



CHAPTER 21

Troubleshooting the Sessions

You must understand the Cisco Prime Collaboration Manager discovery workflow before reviewing this section. See [Discovering Devices, page 11-1](#) to understand the discovery workflow in Cisco Prime CM.

The Cisco Prime CM discovery ends after discovering the layer 2 information for an endpoint. That is, it discovers the switches and default gateway to which an endpoint is connected. The layer 3 information between the endpoints, is discovered during the troubleshooting workflow. The newly discovered devices are added to the Cisco Prime CM inventory. The network topology is discovered using CDP.

You can view details, such as CPU utilization, memory utilization, interface, and so forth for a network device. In addition to the system details, the fault information is also displayed for a device.

During the troubleshooting workflow, the devices are polled based on the values defined for the System Status Polling Interval, Interface Statistics Polling Interval, and Flow Statistics Polling Interval in the Device Monitoring Configuration page (**Administration > Device Monitoring Configuration**).

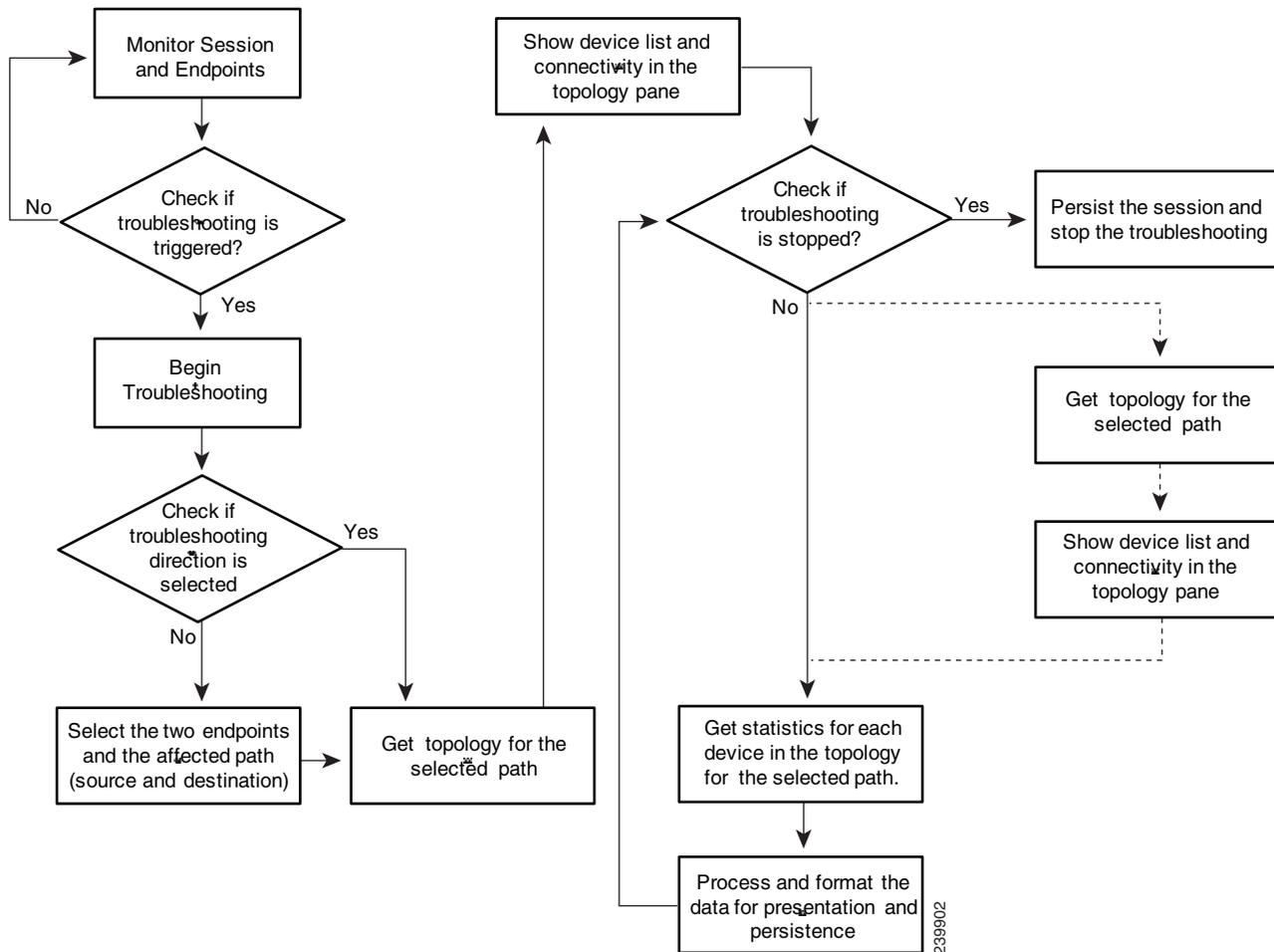


Note

The troubleshooting workflow impacts the Cisco Prime CM system performance. Add a session or an endpoint to the watch list only if it is required.

Figure 21-1 shows the flow diagram for the troubleshooting workflow for a session.

Figure 21-1 Cisco Prime CM Troubleshooting Workflow for a Session



Troubleshooting Workflow Features

The following are the key features of the troubleshooting workflow:

- The troubleshooting workflow can be started automatically or manually.
 - Automatic troubleshooting is triggered when the session is added to the watch list (see [Figure 21-2](#)).
 - Automatic troubleshooting is triggered when one of the endpoints is in the watch list when the session starts (see [Figure 21-3](#)). You can start a troubleshooting workflow only if the endpoints are in the Managed state.

- Automatic troubleshooting is also triggered, if you have configured automatic troubleshooting for packet loss, jitter, and latency alarms (**Administration > Device Monitoring Configuration**).

If the value for packet loss, jitter, or latency alarm exceeds the defined threshold value, automatic troubleshooting is triggered. This is applicable only for a point-to-point session.

Automatic troubleshooting is not triggered when the packet loss, jitter, or latency alarm occurs in a multipoint session.

- Manual troubleshooting can be started from either the Session Monitoring or Video Collaboration Dashboard (**Home** tab) page (see [Figure 21-2](#)).

See [Starting a Troubleshooting Workflow](#), page 21-5 for details on how to start a troubleshooting workflow for sessions and endpoints.

- For a point-to-point session, the troubleshooting is performed between two endpoints. You can select the direction for troubleshooting between the endpoints, if you are manually starting the troubleshooting workflow.
- For a multipoint session, troubleshooting is performed between a multipoint switch and endpoints. The troubleshooting direction is from an endpoint to a multipoint switch, not in the reverse direction.
- When there is a packet loss, jitter, or latency alarm between the two endpoints, the troubleshooting workflow starts if you have configured for the automatic troubleshooting; when this alarm is cleared, the troubleshooting workflow stops.

Assume there are two endpoints A and B (packet flow is between A to B and B to A). If you have configured for the automatic troubleshooting and there is a packet loss from endpoint A to B, the troubleshooting workflow starts automatically from A to B.



Note

- The troubleshooting workflow lasts maximum for four hours from the time it is started. If the troubleshooting workflow does not end within this time, Cisco Prime CM ends the workflow automatically.
- You can have maximum of 25 concurrent troubleshooting workflows at a time. If this limit is exceeded, an error message is displayed in the troubleshooting log file.

Troubleshooting Workflow Features for the Sessions

The following are the key behaviors of the troubleshooting workflow, when scheduled sessions are added to the watch list:

- The automatic troubleshooting workflow starts for all sessions added to the watch list.
- In a multipoint session, the troubleshooting starts as soon as the endpoints join the session.
- In a multipoint session, if a troubleshooting is stopped for an endpoint, the troubleshooting workflow continues for the other endpoints in the session. You need to manually start the troubleshooting for this endpoint.
- In a multipoint session, if an endpoint restarts because of a problem, a new troubleshooting workflow is triggered for this endpoint after it rejoins the session. There is no impact on the other endpoints in the session.

- If a session is removed from the watch list, the associated troubleshooting workflow stops, provided:
 - There are no packet loss, jitter, or latency alarm triggered for that session.
 - There are no manually triggered troubleshooting workflow.
- If a troubleshooting workflow is triggered because of a packet loss, jitter, or latency alarm, the troubleshooting workflow stops when the packet loss, jitter, or latency alarm is cleared, provided:
 - The session is not added to watched list.
 - There are no manually triggered troubleshooting workflow.
 - The troubleshooting workflow is manually stopped, or
 - The session ended.
- If a troubleshooting workflow is triggered manually, the troubleshooting workflow can be stopped only manually. Else it stops when the session ends.
- If a session is added again to the watch list, a new troubleshooting workflow is started.

Troubleshooting Workflow Features for Endpoints

You can start a troubleshooting workflow only if the endpoints are in the Managed state. The following are the key behaviors of the troubleshooting workflow, when an endpoint is added to the watch list:

- The automatic troubleshooting for an endpoint starts as soon as it joins a session. You can stop the troubleshooting workflow for a session that is associated with an endpoint (added to a watch list). You need to manually start the troubleshooting for this session.
- During the session, if an endpoint is removed from the watch list, the troubleshooting stops for that endpoint.
- If a session and the associated endpoints are part of the watch list and if an endpoint is removed from the watch list, the troubleshooting workflow continues for the session until it ends.
- If a session and the associated endpoints are part of the watch list and if the session is removed from the watch list, the troubleshooting workflow continues for the endpoints, until they disconnect from the session. That is, if the session and endpoints are part of the watch list, the endpoints are given higher priority.

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.

It enables 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.

Before Cisco Prime CM can perform a Mediatrace poll, you must 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.

You can verify whether the Mediatrace initiator and/or responder features are enabled on the device using Cisco Prime CM Inventory (**Inventory > Device Inventory** [Mediatrace Role]).

If you have enabled Cisco Mediatrace on your network nodes, Cisco Prime CM provides Medianet Path View as part of the troubleshooting data. The Medianet Path View includes a graphical view of:

- CPU and packet loss
- Video IP bit rate and packet loss
- Video interarrival jitter and packet loss
- IP DSCP and packet loss

Starting a Troubleshooting Workflow

You can start the troubleshooting workflow for a session or endpoint from the quick view window (see [Table 21-1](#)) in the Session Monitoring and Endpoint Monitoring page. You can:

- Start a troubleshooting workflow for an in-progress session.
- Tag a session to the watch list. The troubleshooting workflow starts when the session begins.
- Tag an endpoint to the watch list. The troubleshooting workflow starts when the endpoint joins a session.
- Configure to trigger an automatic troubleshoot workflow if there is a packet loss, jitter, or latency alarm for a point-to-point session.

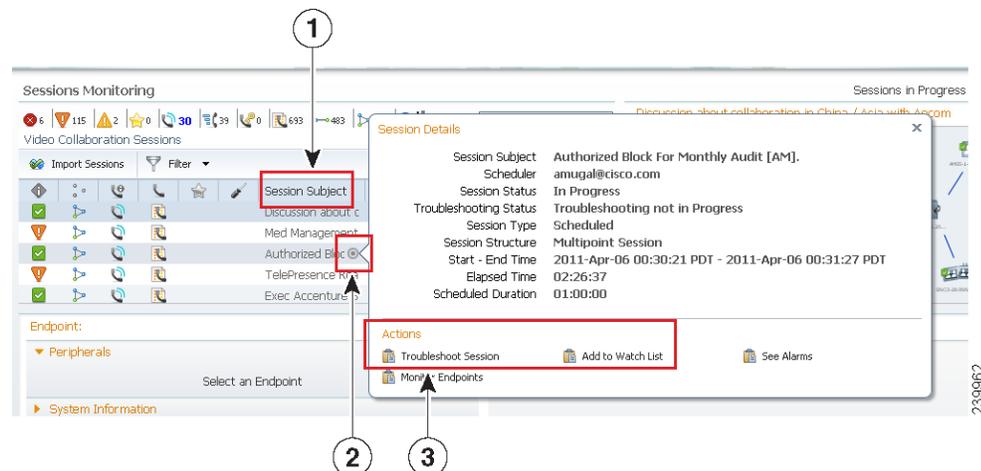


Note

The CLI credentials are mandatory to start a troubleshooting workflow. You must ensure that the CLI credentials are entered for all endpoints and network devices, before you start the troubleshooting workflow. If you have not entered the CLI credentials, enter the CLI credentials and discover the devices again.

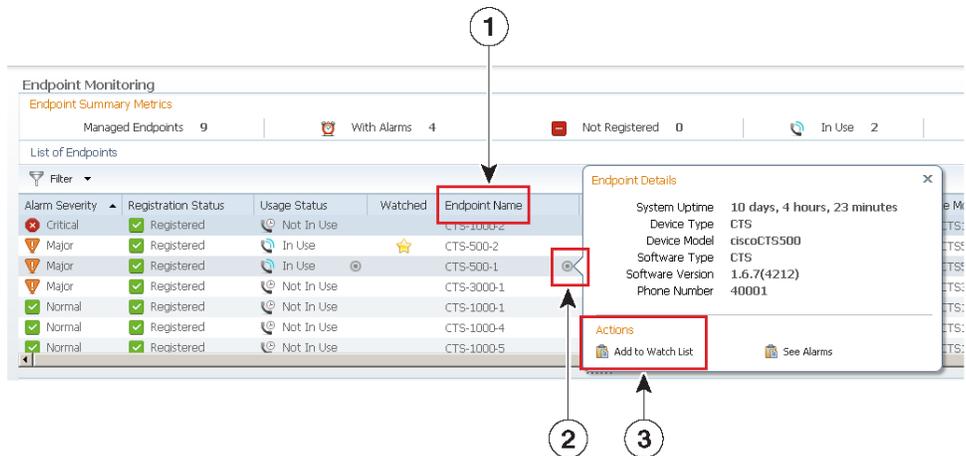
See [Managing Credentials, page 10-1](#) for updating the credentials, [Discovering Devices, page 11-6](#) to start the discovery job, and [Access Information, page 12-4](#) to verify if the CLI credentials are configured.

Figure 21-2 Starting Troubleshooting from the Session Monitoring Page



1	The Session Subject column from where you can launch the quick view.	2	Hover the mouse over the session for which you want to start the troubleshooting and click the quick view icon.
3	Click either the Troubleshoot Session or Add to Watch List link.		

Figure 21-3 Starting Troubleshooting from the Endpoint Monitoring Page



1	The Endpoint Name column from where you can launch the quick view.	2	Hover the mouse over the endpoint for which you want to start the troubleshooting and click the quick view icon.
3	Click the Add to Watch List link.		

Table 21-1 Launch Points for the Troubleshooting Workflow

Troubleshooting Type	Launch Points
Automatic	<ol style="list-style-type: none"> 1. Choose Administration > Device Monitoring Configuration. The Device Monitoring Configuration page appears. 2. Set the threshold value for Rx Packet Loss, Average Period Jitter, and Average Period Latency. 3. Check Rx Packet Loss, Average Period Jitter, and/or Average Period Latency, based on your requirement. 4. Click Save.
Automatic	<ol style="list-style-type: none"> 1. Choose Monitoring > Session Monitoring. The Sessions Monitoring page appears. 2. Select a scheduled session. 3. Hover the mouse over the Session Subject column in the Video Collaboration Sessions table and click the quick view icon that appears. 4. Click Add to Watch List.

Table 21-1 Launch Points for the Troubleshooting Workflow (continued)

Troubleshooting Type	Launch Points
Automatic	<ol style="list-style-type: none"> 1. Choose Monitoring > Endpoint Monitoring. The Endpoint Monitoring page appears. 2. Select an endpoint, which is in the Not In Use usage status. 3. Hover the mouse over the Endpoint Name column in the List of Endpoints table and click the quick view icon that appears. 4. Click Add to Watch List. The troubleshooting workflow starts as soon as the endpoint joins a session.
Manual	<ol style="list-style-type: none"> 1. Choose Home. The Sessions in Progress with Alarms page appears. 2. Select an in-progress session. 3. Hover the mouse over the Session Subject column and click the quick view icon that appears. 4. Click either <ul style="list-style-type: none"> – Troubleshoot Session—To launch the Troubleshooting page and to select the direction from where you want to start the troubleshooting. <p>or</p> <ul style="list-style-type: none"> – Add to Watch List—To immediately start the troubleshooting workflow between endpoints, if it is a point-to-point session and between endpoint and multipoint switch, if it is a multipoint session. The troubleshooting direction is from an endpoint to a multipoint switch, not in the reverse direction.
Manual	<ol style="list-style-type: none"> 1. Choose Monitoring > Session Monitoring. The Sessions Monitoring page appears. 2. Select an in-progress session. We recommend that you select an alarmed in-progress session. 3. Hover the mouse over the Session Subject column in the Video Collaboration Sessions table and click the quick view icon that appears. 4. Click either <ul style="list-style-type: none"> – Troubleshoot Session—To launch the Troubleshooting page and to select the direction from where you want to start the troubleshooting. <p>or</p> <ul style="list-style-type: none"> – Add to Watch List—To immediately start the troubleshooting workflow between endpoints, if it is a point-to-point session and between endpoint and multipoint switch, if it is a multipoint session. The troubleshooting direction is from an endpoint to a multipoint switch, not in the reverse direction.

Table 21-1 Launch Points for the Troubleshooting Workflow (continued)

Troubleshooting Type	Launch Points
Manual	<ol style="list-style-type: none"> 1. Choose Monitoring > Session Monitoring. The Sessions Monitoring page appears. 2. Select an in-progress session. We recommend that you select an alarmed in-progress session. 3. Hover the mouse over the network link (if there is an alarm on the network link) in the session topology pane and click the quick view icon that appears. 4. Click Troubleshoot Network Link.
Manual	<ol style="list-style-type: none"> 1. Choose Monitoring > Endpoint Monitoring. The Endpoint Monitoring page appears. 2. Select an endpoint, which is in the In Use usage status. 3. Hover the mouse over the Endpoint Name column in the List of Endpoints table and click the quick view icon that appears. 4. Click Add to Watch List. The troubleshooting workflow starts immediately.

The troubleshooting workflow result appears in a new page. The following information is available:

Session Information

- Subject—Details on the session as provided by you at the time of scheduling a session.
- Session Type—Displays whether the session is ad hoc, scheduled, or static.
- Scheduler—Displays the details of the user who scheduled the session. For example, john@cisco.com. For ad hoc sessions, the scheduler information is not displayed.
- Start Time—Session start time.
- Structure—Displays whether the session is point-to-point or multipoint.
- Status—Displays the status of the session, such as in-progress, completed, or so forth.
- Elapsed Time —Duration for the session since the time it started.

View Session Topology

You can view the session topology in this pane. See [Session Topology, page 13-8](#) to understand the Session Topology view.

Troubleshooting Status

You can view the troubleshooting status between:

- Endpoints, if it is a point-to-point session.
- Multipoint switch and endpoints, if it is a multipoint session.

You can start, stop, and restart (Start New) a troubleshooting workflow, based on the endpoints that you want to analyze.

See [Understanding the Troubleshoot Data, page 23-1](#) for detailed information on the troubleshooting result (Troubleshooting, Log, and Medianet Path View tabs).

Exporting Troubleshooting Data

You can export the troubleshooting workflow data from the Cisco Prime CM client. You can export the data only after the session ends. After the troubleshooting job is completed, the troubleshooting job status is displayed in the Session Monitoring pages (see the Troubleshooting Status column).

To export and view the troubleshooting data:

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- Step 1** Choose **Monitoring > Session Monitoring**.
The Sessions Monitoring page appears.
 - Step 2** Select a past session, where the troubleshooting status icon displays Troubleshooting Report Available.
 - Step 3** Hover the mouse over the Session Subject column in the Video Collaboration Sessions table and click the quick view icon that appears.
 - Step 4** Click **Export Troubleshooting Data** in the quick view window.
A popup window appears with the message:
Click here to view the troubleshooting data.
 - Step 5** Click on the link in the popup window.
The Troubleshooting Report in the HTML file format appears in a new browser window.
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Understanding the Export Troubleshooting Report

The export troubleshooting report contains the following details:

Report Field	Description
Session Identifier	A unique ID for the session.
Session Subject	Displays whether the session is ad hoc, scheduled, or static.
Session Date	Date when the session occurred.
Session Start Time	Session start time.
Session Duration in Minutes	Duration of the session.
Session Type	Displays whether the session is a point-to-point or multipoint.

Report Field	Description
Endpoints	Details of the endpoints that were part of the session.
Call Segment	Displays the direction that was used while troubleshooting.
Troubleshooting Session	Start and end time of troubleshooting workflow.
Troubleshooting Session ID	A unique ID for the troubleshooting workflow.
Troubleshooting Start Time	Start time of the troubleshooting workflow.
Troubleshooting Initiation	Displays whether the troubleshooting was started manually or automatic.
Segment Service Topology	Displays information on the troubleshooting path topology (device name, type and IP address).
Troubleshooting End Time	Start time of the troubleshooting workflow.
Troubleshooting Termination	Displays whether the troubleshooting workflow was ended manually or automatic.