responder app-health**

11. **show mediatrace responder sessions [global-session-id | brief | details]**
12. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
	Example: Router> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example: Router# configure terminal	
Step 3	show mediatrace profile perf-monitor [name]	Displays the parameters configured for all pre-packaged video-monitoring profiles or the specified profile.
	Example: Router(config)# show mediatrace profile perf-monitor vprofile-4	
Step 4	show mediatrace profile system [name]	Displays the parameters configured for all pre-packaged system-data monitoring profiles or the specified profile.
	Example: Router(config)# show mediatrace profile system system-8	
Step 5	show mediatrace flow-specifier [name]	Displays the parameters configured for all flow-specifier profiles or the specified flow-specifier profile.
	Example: Router(config)# show mediatrace flow-specifier flow-2	
Step 6	show mediatrace path-specifier [name]	Displays the parameters configured for all path-specifier profiles or the specified path-specifier profile.
	Example: Router(config)# show mediatrace path-specifier path-6	
Step 7	show mediatrace initiator	Displays the parameters configured for the initiator profile.
	Example: Router(config)# show mediatrace initiator	
Step 8	show mediatrace session-params [name]	Displays the monitoring parameters for the session like frequency, response timeout, and so on. the parameters configured for all pre-packaged system-data monitoring profiles or the specified profile.
	Example: Router(config)# show mediatrace session-params sysparams-2	

Command or Action	Purpose
Step 9 <code>show mediatrace session [config data stats hops]</code>	Displays the parameters configured for all session profiles or the specified session profile. Use the following keywords to display the corresponding information:
Example: <pre>Router(config)# show mediatrace session data</pre>	<ul style="list-style-type: none"> • config—Configuration of the session. • data—All data records collected and still cached at the Initiator. • stats—Statistics for this service path or session. • hops—Prior service paths (if available) and current service paths discovered. Also shows where and when the last route change happened.
Step 10 <code>show mediatrace responder app-health</code>	Displays the current status of the responder.
Example: <pre>Router(config)# show mediatrace responder app-health</pre>	
Step 11 <code>show mediatrace responder sessions [global-session-id brief details]</code>	Displays the information about all or specific active sessions on local responder. Use the following keywords to display the corresponding information
Example: <pre>Router(config)# show mediatrace responder sessions</pre>	<ul style="list-style-type: none"> • <i>global-session-id</i>—ID of the session for which information is displayed. • brief—Displays only the destination and source address/port of the path, their role as either Initiator or Responder, and some state information. • details—Displays all information.
Step 12 <code>end</code>	Exits the current configuration mode and returns to privileged EXEC mode.
Example: <pre>Router(config)# end</pre>	

Output Examples



For a complete description of the output for the following show commands, see the [Cisco Media Monitoring Command Reference](#).

The following example displays video-monitoring profiles:

```
Router# show mediatrace profile perf-monitor
Perf-monitor Profile: vprof-4
Metric List: rtp
RTP Admin Parameter:
  Max Dropout: 5
  Max Reorder: 5
  Min Sequential: 5
Admin Parameter:
  Sampling Interval (sec): 30
```

The following example displays system-data profiles:

```
Router# show mediatrace profile system
System Profile: sys-1
Metric List: intf
```

The following example displays flow-specifier profiles:

```
Router# show mediatrace flow-specifier flow-1
Flow Specifier: flow-1
  Source address/port:
  Destination address/port:
  Protocol: udp
```

The following example displays path-specifier profiles:

```
Router# show mediatrace path-specifier flow-1
Path Configuration: ps1
  Destination address/port: 10.10.10.1
  Source address/port: 10.10.10.4
  Gateway address/vlan:
  Discovery protocol: rsvp
```

The following example displays the initiator profile:

```
Router# show mediatrace initiator
Version: Mediatrace 1.0
Mediatrace Initiator status: enabled

Source IP: 1.1.1.1

Number of Maximum Allowed Active Session: 127
Number of Configured Session: 1
Number of Active Session : 0
Number of Pending Session : 0
Number of Inactive Session : 1

Note: the number of active session may be higher than max active session
      because the max active session count was changed recently.
```

The following example displays session profiles:

```
Router# show mediatrace session-params
Session Parameters: s-1
  Response timeout (sec): 60
  Frequency: On Demand
  Inactivity timeout (sec): 300
  History statistics:
    Number of history buckets kept: 3
  Route change:
    Reaction time (sec): 5
```

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The following example displays Mediatrace session statistics:

```
show mediatrace session stats 2

Session Index: 2
Global Session Id: 86197709
Session Operation State: Active
Operation time to live: Forever
Data Collection Summary:
    Request Timestamp: 23:55:04.228 PST Fri Oct 29 2010
    Request Status: Completed
    Number of hops responded (includes success/error/no-record): 2
    Number of hops with valid data report: 2
    Number of hops with error report: 0
    Number of hops with no data record: 0
Detailed Report of collected data:
    Last Route Change Timestamp:
    Route Index: 0
        Number of Mediatrace hops in the path: 2

    Mediatrace Hop Number: 1 (host=responder1, ttl=254)
        Metrics Collection Status: Success
        Reachability Address: 10.10.12.3
        Ingress Interface: Gi0/1
        Egress Interface: Gi0/2
```



Note The rest of the data for hop 1 is similar to the data for hop 2, as shown below.

```
Mediatrace Hop Number: 2 (host=responder2, ttl=253)
    Metrics Collection Status: Success
    Reachability Address: 10.10.34.3
    Ingress Interface: Gi0/1
    Egress Interface: Gi0/2
    Metrics Collected:
        Collection timestamp: 23:55:04.237 PST Fri Oct 29 2010
        Octet input at Ingress (KB): 929381.572
        Octet output at Egress (MB): 1541.008502
        Pkts rcvd with err at Ingress (pkts): 0
        Pkts errored at Egress (pkts): 0
        Pkts discarded at Ingress (pkts): 0
        Pkts discarded at Egress (pkts): 0
        Ingress i/f speed (mbps): 1000.000000
        Egress i/f speed (mbps): 1000.000000
```

The following example displays Mediatrace session configuration information:

```
show mediatrace session config 2

Global Session Id: 93642270
-----
Session Details:
    Path-Specifier: ps1
    Session Params: sp1
    Collectable Metrics Profile: intf1
    Flow Specifier:
Schedule:
    Operation frequency (seconds): 30 (not considered if randomly scheduled)
    Next Scheduled Start Time: Start Time already passed
    Group Scheduled : FALSE
    Randomly Scheduled : FALSE
```

```
Life (seconds): Forever
Entry Ageout (seconds): never
Recurring (Starting Everyday): FALSE
Status of entry (SNMP RowStatus): Active
History Statistics:
    Number of history Buckets kept: 10
```

The following example displays Mediatrace session hops:

```
show mediatrace session hops 2

Session Index: 2
Global Session Id: 93642270
Session Operation State: Active
Data Collection Summary:
    Request Timestamp: 13:40:32.515 PST Fri Jun 18 2010
    Request Status: Completed
    Number of hops responded (includes success/error/no-record): 3
    Number of hops with valid data report: 3
    Number of hops with error report: 0
    Number of hops with no data record: 0
Detailed Report of collected data:
    Last Route Change Timestamp:
    Route Index: 0
        Number of Mediatrace hops in the path: 3

        Mediatrace Hop Number: 1 (host=responder1, ttl=254)
            Ingress Interface: Gi0/1
            Egress Interface: Gi1/0

        Mediatrace Hop Number: 2 (host=responder2, ttl=253)
            Ingress Interface: Gi0/1
            Egress Interface: Gi1/0

        Mediatrace Hop Number: 3 (host=responder3, ttl=252)
            Ingress Interface: Gi0/1
            Egress Interface: Gi0/2
```

The following example displays Mediatrace session data:

```
show mediatrace session data 2

Session Index: 2
Global Session Id: 35325453
Session Operation State: Active
Bucket index: 1
Data Collection Summary:
    Request Timestamp: 13:02:47.969 PST Fri Jun 18 2010
    Request Status: Completed
    Number of hops responded (includes success/error/no-record): 3
    Number of hops with valid data report: 3
    Number of hops with error report: 0
    Number of hops with no data record: 0
Detailed Report of collected data:
    Last Route Change Timestamp:
    Route Index: 0
        Number of Mediatrace hops in the path: 3

        Mediatrace Hop Number: 1 (host=responder1, ttl=254)
            Metrics Collection Status: Success
            Ingress Interface: Gi0/1
            Egress Interface: Gi1/0
```

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```

Metrics Collected:
    Collection timestamp: 13:04:57.781 PST Fri Jun 18 2010
    Octet input at Ingress (KB): 10982.720
    Octet output at Egress (KB): 11189.176
    Pkts rcvd with err at Ingress (pkts): 0
    Pkts errored at Egress (pkts): 0
    Pkts discarded at Ingress (pkts): 0
    Pkts discarded at Egress (pkts): 0
    Ingress i/f speed (mbps): 1000.000000
    Egress i/f speed (mbps): 1000.000000

Mediatrace Hop Number: 2 (host=responder2, ttl=253)
    Metrics Collection Status: Success
    Ingress Interface: Gi0/1
    Egress Interface: Gi1/0
    Metrics Collected:
        Collection timestamp: 13:04:57.792 PST Fri Jun 18 2010
        Octet input at Ingress (MB): 1805.552836
        Octet output at Egress (MB): 1788.468650
        Pkts rcvd with err at Ingress (pkts): 0
        Pkts errored at Egress (pkts): 0
        Pkts discarded at Ingress (pkts): 0
        Pkts discarded at Egress (pkts): 0
        Ingress i/f speed (mbps): 1000.000000
        Egress i/f speed (mbps): 1000.000000

```

The following example displays application health information for the Mediatrace responder:

```

Router# show mediatrace responder app-health
Mediatrace App-Health Stats:
    Number of all requests received: 0
    Time of the last request received:
    Initiator ID of the last request received: 0
    Requests dropped due to queue full: 0
    Responder current max sessions: 45
    Responder current active sessions: 0
    Session down or tear down requests received: 0
    Session timed out and removed: 0
    HOPS requests received: 0
    VM dynamic polling requests received: 0
    VM dynamic polling failed: 0
    VM configless polling requests received: 0
    VM configless polling failed: 0
    SYSTEM data polling requests received: 0
    SYSTEM data polling requests failed: 0
    APP-HEALTH polling requests received: 0
    Route Change or Interface Change notices received: 0
    Last time Route Change or Interface Change:
    Unknown requests received: 0

```

The following example displays brief session information for the Mediatrace responder:

```

Router# show mediatrace responder sessions brief
Local Responder configured session list:
Current configured max sessions: 45
Current number of active sessions: 0
session-id initiator-name      src-ip          src-port      dst-ip          dst-port det-1
      2      host-18           10.10.10.2       200          10.10.10.8       200

```

Configuration Example

Example: Basic Mediatrace Configuration

The topology for this example includes:

- One Mediatrace initiator (10.10.12.2)
- Two Mediatrace responders between:
 - A media source (10.10.130.2)
 - A destination (10.10.132.2)

In this example, there is an RTP traffic stream from the source (address=10.10.130.2, port=1000, to the destination (address=10.10.132.2, port=2000).

The basic configuration of the Mediatrace responder is as follows:

```
mediatrace responder
snmp-server community public RO
```

The basic configuration of the Mediatrace initiator is as follows:

```
mediatrace initiator source-ip 10.10.12.2
mediatrace profile system intf1
mediatrace profile perf-monitor rtp1
mediatrace path-specifier path1 destination ip 10.10.132.2 port 2000
    source ip 10.10.130.2 port 1000
mediatrace flow-specifier flow1
    source-ip 10.10.130.2 source-port 1000
    dest-ip 10.10.132.2 dest-port 2000
mediatrace session-params sp1
    response-timeout 10
    frequency 60 inactivity-timeout 180
mediatrace 1
    path-specifier path1
    session-params sp1
    profile perf-monitor rtp1 flow-specifier flow1
mediatrace schedule 1 life forever start-time now
mediatrace 2
    path-specifier path1
    session-params sp1
    profile system intf1
mediatrace schedule 2 life forever start-time now
```

Where to Go Next

For more information about configuring the products in the Medianet product family, see the other chapter in this guide or see the [Cisco Media Monitoring Configuration Guide](#).

Additional References

The following sections provide references related to Mediatrace.

■ Additional References

Related Documents

Related Topic	Document Title
IP addressing commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	<i>Cisco Media Monitoring Command Reference</i>

Standards

Standard	Title
No new or modified standards are supported, and support for existing standards has not been modified	—

MIBs

MIB	MIBs Link
No new or modified MIBs are supported, and support for existing MIBs has not been modified	—

RFCs

RFC ¹	Title
RFC 2205	RSVP: Resource ReSerVation Protocol http://www.ietf.org/rfc/rfc2205.txt

1. These references are only a sample of the many RFCs available on subjects related to IP addressing and IP routing. Refer to the IETF RFC site at <http://www.ietf.org/rfc.html> for a full list of RFCs.

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.	http://www.cisco.com/techsupport
To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.	
Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	

Feature Information for Cisco Mediatrace

Table 1 lists the features in this module and provides links to specific configuration information.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.



Note

Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 1 *Feature Information for Cisco Mediatrace*

Feature Name	Releases	Feature Information
Cisco Mediatrace 1.0	15.1(3)T 12.2(58)S	This feature enables you to isolate and troubleshoot network degradation problems for data streams. The following commands were introduced or modified by this feature: admin-params , clear mediatrace , incomplete-sessions , clock-rate (RTP parameters), dest-ip (flow), frequency (session parameters), history (session parameters), ip-protocol (flow), max-dropout , max-reorder , mediatrace , mediatrace initiator , mediatrace responder , mediatrace path-specifier , mediatrace poll , mediatrace profile perf-monitor , mediatrace profile system , mediatrace schedule , mediatrace session-params , metric-list (monitoring profile), metric-list (system profile), min-sequential , path-specifier , profile perf-monitor , profile system , response-timeout (session parameters), route-change reaction-time , sampling-interval , session-params , show mediatrace flow-specifier , show mediatrace initiator , show mediatrace path-specifier , show mediatrace profile system , show mediatrace profile perf-monitor , show mediatrace responder app-health , show mediatrace responder sessions , show mediatrace session , show mediatrace session-params , source-ip (flow), and source ip (path).

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